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The Canadian Patent Office

RECORD

Vol. XV.—No. 6.

JUNE, 1887.

{ Price in Canada \$2.50 per An.
United States - \$2.50 "

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INVENTIONS PATENTED.

NOTE.—Patents are granted for 15 years. The term of years for which the fees have been paid, is given after the date of the patent.

No. 26,567. Comb Foundation Fastening Machine. (*Machine à assujétir les croisées desruches.*)

Edward S. Eden, Woodstock, Ont., 2nd May, 1887; 5 years.

Claim.—1st. The combination, in a comb foundation fastener, of the heating lamp B, with an iron plate C, substantially as and for the purpose hereinbefore set forth. 2nd. In a comb foundation fastening machine, the combination of a heated plate C, with a section holder H and horizontal sliding table F, substantially as and for the purpose hereinbefore set forth.

No. 26,568. Art of Reducing the Point in Carbon in Steel and Forming a Homogeneous Weld. (*Art de réduire le point de carbone dans l'acier et faire une soudure homogène.*)

Elam I. Wassell, (assignee of Edwin D. Wassell), Pittsburgh, Penn., U.S., 2nd May, 1887; 5 years.

Claim.—1st. The process herein described for treating steel to reduce the point in carbon, which consists in subjecting it to the action of molten slag while immersed or buried therein, substantially as described. 2nd. The process herein described for treating wrought metals to form a homogeneous weld, which consists in subjecting a pile, fagot, bloom, or ingot of metal to the action of molten slag while immersed or buried therein, substantially as described. 3rd. The process herein described for treating steel to reduce the point in carbon and form a homogeneous weld, which consists in subjecting a pile of bars, tubes, or plates, a fagot, or ingot to the action of molten slag while immersed therein, substantially as described. 4th. The process herein described for treating steel rails to reduce the point in carbon, and convert them into bars low in carbon, which consists in subjecting a steel rail, or a section or sections of rails to the action of molten slag and then reducing the rail to bars, substantially as described. 5th. The process herein described for treating steel to reduce the point in carbon, which consists in heating a body of steel in an ordinary furnace, and then subjecting it to the action of molten slag while dipped, immersed or buried therein, substantially as described. 6th. The process herein described for treating wrought metals to form a homogeneous weld, which consists in heating a pile, bloom, or fagot, in an ordinary furnace, and then subjecting it to the action of molten slag while immersed or buried therein, substantially as described. 7th. The process herein described for treating steel to reduce the point in carbon, which consists in heating slag to a state of liquifaction, and then dipping, immersing, or burying the steel in said slag, and subjecting it to the action of the slag until the point in carbon has been reduced to any desired degree, substantially as described.

No. 26,569. Portable Safe. (*Coffre-fort portatif.*)

The Woodruff Portable Safe Company, (assignee of Horace W. Woodruff), Cincinnati, Ohio, U.S., 2nd May, 1887; 5 years.

Claim.—1st. The method or improvement in the art of transmit-

ting money or valuables from place to place, consisting essentially in enclosing said valuables in a secure box or packing case, through which a window permits them to be visible while *en route*, substantially as and for the purpose described. 2nd. A portable safe for transmitting money or valuables, provided with a secure transparent opening, through which its contents are visible, and a lock which can only be opened by one acquainted with the key-number or combination, substantially as described. 3rd. A portable safe for transmitting money or other valuables, constructed in two parts one fitting within the other, and securely locked together and having a certain part transparent for the purpose of making the contents visible, substantially as described. 4th. A portable safe for transmitting valuables, one side or portion of which is transparent, in combination with a combination lock so arranged that the key-number may be changed by simply changing the order of the numbers, substantially as described. 5th. A portable safe for transmitting valuables, constructed in two parts one fitting within the other and locked together, the inner casing provided with a glass or transparent window, and the other casing being cut away so as to expose said window to view, substantially as described. 6th. A portable safe for transmitting money or other valuables, and provided with a transparent portion through which the contents are visible, substantially as described. 7th. A portable safe for transmitting money, constructed with a transparent part for exposing the contents, said transparent portion being protected by an outer grating, substantially as described. 8th. A portable safe having a transparent portion, for the purpose described, provided with a circumferential groove or depression to receive the encircling cord or ribbon for sealing the safe, substantially as and for the purpose described.

No. 26,570. Hot Water Radiator.

(*Calorifère à eau.*)

Joseph D. Barcelow and Frederic Steben, Brockville, Ont., 2nd May, 1887; 5 years.

Claim.—1st. A hot water radiator having its base divided by a horizontal partition D into upper and lower sections B, C, pipes G connecting with the upper section and with a hollow head H at top, and tubes G terminating with the pipes G and connecting with the lower section C, whereby the circulation of each pipe G is returned by tube J to the lower section C and thence to the boiler, as set forth. 2nd. The combination, with the upper section B, tubes G and hollow head H, of the lower section C having tubes J standing with the tubes G to cause a return circulation, as set forth.

No. 26,571. Artificial Cement.

(*Ciment artificiel.*)

Jean Thorraud, Victor Nicolet and Antoine Bonnet, Grenoble, France, 2nd May, 1887; 5 years.

Claim.—1st. The novel industrial product above described, and which is essentially formed of an intimate mixture in contact with water, of dried and pulverized chloride of magnesium with or without the addition of inert matters or calcareous powder with magnesia also pulverized, and mixed with calcareous powder or inert matters, this product intended to replace cements being capable of receiving the most varied colorations by the addition of coloured earths, or remaining white like purest plaster. 2nd. The above described process consisting in drying by moist or dry method, the chloride of magnesium, in pulverizing it with the addition of inert matters, and in preparing a magnesium cement composed as above described, these two powders preserved separately being intended to be mixed at the moment of using to constitute a product replacing cements in the manner and with the object specified.

No. 26,572. Process of Treating Natural Gas for Illuminating Purposes.

(*Procédé de traitement du gaz naturel pour l'éclairage.*)

John McKay, Titusville, and John M. Critchlow, Beaver Falls, Penn., U.S., 2nd May, 1887; 5 years.

Claim.—1st. The method hereinbefore described of treating natural gas, the same consisting in heating natural gas in a chamber

containing incandescent carbonaceous fuel, substantially as and for the purposes described. 2nd. The method hereinbefore described in treating natural gas to produce a fixed gas, the same consisting of heating natural and hydrocarbon vapour in a chamber containing incandescent carbonaceous fuel, substantially as and for the purposes described. 3rd. The method hereinbefore described of treating natural gas to produce a fixed gas, consisting in heating natural gas in a chamber containing incandescent carbonaceous fuel, and adding a volatile hydrocarbon to the gas in said chamber, substantially as and for the purposes described. 4th. The method hereinbefore described of treating natural gas to produce a fixed gas, the same consisting in heating natural gas and a volatile hydrocarbon in a chamber containing incandescent carbonaceous fuel, and passing the gases thus combined through a second heating-chamber, substantially as and for the purposes described. 5th. The process above described of treating natural gas of varying quality, and converting it into an illuminating-gas of the desired candle-power, by passing the natural gas in connection with a jet of steam up through and in direct contact with an incandescent bed of coke, anthracite coal, or similar substance which forms the bed of fuel in any water-gas apparatus or generator, and simultaneously spraying on top of the bed of fire any suitable hydrocarbon by means of a stream of natural gas or its equivalent under pressure, and then passing the combined gases thus formed through a superheater, substantially as described and for the purposes herein set forth. 6th. The process described of manufacturing gas which consists of converting natural gas of varying quality into illuminating-gas of the desired candle-power, by passing the natural gas together with steam through a body of incandescent or highly-heated fuel, whereby decompositions and recompositions are effected and the natural gas is converted into a fixed illuminating-gas. 7th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into illuminating gas of the desired candle-power, by passing the natural gas together with steam through a body of incandescent or highly-heated fuel, whereby decompositions and recompositions are effected, and the natural gas is converted into a fixed gas, and mixing with such gas, hydrocarbon vapour for forming an illuminating gas. 8th. The above described process of manufacturing gas, which consists in converting natural gas of varying quality into illuminating gas of the desired candle-power, by passing the natural gas together with steam through a body of incandescent or highly-heated fuel, whereby decomposition and recomposition are effected and the natural gas is converted into a fixed gas, and simultaneously carburizing such gas by injecting into it a suitable proportion of hydrocarbon by a jet of natural gas or its equivalent. 9th. The process above described of converting natural gas into illuminating gas, by mingling with it in the gas-scrubber, a combined jet of crude petroleum or naphtha and steam introduced under heavy pressure, and then passing the product through a bed of incandescent coal, coke, or similar substance, and from thence to a superheater, substantially as described and for the purposes herein set forth. 10th. The process above described of manufacturing gas which consists in converting natural gas of varying quality into an illuminating gas of the desired candle-power, by passing the natural gas through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel, and decomposition and recomposition are thereby effected and the natural gas is converted into a fixed gas, and simultaneously carburizing such gas by injecting into it a suitable proportion of hydrocarbon by means of a jet of natural gas, steam, or its equivalent, as herein specified. 11th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into an illuminating gas of the desired candle-power, by passing the natural gas through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel and decomposition and recomposition are thereby effected, and finally passing the mixture of gases thus formed through a heated fixing-chamber or superheater, whereby the natural gas is converted into a fixed illuminating gas of the desired candle-power. 12th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into an illuminating gas of the desired candle-power, by first carburizing the natural gas by mixing it with any suitable hydrocarbon, and then passing the natural gas thus carburized in connection with steam through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel and decomposition and recomposition are thereby effected, and the natural gas and steam and hydrocarbons are converted into a fixed illuminating gas. 13th. In connection with the above described process of converting natural gas into an illuminating gas, by passing it through a bed of highly-heated fuel, the method of introducing the natural gas to the bed of fuel by first passing steam through the bed of fuel, and afterwards passing through said fuel the natural gas and shutting off the steam, as herein described and for the purpose set forth. 14th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into an illuminating gas of improved candle-power, by passing natural gas together with steam through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel and decomposition and recomposition are thereby effected, and then passing the gases thus formed through a heated fixing-chamber or superheater and natural gas and steam become converted into a fixed illuminating gas of improved candle-power. 15th. The process above described of manufacturing gas, which consists of converting natural gas of varying quality into illuminating gas of the desired candle-power, by passing the natural gas through a body of incandescent carbonaceous fuel which has been highly heated by internal combustion, whereby decompositions and recompositions are effected, and the natural gas is converted into a fixed illuminated gas. 16th. The process above described of manufacturing gas, which consists of converting natural gas of varying quality into illuminating gas of the desired candle power, by passing the natural gas together with steam through a body of incandescent carbonaceous fuel, which has been highly heated by internal combustion, whereby decompositions and recompositions are effected and the natural gas is converted into a fixed illuminating gas.

No. 26,573. Washing Machine.

(*Machine à Laver.*)

Narcisse Leger, St. Isidore, Ont., 2nd May, 1887; 5 years.

Claim.—1st. In a washing machine, the combination of the spindle D, having the claws *c* secured to its end, with the bevel pinion E and the bevel wheel F journaled in the standards C and G, substantially as herein shown and described. 2nd. The combination of the spindle D, having the claws *c* fixed to its end, the shoulder *f* and the groove *c* formed in it, with the spring H, pinion E having in its eye a key fixed to slide in the groove *c* and the bevel wheel F having the hand lever *d* and journaled in the standards C and G attached to the hinged cover B, as shown and described.

No. 26,574. Process and Apparatus for Drying Various Materials. (*Procédé et Appareil pour Sécher Divers Objets.*)

John H. Lorimer, Philadelphia, Penn., U.S., 2nd May, 1887; 5 years.

Claim.—1st. The herein described process for treating a textile material to be tinted, bleached, or disinfected, which consists in causing the material to be passed back and forth through a closed chamber, and exposed to strong currents of air impregnated with a coloring, bleaching, or disinfecting re-agent in a gaseous, or finely divided condition, which substances are drawn or forced directly through the material to be treated, substantially as and for the purpose specified. 2nd. The herein described process for treating a material to be tinted, bleached, or disinfected and dried, which consists in causing the material in a wet or moist condition to be passed back and forth through a closed chamber, and exposed to strong currents of air, impregnated with a coloring, bleaching, or disinfecting re-agent, which substances are drawn or forced directly through the material to be treated, and the action being continued sufficiently long to thoroughly dry the said material, substantially as and for the purpose specified. 3rd. A close drying chamber, through which a drying medium is caused to circulate, in combination with two endless aprons adapted to lie close together to hold the material to be dried and arranged to pass back and forth within the drying chamber, the aprons being brought outside the chamber at two places, one to form the feeding and one to form the discharging parts thereof, whereby the goods to be dried may be placed upon the aprons, and then conveyed through the drying chamber, and after being dried discharged again, guiding rollers for the aprons, and suitable devices for injecting into said drying medium, a fluid or gas which is conveyed to the material to be dried and caused to act thereon, the drying medium being the vehicle by which the fluid or gas is brought into contact with the material to be treated and dried, substantially as and for the purpose specified. 4th. The combination of the inclosed drying chamber, having openings for the admission of the endless belts, and provided with openings with a fan or blower to cause a circulation of air through said drying chamber, the two endless belts or aprons, guiding rollers therefor to guide said aprons back and forth in said drying chamber and in the path of the air currents and convey the said aprons outside or exterior to the closed chamber at two places for the feed and discharge, and suitable devices for injecting into said drying medium a fluid or gas, which is conveyed to and through the material to be dried and caused to act thereon, the drying medium being the vehicle by which the fluid is brought into contact with the material to be treated and dried, substantially as and for the purpose specified. 5th. A close drying chamber, through which a continuous vertical column or current of dry air is passed, in combination with two endless aprons of open-work adapted to lie close together to hold the material to be dried, and arranged to pass back and forth through the continuous vertical current of dry air, exposing both sides of the material to be dried in alternation to the said current of dry air, and guiding rollers for said aprons to guide them back and forth within the chamber, and bring them out through openings therein for the feed and discharge, the construction being such that the material is fed into the machine and delivered from it in an atmosphere which is cool and comfortable to work in, and is carried through a hot atmosphere within the close chamber and in which the dry air is passed directly through the sides of the said material to be dried while in the custody of the apron, substantially as and for the purpose specified.

No. 26,575. Starting Device for Tramway and other Vehicles. (*Appareil de Mise en Marche des Voitures de Tramway et autres.*)

John Gilmore and William R. Clark, London, Eng., 2nd May, 1887; 5 years.

Claim.—1st. The combination, with a draw-bar of train, car, or other vehicle, of a rocking bar, a pawl carried in any suitable part of the frame, the said pawl engaging with a ratchet wheel or for forming part of carrying wheel or wheels, substantially as described. 2nd. The guiding of such a pawl by means of a pivoted cam guide, so that it engages with the ratchet wheel in the upward travel and back clear of the ratchet wheel on its downward travel, substantially as described. 3rd. The combination, with the draw-bar so fitted, of a locking apparatus operated by a for treadle at the pleasure of the driver, which automatically locks the bar, so as to throw the ratchet starting gear out of operation until released by the action of the driver, substantially as described.

No. 26,576. Hollow Ware, such as Vases, Boxes, etc. (*Utileuses tel que Vases, Boîtes, etc.*)

William H. Hoyt, Stamford, Conn., U.S., 2nd May, 1887; 5 years.

Claim.—1st. As a new article of manufacture, hollow-ware, made of vegetable pith, substantially as described. 2nd. A vase or other hollow article, made of the pith of corn stalks, the pith being cut in

the form of blocks joined or connected together, substantially as described.

No. 26,577. Handled Blacking Box.
(*Boîte à Cirage avec Poignée.*)

Samuel M. Bixby, New York, N.Y., U.S., 2nd May, 1887; 5 years.

Claim.—1st. A blacking box, having a movable handle adapted to be received in a groove, or its equivalent, in the bottom of the box. 2nd. The combination, with a blacking box adapted for use with a handle, of suitable feet arranged at the sides of the handle to preserve the standing level of the box, as set forth. 3rd. In a handled blacking box, the combination, with a bottom struck outward at the central area, leaving an encircling margin inclined upward at the sides, of a suitable handle and feet placed at the sides of the handle. 4th. In a handled blacking box, the combination of the dishing bottom, the groove, or grooves, therein, and a movable handle sliding in the groove, as set forth.

No. 26,578. Stay or Stiffening for Dress Waists and Corsets. (*Busc pour Corsets de Robes et Corsets.*)

George R. Holden, St. Thomas, Ont., 24th May, 1887; 5 years.

Claim.—A stiffening for corsets and dresses, waists, or other uses, formed by rendering into fibre, India, Java, or common rattan, and bound together, as shown and described above.

No. 26,579. Spring Motor, in which a Rocking Motion is Communicated to a Lever, etc. (*Moteur à Ressort Donnant Mouvement Oscillant à un Levier, etc.*)

Ezra B. Evans, Circleville, Ohio, U.S., 2nd May, 1887; 5 years.

Claim.—1st. In a motor, the combination, with a revolving crank receiving its motion, substantially as described, of a lever having a slot at one end formed by two longitudinal slot portions, formed one above the other, and connecting at their meeting ends with a transverse portion, and a balance-wheel engaging with the other end of said lever, as and for the purpose shown and set forth. 2nd. In a motor, the combination, with a balance wheel having a helical balance spring secured to its shaft, and provided at its shaft with a disk having a straight portion cut away at its periphery, and having a laterally-projecting pin at the middle of the said straight portion, of a rocking lever having a slot with widened outer end for the reception of the pin of the disk, and having a laterally-projecting pin at the inner end of the slot for engaging the straight edge of the disk, as and for the purpose shown and set forth. 3rd. In a motor, the combination of a rocking balance-wheel having a notch in its periphery, a bell-crank pivoted with one arm within reach of the notched rim of the wheel, and a float having suitable connection with the bell-crank tilting it toward the wheel when the float rises, as and for the purpose shown and set forth. 4th. In a motor, the combination of a train of wheels, having a double crank at the last shaft, a lever pivoted at its middle and having the reciprocating power-rod pivoted to one arm, and formed at one end with a slot having two longitudinal portions connected by a transverse portion, and having the crank-pin sliding in it and formed with a slot at the other end, widening toward its end, and having a laterally projecting pin at the inner end of the slot, and a balance-wheel, having a balance spring secured to its shaft, a disk formed with a straight portion at the edge secured upon said shaft, and having a laterally projecting stud at the centre of the straight edge, the said stud projecting into the slot of the lever and the pin of the lever projecting into the cut-away portion of the disk having the straight edge, as and for the purpose shown and set forth.

No. 26,580. Brake for Locomotives, etc.
(*Frein pour Locomotives, etc.*)

The American Brake Company (Assignee of George H. Poor), St. Louis, Mo., U.S., 3rd May, 1887; 5 years.

Claim.—1st. In a brake system, the combination of a series of link-suspended or floating brake-heads, one for each of the wheels of one side of a locomotive, all of said brake-heads suspended on one and the same side of the respective wheels, a series of substantially horizontal floating levers for actuating said brake-heads, and a single line of pull rods, substantially as and for the purposes specified. 2nd. The combination, in a brake system, of a series of link-suspended or floating brake-heads, and a series of substantially horizontal floating levers for actuating the brake-heads, said levers connected by pull-rods arranged so that all the levers shall be levers of the third order, substantially as and for the purposes specified. 3rd. The combination, with a series of link-suspended or floating brake-heads, of a series of substantially horizontal floating levers, each of which is directly connected at one end to its respective brake-head, and by its opposite end connected to the next lever of the series at a point between its two extremities, substantially as and for the purposes specified. 4th. The combination of two systems of brakes, one for the wheel of each side, each of said systems consisting of a series of link suspended or floating brake-heads, substantially horizontal floating levers, and a single line of pull-rods which connect all the levers of a side, so that said levers shall be levers of the third order, and a transverse brake-beam which connects the two systems at one end, substantially as and for the purposes specified. 5th. In a brake system, the combination, with the lever of wedge-shaped cross-section, of a brake-head having a wedge-shaped slot, the thickest edge of the lever arranged in the narrow portion of the slot, and a pin for connecting the two, so that the head can rock on the lever, substantially as and for the purposes specified.

No. 26,581. Water Gauge for Steam Boilers.
(*Indicateur d'Eau pour Machines à Vapeur.*)

Frank A. Drummond, Winnipeg, Man., 3rd May, 1887; 5 years.

Claim.—1st. In a water gauge for steam boilers, an under glass ball valve unseatedly supported in vertical channel of the gauge below the glass indicator tube, a series of glass balls or sectionals resting pillar-wise upon this glass ball valve and passing through the glass indicator tube, and an upper glass ball valve unseatedly supported on this series of glass balls or sectionals, and located in the vertical channel of the gauge above the glass indicator tube, substantially as described and for the purposes set forth. 2nd. In a water-gauge for steam boilers, a blow-off cock U, a stop-cock H, an under glass ball valve unseatedly supported in the vertical channel of the gauge below the glass indicator tube, a series of glass balls or sectionals resting pillar-wise upon this glass ball valve and passing through the glass indicator tube, and an upper glass ball valve unseatedly supported on this series of glass balls or sectionals, and located in the vertical channel of the gauge above the glass indicator tube, all combined and arranged as shown and described, substantially as and for the purposes set forth.

No. 26,582. Wheel Fender for Railway Cars.
(*Garde-roue pour chars de chemins de fer.*)

Alfred L. Clarke, Springfield, Ohio, U.S., 3rd May, 1887; 5 years.

Claim.—1st. The combination, with a car, of a laterally-yielding spring-fender secured to and suspended beneath the car in advance of the car wheel, said fender comprising a lower portion suspended in front of and obliquely to the tread of the wheel, and an upper spring metal portion secured to the brake-beam truck journal-box body or other desired part of the car, substantially as described. 2nd. As an article of manufacture, a wheel-fender for railway cars, constructed from a single piece of spring-metal having the enlarged lower portion *d*, and laterally-yielding spring-metal upper portion *e*, by means of which it is secured to any desired part of the car or car-truck, substantially as set forth. 3rd. The combination, with the brake-beam truck journal-box or body of a car, of the laterally-yielding fender A secured thereto, and constructed from a single piece of spring-wire bent at its lower end as shown, form the loop *d* coiled near its upper end to form the helix *b*, substantially as shown and for the purpose described. 4th. The combination, with any desired part of a railway car, of the fender A constructed from one or more pieces of spring-metal and having the attaching end *e*, a helix *b* or equivalent *b* and the enlarged obliquely arranged lower portion *d*, said fender being so constructed and arranged with relation to the part to which it is attached that the lower portion will depend directly in front of the wheel and in close proximity to the rail, substantially as and for the purpose set forth.

No. 26,583. Manufacture of Wire Mats.
(*Fabrication des nattes en fil de fer.*)

William R. Pitt, Brooklyn, N.Y., U.S., 3rd May, 1887; 5 years.

Claim.—1st. A mat composed of interlaced coils of wire, soldered together at their points of intersection or contact with each other, substantially as herein described. 2nd. A mat composed of interlaced coils of wire, having a protecting coating serving both to prevent rust of the wire, and to connect the coils at their points of interlacing contact with each other, substantially as herein described. 3rd. A mat composed of interlaced coils of wire extending parallel with each other, and with the opposite edges of the mat, and soldered together at their points of interlacing contact with each other, substantially as herein described. 4th. A mat composed of interlaced coils of wire, extending parallel with each other and with opposite edges of the mat, the coil or coils at the longitudinal edge or edges being made of two or more parallel wires or multiple coils, substantially as herein described.

No. 26,584. Means and apparatus for Securing Wheels on their Axles, etc.
(*Moyens et appareil pour placer les roues sur leurs essieux, etc.*)

Ebenezer Partridge, Birmingham, Eng., 3rd May, 1887; 5 years.

Claim.—1st. The half band grooved flanged D, notched ring G and pin J, acting as and for the purpose described. 2nd. As attachments to a colling axle collet A, with a half band grooved flange D, notched ring G on nut C, pin J, notch I, and notches H, in combination with lipped plate N, screw T, solid back collar P, as and for the purpose described. 3rd. The loose half band U, with flanges D, in combination with J, prongs Y, notches X, X, as and for the purpose specified.

No. 26,585. Wind Mill. (*Moulin à vent.*)

Jeffrey Artley, Walter's Falls, Ont., 3rd May, 1887; 5 years.

Claim.—1st. In a windmill, the combination, with the tower turntable and wind-wheel, of the horizontal shaft E, sliding shaft K, means for connecting said sliding shaft to the sails, and a spring and weight for throwing said sails in and out of wind, substantially as described. 2nd. In a windmill, the combination, with the wind-wheel, its sails and levers for changing their position, and the turntable of the sliding shaft K, chain O, rod R, weighted lever S, and spring M, substantially as and for the purpose specified. 3rd. The combination, with the turntable B, of the arm C, and tail boards *e*, *c* and the vertical shaft D, said arm and shaft being hollow, as specified. 4th. The wind-wheel made up of hub F, spokes *f*, *f*, corner bracket *ft*, *ft* sale beams Fr, Fr, arranged to form a quadrangle and sails carried by said beams, in combination with the sliding shaft and connecting levers, all arranged substantially as and for the purpose set forth. 5th. The sails G having concave faces, for the purpose specified. 6th. The combination, with the sails G, formed as described, of the governing weights *g*, as specified. 7th. The combination of the sliding shaft K and braces Kr, Kr, with the levers H, A, hub F and sails G, for the purpose specified. 8th. The combination, with a quadrangular wind-wheel having hub F and corner brackets *ft*, *ft*, of the braces L, L, L₁ and ring L₂ or its equivalent, as and for the purpose described.

No. 26,586. Asphalt Pavements.*(Pavage en asphalte.)*

James Stansfield, Todmorden, Eng., 4th May, 1887; 5 years.

Claim.—In the laying of asphalt pavements, the process or method of giving an improved surface to the same, by spreading a top layer or coat of varnish or paint composed of carbonate of lime on other similar finely powdered substances, as hereinbefore mentioned, mixed in suitable proportions with pitch, oil, and resin, as hereinbefore mentioned, and the laying and rolling therein of suitably sized particles of stone, substantially as hereinbefore described.

No. 26,587. Door Check. (Ressort de porte.)

Henry A. House and Henry A. House, jr., Bridgeport, Conn., U. S., 4th May, 1887; 5 years.

Claim.—1st. The combination, with a door and frame, of a contact piece carried by one of said parts, and a cylinder carried by the other, and a piston and piston rod unconnected with the door or frame, and arranged to make contact with the contact piece as the door closes, a circulating passage around or through the piston and a liquid in the cylinder, substantially as set forth. 2nd. The combination, in a door buffer, of a cylinder containing a liquid and provided with a piston, piston-rod and contracted passage through which the liquid may flow from one side to the other of the piston, and with an air chamber confining a body of air, substantially as and for the purpose set forth. 3rd. The combination of the door buffer cylinder, piston rod and piston recessed to form an air chamber, with a passage for the flow of the liquid from one side to the other of the piston, substantially as and for the purpose set forth. 4th. The combination of the suspended buffer cylinder provided with a piston, piston rod and liquid passage, and a pivoted arm connected to the piston and arranged to make contact with an independent contact arm, substantially as set forth. 5th. The combination of the buffer cylinder, piston rod, piston having a peripheral valve seat, a ring valve adapted to said seat loosely encircling the piston, and smaller in diameter than the cylinder and carried by the piston, substantially as set forth. 6th. The combination of the cylinder containing a liquid, a piston rod, piston and valve arranged to partly close the passage for the fluid from one side of the piston to the other, and to normally occupy a position away from its seat, substantially as set forth.

No. 26,588. Barb for Wire Fencing.*(Fil de fer barbelé pour clôture.)*

William H. Rodden, Toronto, Ont., 4th May, 1887; 5 years.

Claim.—1st. A blank for a fence wire barb, formed of a strip of metal with its ends cut obliquely and split, all as and for the purposes described. 2nd. A blank for a fence wire barb, formed of a strip of metal flat on one side and corrugated lengthwise or waved in transverse section, with its ends cut obliquely and divided up longitudinally, all as herein set forth. 3rd. The combination, with a fence wire, of one, two or more strands of a barb, formed of a strip of metal wrapped or folded round same, with obliquely cut ends divided up and projecting in different directions, all as herein set forth.

No. 26,589. Baling Press for Hay, etc.*(Presse d'emballage pour le foin, etc.)*

Samuel T. McCanless, Cartersville, Ga., U. S., 4th May, 1887; 5 years.

Claim.—1st. The combination, in a hay or cotton press, of a compression-chamber and a ram suspended in rear of said chamber from suitable supporting-posts and adapted to enter the chamber in its forward movement to compress the material contained therein, substantially as described. 2nd. In a hay or cotton press, the combination of a compression-chamber, a bar adapted to be inserted in front of the rammer to hold the material in its compressed position, pawls *b, b'* for holding said bar in its advanced position, and a reciprocating ram suspended from suitable posts adapted to compress the material by intermittent strokes, substantially as described. 3rd. In a hay or cotton press, the combination of a compression-chamber, a device for holding the material in its compressed position after it has been compressed by successive strokes of a reciprocating cam, and means for reciprocating said ram consisting of the fly-wheel adapted to be actuated by suitable power, the face-plate on the same shaft therewith, and the pitman connected to said face-plate at one end and secured to the beam at the other end, whereby when the wheel is rotated the pitman will throw the beam forward against the material and back, substantially as described.

No. 26,590. Wire Cloth Weaving Shuttle.*(Navette pour tisser la toile métallique.)*

Samuel O. Greening, Hamilton, Ont., 4th May, 1887; 5 years.

Claim.—1st. In a wire cloth weaving shuttle, the combination of a shuttle A having a concave bottomed space for cop, and provided with corrugated curved metal sides G, and a curved spring D D held in position by a hinge E and latch F, substantially as and for the purpose hereinbefore set forth. 2nd. In a wire cloth weaving shuttle, the combination of a shuttle having concave chamber, as described, curved metal walls G, spring D and its hinged and latched attachments, and the two projecting steel sides *c, c'*, substantially as set forth and described.

No. 26,591. Implement for Stretching Carpets. (Outil pour étirer les tapis.)

William Porter, Ottawa, Ont., 4th May, 1887; 5 years.

Claim.—1st. In a carpet stretcher having from A and points B, the cam lever C and strap E, as and for the purpose shown and described. 2nd. In a carpet stretcher, tooth pliers F, gaws G and G' having J, roller N and strap E, as and for the purpose shown and described.

No. 26,592. Ventilator. (Ventilateur.)

Rachel McDonald, Renfrew, Ont., 4th May, 1887; 5 years.

Claim.—1st. A system of ventilating apartments, consisting of a series of receivers A placed in the ceiling, each receiver having at its apex a pipe adapted to be connected with plain lengths of piping *b*, coupling said receivers by pipe lines into one trunk line, and connecting the latter by a discharge pipe with the chimney flue F, substantially as shown and described. 2nd. The combination of the flue F, ceiling C, receivers A, B and A', B', pipes *b, T*, pipes *b₁*, branches *b₁₁*, *b₁₁₁*, and discharge *d, d'*, substantially as set forth. 3rd. The combination of the inverted funnel A, pipe B, lugs *a* and lid A', substantially as set forth. 4th. The combination of the ceiling C, receivers A, pipes B, pipes *b*, connections *b₁*, *b₁₁*, *b₁₁₁*, discharge *d, d'* and flue F, substantially as set forth.

No. 26,593. Pipe Wrench. (Clé à Tuyau.)

James A. Fairbanks, Augusta, Me., U. S., 4th May, 1887; 5 years.

Claim.—1st. In a pipe wrench, the combination, substantially as described, of the shank *f* having jaw *a* therein, the shank *n* having jaw *b* thereon and screw threads cut in the thread thereof, and the bolt *c* with external screw thereon, all connected and inclosed by the pin *8* and case, and as set forth. 2nd. In a pipe wrench, the combination of the shank *f*, having jaw *a* thereon, said jaw operating against the bolt *c* at *4*, as described, the shank *n* with jaw *b* thereon and screw threads cut in the throat thereof, and the bolt *c*, with screw cut thereon, all inclosed and connected by pin *8* and case *m*, as set forth. 3rd. In a pipe wrench, the combination, as described, of the shank *f*, having jaw *a* thereon, the shank *n* having jaw *b* therein, and screw threads cut in the throat thereof, and the bolt *c* with external screw thereon, all inclosed, connected and operated by case *m*, pin *8*, and spiral spring *5*, as and for the purpose set forth. 4th. In a pipe wrench, the combination of the shank *f*, having jaw *a* thereon, the shank *n*, with jaw *b* thereon, and screw-threads cut in the throat thereof, and the bolt *c* with external screw thereon, the threads on said bolt having cut-off on one side to give a quick return, all inclosed and connected by case *m* and pin *8*, as described. 5th. In a pipe wrench, the combination of the shank *f*, having jaw *a* thereon, the shank *n*, with jaw *b* thereon, and screw threads cut in the throat thereof, and the bolt *c* with external screw thereon, said bolt having slot *v*, cut therein to allow longitudinal motion thereof, all inclosed and connected by case *m*, pin *8* and screw *k*, as and for the purposes set forth.

No. 26,594. Apparatus for Separating Oil, Water and Grease from Steam.*(Appareil pour séparer l'Huile, l'Eau et la Graisse de la Vapeur.)*

Sinclair Stuart, Plainfield, N. J., U. S., 4th May, 1887; 5 years.

Claim.—1st. The combination, with the shell or casing A to be inserted in a line of pipe, of a well B communicating therewith by openings *b*, and catch plates or separating abutments C springing from the interior of the shell, and extending transversely to the length of the passage through the shell, whereby oil, grease and water will be separated from the steam and delivered through the openings *b* into the well, substantially as herein described. 2nd. The combination, with the shell or casing A to be inserted in a line of pipe, of the well B at the bottom thereof, and communicating therewith by openings *b*, and the catch plates or separating abutments C extending transversely across the shell from side to side thereof, and formed integral with the shell, substantially as herein described. 3rd. The combination, with the shell or casing containing the catch plates or separating abutments C, and the well B connected therewith, of the chemical receiver S communicating with the said shell or casing, substantially as and for the purpose herein set forth.

No. 26,595. Clothes Pin. (Épingle Américaine.)

Edward M. Ball, Coaticook, Que., 4th May, 1887; 5 years.

Claim.—As a new article of manufacture, a clothes pin made from a single piece of spring wire, bent or twisted into shape, substantially as shown and described.

No. 26,596. Process of Cleaning Wheat.*(Mode de Nettoyage du Blé.)*

Elias Reist, Hamburg, N. Y., U. S., 4th May, 1887; 5 years.

Claim.—The herein described method of cleaning wheat, which consists in mixing bran and wheat, and then subjecting the same to the action of suitable scowling devices, substantially as set forth.

No. 26,597. Hay Stacker. (Monte-Foin.)

Laban Soseman and Thomas Soseman, South Bend, Ind., U. S., 4th May, 1887; 5 years.

Claim.—1st. In a hay stacker, the derrick-arm G composed of two sections, the inner section being rigidly secured to a support, and the outer one hinged to the inner one by a hinge at the upper side of the adjacent ends of the said stations, substantially as shown and described, whereby the outer section can be swung up into a vertical position to bring the loaded fork nearer to the pole, and the downward movement of said section beyond a horizontal position limited, as set forth. 2nd. In a hay-stacker, the combination, with the jointed derrick-arm G, of the pivoted clamping bars X, having bevelled rear ends, and the jointed sliding bar *b*, having bevelled forward end and its keeper *c*, substantially as herein shown and described, whereby the rise of the outer part of the said derrick-arm will cause the said pivoted bars to clamp the hoisting rope, and allow the derrick-arm to be drawn back to a horizontal position by means of the trip rope, as set forth. 3rd. In a hay stacker, the combination, with the pole A and the derrick arm G, of the vertical cross-bar H, the concave rollers I, J, arranged on the opposite sides of the said pole, the roller

supports and the adjusting rope N, substantially as herein shown and described, whereby the said derrick-arm can be swung around the said pole and moved up and down upon it, as set forth. 4th. In a hay-stacker, the combination, with the derrick-arm G and the support K for the centre roller J, of the swivelled screw L and its stationary nut M, substantially as herein shown and described, whereby the said centre roller can be readily adjusted to the pole, as set forth. 5th. In a hay-stacker, the combination, with the vertical cross-bar H, of the derrick-arm, of the lever Q and rope R, substantially as herein shown and described, whereby the said derrick-arm can be readily swung around the pole, as set forth. 6th. In a hay stacker, the combination, with the cross-bar H of the derrick-arm, and the braces M, of the forked arm Y, substantially as herein shown and described, whereby the outer part of the derrick-arm, when raised, will be stopped in a vertical position and will be held from lateral movement, as set forth. 7th. In a hay stacker, the combination, with the inner part of the jointed derrick-arm, of the projecting forked bar Z, substantially as herein shown and described, to receive the hoisting rope when the outer part of the said derrick-arm is raised, and hold the loaded fork from swinging as the derrick-arm is swung around the pole, as set forth.

No. 26,598. Bird Cage Protector.

(*Protecteur de Cage d'Oiseau.*)

Wesley S. Armstrong, Cleveland, Ohio, U. S., 4th May, 1887; 5 years.

Claim.—1st. The combination, with the cage A, of a hoop or band B provided with a sack or skirt C enveloping the lower part of the cage, and capable of removal and replacement, substantially as and for the purpose specified. 2nd. The combination, with cage A and protector C, having loop or band B, of the bracket rods D, E, having the bracket d and hooks F and G for supporting the protector upon the cage, substantially as and for the purpose specified.

No. 26,599. Spark Arrester. (*Garde-Etincelle*)

Paul H. Adams and Henry Gerlach, Philadelphia, Penn., U. S., 4th May, 1887; 5 years.

Claim.—1st. The combination of a funnel E within a smoke stack, with a single central discharge pipe that opens into said funnel, and extends for a part of its length vertically downward in the plane of the axis thereof, and a flaring ring F secured within said funnel to the top thereof to form a shallow annular chamber f, said ring having its opening concentric with the discharge opening of said funnel E and discharge pipe E₁, substantially as described. 2nd. In combination, a smoke-stack, a funnel within said stack provided at its lower end with a discharge pipe centrally disposed and extending vertically downward the axis of said funnel, a flaring ring F within and a deflecting ring D above said funnel, substantially as described. 3rd. A smoke stack, a cap therefor, having an annular grooved ring, a funnel below the said ring, and provided with a discharge pipe, and a flaring ring secured to said stack within the same below said funnel, substantially as described. 4th. The combination, in a smoke stack, of a smoke-chamber a₂, having a steam inlet nozzle, and an inverted funnel arranged below said nozzle, and a stack B having an annular grooved ring D, and a funnel E provided with an exit pipe E₁, substantially as described. 5th. In a spark arrester, the combination of a smoke-receiving chamber a₂, having a steam inlet nozzle, and an inverted funnel suspended at the middle of the chamber above said inlet, and provided with an upwardly-extending pipe with a smoke stack having a cap, an annular grooved ring D, a funnel E having a discharge pipe E₁ and a flaring ring C, substantially as described.

No. 26,600. Combined Hay Rake and Tedder. (*Râteau et Faneuse Combinés.*)

John H. Thomas (co-inventor with Joseph E. Offrett.) Springfield, Ohio, U. S., 4th May, 1887; 5 years.

Claim.—1st. In a hay-tedder, the combination, with the thill-frame and the tedder-frame, of the adjusting lever and the yielding support supported by the lever and interposed between it and the tedder-frame, and constructed to support said frame, the yielding capacity of the support being the same, whatever the position of the lever may be. 2nd. In a hay tedder, the combination, with the thill-frame and the tedder-frame, of the pivoted lever and the rod connected with the lever and with the tedder-frame, and a spring for supporting said frame interposed between it and the lever and supported by the lever, the yielding capacity of the support being the same whatever the position of the lever may be. 3rd. In a hay-tedder, the combination, with the thill-frame, the pivoted lever and its detent, the combination, with the thill-frame, the guide secured to the lever, and the rod adapted to play through the lever of the tedder-frame to which the rod is connected, and a spring for supporting said frame interposed between it and the lever and guided by said rod, the yielding capacity of the support being the same whatever the position of the lever may be. 4th. In a hay-tedder, the combination, with the thills and cross-piece, the segment, the lever and the guides secured to the lever of the tedder-frame, the rods secured thereto, and the spring interposed between the frame and the guide, the lever and spring being adapted to adjust the frame to different positions, the yielding capacity of the support being the same whatever the position of the lever may be. 5th. In a rake and tedder, the combination, with the axle and eccentrics mounted thereon, of connecting plates having cheek-pieces, and the locking section and means to secure the section of the cheek pieces. 6th. In a hay rake and tedder, the combination, with the axle and the eccentrics secured thereon of the tedder-frame, and the connecting plates secured thereto and having cheek-pieces, and the locking sections adapted to fit within the cheek-pieces, and to embrace the eccentrics and means to lock the sections to said pieces. 7th. In a hay-rake and tedder, the combination, with the axle having the eccentrics secured thereon, of the tedder-frame, the connecting plates secured thereto and having cheek-pieces, the locking sections, means to secure them to said pieces, the arm secured to the axle, the lever and the connecting pitman, whereby the eccentrics are

are actuated and the frame adjusted to and fro. 8th. In a hay rake and tedder, the combination, with the axle having eccentrics, and an arm secured thereon, the lever and the pitman connecting it with said arm of the tedder frame, the connecting-plates secured thereto and having cheek-pieces, the locking-sections locked to said pieces, the tedder-shaft mounted upon said frame, and the cog-rims mounted on the drive-wheels intergearing with the tedder-shaft pinions. 9th. In a hay rake and tedder, the combination, with the axle, the eccentrics and arm secured thereon and a lever and pitman for actuating the same, of the rake-head, the connecting-plates locked to said pieces. 10th. The combination, with the tedder-frame mounted upon the axle, the tedder-shaft and pinions and the cog-rims mounted on the drive-wheels, of the seat standard secured to the frame between the tedder-shaft, and the axis of the axle and the seat-beam pivotally connected with the thills and to the seat, whereby the weight of the driver holds the pinion down against the lifting action of the cog-rims. 11th. The combination, with the rake-head mounted upon the axle of the seat-standard pivotally connected to the head in front and above the axis of the axle, and the seat-beam pivotally connected with the thills and connected to the seat. 12th. The combination, with the tedder-arm, of the coupling consisting of two plates rigidly secured thereto, one of which has a sleeve extending therefrom and into the other, and the radius-arm pivotally mounted on said sleeve. 13th. The combination, with the tedder-arm, of the lugs fitted thereto and the sleeve fitted over the arm, the rods connecting the sleeve and lugs and the interposed springs. 14th. The combination, with the tedder-arm, of the springs and the tedder-shaft boxes secured thereto, and having the recessed ends, and the tedder shaft passing through the boxes and having its cranks in proximity to said recesses. 15th. The combination, with the tedder-frame and the tedder-arms, of the boxes secured to the frame and the boxes secured to the arms, both being provided with recessed ends, and the tedder-shaft journaled in said boxes. 16th. A tedder-shaft box constructed with recessed ends, whereby the tedder-shaft is prevented from having longitudinal motion, and from binding in the box at the juncture of the shaft and the crank. 17th. A tedder-shaft box constructed with enlarged portions having warden bushings fitted therein and having its ends recessed. 18th. The combination, with the axle having the annuli of the two-part boxes having recesses in which said annuli fit and the thills secured to said boxes.

No. 26,601. Hose Coupling. (*Joint de boyau.*)

James A. Sewall, Portland, Me., U. S., 3th May, 1887; 5 years.

Claim.—1st. A two part hose coupling composed of like halves or portions, each half consisting of a body portion A having a suitable passage therethrough, a broad extension a, locking flange a' shaped as described and located at one side of the body portion, a groove or passage b, shaped as described, upon the other side of the body portion, and a joint connection at the lower side of the meeting face of the body portion A upon which the two halves may be turned to disengage them one from the other, substantially as described. 2nd. A two part hose coupling composed of two like halves or portions adapted to be locked together against lateral or downward pressure, but to be disengaged by the upward movement only, each half of which consists of a body portion A having a suitable passage through it, a broad extension a located at one side of the body portion and having a locking flange a' upon the upper side of the broad extension a, and extending in a diagonal line, a groove or passage b upon the other side of the body portion also extending in a diagonal line and having at the lower side of the meeting faces of the body portions, a co-operative part of a separable connection, all substantially as and for the purposes set forth. 3rd. In a two part hose coupling composed of like halves or portions, each of which has a free and unobstructed passage through it directly from end to end, which passages co-operate together to form a longitudinal unobstructed passage directly through the hose coupling, combined with locking devices as described upon each side to lock the said halves or portions together, as set forth.

No. 26,602. Vent Stopper for Drive Well Tubes. (*Valve d'évent pour sondes de puits.*)

Ernest G. Gosch, Freeport, Mich., U. S., 4th May, 1887; 5 years.

Claim.—1st. The combination, with the tube A of a clamp attached thereto above the vent-opening so as to encircle the well-tube, a bell-crank lever provided at its lower end with a suitable packing, and a spring rod provided with a flat central portion attached to the outer end of said bell-crank lever, said spring-rod extending above the platform, and provided with means for engaging with said platform, so that said rod will exert a spring-pressure upon the bell-crank lever, substantially as shown and for the purpose set forth. 2nd. The combination, in a vent-stopper for well-tubes, of a bell-crank lever and operating-rod, a clamp consisting of two sections which are hinged to each other, the free ends of said clamp being bent outwardly, and a bolt for clamping the parts upon each other, said bolt also serving as a pivot for the bell-crank lever, substantially as shown. 3rd. In combination, with a vent-stopper for well-tubes, a clamp consisting of two sections which are pivotally secured to each other, the opposite ends of said pivoted sections extending outwardly from the well-tubes and parallel with each other, a bell-crank lever pivotally connected between said outwardly-projecting portions of the clamp, and a bolt e, said bell-crank lever being provided at one end with packing adapted to cover the vent-opening, and at the opposite end with a spring operating-rod which extends above the platform and engages therewith, substantially as shown. 4th. In a vent-stopper for well-tubes, the combination of a clamp having pivotally attached thereto a bell-crank lever, a spring operating rod provided near its upper end and below the platform with a notch, a platform securely attached to the well-tube and provided with an opening through which the upper end of the spring-rod passes, and a rigid dog, substantially as shown and for the purpose set forth.

No. 26,603. Beater Arm for Wire Weaving Looms. (*Frappeur pour métiers à tisser le fil de fer.*)

Samuel O. Greening, Hamilton, Ont., 4th May, 1887; 5 years.

Claim.—1st. In a beater arm, the forward movement of the beater and reed by the ordinary mechanism of the loom, in combination with the forward movement of the beater and reed at the will of the operator, substantially as set forth. 2nd. In a beater arm, the combination of an arm A having a strap at each end adjustable by means of slotted holes *b*, and secured to the arm by means of bolts D and E and the cam lever F, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, in a beater arm, of an arm A having straps B with slotted holes for the adjusting of the same, and the spring *c* attached to the ends of strap, substantially as and for the purpose hereinbefore set forth. 4th. In a beater arm, the combination of the arm A with its straps and bolts, the springs *e* hooked to the said straps and the cam lever F, substantially as and for the purpose hereinbefore set forth.

No. 26,604. Car Strap. (*Cordon de char.*)

Alexander Brandon, New York, N.Y., U.S., 4th May, 1887; 5 years.

Claim.—1st. The within-described improved car-strap, consisting substantially of a round cord, in combination with a sleeve through which it is passed, clamping-jaws formed integrally with said sleeve, a strap or band extending above the sleeve to pass over a supporting-rod and whose free end is confined by the jaws, a transverse bolt or rivet to secure the same, and a handle fitted upon the lower free end of the cord, substantially in the manner and for the purpose herein set forth. 3rd. The combination, in a car-strap, of the tapering sleeve E formed in one with the jaws *a, a*, in combination with the round depending cord A and flat supporting-strap J, substantially in the manner and for the purpose herein set forth.

No. 26,605. Nipper-head for Spinning Machines. (*Guide-pinces pour machines à filer.*)

Elisha S. Ormsby, Brooklyn, N.Y., U.S., 4th May, 1887; 5 years.

Claim.—The combination, with a member or jaw having upon the piece D, and carrying the block or piece D1, which forms the yielding member or jaw of the nippers and cheek-pieces D3 secured to the walls of the recessor channel *b* to hold the piece or block D in place therein, substantially as herein described.

No. 26,606. Vertical Boring or Drilling Machine. (*Machine à forer verticale.*)

Joseph D. Fuller, Brantford, Ont., 4th May, 1887; 5 years.

Claim.—1st. In a vertical drilling machine, part 3 of shaft B attached by left hand screw or pin to part 1, in combination with fly-wheel H, substantially as and for the purposes hereinbefore set forth. 2nd. In a vertical drilling machine, the revolving frame K with arms for rollers *a, b, c*, in combination with plates I and fly-wheel H, substantially as and for the purposes hereinbefore set forth. 3rd. In a vertical drilling machine, the combination of internal gear wheel P and shaft Q for the purposes specified.

No. 26,607. Copying Device. (*Appareil à copier.*)

William Griffith, Pittston, Penn., U.S., 4th May, 1887; 5 years.

Claim.—1st. The combination, with a roller and absorbent envelope or sheet for receiving and retaining moisture, of a flexible flap secured thereto and adapted to form a rest for the letter and leaf, and hold the latter in contact with the moistened envelope, substantially as set forth. 2nd. The combination, with a roller and absorbent envelope or sheet for receiving and retaining moisture, and means substantially as described for furnishing a constant supply of moisture to the said envelope, of a flexible flap secured to the roller and adapted to hold the leaf and letter in contact with each other and the leaf in contact with the moistened envelope, substantially as set forth. 3rd. The combination, with a roller having a central reservoir and passages from said reservoir to the periphery of the roller of an absorbent envelope or sheet, and a flap secured to the roller and adapted to hold the leaf and letter in contact with each other, and the leaf in contact with the moistened envelope. 4th. The combination, with the roller having a central reservoir passages leading from said reservoir to the periphery of the roller, and absorbent material located within said passages of an absorbent envelope surrounding the roller, and a flap secured to the roller, substantially as set forth.

No. 26,608. Railway Car Step.

(*Marche-pied de char de chemin de fer.*)

Urgel Beauséjour, East Saginaw, Mich., U. S., 5th May, 1887; 5 years.

Claim.—1st. In combination, with the fixed steps of a railway car platform, an adjustable step located beneath the lowest fixed steps and held in position when not extended by a detent, substantially as and for the purposes described. 2nd. In combination with the fixed steps of a railway car platform, an extensible step located beneath the lowest fixed step and which when extended will project upon a line pitch to that of said fixed step, substantially as specified. 3rd. In combination, with the fixed step of a railway car platform, and adjustable and supplementary step located beneath the lowest fixed step, and a system of levers or other equivalent devices for retracting such supplementary step, substantially as set forth. 4th. In combination, with the fixed steps of a railway car platform, the guides B secured to the sides of such fixed steps in line with the pitch thereof, substantially as and for the purposes described.

No. 26,609. Process for Treating the Shells and Flesh of Lobsters or Crabs and the Product Produced therefrom. (*Procédé de traitement des écaillés et de la chair du homard ou de l'écrevisse et de leurs produits.*)

Paul H. Bate, (assignee of John J. Bate), Brooklyn, N. Y., U. S., 5th May, 1887; 5 years.

Claim.—1st. The herein-described process of treating the flesh and shells of lobsters or crabs by drying and grinding the same together, substantially as set forth for the purpose of mixing together the different ingredients, and chemically fixing and thus saving for future use the contained nitrogenous matter. 2nd. The herein-described product formed by drying and grinding together the shells and flesh of lobsters crabs, substantially as and for the purpose set forth.

No. 26,610. Fertilizer and Process for Producing the Same. (*Engrais et procédé pour le préparer.*)

Paul H. Bate, (assignee of John J. Bate), Brooklyn, N.Y., U.S., 5th May, 1887; 5 years.

Claim.—1st. The herein-described process of treating the shells and flesh of lobsters and crabs by drying and grinding the same, substantially as described, thereby mixing together the contained ingredients as well as checking or preventing the production of ammonia until required for use as a fertilizer. 2nd. As a new article of manufacture, the herein-described fertilizer formed by drying and grinding together the shells and flesh of lobsters or crabs, substantially as and for the purposes set forth.

No. 26,611. Method of and Apparatus for Signalling through Submarine Cables. (*Système et appareil de signaux par câbles sous-marins.*)

Moses G. Farmer, Eliot, Me., U.S., 5th May, 1887; 5 years.

Claim.—1st. The method of signalling through circuits of high electro-static capacity, such as submarine cables, which consists in abruptly changing the electrical condition of the cable circuit, and utilizing the initial effect immediately attendant upon such changes to produce at the opposite or receiving ends of the cable sounds or audible signals, as set forth. 2nd. The method of receiving telegraphic signals through circuits of high electro-static capacity, such as submarine cables, which consists in utilizing the initial effects of current changes in the circuit to produce sounds or audible signals, as herein described. 3rd. The combination, with a current of high electro-static capacity, such as an insulated submarine cable, of a source of electricity, a transmitter consisting of a key or circuit controller, and a receiving instrument, substantially as described, capable of audibly responding to abrupt or sudden as distinguished from gradual changes in the electrical condition of the circuit, as herein set forth. 4th. The combination of a circuit of high electro-static capacity, such as an insulated submarine cable, of a source of electricity, a transmitter consisting of a key or circuit controller, and a receiver consisting of a polarized or permanently magnetized core having a pointed end or pole, as set forth, surrounded by an insulated coil connected directly or indirectly with the cable circuit, and a plate of magnetic metal in proximity to the pointed end of the core, as herein set forth. 5th. The combination, with a circuit of high electro-static capacity, such as an insulated submarine cable, of a battery or other source of electricity, a transmitter consisting of a key or circuit controller, and a receiver consisting of a polarized or permanently magnetized core having a pointed end or pole, as set forth, surrounded by an insulated coil of low resistance connected with the cable circuit, and a magnetic plate in proximity to the pointed end of the core, as herein described. 6th. The combination, with a circuit of high electro-static capacity, such as an insulated submarine cable, having an earth connection at each end, of a battery or current generator included in the circuit formed by said cable, a transmitter for making and breaking the continuity of the cable circuit, or producing therein equivalent current impulses, and a receiver consisting of a permanent magnet surrounded by a coil of low resistance, and a thin sheet iron or equivalent plate in proximity to the pole of said magnet, as herein set forth. 7th. The combination, with a circuit of high electro-static capacity, such as an insulated submarine cable, of a battery, a key or circuit controller, one or more induction coils included in the cable circuit for converting or reproducing the changes in the battery current, and a receiver, substantially as described, capable of audibly responding to abrupt or sudden, as distinguished from gradual changes in the electrical condition of the circuit, as herein set forth. 8th. The combination, with an insulated submarine cable, of a source of electricity, a key capable of two positions, one of which places the sending end of the cable in connection with the said source of electricity, while the other places the same in direct communication with the earth, and a receiver included in or receiving electrical impulses from the remote end of the cable circuit, and constructed in the manner herein described, whereby it is capable of audibly responding to abrupt or sudden, as distinguished from gradual changes in the electrical condition of the circuit, as herein set forth.

No. 26,612. Opera Chair. (*Fauteuil d'opéra.*)

Seymour W. Peregrine, Grand Rapids, Mich, U. S., 6th May, 1887; 5 years.

Claim.—1st. In an opera-chair or church-chair, the combination, with the standards, of a seat pivotally secured thereto on oscillating brackets, an oscillating back having a rigid extension connected to the brackets, supporting said seat by a sliding connection having a pivot and a spring bearing against the pivot of said sliding connection, substantially as described. 2nd. In an opera-chair, the combination, with the standard, of the back pivoted thereto and having slotted

extension, a seat and a rocking frame supporting said seat and pivoted to said standards, and provided with a projection engaging the slot in said extension, substantially as and for the purposes set forth. 3rd. In an opera-chair, the combination, with the standards and the back pivoted thereto and provided with slotted extensions, of a seat having its brackets pivoted to said standards, and provided with projections engaging the slots in said extensions, and springs secured to said standards and bearing against the projections on the seat, as set forth. 4th. In an opera-chair, the combination of the standards, brackets E pivotally secured to said standards, seat D supported thereby, an oscillating back having sliding connection with said seat, and a spring secured to the standard, and bearing against the pivot of said sliding connection, substantially as described. 5th. In an opera-chair, the combination, with the seat having rocking frames E, E and bosses N, N, of the stops G, G and spring O, O arranged to automatically rock the seat by their tension, substantially as described. 6th. The combination with the standards, brackets E, E pivoted to said standards and supporting the seat D, and bosses N on said brackets, of the back pivoted to said standards and having slotted extensions engaging said bosses, substantially as described. 7th. The combination, with the standards, brackets E, E pivoted to said standards and supporting the seat D, and bosses N on said brackets, of the back pivoted to said standards and having slotted extensions engaging said bosses, and springs attached to the said standards and bearing against the bosses, substantially as and for the purpose set forth. 8th. The combination of the frame A, joints F, seat D, brackets E, projections N and back extensions M, substantially as set forth. 9th. The combination of the frame A, brackets E, seat D, joint F, projections N, springs O, stops G, back H, extension M, slot B, lugs I, connection C, and loops P, substantially as set forth.

No. 26,613. Nail Extractor. (*Tire-clou.*)

George J. Capewell, Cheshire, Conn., U.S., 6th May, 1887; 5 years.

Claim.—1st. In a nail-extractor, the combination of a stock and movable hammer attached thereto, and sliding jaws that alone receive the direct impact of the hammer, and a jaw closing device, all substantially as described. 2nd. In a nail-extractor, in combination with a stock and movable hammer attached thereto, lengthwise sliding jaws that receive directly the impact of the hammer, and a jaw closing lever *e* pivoted to the stock and having a cam faced short arm in contact with the back of one of the jaws, and a projecting arm that forms the fulcrum in extracting a nail, all substantially as described. 3rd. In combination with the stock *a* having a jaw socket *a*₂, and sliding hammer *b* with handle *b*₁, and a lower and wormily *a*₂, and sliding hammer *b* with handle *b*₁, and stop *b*₂, and notch *b*₃, and spring latch *f* seated in a socket in the handle, the sliding jaws *c*, *d* with respective slots *d*₃, the pins *e*₂ and *d*₂, the V-shaped spring *i* with out-turned ends taking into notches in the adjacent faces of the jaws, and the lever *e* with arms *e*₂ and *e*₃, all substantially as described. 4th. In a nail-extractor of supporting stock, and movable hammer attached thereto, and sliding jaws located and moving at an angle with the axis of the stock, all substantially as described. 5th. In combination with a stock *a* having a jaw socket *a*₂, and sliding hammer *b* with handle *b*₁, and stop *b*₂, and notch *b*₃, and spring latch *f* seated in a socket in the handle, the sliding jaws *c*, *d* with respective slots *d*₃, the pins *e*₂ and *d*₂, the V-shaped spring *i* with out-turned ends taking into notches in the adjacent faces of the jaws, and the lever *e* with arms *e*₂ and *e*₃, all substantially as described. 6th. In a nail-extractor, in combination with a stock *a*, and movable handle *b* attached thereto, the lengthwise moving jaws normally in contact with the end of the hammer, and the jaw closing lever *e*, with arm *e*₂, and cam-faced arm *e*₃, the latter by contact with the face of the wall *a*₄ forming a stop that limits the rotary movement of the lever, all substantially as described. 7th. In a nail-extractor, the stock *a* having a loop *h*, jaw socket *a*₂ with walls *a*₃, *a*₄ with wider faces at an angle with the axis of the stock, the sliding hammer *b* with handle *b*₁ and stop *b*₂, the sliding jaws *c*, *d* with slots through which retaining pins pass the length of the hammer beyond the stop *b*₂, being such that the stop *b*₂ will come in contact with the end *a*₁ of the stock before the pins *e*₂, *d*₂ reach the end of the slots *c*₃ and the lever *e* with arms *e*₂ and *e*₃, the latter by contact with the wall *a*₄ forming a stop to limit the rotary movement of the lever, all substantially as described.

No. 26,614. Locking Attachment for Door Knobs. (*Appareil de fermeture pour boutons de portes.*)

Henry H. Humphrey, Detroit, Mich., U.S., 6th May, 1887; 5 years.

Claim.—1st. In combination with the spindle of a door knob, a rose the inner face of which is channelled or recessed to receive a slotted sliding yoke F between such rose and a plate G, substantially as and for the purpose set forth. 2nd. In combination, with the spindle A provided with an adjustable knob or knobs, a slotted sliding yoke F confined between the rose E and plate G, when constructed, arranged and operating substantially in the manner and for the purposes specified.

No. 26,615. Lawn Mower. (*Faucheuse de pelouse.*)

Oscar Zistel, Sandusky, Ohio, U.S., 6th May, 1887; 5 years.

Claim.—1st. In a grass-collecting device, the combination, with a lawn mower, of an endless carrier secured in a detachable frame in rear of the knives, and having supporting rollers with a drive connection for the carrier, substantially as described. 2nd. In a grass-collecting device, the combination, with a lawn mower, of an endless carrier secured in a frame in rear of the knives, and having an independent drive connection, of a detachable connection between the side frames of the lawn mower, and the sides of the carrier frame, and of a detachable connection between the carrier frame and the handle of the lawn mower, substantially as described. 3rd. In a grass-collecting device, the combination, with a lawn mower, of the following elements: an endless carrier in rear of the knives and provided with independent drive-connection, of a carrier frame arranged to form a rearward extension of the frame of the lawn mower, and having detachable connection therewith, and of a receptacle detachably secured in rear of the endless carrier, all arranged sub-

stantially as described. 4th. In a grass-collecting device for lawn mowers, the combination of an endless carrier secured in a detachable frame in rear of the knives, of supporting rollers journaled in slots of the frame of the carrier, substantially as described. 5th. In an attachment to lawn mowers, the following elements combined: an endless carrier arranged in rear of the cutting knives, a shield or deflector for throwing the cut-off grass on to said carrier, and a basket under the rear end of the carrier, all arranged substantially as described. 6th. In an attachment to lawn mowers, the combination of the side frames C, C, rolls D, E, endless apron F, wheels G, friction wheel K, basket O and shield P, all arranged and combined substantially as described.

No. 26,616. Steam Generator.

(*Générateur de vapeur.*)

Victor Colliaux, Detroit, Mich., U.S., 6th May, 1887; 5 years.

Claim.—1st. The combination, with the outer shell, the boiler within said shell extended above the top thereof and terminating in an annular steam drum, a system of tuyeres affording communication between the exterior and interior of the furnace, a feed-hole above the boiler proper and a blast pipe connected with the outer shell above the upper tuyere, substantially as and for the purpose specified. 2nd. In a steam generator, the combination of the outer shell E, annular boiler D within said shell, and extending above the top thereof, and terminating in an enlarged annular steam drum, a system of tuyeres affording communication between the exterior and interior of the furnace, a blast pipe G communicating with the space between the outer shell, and the boiler above the upper tuyere, a feed opening above the top of the drum, and a feed pipe J and slag hole O near the bottom of the furnace, substantially as described.

No. 26,617. Art of Preparing Moulds for the Electro-Deposition of Metals.

(*Art de Préparer les Moules pour l'Electro-Deposition des Metaux.*)

Lewis H. Rogers, New York, N.Y., U.S., 6th May, 1887; 5 years.

Claim.—1st. The method herein described of preparing forms for the manufacture of metallic vessels, or fac-similes, in whole or in part, consisting of first making a rigid male form approximating to the form of the article desired to be reproduced, then forming upon the outer surface of said male form an auxiliary form of wax or equivalent substance of the exact size of the article to be reproduced, and rendering the surface of said auxiliary form conductive by the application of black lead or its equivalent, and then immersing said form in a metallic solution, or bath, in which bath are placed anodes connected electrically with a suitable electro machine or generator. 2nd. The herein described method of treating forms for the electro-deposition of metals, consisting, first, of making a male form approximating to the size of the article desired to be manufactured, and then covering said form with an auxiliary form of wax or equivalent substance, and then inclosing said form and the wax formed thereon in a female form of the exact size of the article to be manufactured, and subjecting said form to a suitable temperature, for the purpose described. 3rd. The herein described method of treating forms for the electro-deposition of metals, consisting of first making a male form approximating the size of the article desired to be manufactured, and treating said form to a solution of melted wax or its equivalent, then inserting said form in a female form of the exact size of the article to be manufactured, and enclosing the extreme surface of said female form in a reservoir subjected to application of the heating and cooling agents, as and for the purposes specified.

No. 26,618. Extinguishing Apparatus for Oil and Spirit Lamps. (*Eteignoir pour Lampes à Huile et à Esprit de Vin.*)

Edward Phillips, London, Eng., 6th May, 1887; 5 years.

Claim.—1st. In oil or spirit lamps having flat wicks, the extinguishing apparatus, consisting of the cap C, the sliding plate E, the weighted rod D jointed or not and passing through the body of the lamp, the cross-bar D₂, with or without the sliding boss T, the tube I, with or without the ring J, the whole arranged, combined and operating substantially as hereinbefore described and illustrated in Figs. 1, 2, 3, 4, 5 and 8 of the accompanying drawings, and for the purposes specified. 2nd. In oil or spirit lamps, having cylindrical wicks and flame spreaders, the extinguishing apparatus, consisting of the improved forms of flame spreaders connected with the weighted rod D, jointed or not, and passing through the body of the lamp, the cross-bar D₂, with or without the sliding bars T, in combination or not with the sliding cylindrical tube M, the rods N and levers Q, the whole arranged and operating substantially as hereinbefore described and illustrated in Figs. 6, 7, and 8 of the accompanying drawings and for the purposes specified.

No. 26,619. Carding Machine.

(*Machine à Carder.*)

John Robb, Oxford, N.S., 6th May, 1887; 5 years.

Claim.—1st. The combination, with the finishing card of a carding machine, of a spool holding finished rovings, a cylinder in contact with such rovings leading rolls, and means for imparting to such cylinder and rolls simultaneous intermittent motion, in order to draw off the rovings from the spool and lay them regularly or irregularly in the lap, all as herein described. 2nd. The combination, with the cylinder G and rolls J, J, simultaneously actuated, of bobbin K resting in forks f, f, as and for the purposes described. 3rd. In a carding machine, the combination, with the doffer spindle, of disc mounted on same and perforated at irregular intervals to receive pins, actuating the free end of a pivoted lever, carrying on its other end a pawl intermeshing with ratchet wheel on spindle of cylinder G, as and for the purposes set forth.

No. 26,620. Drilling Jar for Sinking Wells.*(Sonde de Puits Artésien.)*

Daniel Rosford, Oil Springs, Ont., 6th May, 1887; 5 years.

Claim.—1st. In drilling jars, the combination of iron and steel welded together for the purpose of rendering more durable the contacting parts, substantially as described. 2nd. In drilling jars, the welding of the steel centers *d*, *d* into the iron lews *c*, *c*, *c*, *c*, substantially as and for the purposes specified.

No. 26,621. Moulding Machine.*(Machine à Mouler.)*

John C. Wheeler, Flushing, and Michael Cokely, Shenectady, N. Y., U.S., 6th May, 1887; 5 years.

Claim.—1st. The combination, with the bed-plate *X*, the slotted base, the vertical post *B*, with the plate *E* and half pattern *K* at its upper end, the ring *N*, flask *M*, *M*, and pattern of the pronged plate *L*, the press plate *J*, the arms *2*, *3*, connecting said plate to the press arms *C*, *C*, and the segment lever *F* and gearing *F*, substantially as specified. 2nd. The combination, with the bed plate *X*, the bars *2*, the arms *C*, the slotted base, the vertical post *B*, with plate *E* and half pattern *K* at its upper end, the ring *N* and flask *M* of the pronged plate *L* having the central slots, the hinged press plate and the compression levers, as described, for compressing the sand in the flask, substantially as specified. 3rd. In a moulding machine, the combination, with a flask having an outwardly bevelled mouth, of a yielding ring arranged to engage the bevel, substantially as specified. 4th. The combination, in a moulding machine, of a flask having an outwardly bevelled mouth, a yielding ring, and a pronged plate adapted to move within the ring, substantially as specified.

No. 26,622. Sprinkler. (Arrosoir.)

Charles D. Parks, Saranac, Mich., U.S., 6th May, 1887; 5 years.

Claim.—1st. In a device for the purpose described, the combination of a reservoir *A*, sprinkling nozzle *G*, flaring *F*, valve stem *H*, valve *O*, sprink *K* and perforated disk *I*, constructed, arranged and operated in the manner and for the purpose set forth. 2nd. In a device for the purpose described, the combination of a reservoir *A*, provided with a sprinkling nozzle *G* and a valve *O*, in combination with an agitator consisting of the perforated disk *L*, cup *M* and perforated flange, substantially as described. 3rd. In a device for the purpose described, the combination of the reservoir *A*, provided with a handle *B* and legs *D*, with the tube *F*, sprinkling nozzle *G*, valve stem *H*, valve *O*, disk *I*, sprink *K*, perforated disk *L*, cup *M* and perforated flange *N*, the parts being constructed, arranged and operating as and for the purposes specified.

No. 26,623. Carriage Wheel. (Roue de Voiture.)

Joseph Blais, St. Charles, Que., 6th May, 1887; 5 years.

Reclamé.—1o. La combinaison du moyen *A*, avec les bouts de rais *a* même en métal et les rais en bois *B*, tel que décrit. 2o. La combinaison des points *C*, avec les rais *B*, les capsules *G* et les joints *F*, tel que ci-dessus décrit et pour les fins indiquées.

No. 26,624. Composition of Matters for the Relief and Cure of Rheumatisms. (Composition de Matières pour le Soulagement et la Guérison des Rheumatismes.)

Dieudonné Mercure, Nicolet, Que., 6th May, 1887; 5 years.

Reclame.—Je réclame comme mon invention une composition d'aucune de ces matières mélangées, dans les quantités et les proportions et pour les fins décrites ci-dessus.

No. 26,625. Process of and Apparatus for Drying and Carbonizing Wool. (Procédé et appareil de Séchage et de Carbonisation de la Laine.)

Charles Schrebbler, Methuen, Mass., U.S., 6th May, 1887; 5 years.

Claim.—1st. The improvement in the art of treating wool for the purpose of carbonizing or destroying vegetable substances therein, which consists in first drawing or forcing a warm current of air through the entire mass or body of the wool, and discharging such air in order to dry the wool and free it from damaging gases, and subsequently subjecting the entire mass to a current of hot air to carbonize the vegetable matter in the mass, substantially as set forth. 2nd. The improvement in the art of treating wool for the purpose of carbonizing or destroying vegetable substances therein, which consists in spreading the wool evenly upon a foraminous support, and subjecting the entire mass to a current of air warmed to a temperature of about 75° or 80° Fahr., to expel dampness and gases from the wool, and subsequently subjecting the mass to a current of air heated to a temperature of about 175° or 180° Fahr., to destroy or carbonize the vegetable matter in the wool, substantially as set forth. 3rd. A wool drying and carbonizing machine, having a foraminous support for the material to be treated, means for heating the air, an inlet aperture, a discharge aperture and a suction fan or equivalent means to create a current in the heated air, substantially as set forth. 4th. In a wool drying and carbonizing machine, a drawer or drawers provided with foraminous bottoms for the reception and support of the wool, means above the drawer or drawers for heating the air, and means below the drawer or drawers for drawing or sucking the heated air through the drawer or drawers, for drawing, as set forth. 5th. A wool drying and carbonizing machine, provided with inlet and outlet ports or apertures, slides for opening and closing said ports, a support for the wool and a suction fan for inducing a circulation of air in the machine, as set forth. 6th. A wool drying and carbonizing machine, having a main chamber or apartment *c*, a sub-chamber *b*, an aperture or port providing a means

of air communication between the two chambers, a suction fan for drawing the air from one chamber to the other and forcing it through said communicating port or aperture, as set forth. 7th. In a wool-drying and carbonizing machine, the combination, with an inlet and outlet port, slides for opening and closing said ports, a bed of heating pipes, a series of drawers provided with foraminous bottoms for supporting the wool, and an exhaust or suction fan, as set forth. 8th. A wool drying and carbonizing machine, having inlet and outlet ports, slides for opening and closing said ports, chambers *b*, *c*, port *p* in the partition between said chambers, exhaust or suction fan *g*, also the partition between said chambers, slide-valve *n* in chamber *b*, *a*, bed of pipes *d* and a series of drawers *e* provided with foraminous bottom *f*, as set forth.

No. 26,626. Lock and Keeper. (Serrure et Gâche.)

Samuel A. Dunbar, Toronto, Ont., 6th May, 1887; 5 years.

Claim.—1st. A bolt *A*, in combination with the pivoted block *C*, substantially as and for the purpose specified. 2nd. The block *C*, pivoted at *a* to the case *D*, and at *b* to the bolt *A*, in combination with a device designed to move the block *C* on the pivot *n*, substantially as and for the purpose specified. 3rd. The block *C* pivoted at *a* to the case *D*, and at *b* to the bolt *A*, in combination with the adjustable block *E*, arranged substantially as and for the purpose specified. 4th. The combination, with a bolt or latch keeper, of a friction roller, substantially as and for the purpose specified. 5th. The friction roller *G*, pivoted on or near the edge of the keeper *F*, in combination with the bolt *A*, substantially as and for the purpose specified.

No. 26,627. Waggon Box for Unloading Roots, etc. (Caisse de wagon pour décharger les racines, etc.)

Peter Scott, Culross, Ont., 6th May, 1887; 5 years.

Claim.—1st. The combination of drops *A*, *A* and the hinges *h*, *h* which are attached to the adjustable cross-bar *G* by straps *s*, *e*, the adjustable cross-bar *G* fastened to bevelled bottom *B*, *B*, with bolts and hand screws *I*, *I*, held up by cross-bars *C*, *C*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the sides *C* to bevelled bottom *B*, *B*, supported by straps *N*, *N*, and the drops *A*, *A*, supported on the outside by links *L*, *L*, and holders *F*, *F* held by rings *R*, *R*, substantially as and for the purpose hereinbefore set forth.

No. 26,628. Faucet and Bushing. (Fausset et dé de fausset.)

Mark Anthony, San Francisco, Cal., U.S., 7th May, 1887; 5 years.

Claim.—1st. The combination with the bushing *A* having head *E*, spindle *D*, valve *C*, and diaphragm *I* carrying a cylinder *J*, provided with notches or grooves *Q*, of the faucet pipe *N* having a reduced portion *P*, provided with perforations *R* and terminating in a triangular end having wards *Q*, substantially as shown and described. 2nd. The combination of the bushing *A* having head *E*, inclined lugs *L*, *L* provided with openings *M*, *M*, and diaphragm *I* provided with cylinder *J* and ribs *K*, *K*, the spindle *G* carrying a segmental disk-valve *C*, and the faucet *N* having perforated pipe *P* and collar *N* provided with lugs *O*, *O*, substantially as shown and described.

No. 26,629. Arm-rest for Key-board Operators. (Appui-main pour personnes pratiquant sur le clavier.)

John S. Jurey, Boonville, Mo., U.S., 8th May, 1887; 5 years.

Claim.—1st. In combination with a type-writing machine, a support or rest located in front of the board, and adapted to pass beneath and support the fore arm at or in rear of the wrists, said rests being free from clamps or other devices which might interfere with the free rise or removal of the arm from the rest. 2nd. In combination, with an instrument or machine having a key-board, an overhanging frame or support, and arm rests suspended from said support in front of the key-board, substantially as set forth. 3rd. In combination, with a machine or instrument having a key-board, a bar or support above the key-board, and two independent elastic hangers carried by said support and provided with rests or stirrups to receive the arms of an operator of the machine. 4th. In combination with a type-writing or other machine having a key-board, a support above the machine, suspenders attached to said support, and made adjustable as to length, and arm-rests carried by said suspenders, substantially as described and shown.

No. 26,630. Picture Exhibiting Stand. (Montre d'image.)

John C. Merriam, Chadsworth, Ont., 6th May, 1887; 5 years.

Claim.—1st. An exhibition stand consisting of a rotary drum *B* supported by a base, a series of sectional frames *C*, *C* removably pivoted to said drum, substantially as shown and described. 2nd. The combination of the base *A*, stem *A*, pivot *a*, drum *B*, frame *C*, *C*, eyes *c*, glass *G*, pins *G*, staples *D* and top *T*, substantially as set forth. 3rd. The combination of the frame *C*, eyes *c*, style *C*, pin *D* and staple *D*, substantially as set forth. 4th. The combination of the drum *B*, pins *D*, staples *D*, and frames *C*, substantially as set forth. 5th. The combination of the frame *C*, eyes *c*, styles *C*, glass *G*, and pins *D*, *D*, substantially as set forth.

No. 26,631. Station Indicator. (Indicateur de station.)

Mark Anthony, San Francisco, and Henry B. Berryman, Co Alameda, Cal., U.S., 6th May, 1887; 5 years.

Claim.—1st. In an automatic indicator, the combination, with the spring rod or bolt *E*, provided with a head *S* and the collar *G*, of

the hinged shank K₁ provided at its lower end with the friction roller L₁, substantially as specified. 2nd. In an automatic indicator, the combination, with the indicator mechanism, and the tunnel way provided with the inclined wedges, of the spring rod or bolt provided with a head and the collar G₁, and the hinged shank K₁ provided at its lower end with the friction roller L₁, substantially as specified.

No. 26,632. Process of and Apparatus for Manufacturing Gas. (*Procédé et appareil de production du Gaz.*)

Burdett Loomis, Hartford, Conn., U.S., 6th May, 1887; 5 years.

Claim.—1st. In the manufacture of gas, the process of coking bituminous coal and heating such coked coal to incandescence for decomposing steam, which consists in passing the air blast or draft down through the ignited fuel, and periodically charging fresh bituminous coal on top of the fuel body, whereby the ashes and dust are blown down into the ash pit leaving the body of the coal porous for the passage of steam, and preventing the formation of clinker, and whereby the formation of a tarry coating on top of the fuel is prevented and improved results secured. 2nd. The process of manufacturing gas, which consists in coking bituminous coal, and suitably heating such coked coal by passing the air blast or draft down through it for keeping it clear of ash and clinker, adding fresh bituminous coal as required, and decomposing steam by passing it through the heated fuel and distilling coal, whereby a mixture of water gas and carburated hydrogen is produced. 3rd. The process of making illuminating gas by forcing air downward into and through the fuel, thereby better coking it and heating it to the decomposing temperature for steam, causing combustion of the resulting gaseous products, and conducting the hot products through the regenerator for heating it, then decomposing steam by passing it downward through the fuel, and conducting the resulting water gas through the ash-pit into the regenerator or fixing chamber, there adding hydrocarbon liquid or vapour, and then fixing the gas by passing it in contact with the heated refractory material. 4th. The process of manufacturing heating gas, which consists in heating two bodies of fuel by downward blast of air, heating two superheating and fixing chambers by burning the resulting gaseous products, then superheating steam by passing it through one of the superheating chambers, decomposing it by passing it through one body of heated fuel, then passing the resulting gases through the other body of heated fuel for converting the carbonic acid into carbonic oxide. 5th. The process of manufacturing gas, which consists in heating two bodies of fuel by downward blast of air, heating two superheating and fixing chambers by burning the resulting gaseous products, then superheating steam by passing it through one of the superheating chambers, decomposing it by passing it through one body of heated fuel, then passing the resulting gases through the other body of heated fuel for converting the carbonic acid into carbonic oxide, then carburating the water-gas and fixing it by passing it through the heated fixing-chamber. 6th. The process of generating gas, which consists in passing superheated steam up through a body of incandescent fuel for decomposing it, then admitting crude oil, tar, or liquid asphaltum into the resulting hot gas, and passing it down through a second body of heated fuel for converting such oil, tar or asphaltum into gas, then carburating the gas if required and fixing it by passing it through the heated fixing-chamber. 7th. The process of manufacturing gas, which consists in superheating steam, then decomposing it in contact with a body of incandescent fuel, and at the same time distilling bituminous coal on top of and in contact with the body of incandescent fuel, and causing the resulting gas and vapours to pass downward into the heated fuel below for converting them into fixed gas, and finally conducting off the coal-gas and the water-gas together some distance below the surface of the fuel, whereby fresh charges of bituminous coal are successfully coked and the hydrocarbons distilled therefrom converted into fixed gas. 8th. The process of manufacturing gas, which consists in heating a body of fuel to incandescence by blasting with air, and by means of the resulting hot products heating a chamber containing refractory material, then shutting off the air and superheating steam in contact with the hot refractory material, decomposing it in contact with the incandescent fuel, and at the same time distilling bituminous coal in the form of lump or slack in contact with the incandescent fuel, and causing the resulting gas and vapour to pass down in contact with the incandescent fuel for converting them into fixed gas and finally conducting off the coal-gas and water-gas together below the more recent charge or charges of fresh coal, whereby the coal is better coked, the formation of hard crusts by excessive heat is avoided, and the hydrocarbons are converted into fixed gas. 9th. The process of manufacturing gas, which consists in heating two bodies of fuel to incandescence by blasting with air burning the resulting gaseous products, and thereby heating two superheating and fixing-chambers, superheating steam by passing it through one superheating chamber, decomposing it by passage up through one body of incandescent fuel, and at the same time causing distillation of fresh charges of bituminous coal in contact with the body of incandescent fuel, and passing the evolved gas and vapour and water-gas from below the recently charged coal into the second body of fuel below its surface, and down through it for converting carbonic acid into carbonic oxide and hydrocarbon into fixed gas, then carburating the mixed gas by means of hydrocarbon liquid and finally combining and fixing the carburated gas by passage through the heated fixing-chamber. 10th. In a gas apparatus, the generator having the air blast pipe connecting with its top, in combination with the regenerator for fixing gas or superheating steam connected with said generator by means of the ash-pit, and combustion-chamber below the grate, and a blast-pipe connected to supply air between the fuel and regenerator for the purpose set forth. 11th. The fuel and generating chamber having an air blast pipe connecting with its upper portion, in combination with the regenerator connecting with said generating chamber below the grate, and containing the vertical partitions or check-walls extending alternately from opposite side walls or top and bottom of the chamber, and an escape flue for products of combustion from the rear end or base of the regenerator, for the purpose set forth. 12th. The combination of the generator, with the regenerator or superheater connecting with such

generator at its base, and having a series of vertical partitions or check-walls made of fire-brick or other refractory material projecting alternately from opposite sides or top and bottom of said regenerator, so as to form the tortuous passage and such regenerator having cleaning openings and closing devices in its side walls, for the purpose described. 13th. A down blast gas generator having an air blast pipe connecting with its top, in combination with a regenerator for fixing gas or superheating steam, provided with partitions or check-walls extending alternately from the opposite side walls or top and bottom of the chamber, so as to form a tortuous passage. 14th. A down-blast gas generator having an air-blast pipe connecting with its top, in combination with a regenerator for fixing gas or superheating steam, connected with its bottom and provided with partitions or check-walls, as described, and a steam supply, for the purpose described. 15th. In a cupola gas generating furnace, the fuel chamber having gas eduction ports, flue and take-off pipe arranged at a distance below its top, in combination with an air blast pipe connecting with the top of the furnace, and a steam supply pipe connecting with the base of the fuel chamber, for the purpose described. 16th. In a cupola gas generating furnace, the fuel chamber having an air-blast pipe connecting with its top, and the gas eduction pipe connecting below its top, as described, in combination with the superheater and fixing or regenerator chamber placed at the base of the cupola, the connecting flue C₃ and vaporizing retorts extending transversely through the superheating and fixing chamber, and opening into flue C₃, for the purpose described. 17th. In combination with the fuel chamber of a cupola gas generator, the deep fire-clay grate-bars resting upon the floor of the chamber, for the purpose described. 18th. In a cupola gas generating furnace, the superheating and fixing chamber having vertical partitions or check-walls forming connecting flues and the vaporizing retorts extending transversely through the chamber and opening into a flue leading from the fuel chamber, for the purpose described. 19th. The two generating chambers connected at or near the top, in combination with the two superheating and fixing chambers connecting with the bases of the generating chambers, as and for the purpose described. 20th. The two fuel chambers connected by a pipe or pipes for the passage of gas from one to the other, in combination with the two superheating and fixing chambers having the vaporizing retorts, and the gas inlet pipes leading from the connecting gas pipes of the fuel chambers into the retorts, for the purpose described. 21st. In a cupola gas generator, the fuel chamber above, and the connected superheated and fixing chamber below, in combination with gas take-off pipes G and F, connecting pipe H, connecting valve boxes U, V, having seats at top and bottom, and the ball valves suitably hung so as to be adjustable upon either seat, for the purpose described. 22nd. The combination of the two fuel chambers and two superheating and fixing chambers connecting therewith, and the double steam boiler valves and pipes connecting the fuel chambers with each other and with the chambers of the boiler, and pipes and valves connecting the superheating and fixing chambers with the chambers of the boiler, whereby either gas or products of combustion may be passed through each chamber of the boiler, as described. 23rd. In combination with the double cupola generator, the double boiler and suitable connecting pipes and valves, and a gas pipe leading to the seat box, and a pipe for the escape of products of combustion having a valve at the top connecting with each chamber of the boiler, for the purpose described. 24th. The two fuel chambers and the two superheating and fixing chambers connecting with such fuel chambers, in combination with pipes F, E₁ having valve boxes and valves connecting the superheating and fixing chambers with the double boiler pipes G, G₁ and p, and valve boxes provided with double seats and ball valves connecting the two fuel chambers and the pipes H, H₁, connecting pipes Q, G₁ with pipes F, E₁, through the medium of the valve boxes. 25th. The two fuel chambers connected by a valve pipe or pipes below their tops and below the level at which the fuel is maintained, in combination with two superheating and fixing chambers having steam supply pipes and valve take-off pipes for the gas and products of combustion, as described.

No. 26,633. Sash Balance.

(*Contre-poids de Croisée.*)

James McArthur, Rochester, N.Y., U.S., 6th May, 1887; 5 years.

Claim.—1st. In a sash-suspending device, a frame, a rotating spring-drum, with contained spring held by said frame, and suspending band for the sash secured to the latter and to said drum, in combination with a semicircular tension-band secured to said frame, substantially concentric with said drum bearing upon said suspending-band, to act as a tension therefor, said tension band acting upon said suspending-band only when the connected sash is approaching its uppermost position or increasing its action on said suspending band as said sash rises, substantially as described. 2nd. In a sash-suspending device, a frame, a rotating spring-drum with contained spring held by said frame, and suspending band for the sash secured to the latter and to said drum, in combination with a semicircular tension band secured to said frame, substantially concentric with said drum bearing upon said suspending-band to act as a tension therefor, said tension-band being held against said suspending-band by a spring p acting upon its free end, to press said suspending-band more firmly as said sash moves upward, substantially as described. 3rd. In a device for suspending a window-sash, a frame, a rotating spring-drum or holder with contained spring and band or suspender for the sash, secured to the latter and to said drum, a brake or retarder for said sash, in combination with springs p and r for said retarder, and threaded stud, and screw-nut, substantially as and for the purpose specified.

No. 26,634. Bed Bottom. (*Sommier de Lit.*)

William E. Long and Joseph H. Long, Brantford, Ont., 6th May, 1887; 5 years.

Claim.—A bed-bottom, with the side rails B formed of pipes, and having right and left hand screws with nuts, or having smooth ends and screwed ends C, with nuts D, in combination with casting E and G, substantially as and for the purposes hereinbefore set forth.

No. 26,635. Brush. (Pinceau.)

James F. Bartlett, Cleveland, Ohio, U.S., 6th May, 1887; 5 years.

Claim.—1st. The bottom piece B, provided with tapering opening in one face thereof, substantially as described. 2nd. A bottom piece having a tapering opening countersunk in one face, and provided with an encircling band having a short projecting rim, as and for the purpose set forth. 3rd. The combination, with a wedge-tapering plug or bell, of a band encircling and permanently holding a bottom piece or seat, provided with an opening countersunk from within and of a shape suitable to receive the body of the wedge plug or bell, substantially as and for the purpose set forth. 4th. A brush, made of a band A, encircling and holding a bottom piece B, inserted in such a manner as to leave a projecting rim on said band and provided with a tapering excavation from within, a wedge or plug capable of entering bodily into the excavation, and suitable bristles having their upper ends against the bottom piece and interposed between the plug and the band. 5th. In combination with a band encircling a bottom piece or seat, provided with an opening countersunk within and of suitable shape, a wedge plug or bell adapted to enter the opening and provided with a shank, and a handle fitting upon the shank, arranged and operating as described.

No. 26,636. Traction Engine.*(Machine Locomotive.)*

Samuel E. Jarvis, Lansing, Mich., U.S., 6th May, 1887; 5 years.

Claim.—1st. In a traction engine, the combination of the front support of the boiler having a ball and socket pivot with the front axle of the brace rods H, H, pivotally connected to said front support, of the hangers M secured to the boiler, between its front and rear supports, and having the rear ends of the brace rods H, H, adjustably connected thereto, of the braces K, K, secured at one end to the brackets M, and of the rear supports of the boiler terminating in boxes in which the rear axle is journalled, and to which the rear ends of the braces K and the front ends of the draw-bar are connected, all arranged substantially as described. 2nd. In a traction engine, a front support consisting of a saddle stationarily secured to the underside of the boiler, and of an adjustable part forming a ball and socket pivot with the front axle, substantially as described. 3rd. In a traction engine, a front support consisting of a saddle stationarily secured to the boiler, and having two downwardly projecting flanges, and of two boxes radially adjustably secured thereto, said boxes forming the journals for a sprocket-wheel, to which motion is conveyed by means of a chain, substantially as described. 4th. In a traction engine, in combination, the front saddle F having downwardly projecting flanges d, the adjustable boxes G having upwardly projecting flanges c, the bolts e, e, adjustably securing the parts together, the sprocket-wheel f journalled in the boxes G, the ears g on the boxes G, the brace rods H and the hangers M, all arranged substantially as described. 5th. In a traction engine, the sliding boxes N, in which the counter-shaft O is journalled, which transmits the tractive power by means of chains and sprocket wheels, substantially as described, in combination with the braces K which run parallel to each other and form longitudinal supports upon which the sliding boxes N are sleeved and adjustably secured thereon, all arranged substantially as and for the purpose described. 6th. In a traction engine, the combination of the braces K arranged parallel to each other and forming a longitudinal support for the sliding boxes N, of the brackets M having the inner ends of the braces K secured thereto, vertically adjustable, of the sliding box N, adjustably sleeved upon said braces K, and of the counter-shaft O which transmits the tractive power from the crank-shaft by means of sprocket wheels and chains, all arranged for the purpose of forming proper means for adjusting the drive chains, substantially as described. 7th. In a traction engine, the combination of the saddle J, upon which the rear end of the boiler is supported upon the rear axle of the boxes J in which the rear axles are journalled, of the shoulders h upon the lower side of said boxes, of the draw-bar L provided with hooked inner ends engaging with the aforesaid shoulders, and of the system of brace-rods K', connecting the rear supports, of the boiler with the front support on the same general plane, all substantially as and for the purposes described. 8th. In a traction engine, a ball-shaped epicyclic train of gear forming, one member of a ball and socket pivot of the front axle, substantially as described. 9th. The combination, with the front axle, of a ball-shaped epicyclic train or gear in the centre of a front axle of a sprocket-wheel, having a central ball-socket, of the pin Q engaging into a segmental recess in the ball-socket of the hollow shafts u, and of the front wheel engaging with the outer ends of the hollow shafts, substantially as described. 10th. The combination, with the front axle having a recessed ball formed thereon, of an epicyclic train of gear concealed within the recesses of said ball and completing its ball form, of a sprocket-wheel journalled in the front support and having a central ball socket, of the pin Q engaging into a segmental recess in said ball socket, and of the hollow shafts u which transmit the motion from the epicyclic train to the front wheels, all arranged substantially as described. 11th. The combination of the front axle and front wheels, with the hollow shafts u, said hollow shafts being provided upon their inner ends with gear wheels forming part of a ball-faced epicyclic train of gear arranged to transmit motion and forming the ball of a ball and socket pivot, substantially as described.

No. 26,637. Windmill. (Moulin à Vent.)

George J. Bentley, San Jose, Cal., U.S., 6th May, 1887; 5 years.

Claim.—1st. The wind mill frame, comprising the posts converging from the bottom toward the top, having a central vertical guiding sleeve secured in the top, an annular step supported between the posts at some distance below the top, a tubular post passing through the upper guiding sleeve, and having its lower end supported to turn in the channel of the step at the bottom, and having the horizontal crank-wheel shaft supported in the boxes upon a frame, which is fixed to this tubular shaft, the crank being connected with an arm projecting to one side, and secured to the upper end of a vertically-moving plunger-rod, which extends down through the tubu-

lar post C and is guided thereby, substantially as described. 2nd. The wind-mill, having the fan-wheel secured to a horizontal crank-shaft, which is supported in journal-boxes at one side of a vertical tubular post, which revolves within a guiding sleeve, and a supporting step, as shown, a tail vane hinged to this vertical post, so as to swing from a position, parallel with the wheel to a position in line with the wheel-axle, said tail vane having a chain or rope attached to it passing around a pulley upon an arm projecting from the frame of the central post, and thence over a guiding pulley to the interior post, and the hollow plunger rod extending down toward the ground and having a weight attached to its lower end, substantially as described. 3rd. The vertical turning-post, having the hollow plunger-rod extending down through its centre, an arm extending outward from the top of the plunger-rod and connected with a crank-shaft wheel by a rod or pitman, said crank-shaft extending across a frame extending from the turning-post, and at one side of the post a tail-vane, pivoted so as to swing through an arc of ninety degrees, and having the balance-weight and chain connecting the weight with a weighted latch-lever, which is fulcrumed in the tail-vane, and a projecting arm from one side of the wheel-supporting frame, with which this latch-lever may engage to hold the wheel out of the wind when desired, substantially as described. 4th. The wind-wheel, composed of the flat fans secured to radial arms, which project from the wheel-hub and are secured to the same by bolts, while the outer ends of the fans are united by the connecting-braces, as shown, substantially as described.

No. 26,638. Manufacture of Upholsterer's Furniture. (Fabrication des Effets de Tapissier.)

Sarah Clark (assignee of Henry B. Clark), Toronto, Ont., 6th May, 1887; 5 years.

Claim.—1st. The rail R, having a bevelled groove f, in combination with the cord B and the springs F which are attached to the webbing, substantially as described. 2nd. The rail R, in combination with the strip C, which forms a pliable bearing, over which the outer covering D is stretched after the seat has been packed, substantially as described. 3rd. The rail R, provided with a strip n, in combination with the cord B and the springs F, which are attached to the webbing E, substantially as described. 4th. The rail R, in combination with the roll n, which forms a pliable bearing, over which the outer covering D is stretched after the seat has been packed, substantially as described. 5th. The combination of the rail R, having a bevelled groove f, whereon the cord B which stays the springs F and H, the covering for said springs are fastened, and the webbing E to which the springs are attached, the rail R being adapted to remain in position the strip C, which forms a pliable bearing over which the outer covering D is stretched after the seat has been stuffed or packed, substantially as specified. 6th. The combination of the rail R, having a strip n whereon the cord B, which stays the springs F and on which H the covering for said springs are fastened, and the webbing E to which the springs are attached, the rail R being adapted to remain in position the strip C, so as to afford a pliable bearing at the uppermost outer edge of said rail, over which the outer covering D is stretched, after the seat has been stuffed or packed, substantially as specified. 7th. The combination of the rail R, having a bevelled groove f whereon the cord B and the covering H are fastened, the webbing E to which the springs F are attached, and the rail R adapted to remain in position the roll n, which forms a pliable bearing, over which the outer covering D is stretched after the seat has been stuffed, substantially as specified. 8th. The combination of the rail R, having a strip n, whereon the cord B and the covering H are fastened, the webbing E to which the springs F are attached, and the rail R adapted to remain in position the roll n, which forms a pliable bearing over which the outer covering D is stretched after the seat has been stuffed, substantially as specified. 9th. A rail, so shaped as to be adapted to hold in position an edging which forms a pliable bearing, over which the outer covering is stretched after the seat has been packed, the place of attachment of the cords which stay the springs and of the casing for said springs being located in the inner sides of said rail, at such a distance above the webbing which carries the springs, so as to enable the shortening to the fullest extent practicable of the stay cords, which hold the springs in place, as well as of the spring covering, substantially as described and for the purpose specified. 10th. In the back of an upholstered piece of furniture, a wooden strip attached to the inner sides of the back frame, in combination with an edging forming a pliable bearing, over which the outer covering is stretched after the back has been packed, the place of attachment of the cords which stay the springs being located on the inner sides of said wooden strip, at such a distance from the back covering which carries the springs as to permit of the shortening to the fullest extent practicable of the stay cords which hold the springs in place, substantially as specified.

No. 26,639. Plate applicable for the Manufacture of Cases or Packages for Canning or Preserving Articles of Food. (Feuille propre à la fabrication des boîtes ou paquets à conserves alimentaires.)

William Powell, Liverpool, Eng., 6th May, 1887; 5 years.

Claim.—The manufacture and use of plate for the making of cans, packages, and the like, having a base of tin plate, sheet iron, or other tough metal, and a coating thereon of papier maché, paper, or other similar material.

No. 26,640. Buckle. (Boucle.)

George F. Atwood and Charles S. L. Leach, Swanton, Vt., U. S., 6th May, 1887; 5 years.

Claim.—A buckle comprising an integral frame with middle attaching-bar, and also having the inner edge of one of the outer cross-bars provided with rearwardly-projecting spurs or teeth, the outer

ones turned outward in the direction of the ends D and E, substantially as specified.

No. 26,641. Piston adapted to Pumps and Valves as well as to Engine Cylinders. (*Piston propre aux pompes et aux soupapes comme aux cylindres des machines.*)

Tom. Thompson, Hanley, Samuel Thompson, Stoke-on-Trent, and Thomas M. Favell, Etruria, (assignees of William Dixon, Sheffield, and Samuel Thompson, Stoke-on-Trent,) Eng., 6th May, 1887; 5 years.

Claim.—1st. A piston provided in its periphery with packing rings extending circumferentially around the same, and a spring-pressed ring behind the packing rings at their adjoining edges, and serving to force the said packing rings outwardly and laterally, substantially as and for the purpose specified. 2nd. A piston provided in its periphery with packing rings extending circumferentially around the same, and a spring-pressed reversely bevelled ring behind the said packing rings, the apex or the reversely-bevelled ring fitting between the packing rings and serving to force them outwardly, and laterally, substantially as and for the purpose specified. 3rd. A piston provided in its periphery with packing rings extending circumferentially around the same and bevelled at their inner or adjoining edges, and a spring-pressed reversely-bevelled ring bearing against the bevelled edges of the packing rings, substantially as shown and described. 4th. A piston provided in a peripheral groove thereof with packing rings, a reversely-bevelled ring behind and bearing against said packing rings, and spring-pressed blocks behind the said reversely-bevelled ring, substantially as shown and described. 5th. A piston provided in radial recesses or packets thereof with spring-pressed blocks or studs, a ring reversely bevelled on its outer surface and fitted in a peripheral groove of the piston, and packing rings fitting on said bevelled ring and bevelled to conform to the same, substantially as shown and described. 6th. In a piston, the combination, with packing rings fitted in the periphery thereof, of a segmental ring behind said packing rings, a series of studs or blocks in radial pockets or recesses in the piston, and spiral springs on the shanks of said studs or blocks, substantially as shown and described.

No. 26,642. Rubber Dam Clamp.

(*Griffe à caoutchouc pour dentiste.*)

Oliver Carpenter, Oakland, Cal., U.S., 7th May, 1887; 5 years.

Claim.—1st. A rubber-dam clamp comprising the curved hinged frame A, the jaws B in the grooved ends of said frame, and the set-screw C by which said frame is expanded and contracted, substantially as herein described. 2nd. A rubber-dam clamp comprising the hinged frame A, having the dovetailed grooves b in its ends, the jaws B inserted and held in said grooves, said jaws having their free ends fashioned to the surface of the tooth to which they are fitted, and the screw C by which the frame is expanded and contracted, substantially as herein described.

No. 26,643. Padlock. (*Cadenas.*)

Williston J. Alford, Bridgeport, Conn., U.S., 7th May, 1887; 5 years.

Claim.—1st. In a padlock, the combination, with the nose of the shackle and a stop projecting from the side of the padlock casing, of a rotary shell having arranged therein tumblers adapted to slide laterally, and having extending from its side a hook, said tumblers and hook adapted to engage with said stop and nose respectively when the said shell is rotated to lock the shackle, substantially as set forth. 2nd. In combination, with the shackle of a padlock, a shell capable of motion around a centre and arranged within the padlock case, spring-actuated tumblers within said shell adapted to slide laterally through the sides of the same, and means as a stop projecting from the padlock casing against which the extremities of the tumblers may abut, whereby the shell is securely held in locked position, substantially as shown and described.

No. 26,644. Hot Water Heater.

(*Calorifère à eau.*)

Thomas C. Stewart, Hamilton, Ont., 7th May, 1887; 5 years.

Claim.—1st. In a hot water heating boiler, a series of hollow rings C placed vertically one over the other, and provided with inlet and outlet pipes, and connected by outside coupling pipes, substantially as and for the purpose specified. 2nd. In combination, with the rings C, of a hot-water heating boiler, of a jacket or casing I surrounding the same, substantially as and for the purpose specified. 3rd. In combination, with the hollow rings C, of a hot-water heating boiler, of the lugs c, d on the top and bottom rings respectively, and the inlet and outlet opening a, b, substantially as and for the purpose specified. 4th. In a hot water heating boiler, the combination of the hollow rings C and the dome H, substantially as and for the purpose specified. 5th. In a hot water heating boiler, the combination of the hollow rings C, coupling pipes D, inlet and outlet pipes E, G, draft openings K, L, and casing I, substantially as and for the purpose specified.

No. 26,645. Stovepipe Shelf.

(*Tablette à tuyau de poêle.*)

Carlton E. Bailey, Merrickville, Ont., 7th May, 1887; 5 years.

Claim.—1st. The sections 1, 2 secured by arms 3 having serrations 4, and provided with lug projections 5, as set forth. 2nd. The sections 1, 2 having radial bars 7, and connected by a link 7 hung to one of the bars, as set forth. 3rd. The sections 1, 2, having indented bars, and provided with hooks 9 hung from the indentations, as set forth.

No. 26,645. Ink-Well. (*Encrier-fontaine.*)

Marcellus S. Smith, Independence, Mo., U. S., 7th May, 1887; 5 years.

Claim.—1st. An ink-well cover constructed in two sections, one of which is fastened to the upper surface of the desk and made stationary therewith, and the other hinged to said stationary section and opening in a plane that is parallel to said upper surface, substantially as specified. 2nd. The combination, with an ink-well cover constructed in sections and hinged together, of a well located on the upper surface of the desk and removably inclosed or incased by the sections of the cover, substantially as specified. 3rd. The combination, with sections A¹ and A² hinged together, and provided with dip opening c of the well H inclosed by said sections and valve or slide b pivoted to the top of one section, as set forth.

No. 26,647 Mechanism for Forging Hammers and other Tools. (*Machine à forger les marteaux et autre outils.*)

Henry H. Warren, Côte St. Paul, Que., 7th May, 1887; 5 years.

Claim.—1st. The combination of the swage q and punch r, with swaging jaws f having swages s (actuated by) and with a spring o and inclines e¹, inclines d¹ of the horns c¹ and with lower die d, the whole substantially as described. 2nd. The combination, in a hammer forging, etc., mechanism substantially as described, of the swaging jaws f having swages s, spring o and head a, whereby the swages s are enabled to automatically bring the bar b¹ to the proper relative position required, as described. 3rd. The combination, in a hammer-forging, etc. mechanism, of a reciprocating punch arranged to punch the eye of the hammer, with a pair of swages arranged to open further apart as the punch first enters the material and it is extended by the said punch as described and shown, and said swages being furthermore arranged to close and swage the sides of the material after the punch has entered the material and as the further process of punching is being carried on, substantially as described. 4th. The combination of the swage q having incline v, punch r, swages i and lower supporting die or anvil, the whole substantially as described.

No. 26,648. Pinch Bar for Starting and Moving Cars on a Railway Track. (*Lever pour mettre en mouvement les chars sur les voies de fer.*)

Charles E. Letts, Detroit, Mich., U.S., 7th May, 1887; 5 years.

Claim.—1st. A pinch bar provided with a heel which forms a loose fulcrum, in combination with an adhesive fulcrum plate, substantially as described. 2nd. In combination with a pinch bar having a rolling fulcrum at the heel thereof, a metallic shoe pivotally attached to said bar, substantially as and for the purpose described. 3rd. In combination with a pinch bar having a rolling fulcrum at the heel thereof, a metallic shoe pivotally attached to said bar and having a removable friction surface attached to the bottom of said shoe, substantially as and for the purpose specified. 4th. The combination, in a device for the purpose described, of a lever having a toe and a rounded heel, and a metallic shoe having ears for attachment of the shoe to the bar and flanges at each end, and a removable friction surface attached to the bottom of the shoe, substantially as set forth.

No. 26,649. Spring Gear for Vehicles.

(*Train de voiture à Ressorts.*)

James Steele, Guelph, Ont., 7th May, 1887; 5 years.

Claim.—1st. In combination with the axles A and B, the spring reach C suitably attached to said axles and carrying the saddle D rigidly attached to said reach, together with the front and rear supports E and F bolted on said saddle, substantially as described and for the purpose specified. 2nd. The spring D, in combination with the head block P and the rear support F, the said spring being pierced to receive the bolt L which is secured thereto, the strips m placed under said spring and bolted to the upper plate l by the bolts n, and the slotted plate N fixed to the lower side of the front support E, which is recessed at O to allow for the movement of the bevelled head of the bolt L which has curved lips M resting on the slotted plate N, substantially as described. 3rd. The spring H, in combination with the axle B and front support E, the said spring being pierced to receive the bolt L which is secured thereto, the strips m placed under said spring and bolted to the upper plate l by the bolts n, and the slotted plate N fixed to the lower side of the rear support F, which is recessed at O to allow for the movement of the bevelled head of the bolt L which has curved lips M resting on the slotted plate N, substantially as described. 4th. The axles A and B and spring reach C, carrying the saddle D rigidly attached thereto, the rear support F bolted to the saddle and suitably attached to the springs G, which are also connected with the head blocks P, the said springs G being pierced to receive the bolts L secured thereto, the strips m bolted to the upper plates l by the bolts n, and the slotted plates N fixed to the lower side of the front support E, which is recessed at O, the bolts L having lips M, which rest on the slotted plates N, in combination with the springs H suitably attached to the rear axle B and front support E, which is bolted to the saddle D, the rear support F being also carried by the springs H, substantially as specified. 5th. The axles A and B and spring reach C, carrying the saddle D rigidly attached thereto, the rear support F bolted to the saddle and suitably attached to the springs G, carrying as specified, the front support E which is bolted to the saddle, in combination with the springs H, which have bearings on the front support E and rear axle B, and are pierced to receive the bolts L secured thereto, the strips m bolted to the upper plates l by the bolts n, and the slotted plates N fixed to the lower side of the rear support F, which is recessed at O, the bolts L, having lips M, which rest on the

slotted plates N, substantially as specified. 6th. The combination of the axles A and B, the spring C, the saddle D and the front and rear supports E and F, the head block P affording bearings for the springs G, which are pivotally attached to the rear support F, and so connected with the front support E as to permit of flexure, together with the springs H pivotally attached to the rear axle B and the front support E, and so connected with the rear support F as to permit of flexure, substantially as set forth.

No. 26,650. Waggon and other Vehicles.

(*Wagon et autres Voitures.*)

John Fraser, Woodhouse, and Michael Hall, Charlotteville, Ont., 7th May, 1887; 5 years.

Claim.—The combination of the cross-rods D, D, with the circles C, C, and adjustable reach F, substantially as and for the purpose hereinbefore set forth.

No. 26,651. Bobbin and Spool. (*Bobine et Roquet.*)

Charles G. Thompson, Sherbrooke, Que., 7th May, 1887; 5 years.

Claim.—The wooden ferrule A, inserted in groove B, B, substantially as and for the purposes hereinbefore set forth.

No. 26,652. Electro-Medical Battery.

(*Batterie Electro-Médicale.*)

Thomas H. Hicks, Detroit, Mich., U.S., 7th May, 1887; 5 years.

Claim.—1st. In an electro-medical battery, a circuit-breaker provided with two contact springs, which represent the poles of a galvanic battery, in combination with two sets of stationary contacts arranged in pairs upon opposite sides of the contact springs of the circuit breaker, and forming the terminals of an inductor coil, substantially as described. 2nd. In an electro-medical battery, a circuit breaker carrying four contact points, arranged in pairs upon opposite sides thereof, each pair constituting the poles of the galvanic battery, four stationary contact points grouped in pairs upon opposite sides of the circuit-breaker, and adapted to make and break contacts with the contact points of the circuit-breaker, an induction coil forming a circuit with each pair of stationary contact points, and an electro-magnet in the induction coil for operating the circuit-breaker, all arranged and operating as described. 3rd. In an electro-medical battery, a circuit-breaker carrying four contact points arranged in pairs upon opposite sides thereof, each pair constituting the poles of the galvanic battery, four stationary contacts grouped in pairs upon opposite sides of the circuit-breaker, and adapted to make and break connection with the contacts of the circuit-breaker, an induction coil having its terminals connected with each pair of stationary contacts by a distinct and independent connection, and of a switch in one of these connections for breaking the circuit through it, all substantially as described. 4th. In an electro-medical battery, the combination of a circuit-breaker, carrying two vibrating contacts, which form the poles of a galvanic battery of four stationary contacts arranged in pairs in relation to the vibrating contacts of the circuit-breaker, of an induction coil, having primary and secondary circuits, of electrical connections between the terminals of the primary coil, and two electrodes for taking off the extra current and of a switch whereby the extra current may be obtained straight or alternating, substantially as described. 5th. In an electro-medical battery, an induction coil, having the terminals of its primary wire connected, as described, to four stationary contacts arranged in pairs, each pair forming the terminals of the primary wire of the coil, in combination with a circuit-breaker carrying two contact springs, which are in electrical connection with the poles of the battery, and which are adapted in the operation of the circuit-breaker to form make and break contacts with each pair of stationary contacts, to alternately reverse the current through the primary wire of the coil, as and for the purpose described. 6th. In an electro-medical battery, a circuit-breaker, carrying four contact points, arranged in pairs upon opposite sides thereof, each pair constituting the poles of the galvanic battery, four stationary contact points grouped in pairs upon opposite sides of the circuit-breaker, and adapted to make and break contacts with the contact points of the circuit-breaker, an induction coil having its terminals connected with each pair of stationary contact-points, and an electro-magnet in the induction coil for operating the circuit-breaker (which latter has a revolving armature) all arranged and operating as described, whereby the current is sent alternately in opposite directions through the coil, to cause its magnet to alternately attract the armature of the circuit-breaker to cause it to revolve, substantially as described. 7th. In an electro-medical battery, the combination of the current breaker, carrying four contacts arranged in pairs upon opposite sides, each pair forming the poles of the galvanic battery of four stationary contacts arranged in pairs in relation to the contacts of the current breaker of an induction coil, having primary and secondary circuits, of connections between the terminals of the primary coil and two electrodes, and of connections between the secondary coil and two electrodes, all arranged substantially as described. 8th. In an electro-medical battery, the combination with the actuating electro-magnet, of the induction coil, of a circuit-breaker, consisting of a revolving armature, a cam or eccentric carried on the shaft of the armature, a vibrator actuated by said cam or eccentric, two contact springs carried by said vibrator and forming the terminals of a galvanic battery, and four stationary contacts arranged in pairs in relation to the contacts of the vibrator, and forming the terminals of the primary wire, of the induction coil, all substantially as described. 9th. In an electro-medical battery, the combination of the electro-magnet L, the revolving armature T, the shaft m, the cam l, the vibrator R, the springs o, o, the contacts J, J, and the stationary contacts k, k₁, k₂, k₃, k₄, k₅, k₆, k₇, k₈, k₉, k₁₀, k₁₁, k₁₂, k₁₃, k₁₄, k₁₅, k₁₆, k₁₇, k₁₈, k₁₉, k₂₀, k₂₁, k₂₂, k₂₃, k₂₄, k₂₅, k₂₆, k₂₇, k₂₈, k₂₉, k₃₀, k₃₁, k₃₂, k₃₃, k₃₄, k₃₅, k₃₆, k₃₇, k₃₈, k₃₉, k₄₀, k₄₁, k₄₂, k₄₃, k₄₄, k₄₅, k₄₆, k₄₇, k₄₈, k₄₉, k₅₀, k₅₁, k₅₂, k₅₃, k₅₄, k₅₅, k₅₆, k₅₇, k₅₈, k₅₉, k₆₀, k₆₁, k₆₂, k₆₃, k₆₄, k₆₅, k₆₆, k₆₇, k₆₈, k₆₉, k₇₀, k₇₁, k₇₂, k₇₃, k₇₄, k₇₅, k₇₆, k₇₇, k₇₈, k₇₉, k₈₀, k₈₁, k₈₂, k₈₃, k₈₄, k₈₅, k₈₆, k₈₇, k₈₈, k₈₉, k₉₀, k₉₁, k₉₂, k₉₃, k₉₄, k₉₅, k₉₆, k₉₇, k₉₈, k₉₉, k₁₀₀, all substantially as specified. 10th. In an electro-medical battery, the combination of the electro-magnet L, the revolving armature T, the fly-wheel Tr, the shaft m, the cam l, the vibrator R having the bifurcated end, the springs o, o, the posts U, Ur, the spring contacts J, J, and the stationary contacts k, k₁, k₂, k₃, k₄, k₅, k₆, k₇, k₈, k₉, k₁₀, k₁₁, k₁₂, k₁₃, k₁₄, k₁₅, k₁₆, k₁₇, k₁₈, k₁₉, k₂₀, k₂₁, k₂₂, k₂₃, k₂₄, k₂₅, k₂₆, k₂₇, k₂₈, k₂₉, k₃₀, k₃₁, k₃₂, k₃₃, k₃₄, k₃₅, k₃₆, k₃₇, k₃₈, k₃₉, k₄₀, k₄₁, k₄₂, k₄₃, k₄₄, k₄₅, k₄₆, k₄₇, k₄₈, k₄₉, k₅₀, k₅₁, k₅₂, k₅₃, k₅₄, k₅₅, k₅₆, k₅₇, k₅₈, k₅₉, k₆₀, k₆₁, k₆₂, k₆₃, k₆₄, k₆₅, k₆₆, k₆₇, k₆₈, k₆₉, k₇₀, k₇₁, k₇₂, k₇₃, k₇₄, k₇₅, k₇₆, k₇₇, k₇₈, k₇₉, k₈₀, k₈₁, k₈₂, k₈₃, k₈₄, k₈₅, k₈₆, k₈₇, k₈₈, k₈₉, k₉₀, k₉₁, k₉₂, k₉₃, k₉₄, k₉₅, k₉₆, k₉₇, k₉₈, k₉₉, k₁₀₀, all arranged to operate substantially as described.

No. 26,653. Gas Trap Cover.

(*Couvercle de Puisart.*)

Nathan Schwab, New York, N.Y., U.S., 7th May, 1887; 15 years.

Claim.—1st. In combination with a gas trap cover, having an adjustable band outside the rim, of a cam on the underside of the cover attached to adjusting bars connected with said band, as set forth. 2nd. In combination with a cover, having an adjustable band outside the rim, of a cam on the underside of the cover attached to adjusting bars in loop-supports connected with said band, as set forth. 3rd. In combination with a cover, having an adjustable band outside the rim, of a cam on the underside of the cover attached to two or more adjusting bars working through loop supports, and connected with and expanding said band in different directions at the same time, as set forth. 4th. A gas trap cover, having a piston-rod therein secured to a recessed cam on the underside of the cover, said cam being attached to adjusting bars by rollers, for expanding a band outside the rim, as set forth. 5th. A cover, with a reinforced bottom within its rim, having loop supports secured thereto for carrying adjusting bars, for expanding a band outside the rim, as set forth. 6th. A cover, having double loop-supports secured to the reinforced of the bottom, with rollers on each side of the centre between the bars of the support to guide an adjusting bar for expanding and contracting a band outside the rim, as set forth. 7th. In combination with a conical cover, having a tube under the cone containing a packing, with a piston-rod therein, of a reinforced bottom on substantially the same plane as the flange outside the rim, said bottom having a recess or chamber within the reinforce for a cam attached to the lower end of the piston-rod, as set forth. 8th. In combination with a conical cover, having a piston-rod passing through a tube therein, of a cam recessed on its under side, and having a flange at its edge serrated on its periphery attached to the lower end of the rod, said cam being connected with an adjusting bar for expanding a band outside the rim, as set forth. 9th. In combination with a cover, having a recessed cam on its under side, provided with a flange at its edge serrated on its periphery, of an adjusting bar having rollers near its end, one working in the recess and the other against the serrated edge of the flange in expanding and contracting an adjustable band outside the rim, as set forth. 10th. In combination with a gas trap cover, having a cone with a tube therein provided with a packing, and a piston-rod for expanding a band outside the rim, of a cam recessed on its under side and secured to the rod underneath the bottom, and to adjusting bars by rollers journaled thereon, said bars having loop-supports with rollers therein on each side of the bars, as and for the purpose set forth.

No. 26,654. Type Setting Machine.

(*Machine à Composer.*)

John L. McMillan, Ilion, Joseph Fowler, Thomas S. Coolidge, Daniel L. Robertson and John W. Bush, Glens Falls, N.Y., U.S., 7th May, 1887; 5 years.

Claim.—1st. In a type-setting machine, the combination of a series of type cases arranged one above another in an approximately horizontal position, and a race passing in the side of the several cases of the series and arranged to receive type from each, substantially as set forth. 2nd. In a type-setting machine, the combination of a series of substantially horizontal type-cases arranged in tiers on tier being arranged in line with those of other tiers, and races passing the outlets of the cases and each common to cases in the different tiers. 3rd. In combination with two approximately horizontal type-cases, arranged one above another, and having lateral outlets for the type, a race having a slot in its side extending from case to case and adapted to receive the type from the outlets of the different cases. 4th. In a type-setting machine, the combination of a central bar, a series of race-bars inclining thereto and communicating with the race of the central bar, and a series of approximately horizontal type cases arranged in tiers one above another, and with the cases of one tier in line with those of the next forming a series, whereby each race-bar is enabled to receive type from all the cases of the series which it passes, and all the races are caused to deliver their type into the central race. 5th. In a type-setting machine, a series of approximately horizontal type-cases arranged in tiers or rows, one tier above another, the cases of each row being in line with those of tiers above and below each row, thus forming a series or group, each group containing cases of type of a certain single class, as regards width or thickness, and race-bars, one passing and common to all the type-cases of a series, and having a race-way large enough to permit the free longitudinal movement of the type of its series therein, but not large enough to permit said type to turn transversely. 6th. In a type-setting machine, substantially such as described, the combination of type cases, arranged in groups or series according to the thickness of the types, and a race-bar for each series, having a race-way of such size as will permit the free longitudinal movement within it of each type of its series, but too narrow to permit said type to turn therein. 7th. In a type-setting machine, the combination, with supporting plates B and C, having perforations a, of type case D extending from one plate to the other, supported therein and separately removable therefrom, substantially as shown and described. 8th. In a type-setting machine, the combination of supporting plates perforated to receive type cases, and type cases provided each with a shoulder at or near the forward end to limit the passage of the case through the forward plate. 9th. In a type-setting machine, the combination of plates B and C, each provided with openings a for the insertion of type-cases, the openings of plate C being formed with a lateral enlargement, and type-cases D, each provided with a follower and a lateral eye for the attachment of a weight-cord, substantially as set forth. 10th. In a type-setting machine, a type-case holder or frame consisting of plates B and C, each provided with openings a to receive type-cases, the openings in each plate being arranged in horizontal tiers or rows, those of one tier in line with those of other tiers, as and for the purpose explained. 11th. The herein-described type-case for use in a type-setting machine, consisting of a longitudinally slotted bar having an abutment portion at its forward end for the type to bear against, a lateral outlet immediately in rear of said abutment, and a transverse passage or opening

through said abutment to permit the passage of an ejecting-finger. 12th. The herein-described type-case consisting of a bar having a longitudinal groove *d* closed at its forward end by an abutment *f*, provided with end mortise *g*, outlet *e* immediately in rear of abutment *f*, longitudinal slot *n*, follower *E* and a cord, hook or arm extending from the follower through the side slot *n*, all substantially as described and shown. 13th. A type-case for type-setting machines, having a longitudinal slot to contain the type, an abutment at one end for the type to bear against, an outlet immediately in rear of the abutment, and a pusher movable longitudinally within the slot, the face of the abutment being slightly bevelled or undercut to prevent the type from passing through the outlet too easily. 14th. In combination with a main race *o* through which all the type pass in a single line-galley and with front plate *I* covering said race, a pendulous gate *y* formed with a bevelled upper end or face extending downward across the race from rear to front, and with a straight face below the bevelled portion, said gate being of the width of the main race only, and a suspension-pivot for said gate located at or near the upper end of the bevelled portion thereof, as and for the purpose explained. 15th. In combination with type-case *D* having slot *n* and provided with follower *E*, cord-hook *h* having a polygonal stem fitted in a corresponding socket in the follower, and a lateral arm extending through slot *n* and provided with an eye to receive a weight-cord, substantially as shown and described. 16th. In combination with frame or plates *B, C*, a type-case *D* passing through said plates and having a shoulder to limit its forward movement, a follower within the case arranged to bear against the type therein and to press them against an abutment at the forward end of the case, and a weight connected with the follower and serving to press the same forward, whereby it is caused both to feed the type forward within the case and to carry and hold the case forward within its supporting-frame. 17th. In combination with frames *B, C*, and type-cases *D* arranged therein, substantially as shown and described, follower *E* within the type-cases, cord *g* attached to the followers and passing about pulleys *h, i*, and rods *r* running between the cases and serving to prevent the cords from interfering therewith or with cord-hooks, substantially as set forth. 18th. In combination with type-cases *D* and followers *E*, cords *g* attached to the followers and passing about suitable guides or pulleys, and weights *F* provided with guides, substantially as shown to prevent them from interfering with each other. 19th. In combination with a main race-bar having a central race, and a series of branch races meeting the central race at an angle, a series of supplemental race-bars applied to the main race-bar and forming continuations of the branch races, substantially as shown for the purpose explained. 20th. In a type-setting machine, the herein described supporting-frame for type-cases, consisting of plates *B, C*, both provided with openings *a* to receive the type-cases, the plate *C* being further provided with a comb or rack to hold the weight-cords of the type-case followers, substantially as set forth. 21st. In combination with a series of type-cases and ejecting-fingers therefor, key-bars or levers for actuating the ejecting-fingers, provided with finger-buttons arranged in rows, bell-crank levers connected by rods with the key-bars and ejecting-fingers respectively, and pivoted to a supporting-plate each at a like distance horizontally from the end of the key-bar, and a series of pivot rods whereby a uniform leverage for all the key-bars is secured. 22nd. In combination with a horizontal row of type-cases, each having a transverse opening for the movement of an ejecting-finger, a series of ejecting-fingers having their rear ends extended to different distances from the ends of the type-cases, whereby space is secured for the attachment of operating rods one to each bar in the same horizontal plane and in parallel lines. 23rd. In combination with a horizontal series of type-cases, two series of ejecting-fingers jointly comprising a finger for each case, the finger of each series extending back each farther than one, the one preceding the fingers of one series having the rear extensions formed above, and those of the outer series having the rear extensions below the line of the fingers, substantially as shown for the purpose explained. 24th. In combination with two type-cases *D* located in the same horizontal plane, two ejecting-fingers one for each of said cases, one having its rear end out away above the middle line and the other similarly out away below its middle line. 25th. The combination, substantially as herein described and shown, of a type-case *D* having outlet *e*, ejecting-finger *G*, plates *O* and *y*, bell-crank or lever *P* pivoted to plate *O*, rods *Q, R*, the former pivoted with a collar and bearing at opposite ends against collars *x* and plate *y* and spring *z* and key-bars or levers *s*. 26th. In combination with type-cases and ejecting-fingers therefor, key-bars or levers connected with said fingers, substantially as shown and described, and rods or stems *b* provided with buttons *v*, attached to the key-bars, provided with spring *d* and collars *e*, and passing through plates *U* and *V* between which said collars and springs are located, substantially as shown and described. 27th. In combination with type-cases and with ejecting-fingers therefor, key-bars or levers for actuating the ejecting-fingers, elbow levers for changing the direction of the motion produced by the depression of the key-bars and pivot-rods for said key-bars, the elbow-lever and the pivot-rods being set back from the key-board to correspond with the positions of the key-bar buttons in the key-board, whereby a uniform leverage and movement is secured for each. 28th. In combination with a type-case and an ejecting-finger, a key-bar or lever pivoted at one end, a loop encircling said lever, a rod extending from the elbow-lever to and screwing into said loop, and a stem attached to the key-bar provided with a shoulder encircled by a spring and passing through two plates between which the collar and spring are located and against the lower one of which the spring bears, substantially as shown and described. 29th. In combination with main race *o*, and mechanism substantially as described for delivering type into the same successively face upmost, a line-galley having a short horizontal portion to receive the type in a vertical position, and then inclining forward from the race, whereby the type are caused to fall away from the race at their upper ends and to move forward upon the application of slight force. 30th. In combination with galley *X*, head or bunter *J* movable to and from the same, and provided with adjustable face-pieces *m, n*, substantially as shown and for the purpose explained. 31st. In combination with galley *X* and bunter *J*, provided with rib *o*, face-pieces *m, n* grooved to fit said rib, and ar-

ranged to slide one upon the other, substantially as shown and described.

No. 26,655. Machine or Implement and Method for Soldering Tinware on the outside and particularly Tin Cans to be used in the packing of Canned Goods. (*Machine ou outil pour souder et mode de souder la ferblanterie en dehors et particulièrement des boîtes de conserves alimentaires.*)

William M. Miller and Wellington Boulter, Picton, Ont., 7th May, 1887; 5 years.

Claim.—1st. The combination of the disk band *B* and the cross-hand *G* thereto secured, and the vertical rim *C* attached to the inner edge of said disk-band *B*, with the disk elevator *D* secured to the centre of said cross-band *G*, substantially as and for the purposes hereinbefore set forth. 2nd. The combination of the above described implement with the solder pan *F* having on its centre the depression *E*, substantially as and for the purposes hereinbefore set forth.

No. 26,656. Lamp. (*Lampe.*)

Henry Wellington, Brooklyn, N.Y., U.S., 7th May, 1887; 5 years.

Claim.—1st. In a vacuum lamp, the cylindrical valve at the bottom of the reservoir, provided with a stem projecting up through the reservoir, said valve entering a hollow tube containing the oil escape orifice, and arranged to move up and down past said orifice in order to govern the oil communication between the reservoir and the burner, substantially as shown and described. 2nd. In combination with the hollow cylindrical valve and its tubular seat, the interposed spiral spring, the valve being provided with means for forcing it down against the action of the spring, substantially as and for the purposes set forth. 3rd. The herein-described support for the valve seat, the same being affixed to the reservoir at one side and provided with sockets for the reception of the oil supply tube, and the air tube leading to the upper part of the reservoir and the valve arranged and combined, substantially as shown. 4th. In a vacuum lamp, the valve stem connecting the upper and lower valves which respectively govern the inlet to and outlet from the reservoir, said stem being moved by a locking mechanism, and removable key therefor applied at the upper end of said valve stem, substantially as shown and described. 5th. The combination, with the valve stem carrying the two valves, and the lock applied upon said stem, of the key connected with the cover and arranged to operate the lock and secure the cover, substantially as shown and described. 6th. In combination with the valve stem, the two-part lock and its casing, each part of said lock having inclined and flat faces for abutting against each other, the lower part being prevented from turning as explained, and the removable key for operating said lock, substantially as shown and described. 7th. In combination with the reservoir, the feeding funnel in the upper part thereof, the same being closed at bottom by a valve and made of transparent or translucent material, substantially as and for the purposes set forth. 8th. The lock case containing the two-part lock, which is connected with the valve stem, said case being located within the feeding funnel, and arranged to receive and hold the key attached to the reservoir cover, substantially as and for the purpose set forth. 9th. In combination with the standard and the supply tube connecting the reservoir and burner, the set-screw connected with the hollow ball through the medium of a shell upon which said ball is mounted, and upon which it is arranged to revolve, thus permitting the turning or swinging of the lamp while the screw remains stationary, substantially as shown and described. 10th. In combination with the burner, the removable dip cup arranged to be sprung upon the bottom thereof, and held in place as set forth, and having the side and top foraminated plates, substantially as shown and described. 11th. In combination with the drip cup having the upper foraminated cover, the removable cleaning plate, substantially as shown and described. 12th. In a lamp burner, the combination with the central air tube located in the oil receptacle, of a second tube surrounding the first also located within the oil receptacle, and forming on one side a chamber for the reception of the wick, and on the other an oil space, oil being admitted to the outside chamber at or near its top, and to the wick chamber from the outside chamber at its bottom, substantially as shown and described. 13th. In a lamp burner, the enlarged chamber located within the oil receptacle, receiving oil from the supply tube, and communicating with the receptacle through a small perforation, substantially as shown and described. 14th. In a lamp burner, the air chamber at or near the top communicating with oil receptacle through an elongated tube, said tube being arranged to admit air to the oil receptacle, and to drain the air chamber of oil which may collect therein, substantially as and for the purposes set forth. 15th. In a lamp burner, the short cylinder mounted upon the upper end of the central wick tube, and the cylindrical tip mounted upon the top part of the air chamber in the upper part of the oil receptacle, forming respectively with the wick tube and top and bottom parts of said air chamber channels through which the overflowing oil from either side of the wick is directed back to the oil receptacle, substantially as shown and described. 16th. The band for supporting the chimney, the same having exterior sockets applied thereon and arranged to support the removable shade holder arms, said arms having their lower ends flattened or formed to correspond with the contour of the cylinder as explained, so that they will have a steady bearing in their seats all combined and arranged, substantially as shown and described. 17th. In combination with the wick raiser shaft, the two tubes entering the metallic shell upon the oil receptacle below the removable burner top, one of said tubes being closed at its outer end and both arranged to prevent leakage of oil, substantially as shown and described. 18th. The herein-described wick raiser in which the ratchet wheels are doubled, the teeth of one wheel being located, as explained, so that they fall opposite the spaces, between the teeth of

the other wheel, substantially as and for the purposes set forth. 19th. In combination with the wick-raising ratchets, the cylindrical wick tube indented at points opposite said ratchets, the surface of the indentations being made to receive the wick as it is pressed therein by the teeth, substantially as and for the purposes set forth.

No. 26,657. Radiator. (*Serpentin.*)

William Rodden, Montreal, Que., 9th May, 1887; 5 years.

Claim.—A radiator composed of sections having a central "up" pipe, and two outer "down" pipes, either side of same with which it communicates at its top end, a diaphragm separating such "up" pipe from the down pipes at its lower end, and inlet and outlet formed respectively above and below such diaphragm in "up" and "down" pipes shown and described.

No. 26,658. Fodder Cutter. (*Coupe-paille.*)

Pembroke S. Rich, Worcester, Mass., U.S., 9th May, 1887; 5 years.

Claim.—1st. In a feed-cutter, the throat-piece B having the quadrangular opening, and provided with a segmental guide having the lip 5, and bored at the opposite end to form a bearing for the cutter-lever, combined with the cutting-blade C1, the blade-carrying lever to which it is attached, the bolt and nut for attaching the lever to the throat-piece, and the adjustable hook *e* carried by the lever to engage the said lip, all substantially as described. 2nd. The throat-piece B having the ear *b* and the sleeve *b1* placed in the said ear, and provided with a toothed flange, and the bolt *b1* and nut combined with the blade C1, and the lever C carrying it, the said lever being slotted and provided with teeth as at *b1111* to engage the toothed flange of the sleeve, substantially as and for the purpose described. 3rd. The metallic throat-piece B having the lips 12, 13, 14, and the segmental guide having the flange 6 and lip 5, combined with the bolt *b1*, sleeve *b11*, the adjusting lever C, its attached cutting-blade C1 and adjusting devices *f, f1* and with a hook attached to the lever and engaging the lip 5 of the throat-piece, substantially as described.

No. 26,659. Safety Appliance for Railway Frogs. (*Appareil de sûreté pour rails de croisement.*)

John C. Nichol, Montreal, Que., 9th May, 1887; 5 years.

Claim.—1st. As a railroad frog safety appliance, a compressible filling composed of a single piece of bent metal with overlapping top, sides and ends, substantially as herein set forth. 2nd. The combination of the sides A1, A1', connected at the apex wings B, B' and overlapping ends A2, A2', all as and for the purpose set forth. 3rd. The combination of the sides A1, A1', wings B, B' and base connection A2, substantially as herein described. 4th. The combination, with a compressible filling device for a railway frog formed of a single piece of bent metal, of a locking device for securing same in place, as shown and described.

No. 26,660. Household Implement.

(*Poignée de cuisine.*)

James Angus, St. Catharines, Ont., 9th May, 1887; 5 years.

Claim.—The improved implement containing the several tools enumerated, in combination as shown and described, as a new article of manufacture.

No. 26,661. Pump. (*Pompe.*)

Hiram Field, Smithville, Ont., 9th May, 1887; 5 years.

Claim.—1st. A pump having a barrel open in the centre, and a packing gland at each end of the open space, a tubular plunger fitting loosely in the barrel ends and made tight therein by said packing rings, a valve in the lower end of the plunger, and a valve below and above the plunger, the plunger connected externally by an external plunger rod to the pump handle, as described and shown. 2nd. The combination of the barrel B, bars *b, b1, glands G, rim g, bolts G1, plunger P, packing p, extension tubes B, B1, top B11, valves V, V1, V11, spout S, handle H, rod R, fork r, and bolt r1, substantially as set forth. 3rd. The combination of the pump barrel B, bars *b, glands G, rims g, packings p, plunger P and valve V, substantially as set forth. 4th. The combination of the plunger P, rod r, fork r, bolt r1, handle H, and top B11, substantially as set forth. 5th. The combination of the barrel B, glands G, packing p, plunger P, valve V, rod R and handle H, substantially as set forth. 6th. The combination of the barrel B, gland G, packing p, plunger P, valves V, V1, V11, rod R and handle H, substantially as set forth.**

No. 26,662. Fireproof Post and Column.

(*Poteau et colonne réfractaires.*)

Charles C. Gilman, Eldora, Iowa, U.S., 9th May, 1887; 5 years.

Claim.—1st. A post or column surrounded by a covering of porous earthenware or its equivalent, constructed of two parts of the form, substantially as described, and united by nails passing from one part into the substantially as described. 2nd. A post or column surrounded by a covering of porous earthenware or its equivalent, constructed of two parts of the form, substantially as described, united by nails passing from one part into the other and a covering of stucco over all, substantially as described. 3rd. A post or column surrounded by a covering of porous earthenware or its equivalent, constructed of two parts one of which has a wedge-like form and is secured to the other, substantially as described. 4th. A post or column surrounded by a covering of porous earthenware or its equivalent, constructed of two parts, the smaller of which has a wedge-like form, and the larger an opening sufficiently large to permit it to be passed around a post, and fitted to receive the smaller part, the said parts being nailed together, substantially as described. 5th. A post or column surrounded by a covering of porous earthenware or its equivalent, con-

structed of two parts, one of which has a wedge-like form and is nailed to the other, and a finish of stucco over all, substantially as described. 6th. A section fireproof covering for posts and columns, consisting of two pieces of porous earthenware or its equivalent, one of which has a wedge-like form and the other a form to fit therewith, substantially as described. 6th. A sectional fireproof covering for posts and columns consisting of two pieces of porous earthenware or its equivalent, the smaller of which has a wedge-like form and the larger a form to correspond therewith, substantially as described.

No. 26,663. Road Cart. (*Voiture.*)

William D. Rumsey, Detroit, Mich., U.S., 9th May, 1887; 5 years.

Claim.—1st. In combination with the axle, the thills, the seat-frame attached thereto and having a central support, the seat and spring or springs located between said seat and the seat-frame, whereby the horse motion imparted to the seat-frame is counteracted, as and for the purposes specified. 2nd. In combination with the axle, the thills attached thereto, the seat-frame having its forward ends pivoted to the thills, and having pivoted connection with the brace E, said brace being mounted on the spring F, the seat and U-shaped springs connecting the seat with the seat-frame substantially as specified. 3rd. In combination, with the axle, the thills rigidly attached thereto, the seat-frame and its seat, the brace E having its ends pivoted to the seat-frame, the spring F and mechanism connecting the spring with said brace, the ends of the springs F being adjustably attached to the head J, substantially as set forth. 4th. In combination with the axle, the thills rigidly attached thereto, the heads J constructed as set forth, the spring F and arms N with bolts connecting the spring adjustably with the heads and the seat-frame mounted on said spring, substantially as specified.

No. 26,664. Tubular Lantern.

(*Lanterne tubulaire.*)

Isaac N. Buck, Elgin, Ill., U.S., 9th May, 1887; 5 years.

Claim.—1st. In a tubular-frame lantern, the combination, with the tubular frame and a globe, hood, or cap forced downwardly by a spring, of a base-plate for a globe disconnected from said hood but forced into and held in its normal position by the hood-spring acting upon an intervening globe, vertical posts projecting upwardly from horizontal lower portions of the tubular frame, guide-eyes on the base plate for loosely embracing said posts, and a spring-catch for maintaining said plate in an elevated position on said posts. 2nd. In a tubular-frame lantern, the combination, with the central pendant tubular portion of the frame, and a spring, of a globe, hood or cap having a tubular neck surrounding said pendant portion of the frame, and provided with a thumb-piece integral with the metal of which said neck is composed, substantially as described.

No. 26,665. Torch. (*Flambeau.*)

Henry Wellington, Brooklyn, N.Y., U.S., 9th May, 1887; 5 years.

Claim.—1st. In a torch of the character herein set forth, the combination, with the pump barrel terminating within the reservoir, of the valve applied upon the extremity of said barrel, the spring located within the supporting shell, substantially as shown and described. 2nd. In a torch of the character herein set forth, the two shells G and G1 having the annular space between them for the passage of oil, the said shell G having an opening *h* within the reservoir, and connected with the packing tube outside of the reservoir, the shell G1 connected with the end of the pump and provided with an opening within the reservoir outside of shell G, the parts combined with the reservoir and packing tube, substantially as described. 3rd. The combination of the reservoir and pump barrel, of the shell G1 containing the valve and valve spring, the shell G and the removable cap or cover applied upon shell G, substantially as shown and described. 4th. The combination of the reservoir, the pump shell G1 connected to the inner end of the pump barrel, the valve and the tube leading from the interior of said shell to the top of the reservoir, substantially as shown and described. 5th. In combination with the shell G secured in the wall of the reservoir, the threaded projection for the reception of the lower end of the packing tube, a burner, the removable cap, the interior shell, the pump barrel and the reservoir, substantially as and for the purposes set forth. 6th. In combination with the burner and perforated casing, the projecting piece centrally perforated and arranged within the perforated casing leaving a free space between it and the casing, substantially as shown and for the purposes set forth. 7th. In a torch of the character herein set forth having the pump barrel, and the supporting shell secured in the walls of the reservoir, the combination, with the reservoir, of the bottom composed of the two plates B and B1 mounted and secured in place, substantially as and for the purposes set forth. 8th. In a torch of the character herein set forth, the combination, with the reservoir pump barrel and packing tube leading to the burner of the two shells G and G1, the washer and the removable cap, substantially as and for the purposes set forth.

No. 26,666. Combined Sole and Heel for Boots and Shoes. (*Semelle et talon combinés pour chaussures.*)

Edward J. LeGay, Boston, Mass., U.S., 9th May, 1887; 5 years.

Claim.—1st. As an improved article of manufacture, a sole and heel having one leaf or portion of the partly divided sole attached to the breast of the heel and the other to the top thereof, and permanently secured together preparatory to incorporation in the boot or shoe, substantially as specified.

No. 26,667. Uniting the Soles and Heels of Boots and Shoes. (*Assemblage des semelles et talons des chaussures.*)

Edward J. LeGay, Boston, Mass., U.S., 9th May, 1887; 5 years.

Claim.—That improvement in the art of uniting the soles and heels

of boots and shoes which consists in uniting two parts of the sole divided at its heel portion respectively, with the breast and top of the heel by coating the abutting faces with an adhesive cement and subjecting them to pressure in a conforming mould until sufficiently dried or hardened, substantially as specified.

No. 26,668. Composition for Coating Roofs, etc. (*Composition pour enduire les toitures, etc.*)

Daniel Brobst, Monroe, Mich., U.S., 9th May, 1887; 5 years.

Claim.—1st. The compound, substantially as herein described, consisting of coal-tar, asphalt, pitch, cooked iron ore, venetian red, salt, alum, gypsum, cement, sulphur, pine, resin, benzine, slaked lime, tallow and coppers, in about the proportions specified. 2nd. The composition, substantially as herein described, consisting of coal-tar, asphalt, pitch, cooked iron ore, venetian red, gypsum, cement, sulphur, resin, benzine and coppers in about the proportions specified. 3rd. The composition, substantially as herein described, consisting of coal-tar, asphalt, pitch, cooked iron ore, venetian red, salt, alum, gypsum, cement, sulphur, pine, resin, benzine and coppers, in about the proportions described.

No. 26,669. Bed Warmer. (*Bassinoire.*)

Jesse Kinney, St. Thomas, Ont., 9th May, 1887; 5 years.

Claim.—In a bed warmer, the combination of a metal case I, I having perforations *h, h* and clips D, D, with the metal plate E having perforations *c, c*, enclosing air chambers H, H, substantially as and for the purpose hereinbefore set forth.

No. 26,670. Derrick. (*Treuil.*)

William Bentley, Bishop's Crossing Que., 9th May, 1887; 5 years.

Claim.—1st. In a horse power derrick, the combination of the crab having the frame B, brackets *a*, chain barrel E, bevel wheel *b*, the pinion *c* fixed on the movable spindle *d*, the sweep F attached to said spindle, and the forked lever *g* with a derrick having the mast D supporting the boom L, as shown and specified. 2nd. The combination of the spindle *d* having the pinion *c* keyed on it, and the forked lever *g* for raising said spindle and pinion with the lever G fulcrumed on the shaft *a* and connected by a chain passing under the pulley *i* with the lever *g*, substantially as shown and described. 3rd. In a horse power derrick, the crab-controlling mechanism consisting of the levers G, I and *e*, pulley *r* and the shaft *a*2 journaled in the blocks *j* placed outside of the horse track and connected with the crab by the rods, cords or chains, herein shown and described. 4th. The combination in a horse power derrick of the crab having the frame B, brackets *a*, chain barrel E, gears *b* and *c*, spindle *d* and sweep F, and the mast D and boom L with the gear wheel *c*, pinion *d*, shafts *e* and *f*, wheel *g* and pinion *h* and hand-crank, as shown and specified. 5th. The combination of the mast D, boom L, wheel *c* and pinion *d* with the shaft *e* having the collar *e*, countershaft *f* having the collar *m* and the shipping hands *j* and *l* hinged to the lugs *k*, substantially as shown and for the purpose set forth.

No. 26,671. Saddle Tree and Check Hook.
(*Pûl de Selle et Crochet de Rènes.*)

Dennis W. Palmer, Plymouth, Me., U.S., 9th May, 1887; 5 years.

Claim.—1st. The combination, with the tree A, of the saddle B and the hook C secured upon the tree by the screw D inserted from the top of the hook, the same passing first through the base of the hook, then through the saddle and into the tree, substantially as described. 2nd. The combination with the tree A, and the saddle B, having a socket *i* in the upper surface, of a hook C, having a projection *h* on the under surface, and the bolt D provided with the head *a*, substantially as herein shown and described. 3rd. The combination, with the tree A, saddle B and hook C, of the screw D inserted from the top and formed at its lower end with the socket *f*, substantially as and for the purposes set forth.

No. 26,672. Stove Pipe Damper.

(*Clé de tuyau de poêle.*)

George C. Fraser, Carsonville, Mich., U.S., 9th May, 1887; 5 years.

Claim.—1st. The combination, with the stove-pipe A, of the semicircular ribs F, the semicircular partitions B and the pivoted semicircular dampers C, substantially as herein shown and described. 2nd. The combination, with the stove-pipe A, of the semicircular ribs F, and the semicircular partitions B arranged alternately on the opposite sides of pipe, and dampers C pivoted at the inner ends of the ribs, substantially as herein shown and described.

No. 26,674. Type Distributing Machine.

(*Machine à distribuer les caractères.*)

John L. McMillan, Iliou, Joseph Fowler, Thomas S. Coolidge, Daniel L. Robertson and John W. Bush, Glen's Falls, N. Y., U. S., 9th May, 1887; 5 years.

Claim.—1st. In a type-distributing machine, the combination of a body having spaces to contain type, and movable blocks provided with pins or fingers extending partially across the mouths of said spaces, and adapted to permit or prevent the escape of type as they are moved into or out of line with the wicks of the type. 2nd. In a type-distributing machine, the combination, with a body provided with channels to contain a line of type, side by side, blocks having pins or fingers extending partially across the mouths of the channels, and of a size to pass freely through the nicks formed in the type, and means, substantially such as described and shown for moving said blocks and bringing the pins into line with the nicks of the different type successively. 3rd. In combination with a body, formed with channels to contain a line of type, side by side, movable blocks provided with pins or fingers extending partially across the mouths of the channels and cams or machines, adapted and arranged to move

the blocks and their fingers, and to bring the latter into line with nicks of the different type successively. 4th. In combination with a body having a series of channels to contain a line of type, side by side, and a second series of channels or receptacles to receive and hold the type in a line as they are ejected from the first series blocks, carrying intermediate pins or fingers, adapted to be moved into line with the nicks of the type and cams or inclines serving to move the blocks with their fingers, substantially as set forth. 5th. In combination with a channeled body, as L, having a depression *i* across the ends of the channels, cases adapted to receive type from said channels, the body or the cases being movable, one in relation to the other and intermediate blocks having pins or fingers extending partially across the mouths of the channels working in the depression *i* and adapted to be brought into line with the nicks of the respective types, all substantially as described and shown, the depression permitting the fingers to hold the type back from the meeting line of the channeled body and the cases, and thus to prevent the wear of the type. 6th. In combination with a body channeled to contain single lines of type, side by side, a series of receiving channels, one set of channels being movable past the other set, intermediate movable blocks having fingers to permit or prevent the escape of the type from one set of the channels to the other cams or inclines for moving the blocks and their fingers downward, inclines for elevating the blocks and their fingers, and a blade or plate projecting from the body containing the receiving channels into the space between the distributing channels at points above the elevating inclines, whereby the type are pressed and held back from the fingers during the rise of the latter. 7th. In combination with a series of type containing channels for type to be distributed, and a second series of channels to receive the type discharged from the first series blocks, provided with wards or fingers to control the escape of type from the channels of one series to the channels of the other series, and inclines projecting from the space between the channels of the first series and serving to force the type outward in the channels of the second series, as one series is moved past the other. 8th. The combination of a series of channels to contain type to be distributed, a second series of channels to receive the type from the channels of the first series and guards or fingers to control the passage of the type from one series to the other, said channels being inclined slightly downward in the direction of the travel of the type, substantially as and for the purpose explained. 9th. The herein described type-distributing machine, consisting of a bed or support A, spindle C provided with wheel or disk L, having channels *c*, springs M and follower N in said channels, hoops, or rings V and X, the latter closely encircling wheel L and formed with passages *p*, type-cases W, supported by said rings, sliding blocks B and P provided with fingers *j* and *k*, inclines *r* between the channels *c*, ring Q, provided with grooves *l* and *m* and inclines *r* between the grooved sections of the ring, all substantially as described and shown. 10th. In a type-distributing machine, the combination of a bed or support, a spindle C passing through said support and having threaded sections *b, b*, provided with nuts D, E, by which the elevation of the spindle may be regulated, a channeled distributing wheel L, carried by the spindle C, a ring or hoop X encircling said wheel, and provided with passages *p* and guards or fingers interposed between the periphery of the wheel and the passages *p* to control the escape of the type from the channels of the disk to the passages *p*. 11th. In combination with wheel L, provided with channels *c*, and encircling ring or hoop X, provided with passages *p*, an intermediate annular space *t, o*, and sliding blocks O, P, having fingers *j, k*, arranged to move up and down within said space. 12th. In combination with wheel L, provided with channels *c*, circumferential depression *i* and groove *u*, ring X encircling said disk and provided with passages *p* and depression *o*, sliding blocks O, P, provided with fingers *j, k*, between the disk and ring and with stud *s*, ring Q provided with grooves *l, m*, inclines *r* between the grooved sections of the ring Q, and plates *t* extending from ring X into the groove *u*, above the inclines *r*, substantially as and for the purpose set forth. 13th. In combination with wheel L, having channels *c*, ring X, provided with passages *p* and intermediate wards or guards, spindle C carrying said wheel L, worm wheel F secured to said spindle and shaft H provided with worm G, meshing with the worm wheel F and serving to give motion to the wheel L. 14th. The combination of wheel D, provided with channels *c*, and means for advancing the type therein, ring or hoop X, provided with passages *p*, intermediate fingers *j, k*, and inclines *r* between the channels *c*, substantially as and for the purpose set forth. 15th. In combination with wheel L, having channels *c*, hoops X and V, the former provided with passages *p* and the latter having studs or pins *q*, ring Q provided with fingers *j, k* and studs. 16th. In a type-distributing machine, the combination of a rotary distributing wheel and a series of independent removable type cases, arranged radially outside of said wheel to receive the type therefrom. 17th. In a type-distributing machine, the combination of a rotary distributing disk or wheel, a series of external radial receiving channels and supporting rings or hoops for said channels, substantially as shown. 18th. In combination with a rotary distributing disk and an external series of removable receiving channels, an outer supporting ring for said channels made in separable sections, whereby any section may be removed at will, to give access to the distributing disk.

No. 26,674. Lumber Binder. (*Parc de flotaion.*)

William Baynes and Adison R. Clark, Buffalo, N.Y., U.S., 9th May, 1887; 5 years.

Claim.—The combination, with the binding chain A, of a tightening lever B provided with a slotted claw *c* connected with the body of the lever by a lateral offset *d*, a handle *e* connected with the body of the lever by a lateral offset *e* and a clip *b*, and locking hook *f* attached to the body of the lever, whereby the lever is enabled to lay closely against the chain and load when tightened, substantially as set forth.

No. 26,675. Fastening for Swinging Doors and Gates. (*Fermeture pour portes et barrières.*)

George G. Smith, St. Albans, Vt., U.S., 10th May, 1887; 5 years.

Claim.—1st. A door fastener, constructed of a swinging bolt, having an angular perforation in one end thereof, in combination with a pivot formed with a portion of its length angular in cross-section to enter the angular perforation in the bolt and prevent it from turning, and with the remaining portion cylindrical to serve as an axis upon which the bolt may freely swing, and means, substantially as described, for securing the pivot upon the margin of the door or casing, substantially in the manner and for the purpose herein set forth. 2nd. A door-fastener, constructed of a bolt having an angular perforation in one end thereof, a lateral offset formed upon the opposite end, and a stop-block on the door or casing adapted to engage said offset, in combination with a pivot for the bolt, formed with a portion of its length angular in cross-section to enter the angular perforation in the bolt and prevent it from turning, and the remaining portion cylindrical to serve as an axis upon which the bolt may freely swing, and means, substantially as described, for securing the pivot upon the margin of the door or casing, all substantially in the manner and for the purpose herein set forth. 3rd. The combination, in a door fastener, of the plate R, the ears or lugs P, P, projecting therefrom, the detachable pivot-pin N fitting in angular perforations in said ears or lugs, and having the intermediate portion of its stem angular for one part and cylindrical for the remainder, and the bolt A having an angular perforation at one end to fit upon and embrace the angular portion of the pivot pin N, and swing freely upon its cylindrical portion, all substantially in the manner and for the purpose herein set forth. 4th. The combination, in a door-fastener, of a swinging-bolt, a pivot-pin upon which the bolt is free to turn, an auxiliary bolt fitted in the swinging-bolt to move transversely to the pivot pin into and out of engagement therewith, and a detachable key adapted to actuate the auxiliary bolt, substantially in the manner and for the purpose herein set forth. 5th. The combination, in a door-fastener, of a swinging bolt A having an angular perforation in one end thereof, a pivot-pin N formed with a portion of its length angular and a portion cylindrical, and upon which the bolt is fitted, a lock-bolt S fitted in the swinging-bolt to move into and out of engagement with the angular portion of the pivot, when the swinging-bolt is in register therewith, and a detachable key adapted to move the lock-bolt, substantially in the manner and for the purpose herein set forth.

No. 26,676. Combined Cupping-Glass and Breast Pump. (*Ventouse et pompe à mamelles.*)

William S. Black and Fergus Black, Uxbridge, Ont., 10th May, 1887; 5 years.

Claim.—1st. A cupping-glass, having a short neck containing a valve to cover the hole a through the crown of the glass, in combination with a pump-cylinder provided with a suitable valve and piston, substantially as and for the purpose specified. 2nd. As an improved breast-pump, a glass A having a short neck containing a valve to cover the hole a through the crown of the glass, and connected to a suitable air-pump, in combination with the diaphragm G having a perforated nipple in its centre, substantially as and for the purpose specified.

No. 26,677. Process for Preserving Crustacea and Chemical Solutions of Special Utility in such Connection. (*Procédé de Conservation des Crustacés et Solution Chimique, pour cet Objet.*)

John J. Bate, Brooklyn, N.Y., U.S., 10th May, 1887; 5 years.

Claim.—1st. The herein described process of preserving crustacea, by subjecting the same to the action of a boiling preservative solution of suitable character, for the purposes set forth. 2nd. The herein described process of preserving crustacea, by subjecting the same in the first instance to the action of a boiling preservative solution of suitable character, and, secondly, in steeping such crustacea after being boiled in the same solution, for the purposes set forth. 3rd. The herein described process of preserving crustacea, by subjecting the same in the first instance to the action of a boiling preservative solution of suitable character, and, secondly, in steeping such crustacea, after being boiled, in a fresh solution, for the purposes set forth. 4th. The herein described process of preserving crustacea, by boiling the same in a solution composed of boracic acid, glycerine and water, substantially as set forth. 5th. The herein described process of preserving crustacea, by boiling the same in the first instance in a solution composed of boracic acid, glycerine and water, and, secondly, in steeping such crustacea, after being boiled, in the same solution, substantially as set forth. 6th. The herein described process of preserving crustacea, by boiling the same in the first instance in a solution composed of boracic acid, glycerine and water, and, secondly, in steeping such crustacea, after being boiled, in a fresh solution, substantially as set forth. 7th. The herein described process of preserving crustacea, by boiling the same in a solution composed of bi-carbonate of soda, boracic acid, glycerine and water, substantially as set forth. 8th. The herein described process of preserving crustacea, by boiling the same in the first instance in a solution composed of bi-carbonate of soda, boracic acid, glycerine and water, and, secondly, in thereafter steeping such crustacea in the same solution, substantially as set forth. 9th. The herein described process of preserving crustacea, by boiling the same in the first instance in a solution composed of bi-carbonate of soda, boracic acid, glycerine and water, and, secondly, in thereafter steeping such crustacea in a fresh solution, substantially as set forth. 10th. The herein described process of preserving crustacea, by boiling the same in the first instance in a solution composed of bi-carbonate of soda, boracic acid, common salt, glycerine and water, and, secondly, in thereafter steeping such crustacea in a fresh solution, substantially as set forth. 11th. The herein described process of preserving crustacea, by boiling the same in the first instance in a solution composed of bi-carbonate of soda, boracic acid, common salt, glycerine and water, and, secondly, in thereafter steeping such crustacea in a fresh solution, substantially as set forth. 12th. The herein described

preservative solution, composed of boracic acid, glycerine and water, substantially as and for the purposes set forth. 13th. The herein described preservative solution, composed of boracic acid, glycerine and water, or their chemical equivalents, suitable for the purpose, substantially as and for the purposes set forth. 14th. The herein described preservative solution, composed of bi-carbonate of soda, boracic acid, glycerine and water, substantially as and for the purposes set forth. 15th. The herein described preservative solution, composed of bi-carbonate of soda, boracic acid, glycerine and water, or their chemical equivalents, suitable for the purpose, substantially as and for the purpose set forth. 16th. The herein described preservative solution, composed of bi-carbonate of soda, boracic acid, common salt, glycerine and water, substantially as and for the purposes set forth. 17th. The herein described preservative solution, composed of bi-carbonate of soda, boracic acid, common salt, glycerine and water, or their chemical equivalents, suitable for the purpose, substantially as and for the purposes set forth.

No. 26,678. Flue Shield attached to Furnace Boxes where straw is used as Fuel. (*Doubleur de boîte à feu de fourneau consommant la paille.*)

George Thomas, Brandon, Man., 10th May, 1887; 5 years.

Claim.—1st. The combination of the shield consisting of plate G, bars H, H and I, I, knees L, L and eyes J, J, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the plate or shield, as above, with the gudgeons K, K secured to the crown sheet C of a furnace box, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of the shield and gudgeons as above, but fixed in such a position as to leave the spaces M and N, substantially as and for the purpose hereinbefore set forth.

No. 26,678. Standard for Charts and Maps.

(*Porte-carte géographique.*)

John S. Fox, Oakland, Cal., U.S., 10th May, 1887; 5 years.

Claim.—1st. In a map or chart support, the vertical standard having the dovetailed or enlarged slot formed vertically upon one side, and a correspondingly formed sliding bar fitting in said slot, in combination with a plate having its edges turned down over the standard and a clamping screw passing through the movable portion, a slot in the stationary portion and the plate together with the supporting-nut, substantially as herein described. 2nd. In a map or chart support, a vertically adjustable standard and clamp, as shown, a horizontally-pivoted arm upon the upper end of the standard, with a semicircle fixed to it radially with the pivot and a guide upon the standard, in combination with an elastic plate or holding-screw or device, substantially as herein described. 3rd. In a map or chart support, the vertically adjustable standard with a pivoted transverse arm, a guide and clamp, as shown, in combination with hangers fitted to slide upon said arm and spring-plates or clamp-screws by which the hangers are held at any point, substantially as herein described.

No. 26,680. Municipal Signal System.

(*Système municipal de signaux.*)

Bernice J. Noyes, Boston, Mass., U.S., 10th May, 1887; 5 years.

Claim.—1st. In a system for transmitting signals from one station to another, a transmitting apparatus constructed and arranged to produce a series of short changes in the condition of the circuit and a prolonged change, also a series of short changes, as described, a relay responsive to such changes in the circuit and a receiving instrument controlled by said relay, another relay also responsive to such changes in the circuit, and means controlled by the last-named relay for effecting the operation of an audible alarm or warning signal only upon the occurrence of the prolonged change, substantially as described. 2nd. In a system for transmitting signals from one station to another, a transmitting apparatus constructed and arranged to transmit a series of total interruptions and a prolonged interruption, and also a series of total interruptions, as described, a relay responsive to such interruptions of the circuit and a receiving instrument controlled by said relay, another relay also responsive to such interruptions of the circuit, and means controlled by the armature of the last-named relay for closing a local circuit containing an audible alarm or warning signal only upon the occurrence of the prolonged interruption, substantially as described. 3rd. In an electric circuit, a transmitting apparatus constructed and arranged to produce a series of changes of short duration in the condition of the circuit, also a series of short changes and a prolonged change combined with a receiving-instrument responsive to such changes in the circuit, and an audible alarm responsive to the prolonged change only, substantially as described. 4th. In an electric circuit connecting two stations, circuit-controlling devices at the transmitting-station for changing the condition of the current, to produce impulses of the same character of short and long duration at will, combined with two receivers located at the receiving-station, one of which responds to the impulses of short duration, and the other responds to the impulses of long duration only, substantially as described. 5th. In a municipal telegraph system, an electric circuit connecting a main and one or more sub-stations, and a signal-transmitter at each sub-station containing circuit-controlling devices, which change the condition of the circuit for intervals of short and long duration at will combined with a message-recording instrument at the main station, which receives the signals transmitted and an audible alarm also located at the main station responsive only to the long changes produced by the circuit-controlling devices at the sub-stations, whereby a warning-signal may be sounded for some and not for other signals at the will of the operator, as set forth. 6th. A system for transmitting signals from a sub-station to a central station, wherein are combined a signal transmitting apparatus which is located at the sub-station and is constructed and arranged to change the condition of the circuit to transmit different signals, a signal receiving instru-

ment located at the central station which receives the different signals transmitted, and an audible alarm or indicating device also located at the central station adapted to respond and thus notify the attendant when some of the signals await reply but not others, substantially as described. 7th. In an electric circuit, a circuit-changing device at one station, a receiving-instrument at another station, a toothed-wheel and engaging lever and means controlled by the said circuit-changing device for moving the lever into engagement with the wheel, and an indicating device effected by the movement of the lever, substantially as described.

No. 26,681. Surgical Apparatus for Administering Injections. (*Irrigateur de chirurgie.*)

Marian P. Browne, London, Eng., 10th May, 1887; 5 years.

Claim.—The combination of the flexible vessel A, the case D and spring E, substantially as and for the purposes set forth.

No. 26,682. Farm Fence. (*Clôture de ferme.*)

John Elliott, Goderich, Ont., 10th May, 1887; 5 years.

Claim.—A farm fence having stakes B, C and D, rails A, A, cross-bar E (or stones in place thereof) and wires H, H, all arranged and combined as shown and described.

No. 26,683. Lamp for Liquid Hydrocarbon. (*Lampe à hydrocarbure liquide.*)

Henry D. Cunningham, London, Eng., 10th May, 1887; 5 years.

Claim.—1st. An automatic lamp-extinguishing device or attachment, consisting of an extinguisher, such as *a, c*, in combination with a fulcrumed lever *g*, one end of which carries a suspended weight and the other end of which bears against the extinguishers, and a supporting bracket *f* for the weight, the whole arranged and operating substantially as and for the purpose set forth. 2nd. An extinguisher for duplex lamps consisting of two parts connected together by an arrangement such as is herein described, whereby the extinguisher can be adapted to duplex lamps, the wick tubes of which are of varying distances apart. 3rd. The combination, with the shutters of lamp extinguishers, of a wire loop *c* and weight or link *d*, as and for the purpose substantially as set forth.

No. 26,684. Tray for Developing Photographic Plates. (*Châssis pour sensibiliser les plaques photographiques.*)

Richard E. Atkinson, Schenectady, N. Y., U. S., 10th May, 1887; 5 years.

Claim.—1st. A photographic developing tray composed of open frames or sections, hinged together and combined with a packing or cushioning strip at their closing or adjacent edges, to close upon the plate or film, substantially as and for the purposes described. 2nd. The photographic developing-tray A composed of open frames or sections hinged together, in combination with the wire or latch *f* attached to one section, and the bail *g* attached to the other, and adapted to engage with the latch *f*, substantially as and for the purposes set forth. 3rd. The section *a* provided with reservoir D, packing *d* and wire *f*, in combination with section *b* hinged to section *a* and having handle or bail *g* hinged to it, substantially as and for the purposes set forth. 4th. The hinge *c* hinging the section *b* to the section *a*, and provided with studs *h*, substantially as and for the purposes set forth.

No. 26,685. Lumber Binder. (*Chaîne de radeau.*)

Addison R. Clark and William Baynes, Buffalo, N. Y., U. S., 11th May, 1887; 5 years.

Claim.—1st. The combination, with the binding chain provided at one end with a frame C, of a tightening lever B pivoted to said frame and provided with a transverse recess *b* and a lug or enlargement *b'* projecting laterally from the lever and forming a lateral continuation of said recess, whereby the taut portion of the chain is carried clear of the frame C, substantially as set forth. 2nd. The combination, with the binding chain and the bifurcated frame C, of a bolt *f* attached to one end of the binding chain and extending into the frame C, a spring *g* surrounding the bolt *f* with the frame C, and adapted to be compressed when the binding chain is tightened, and a tightening lever B pivoted to the frame C and provided with a transverse recess *b*, for attachment to the opposite end of the binding chain, substantially as set forth.

No. 26,686. Twine Box for Harvesters.

(*Boîte à ficelle pour moissonneuses.*)

The Massey Manufacturing Company, (assignees of William J. Clokey), Toronto, Ont., 11th May, 1887; 5 years.

Claim.—1st. A twine-box composed of a sheet-metal cylinder divided longitudinally so that its diameter may be increased or decreased, substantially as and for the purpose specified. 2nd. A cylindrical twine-box divided longitudinally, and shaped so that its longitudinal edges overlap each other when the diameter of the cylinder is contracted, substantially as and for the purpose specified. 3rd. A twine-box composed of a sheet-metal cylinder divided longitudinally, and shaped so that its longitudinal edges may overlap each other, each end of said cylinder being bound by a steel spring wire sufficiently heavy to expand the cylinder its full diameter when not contracted, substantially as and for the purpose specified. 4th. A twine-box composed of a sheet metal cylinder divided longitudinally, and shaped so that its longitudinal edges may overlap each other, each end of said cylinder being bound by a steel spring wire sufficiently heavy to expand the cylinder its full diameter when not contracted, in combination with the perforated bar B and pin *b*, substantially as and for the purpose specified. 5th. The combination, with

a twine-box, of a bar B bent substantially as shown, and having holes *d* made in it, substantially as and for the purpose specified. 6th. A twine-box composed of a sheet-metal cylinder divided longitudinally and shaped so that its longitudinal edges may overlap each other, each end of said cylinder being bound by a steel spring wire sufficiently heavy to expand the cylinder its full diameter when not contracted, in combination with a bar B bent substantially as shown, and having holes *d* made in it, substantially as and for the purpose specified.

No. 26,687. Barrel Truck and Platform.

(*Chariot et plateforme à futaie.*)

Elias S. Stone and Bossler Walter, LaGro, Ind., U. S., 11th May, 1887; 5 years.

Claim.—1st. The combination, with a truck or platform constructed as above described, of a socket secured to the floor of a building in any desired locality, one of the swivelled casters of the said truck or platform engaging with the socket, in the manner and for the purpose above set forth. 2nd. A triangular-shaped truck or platform provided on the underside, at each corner, with a swivelled caster and on the upper side, near each corner, with a flanged arc-shaped bearer, substantially as described and for the purpose set forth.

No. 26,688. Setting Instrument for Shoe Lace Holders. (*Machine à poser les agrafes des souliers.*)

Charles A. Sullivan and John D. Sullivan, Windsor, Ont., 11th May, 1887; 5 years.

Claim.—1st. In a setting instrument for a shoe-lace support or holder, the combination, with the members A, B, of the upper jaw C having the longitudinal grooves E, and the lower jaw D having the curved slot F in the side of the jaw, and extending inwardly into the inner face of the jaw, all arranged to operate substantially as described. 2nd. In a setting instrument for a shoe lace support or holder, the combination, with the members A, B, of the upper jaw C having the longitudinal grooves E, and the lower D having the curved slot F formed in the side of said jaw, and the plate G having the lip H, all arranged to operate, substantially as described.

No. 26,689. Charcoal Kiln.

(*Four à charbon de bois.*)

James E. McNaughton, Barnumville, Vt., U. S., 11th May, 1887; 5 years.

Claim.—1st. A charcoal kiln, consisting of vertical sides and an arched roof formed of sheet-metal plates secured together, as described, rows of supporting-pins J secured to the ends of said roof and side plates, the end plates of the kiln removably sustained by said pins and upright frame, connected by angle-irons and eye-bolts to the kiln-walls, all constructed and adapted to operate substantially as described.

No. 26,690. Saw Mill Dog. (*Clameau de scierie.*)

Thomas Manley, Prince Albert, N.W.T., 11th May, 1887; 5 years.

Claim.—1st. In a saw-mill dog, the combination, with the case having an apertured rack, the horizontally movable frame, carrying an apertured rack, and the teeth-carrying bars arranged between uprights of the said frame, of the lever pivoted to said frame and connected to a link connected directly to the teeth-carrying bars, and the additional lever pivoted to said case and connected to said frame, said levers having retaining detents engaging with the racks of said case and rack, said lever carrying an upwardly-extending arm engaging with a stud, which is secured to horizontal arms of the frame and projects outward through an elongated slot formed in the side of the case, substantially as and for the purpose set forth. 2nd. In a saw-mill dog, the combination, with a case, of the adjustable frame B carrying adjustable teeth-carrying bars D, and manipulating levers E and H, the lever E being provided with an arm N, while the lever H is provided with an arm M, formed with teeth *o*, a catch tooth O being formed on the case, substantially as described.

No. 26,691. Valve Gear for Engines.

(*Distribution par tiroir pour machines.*)

Henry R. Fay, Boston, Mass., U. S., 11th May, 1887; 5 years.

Claim.—1st. The eccentric 37 and lead and cut-off eccentric 56, in combination with main driving axle 20, substantially as described. 2nd. The eccentric 37, the centre of which is placed about one-quarter back from centre of lead and cut-off eccentric 56, and centre of main crank pin 78, in combination with main driving axle 20 and main driver 21, substantially as and for the purpose set forth. 3rd. The eccentric 37, provided with straps 38 and rod 39, in combination with link rocker-shaft 40, provided with arm 42 and link 44, the centre radial line of which is at right angles, or nearly so, with centre line of eccentric rod 39, substantially as described. 4th. The lead and cut-off eccentric 56, provided with straps 57 and rod 58, in combination with rocker-shaft 59, provided with slot 63, substantially as described. 5th. The rocker-shaft 59, provided with arms 61 and 62, the centre line of which, through said arms being at right angles, or nearly so, with centre line through rod 58, substantially as described. 6th. The rocker-shaft 59, in combination with bell crank 66, substantially as described. 7th. The bell-crank 66, provided with arm 67, the centre line of which is at right angles, or nearly so, with axis of valve-stem 33, and also provided with arm 69, the centre line of which is at right angles, or nearly so, with centre radial line of link 44, in combination with rocker-shaft 59, substantially as described. 8th. The rocker-shaft 59, in combination with adjustable and cut-off shaft 73 and operative mechanism, substantially as described. 9th. The link rocker-shaft 40, provided with arm 42 and link 44, in combination with reverse shaft 47 and operative mechanism, substantially as described. 10th. The link rocker-shaft 40, pro-

vided with arm 42 and link 44, and operative mechanism, in combination with rod 71, which connects link to and operates bell-crank, in the manner set forth. 11th. The link 44 operatively connected, the centre radial line of which is at right angles, or nearly so, with centre line of lead and cut-off motion, as operatively produced upon bell crank 66, in combination with bell-crank 66, substantially as and for the purposes set forth. 12th. The method of producing an adjustable lead and cut-off valve motion, by placing the centre radial line of link at right angles, or nearly so, with centre line of motion produced by adjustable lead and cut-off eccentric, substantially as and for the purposes set forth. 13th. The method of operating a single valve by the resultant motion of two kinds of valve motions, one being of the lead and cut-off type, and the other being of the main valve type, either of which may be operated independently of the other.

No. 26,692. Manufacture of Horse Shoe Nails. (*Fabrication du clou à cheval.*)

George J. Capewell, Cheshire, Conn., U.S., 11th May, 1887; 5 years.

Claim.—1st. The process or method of forming nail heads, that consists in compressing the shouldered head section endwise between socketed dies, one of which supports the blank by the shoulders, and the other engages the outer end of the blank, all substantially as described. 2nd. In making nails, the method of preventing the jamming of the nail blank in the socket, which consists in forming on the lower end of the head section of the blank shoulders with greater angle of slope, as referred to the axis of the blank, than the supporting walls of the socket in the die, all substantially as described. 3rd. The nail-forming die *d*, having a socket *e*, with the regular sloping wall *e2* and an opposed wall *e3* of irregular slope, whereby a nail blank is tipped sidewise in completing a head formed in the die, all substantially as described. 4th. An improvement in the method or process of bevelling the head of a nail in dies, which consists in supporting the nail-blank in a die with a socket having one wall of regular slope, and the opposite wall of irregular slope, all substantially as described.

No. 26,693. Stove Pipe Thimble.

(*Dé de tuyau de Poêle.*)

Delos A. Smith, Locke, Mich., U.S., 11th May, 1887; 5 years.

Claim.—The herein described chimney thimble, consisting of the thimble A, having the slots *a*, *a*, the plate B composed of two sections pivoted to one another and to the thimble, as described, and provided with the pins *g*, extending through the slots *a*, *a*, and lugs *h*, *h*, having the securing bolt *i*, the whole adapted to operate as shown and described.

No. 26,694. Ventilator for Soil Pipes.

(*Ventilateur pour tuyaux de Renvoi.*)

John W. Griffin, Buffalo, N.Y., U.S., 11th May, 1887; 5 years.

Claim.—1st. The combination, with the ventilating pipe extending through the roof of a plate H resting on the roof and provided with a collar *h* surrounding the ventilating pipe, and a tubular cover F surrounding the ventilating pipe, and the collar *h*, and made vertically adjustable on the ventilating pipe, substantially as set forth. 2nd. The combination, with the soil pipe, of a ventilating pipe extending through the roof of the building, and provided above the roof with an external screw-thread, a plate H secured to the roof and provided with a collar *h*, which surrounds the ventilating pipe, and a tubular cover F provided with an external screw-thread, and surrounding the ventilating pipe and the collar *h*, substantially as set forth.

No. 26,695. Machine for Making Cigars.

(*Machine à fabriquer les Cigares.*)

Conrad L. Driefer and Charles D. Shaw, London, Ont., 11th May, 1887; 5 years.

Claim.—1st. In a machine for making cigars, a table J formed with a recess *k*, in combination with a pad N, substantially as and for the purpose set forth. 2nd. In a machine for making cigars, a packer W and pad N, in combination with a flange *x1*, formed with a projecting face *c5*, substantially as and for the purpose specified. 3rd. The combination of the frames *a1* and *b2*, covers *b1* and *e1*, packing *c1*, top plate *e2* and pivotal screws *d2*, substantially as and for the purpose specified. 4th. In a cigar machine, the automatic wheel E, formed with teeth *e4* and *e5*, in combination with a toothed rack M, pad N and tracks Y, Y, substantially as and for the purpose set forth. 5th. In a cigar machine, the combination of the eccentric F, lever R, arm T and pivotal bar U, with the fingers *o*, *o*, substantially as and for the purpose specified. 6th. In a machine for making cigars, the table J, the upper face of which is shaped according to the shape of the cigar, in combination with a pad N, substantially as and for the purpose set forth. 7th. In a machine for making cigars, the automatic wheel E, in combination with a toothed rack M, pad N¹ and tracks Y, Y, substantially as and for the purpose set forth. 8th. The pad N¹, toothed racks M² and toothed pinions C₂, in combination with the table J¹, toothed racks M³ and tracks Y, Y, Y₂, substantially as and for the purpose specified. 9th. The pad N, anti-friction wheels *z*, *z*, and weight *z1*, in combination with the tracks Y, Y, substantially as and for the purpose specified. 10th. The springs *a2*, in combination with the top plate *e2* and frame *b2*, substantially as and for the purpose set forth. 11th. The combination of the frame *b2* and the cover *e2*, with the screws *d2*, substantially as and for the purpose set forth. 12th. The combination of the eccentric F₁, lever R₁, spring S₁ and pivotal bar U₁, in combination with the fingers *o1*, substantially as and for the purpose set forth. 13th. The combination of the eccentric F₂, arm T and pivotal bar U₂, with the fingers O₂, O₂, substantially as and for the purpose set forth. 14th. The combination of the eccentric *z3*, pivotal bar *z4*, upright *z5*, spring *z7* and guide *z6*, with the apron C₄, substantially as and for the purpose set forth. 15th. The thimble *rs*, constructed substantially as shown and for the purpose specified. 16th. The combination

of the automatic wheel E₂, with the toothed pinion C₂ and thimble *rs*, substantially as and for the purpose set forth. 17th. The dog *r4*, shaft B₅, eccentric *r3* and spring S₃, with the thimble *rs* formed with notch *rs*, substantially as and for the purpose set forth. 18th. The knife *rs*, constructed substantially as shown and for the purpose specified.

No. 26,696. Car Heating Apparatus.

(*Appareil de chauffage des chars.*)

James H. Sewall, Portland, Me., U.S., 11th May, 1887; 5 years.

Claim.—1st. In an apparatus for heating cars, the main steam pipe *a2*, *a4*, the steam cylinder C, with which the said main steam pipe is connected, and the circulating pipes A leading from the steam cylinder C, combined with a piston valve moving within the said cylinder C, and controlling the ports leading to the said circulating pipes, as set forth. 2nd. In an apparatus for heating cars, the main steam pipe *a2*, *a4*, for each car, the steam cylinder C having the inlet and outlet ports 4, 5, with inlet and outlet ports 12, 13, 14, 15, the main circulating pipes A communicating with the cylinder C through ports 12, 13, 14, 15, combined with the piston valve having three disks *c*, *c*, *c*, and means, substantially as described, for moving the said piston valve with relation to the ports 4, 5, of the said cylinder, that both of said ports 4, 5 may be included between two of the disks or may be separated by one of the disks, as set forth. 3rd. In an apparatus for heating cars, the main steam pipe *a2*, *a4*, located beneath the car, and the main circulating pipes A located within the car, combined with the steam cylinder C having suitable ports 4, 5 and 12, 13, 14, 15, permitting the steam from the main steam pipe to enter therein, and to pass to the main circulating pipes, and a piston valve, constructed as described, moving within the cylinder, to control the passage of steam through said ports, all substantially as and for the purpose set forth. 4th. In a car-heating apparatus, the main steam pipe *a2*, *a4*, cylinder C and main circulating pipes A leading therefrom, and means, substantially as described, for controlling the passage of steam from the cylinder C to the main circulating pipes, combined with the reservoirs 30, 31, located upon the under side of the cylinder C, and drip passages 40, 41 leading therefrom, substantially as described. 5th. In a car-heating apparatus, the main steam pipe *a2*, *a4*, cylinder C and main circulating pipes A leading therefrom, and means, substantially as described, for controlling the passage of steam from the cylinder C to the main circulating pipes combined with the reservoirs 30, 31 located upon the under side of the cylinder C, and drip passages 40, 41 leading therefrom, a reservoir or boiler R, and a controlling cock or outlet passage for said reservoir R, substantially as described. 6th. In an apparatus for heating cars, the main steam pipe *a2*, *a4* for each car, and the main circulating pipes A located within the car, combined with the steam cylinder C, having ports communicating with the circulating pipes, and a piston valve, as described, moving within the cylinder to control the passage of steam through said ports, and the discharge pipe 50 adapted to be connected with the main steam pipe when desired, substantially as described. 7th. In an apparatus for heating cars, the main steam pipes and the circulation pipes A contained within each car, combined with a controlling device for each car interposed between the main steam pipe and the circulation pipes, said controlling device consisting of a cylinder C and piston valve, and means for moving the piston valve in the cylinder, whereby the passage of steam or other heating medium may be controlled independently for each car, substantially as described. 8th. The main steam pipe *a2*, *a4* and circulation pipes A, and the drip passages 40, 41, combined with the reservoir R, and a steam trap actuated by a thermostatic device for controlling the passage of water of condensation from the reservoir, substantially as described. 9th. The steam trap composed of the shell or case having inlets and outlets, the frame *cx* placed within the shell or case, said frame having an opening at its upper end, which communicates with the inlet and also with the interior of the shell or case, the piston moving in the said opening at the upper end of the frame *cx*, the lever for moving said piston and the thermostatic device sensitive to changes in the temperature, for moving the lever to close the inlet during high temperatures only, substantially as described. 10th. The steam trap composed of the shell or case having an inlet and outlet passage, the frame *cx* placed within the shell or case, said frame having an opening at its upper end, in communication both with the inlet and also with the interior of the shell or case, as at *cx*, the piston moving in said opening, a lever for moving the piston, and a thermostatic device sensitive to changes in the temperature located adjacent to the inlet passage *cx* for moving the lever, whereby the said piston may be moved to open the inlet in low temperature and to close the inlet in high temperature, substantially as described. 11th. The steam trap consisting of the shell or case composed of the shell A and cover B_x having an inlet and outlet passage, the frame *cx*, the piston moving in an opening in said frame, and a lever for moving the piston, and a thermostatic device for moving the lever, all supported by the cover B_x so that the device may be readily put together and taken apart, all substantially as described.

No. 26,697. Car Heating Apparatus.

(*Appareil de chauffage des chars.*)

James H. Sewall, Portland, Me., U.S., 11th May, 1887; 5 years.

Claim.—1st. In an apparatus for heating cars, the main steam pipe *a2*, *a4*, the intermediate circulating pipes A for each car, and means for controlling the passage of steam from the main steam pipe to the circulation pipes of each car independently, combined with an auxiliary boiler or reservoir B and drip-passages 40, 41 conveying the water of condensation from the circulation pipes A to the auxiliary boiler, and with means for removing the water of condensation from the auxiliary boiler by suction, as and for the purpose set forth. 2nd. In an apparatus for heating a train of cars, the main steam pipe extending the length of the train, the circulation pipes A for each car, receiving steam from the main steam pipe, combined with means operated at will for returning the water of condensation from the said circulation pipes to that end of the train from whence

the steam originally came, substantially as described. 3rd. In an apparatus for heating cars, the main steam pipe a_2, a_4 , steam cylinder C with which the main steam pipe is connected, and the circulation pipes A leading from the steam cylinder combined with the auxiliary boiler or reservoir B connected with said steam cylinder and with the return pipes d, d_1 connected with said boiler or reservoir, substantially as described. 4th. In an apparatus for heating cars, the main steam pipe a_2, a_4 , steam cylinder C with which the steam pipe is connected, and the circulation pipes A leading from the steam cylinder combined with the auxiliary boiler or reservoir B connected with the steam cylinder and with the suction return pipes d, d_1 communicating with said boiler or reservoir, and the T-coupling, substantially as described, joining said pipes d, d_1 . 5th. In an apparatus for heating cars, the main steam pipe a_2, a_4 , steam cylinder C with which the main steam pipe is connected, and the circulation pipes A leading from the steam cylinder, combined with the auxiliary boiler or reservoir B, comprising an outer shell or casing b and the fire-pot b_1 placed within it, to leave a space of sufficient size to permit the water to circulate freely around it, substantially as and for the purpose set forth. 6th. The boiler or reservoir B consisting of the outer shell or water reservoir b tapered from top to bottom, the fire-pot b_1 of similar shape but of less dimensions, contained within the water reservoir, its feed chute b_3 and ash-pit b_2 , and the combustion chamber b_5 surrounding the water reservoir and its flue b_4 , and the pipes connecting the fire-pot with the combustion chamber, substantially as described.

No. 26,698. Paper Box. (*Boîte de papier.*)

Seth H. Smith, Delta, Ohio, U.S., 11th May, 1887; 5 years.

Claim.—1st. A paper box package having the reinforce corner flaps D connecting the sides and ends, substantially as described. 2nd. A rectangular paper box or package made from a plain rectangular sheet of paper and having the reinforce corner flaps D connecting the sides and ends, substantially as described. 3rd. The rectangular blanks having the creased lines a, a , the parallel lines b, b and c, c , at right angles to the lines a, a and intersecting the same, and the creased diagonal lines d, d extending from the intersections of the lines a, a and b, b to the outer ends of the lines c, c and thereby forming the bottom A, ends B, sides C, reinforce corner flaps D, top flaps E and reinforce top flaps F, for a box or package, substantially as described.

No. 26,699. Fusible Connection for the Armatures of Electric Generators.

(*Liaison fusible pour les armures des générateurs électriques.*)

James M. Easton, New York, N.Y., U.S., 11th May, 1887; 5 years.

Claim.—1st. The combination, with the armature of a dynamo-electric generator, of a fusible connection between the junctures of the armature-coils and the commutator-plates, substantially as described. 2nd. The combination, with the armature-coils of an electric generator, of contact-plates and fusible metallic conductors connecting the junctures of said bobbins with said plates. 3rd. The combination, in an electric generator, with a series of commutator-plates and a series of bobbins, of a fusible metallic strip between each juncture of each bobbin and each contact-plate, and means for replacing any of said fusible strips, substantially as described.

No. 26,700. Explosive and use of Explosives in Shells and Torpedoes. (*Explosible et emploi des explosibles dans les bombes et les torpilles.*)

Alfred Nobel, Paris, France, 12th May, 1887; 5 years.

Claim.—1st. Explosive matter consisting of oxidizing and combustible matters normally gaseous, mixed in explosive proportions, compressed and confined, substantially as and for the purposes herein set forth. 2nd. Explosive matter consisting of compressed and normally gaseous oxidizing matter together with liquid or solid combustible matter in explosive proportions and confined, substantially as and for the purposes herein set forth. 3rd. The combination, with porous explosives of oxidizing matter normally gaseous, compressed and confined, substantially as and for the purposes herein set forth. 4th. The combination, with porous explosives, of an explosive gas consisting of a mixture of combustible and oxidizing matter in explosive proportions, both normally gaseous compressed and confined, substantially as and for the purposes herein set forth. 5th. Explosive matter consisting of compressed and normally gaseous combustible matter together with powdered or porous solid oxidizing matter, with or without the addition of solid or liquid combustible matter to suit explosive proportions, substantially as and for the purposes herein set forth. 6th. Charging shells and torpedoes with explosive mixtures, of which the whole or a part consists of matter normally gaseous and compressed, substantially as herein described.

No. 26,701. Transmitting and Recording Sounds by Radiant Energy. (*Transmission et impression des sons par l'énergie rayonnante.*)

Alexander G. Bell, Washington, D.C., U.S., Chichester A. Bell, London, Eng., and Sumner Tainter, Washington, D.C., U.S., 12th May, 1887; 5 years.

Claim.—1st. The method of varying or vibrating radiant energy by producing vibrations corresponding to sound waves in a moving fluid in the path of said energy, and impressing the vibrations upon the radiant energy by the direct action of said fluid, substantially as described. 2nd. The method of varying or vibrating radiant energy by producing the vibrations in a sensitive jet, and impressing the vibrations upon the radiant energy by the direct action of said jet or jet fluid, substantially as described. 3rd. The method of varying or vibrating radiant energy by impressing the vibrations corresponding to sound

waves upon a body or film of more or less transparent material and transmitting the radiant energy through said body or film, substantially as described. 4th. The method of varying or vibrating radiant energy by transmitting the same through a sensitive jet of more or less transparent fluid in vibration, substantially as described. 5th. The method of varying or vibrating radiant energy by directing or concentrating the same upon the jet film of a liquid, and impressing the vibrations upon the jet and through the jet film upon the radiant energy, substantially as described. 6th. The method of utilizing radiant energy for transmitting and recording sound-vibrations consisting in impressing the vibrations thereon by the direct action of fluid in motion, and causing the vibrated rays to fall upon an apparatus such as a radiophonic receiver or a recording-tablet sensitive to radiant energy, substantially as described. 7th. The method of utilizing radiant energy for transmitting and recording sound-vibrations by impressing the vibrations upon a sensitive jet in the path of the rays and thereby causing similar vibrations to be impressed upon the radiant beam and receiving the vibrated beams upon a sensitive apparatus, such as a radiophonic receiver or moving sensitized tablet, substantially as described. 8th. The method of utilizing radiant energy for transmitting and recording sound vibrations by transmitting the rays through a more or less transparent medium, impressing vibrations upon said medium so as to vary the intensity of the energy transmitted, and receiving the transmitted energy upon an apparatus sensitive thereto, substantially as described. 9th. The method of utilizing radiant energy by transmitting the same through the film from a jet of liquid, striking a solid substance, impressing vibrations upon the jet, and receiving the transmitted energy upon an apparatus sensitive thereto, substantially as described. 10th. The method of recording sound-vibrations by varying or vibrating in accordance with the sounds to be recorded, a narrow beam of radiant energy and receiving the same upon a sensitive tablet to which a uniform surface-speed is imparted, substantially as described. 11th. The method of recording sound-vibrations by impressing corresponding vibrations or variations upon radiant energy emanating from a point or line, such as light transmitted through a small hole or slit, and projecting an image of said point or line upon a moving sensitized tablet, substantially as described. 12th. The method of recording sound-vibrations by impressing corresponding vibrations or variations upon radiant energy emanating from a point or line, and projecting an image of said point or line upon a sensitized tablet and giving a uniform surface-speed to said tablet, substantially as described. 13th. The method of recording sound-vibrations by impressing corresponding vibrations or variations upon a jet in the path of a radiant beam, and thereby vibrating or varying the beam and allowing a section of the beam to pass through a slit and fall upon a sensitive moving tablet, substantially as described. 14th. The method of recording sound-vibrations by impressing corresponding vibrations or variations upon a more or less transparent film or medium, transmitting radiant energy through the same, and causing the transmitted energy or a portion thereof to fall as a narrow strip or line upon a moving sensitized tablet, substantially as described. 15th. The combination, with means for providing or directing a beam of radiant energy, of a beam-changer consisting of a vibratory body of moving fluid in the path of said energy for impressing vibrations or variations thereon, substantially as described. 16th. The combination, with means for producing or directing a beam of radiant energy, of a sensitive jet in the path of said beam, substantially as described. 17th. The combination, with a transparent fluid sensitive to sound-vibrations and adapted to vary radiant energy transmitted through it, of means for directing a beam of radiant energy upon said fluid, so that the beam or a part thereof will be transmitted, substantially as described. 18th. The combination, with a jet-tube, supply-tube and reservoir, of the glass sheet in the part of the jet, and the means for directing the radiant energy upon the film which spreads out over said sheet, substantially as described. 19th. The combination, with a sensitized tablet and means for moving the same, of means for directing a beam of radiant energy through a slit or small opening and for impressing vibrations upon the said energy, and means for directing the said energy upon the moving tablet to form thereon an image of said slit or opening, substantially as described. 20th. The combination, with the sensitized tablet and the means for directing a beam of radiant energy upon the tablet so that it forms a spot or line thereof, of mechanism for giving to the tablet a uniform surface-speed where the radiant energy falls, substantially as described. 21st. The combination of the sensitized tablet inclosed in a close box, the means for moving said tablet, the tube opening into the box, the lens in the tube, the plate or block provided with a slit, and the means for directing radiant energy upon the slit and for varying or vibrating the same, substantially as described. 22nd. The combination, with the means for producing or directing a beam of radiant energy, of the means for producing a sensitive jet or vibratory body of fluid in the path of said beam, and a sensitive apparatus or receiver arranged to be acted upon by the energy which is varied or vibrated by said jet or fluid, substantially as described. 23rd. The combination, with the means for producing or directing a beam of radiant energy, of the means for producing a more or less transparent jet film or vibratory fluid in the path of said beam, and a sensitive apparatus or receiver arranged to receive the energy transmitted through said film or fluid, substantially as described. 24th. The apparatus for recording sound-vibrations photographically consisting of the following elements, in combination, namely: the condensing lens, the plate or block provided with a slit, the means for varying the quantity or intensity of the energy transmitted through said slit, the recording tablet, the lens for projecting an image of the slit on the tablet, and the mechanism for giving a uniform surface speed to the tablet under said image, substantially as described.

No. 26,702. Apparatus for Recording and Reproducing Sounds. (*Appareil pour imprimer et reproduire les sons.*)

Sumner Tainter, Washington, D.C., U.S., 12th May, 1887; 5 years.

Claim.—1st. A recording-tablet for a phonograph consisting of a hollow cylinder provided with a wax or wax-like coating for receiv-

ing the sound-record, substantially as described. A recording-tablet consisting of a hollow cylinder of paper provided with a wax or wax-like coating, substantially as described. 3rd. The recording-tablet consisting of a hollow paper cylinder coated with a composition of beeswax and paraffine, substantially as described. 4th. A tubular self-sustaining tablet for recording sound or sonorous vibrations, substantially as described. 5th. In a phonograph and in combination with a sound recorder or reproducer, and operating mechanism for causing the said recorder or reproducer to trace a spiral line on the tablet, an elongated cylindrical tablet-holder supported and journalled so that the tubular tablet can be placed on the same, substantially as described. 6th. The combination, with a tubular tablet, of the tablet-holder for supporting and rotating the same, substantially as described. 7th. A tablet-holder journalled in bearings at both ends, and detachable from its support at least at one end, so that a tubular tablet can be slipped over the same, in combination with a sound recorder or reproducer, and operating mechanism for causing the said recorder or reproducer to trace a spiral line on the tablet, substantially as described. 8th. A tablet-holder detachably connected with its support at one end, and provided at the other end with a ball-and-socket bearing, or bearing which permits the said holder to be tilted for placing a tubular tablet on the same, in combination with a sound recorder or reproducer, and operating mechanism for causing said recorder or reproducer to trace a spiral line on the tablet, substantially as described. 9th. The combination, with a tablet-holder, the side-piece or support at one end of the same, and the cap therefor, of the catch or fastener for said cap, and the spring for moving the tablet-holder when the catch is released, substantially as described. 10th. The combination, with the tablet-holder and the ball-and-socket bearing, or bearing for permitting the holder to be tilted, of the support and cap at the opposite end of said holder, the catch or fastening for said cap and the spring lifting the journal from said support when the catch or fastening is released, substantially as described. 11th. The combination, with the tablet-holder, of the box or sleeve on one journal of the same, the support and cap forming the bearing for said box or sleeve, and the catch or fastening for the cap, substantially as described. 12th. The combination, with the tablet-holder, of the box or sleeve on one journal of the same, the support and cap forming a bearing for said box or sleeve, and the spring whose pressure acts against said box or sleeve, substantially as described. 13th. The combination, with the tablet-holder, of the ball-journal and socket-bearing at one end of said holder, the box or sleeve on the journal at the opposite end of said holder, and the bearing for the same, substantially as described. 14th. The combination, with the tablet-holder, the sound-recorder and the feed-screw, of gearing between said holder and feed-screw, for revolving the latter at a slower speed than the former, substantially as described. 15th. The combination, with the tablet-holder, sound recorder or reproducer, feed-screw and gearing for revolving the screw, of the carrier for the recorder or reproducer provided with a divided or partial nut for engaging said screw, substantially as described. 16th. The combination, with the feed-screw and the carrier for engaging the same, of the movable guard for retaining the carrier in engagement with the screw, substantially as described. 17th. The combination, with a feed-screw and a sound recorder or reproducer, of the carrier for the sound recorder or reproducer engaged and also supported by said screw, substantially as described. 18th. The combination, with a feed-screw and a sound-recorder or reproducer, of the carrier for the recorder or reproducer movable lengthwise of, and engaged by said screw, and capable of turning on the same as a journal, substantially as described. 19th. The combination, with a tablet and a tablet-holder, of the feed-screw, a carrier mounted on said screw, and the recorder supported on said carrier and resting against the tablet, substantially as described. 20th. The combination, with the tablet-holder, feed-screw and gearing between the same, of the hinged frame upheld by spring pressure, and the device connected therewith for putting the feed-screw out of action when the said frame is depressed, substantially as described. 21st. The combination, with a tablet-holder, feed-screw and gearing between the two, of the hinged frame upheld by spring pressure, and reversing mechanism connected with said frame for reversing the rotation of the feed-screw relatively to the rotation of the tablet-holder, substantially as described. 22nd. The combination, with a tablet-holder, a feed-screw gearing and an instrument, the reproducer for example, engaged by said screw, of stop mechanism for putting the feed-screw out of action and at the same time lifting the instrument clear of the tablet, substantially as described. 23rd. The combination, with a tablet, a tablet-holder, a feed-screw gearing and an instrument, the reproducer for example, engaged by said screw, of reversing mechanism for reversing the rotation of the feed-screw, the said mechanism being connected with said instrument so that the latter will be lifted clear of the tablet on the reversal of the feed-screw, substantially as described. 24th. The combination, with the tablet and the recorder held against the same by yielding pressure, of a rest bearing in said tablet for supporting the recorder, substantially as described. 25th. The combination, with the recorder frame and style, and the means whereby sonorous vibrations are impressed upon the style, of the rest attached to said frame and arranged close to said style, the latter projecting beyond the rest to act upon the recording tablet, substantially as described. 26th. The combination, with the recorder, of the adjustable rest attached to said recorder for bearing upon the recording-tablet substantially as described. 27th. The combination, with the recording-style, the recorder-frame and the means whereby vibrations are impressed upon the style, of the rest attached to said frame and adjustable lengthwise of said style, substantially as described. 28th. The combination, with the recorder-frame and the rest attached thereto, of the diaphragm and the recording-style mounted directly on said diaphragm, substantially as described. 29th. The combination, with the diaphragm, of the cutting-style formed of a wire sharpened at its outer end and carried by said diaphragm so as to vibrate with the same, substantially as described. 30th. The combination, with the diaphragm, of the cutting-style provided with a screw-threaded shank, and the nut and washer for securing the same to the diaphragm, substantially as described. 31st. The combination, with a recorder having a cutting-style, of the rest for bearing upon the recording-tablet, substantially as described. 32nd. The combina-

tion, with the tablet having a wax or wax-like coating to receive the record, of the recorder pressed toward the tablet by yielding pressure and provided with a cutting-style, and the rest for bearing upon the tablet and supporting said pressure, substantially as described. 33rd. The combination, with the recorder, of the sound-concentrator comprising a flaring mouth-piece and a tapering tube forming a continuation of the same, substantially as described. 34th. The combination, with the recorder, of the sound-concentrator comprising a mouth-piece of elliptical form, and a tapering tube forming a continuation of the same, substantially as described. 35th. The combination, with the reproducer, of the brush for clearing the record in advance of the reproducer, substantially as described. 36th. The combination, with the recording-tablet having a wax or wax-like coating in which the record is cut, of the reproducer and the brush for clearing the record in advance of the reproducer, substantially as described. 37th. A recording tablet consisting of a hollow cylinder provided with a wax or wax-like coating, and having a sound-recorder cut in said coating, substantially as described. 38th. The combination, with the tablet and tablet-holder, of the feed-screw, the gearing, the reproducer-carrier and the brush, substantially as described. 39th. A reproducer having a flexible or flexibly-mounted style, movable sidewise independently of the diaphragm or device to which the style communicates vibration, substantially as described. 40th. A reproducer having the style attached to, or in one piece with a comparatively broad and thin strip placed on edge, said style in consequence of the flexibility of said strip being movable sidewise independently of the diaphragm or device to which the style communicates vibration, but in consequence of the breadth of said strip being practically rigid to pressures in other directions, substantially as described. 41st. The combination, with the reproducer-style and diaphragm or device to which said style is to communicate vibrations, of a comparatively broad and thin strip placed on edge and attached to, or in one piece with said style, said strip being hinged to the frame so that the style may be vibrated in the plane of said strip, substantially as described. 42nd. In a reproducer, the style attached to a thin metal strip breadthwise of the same like a hammer-head, substantially as described. 43rd. The reproducer-style attached to, or in one piece with a broad and thin strip, in combination with a diaphragm or device upon which the reproduced sonorous vibrations are to be impressed, and a spring carrying said style and strip, and serving as a hinge to permit them to vibrate, substantially as described. 44th. The combination, with the reproducer-style and the diaphragm or device upon which the reproduced sonorous vibrations are to be impressed by said style, of a flat metal spring interposed between the style and diaphragm, and forming a yielding connection through which the reproduced vibrations are transmitted, said spring having a practically rigid connection with the diaphragm, substantially as described. 45th. The combination, with the reproducer-style and the diaphragm or device upon which the reproduced vibrations are to be impressed by said style, of a metal spring or spring tongue whose normal vibration is quicker than that of said diaphragm, and whose tension tends to move the style away from the diaphragm, substantially as described. 46th. In combination with a diaphragm, a frame having a concave seat for said diaphragm, the walls of said seat converging to an opening in the back through which the sound may escape, substantially as described. 47th. The combination, with the diaphragm and the frame having a concave seat for said diaphragm, of a spring for holding the diaphragm to its seat, and for straining the same, substantially as described. 48th. The combination, with the diaphragm, its supporting-frame and the style of the spring for straining said diaphragm, substantially as described. 49th. The combination, with the diaphragm and its supporting-frame, of the spring pressing inward on said diaphragm and the style carried by said spring, substantially as described. 50th. The combination, with the diaphragm and its frame, of the spring projecting over said diaphragm, the block between the spring and diaphragm, and the style bearing upon the spring beyond said block, substantially as described. 51st. The combination, with the reproducer-style, of the hard rubber diaphragm and the frame for supporting said diaphragm of the edges, substantially as described. 52nd. The combination, with a diaphragm and its frame, of a spring projecting over said diaphragm, a style carried by said spring, and a block between the diaphragm and spring adjustable lengthwise of the latter, substantially as described. 53rd. The combination, with the reproducer, of the guard fastened over the face of the same, substantially as described. 54th. The reproducer provided with a guard fastened over the face of the same, and curved to form horns upon which the reproducer may rest, substantially as described. 55th. The double ear-piece comprising the elastic and flexible hollow branches, provided each with a cup connected with the branch by a ball-and-socket joint, substantially as described. 56th. The combination, with the reproducer and the carrier therefor, and the feed-screw for moving them, of a sound-conveying tube on the machine-frame, and a flexible sound-conveyer between the reproducer and the said tube, substantially as described. 57th. The combination, with the reproducer, of the double ear-piece comprising the elastic and flexible hollow branches and the cups joined to the ends of said branches, substantially as described. 58th. The combination, with the feed-screw and the reproducer-carrier supported and capable of turning on said screw, of the reproducer hinged to said carrier, and a stop for lifting the reproducer when the carrier is turned in the proper direction, substantially as described. 59th. The combination, with the feed-screw and the reproducer-carrier engaging and capable of turning on said screw, and provided with an extension or tail, of a movable bar under said tail for upholding the same so that, by depressing said bar, the carrier can be turned and lift the reproducer from the tablet, substantially as described. 60th. The combination of the feed-screw, the reproducer carrier mounted thereon and provided with an extension or tail, and the bar under said tail for upholding the same, substantially as described. 61st. The combination, with the reproducer-carrier, of the reproducer mounted on a standard hinged to said carrier, said standard being provided with a thumb-piece or device whereby the reproducer can be held up in placing the reproducer on, and in removing it from the machine, substantially as described. 62nd. The combination, with the tablet, tablet-holder, feed-screw gearing, reproducer and reproducer-carrier, of the mechanism for controlling the rotation of said feed-screw, the

same being connected with said carrier so as to lift the reproducer from the tablet when operated, to stop or to reverse the rotation of said screw, substantially as described. 63rd. The combination, with the tablet-holder and the feed-screw, of the gearing for rotating the feed-screw in the forward direction, the hinged frame for disengaging said gearing when moved, a certain distance, and additional wheels connected with said frame, so as, by a further movement, to engage said wheels and reverse the rotation of said screw, substantially as described. 64th. The combination, with the sound recorder or reproducer, the tablet, the tablet-holder, the feed-screw, the gearing for rotating the same in a forward direction, the gearing for rotating the same backward at a greater speed, and mechanism for bringing the latter into action, substantially as described. 65th. The combination, with the reproducer and a conveying tube for the reproduced sounds, of a stop-cock in said tube for moderating at will the loudness of the sounds to be conveyed to the ear, substantially as described. 66th. The herein-described improved recording and reproducing machine comprising the following elements in combination: a hollow cylindrical, self-sustaining tablet, a tablet-holder journalled and hinged at one end to the machine-frame, and journalled and detachably connected with said frame at the other, a feed-screw gearing for rotating the said screw in either direction according to the wheels engaged, a hinged frame for controlling the rotation of said screw, and the recording and reproducing instruments with their carriers, substantially as described.

No. 26,703. Recording and Reproducing Speech and other Sounds. (*Impression et reproduction de la parole et autres sons.*)

Chichester A. Bell, London, Eng., and Sumner Tainter, Washington, D.C., U.S., 12th May, 1887; 5 years.

Claim.—1st. The method of forming a record of sounds by impressing sonorous vibrations upon a style, and thereby cutting in a solid body, the record corresponding in form to the sound waves in contradistinction to the formation of sound records by indenting a foil with a vibratory style, or cutting a strip by vibrating it against a revolving disk-cutter, substantially as described. 2nd. The method of forming a sound record, by impressing the sonorous vibrations upon a style in a direction at right angles to the recording surface, and thereby cutting in a solid body a series of elevations and depressions of varying depth corresponding in form to the sound waves, substantially as described. 3rd. The vibratory cutting style of a sound recorder, substantially as described. 4th. The cutting style in combination with a support permitting the same to be vibrated, and means for impressing sonorous vibrations thereon, substantially as described. 5th. A vibratory cutting style, in combination with a sound-conveying tube, for concentrating the sound waves upon the style, substantially as described. 6th. A vibratory cutting style, in combination with a tablet or other solid body in which the record is to be cut, and mechanism for supporting the same and moving it with reference to the said style, substantially as described. 7th. A sound record, consisting of a tablet or other solid body having its surface cut or engraved with narrow lines of irregular or varied form corresponding to sound waves, substantially as described. 8th. A sound record, consisting of a tablet or solid body, having its surface cut or engraved with a number of lines of variable cross-section, the irregularities or variations corresponding in form to sound waves, substantially as described. 9th. The method of forming a sound or speech record, which consists in engraving or cutting the same in wax, or a wax-like composition, substantially as described. 10th. The sound or speech record, cut or engraved in wax or a wax-like composition, substantially as described. 11th. The recording tablet of a phonograph or sound-recording machine, having, as the material for recording sounds or sonorous vibrations, the composition of bees-wax and paraffine, substantially as described. 12th. The sound or speech record, cut or engraved in a wax-like composition, such as the compound of bees-wax and paraffine, substantially as described. 13th. A tablet or body for recording sound vibrations, consisting of a paper or pasteboard foundation and a surface coating of bees-wax and paraffine compound, substantially as described. 14th. The sound or speech record, cut or engraved in a wax-like composition, such as the described compound of bees-wax and paraffine, constituting a surface coating to a paper or pasteboard foundation, substantially as described. 15th. The method of making a sound or speech record, which consists in engraving or cutting, in the recording material, an irregular groove with sloping walls, the shape of the groove representing the sound vibrations, substantially as described. 16th. The method of making a sound or speech record, which consists in cutting, in the recording material, a groove with sloping walls, and of variable cross-section, the variations corresponding in form to sound waves, substantially as described. 17th. The sound record, in the form of an irregular groove with sloping walls cut in solid material, substantially as described. 18th. The sound record cut in wax or wax-like composition, in the form of an irregular groove with sloping walls, substantially as described. 19th. The combination, with a reproducing style, of a mounting therefor, which leaves said style free to move laterally and thereby adjust itself automatically to a sound record, substantially as described. 20th. The reproducer loosely mounted on a suitable support, so that the reproducing style is capable of a lateral movement, and may, in consequence thereof, adjust itself automatically on the record, substantially as described. 21st. The reproducer, mounted on a universal joint and held against the record by yielding pressure, substantially as described. 22nd. The combination, with a grooved tablet or other body having a sound record formed therein, of a reproducer having a rubbing style loosely mounted so that it is free to move laterally and thus adjust itself to the groove, substantially as described. 23rd. The combination, with the tablet or other body having the sound record formed therein as an irregular groove with sloping walls, of a reproducer having a style for rubbing over said record and mounted on a universal joint, substantially as described. 24th. The combination, with a sound record formed in wax or a wax-like material, of a reproducer having a rubbing style for receiving sonorous vibrations from said record, substantially as described. 25th. A reproducer, having a style pro-

jecting beyond the edge or end of the instrument, so that the position of the point of the style or the record may readily be seen, substantially as described. 26th. In a reproducer, the combination, with a vibratory plate or diaphragm, of a reproducing style fastened flatwise on said plate or diaphragm and bent at the end, substantially as described. 27th. The method of recording and reproducing sounds by cutting the record in a wax or wax-like material, and then rubbing over the record the style of a suitable reproducing instrument, so as to impress sonorous vibrations on said style, substantially as described. 28th. The method of improving a sound record, which consists in producing an incipient fusion of the surface, substantially as described. 29th. The improvement in preparing a sound record, consisting in cutting the record in a fusible material, and then producing an incipient fusion of the surface, substantially as described. 30th. The sound recorder, having a vibratory cutting style held against the recording material by yielding pressure, substantially as described. 31st. The recording instrument, having a vibratory cutting style and mounted on a hinged arm, substantially as described. 32nd. The combination, with the tablet or body in which the sound record is to be made, of the recording instrument mounted on a hinged arm and resting by gravity against the tablet, substantially as described. 33rd. The recorder, mounted on a hollow arm or standard, which constitutes also a sound conveyer, substantially as described. 34th. The recorder, mounted upon an arm or standard hinged to its bracket or base, and provided with a sound conveyer extending lengthwise of said arm, substantially as described. 35th. The recorder mounted upon a hinged arm and combined with a sound conveyer, which extends lengthwise of the arm and is connected at the hinge with an exterior sound conveyer, substantially as described. 36th. The reproducer, mounted upon a hollow standard which forms a sound conveyer, substantially as described. 37th. The reproducer, mounted on a hinged arm and provided with a sound-conveyer extending lengthwise of said arm, substantially as described. 38th. The reproducer mounted on a hinged arm, and provided with a sound conveyer extending lengthwise of said arm, and connected at the hinge with an exterior sound conveyer, substantially as described. 39th. The combination, with a sound recorder, of a mouth piece shaped to surround the mouth and nose of the user, and to concentrate the sound upon the recording device, substantially as described. 40th. The combination, with the tablet in the form of a disk and a recorder or reproducer, of mechanism for causing a spiral line to be traced on the disk by the recorder or reproducer at a uniform surface speed, substantially as described. 41st. The combination, with the tablet in the form of a disk, the arbor and the metal disk operating as a friction-wheel of the slide, or its equivalent, such as herein shown, in which said arbor is journalled, and the friction pinion for revolving said disk, substantially as described. 42nd. The combination, with the recorder or reproducer, the disk, the arbor and the laterally-movable support to the arbor, of the friction pinion placed behind and bearing against the disk at a point opposite the recorder or reproducer, substantially as described. 43rd. The combination, with a recording style and the support therefor, of a cup on the back of said support, and the sound-conveying tube terminating just behind the cup, substantially as described. 44th. In combination with the style of a sound reproducer, a vibratory body or plate of hard rubber, upon which vibrations are impressed by said style, and through which they are transmitted, substantially as described. 45th. A tablet, provided with a wax or wax-like coating, and having engraved in said coating a spiral line with inequalities or irregularities corresponding in form to sound waves, substantially as described. 46th. A tablet, provided with a coating of wax or wax-like composition, and having a sound record engraved in said coating, said engraved coating having the glazed surface, which results from an incipient fusion of the wax, after cutting or engraving the record, substantially as described. 47th. In combination with a sound recorder, a flaring mouth-piece shaped to fit over the face of the user, and to include his nose, and communicating through a tube or contracted opening with the space behind the diaphragm of said recorder, substantially as described.

No. 26,704. Fire-Escape Ladder.

(*Sauveteur d'incendie.*)

Alexander McDonald, Petrolia, Ont., 12th May, 1887; 5 years.

Claim.—The combination of the galvanized steel or other wire cable A, A, with the rounds B, B, and the creases therein C, C, substantially as and for the purposes hereinbefore set forth.

No. 26,705. Car Door Fastening.

(*Fermeture de porte de char.*)

Edward B. Searles, Baltimore, Md., U.S., 12th May, 1887; 5 years.

Claim.—1st. A car door fastening, comprising a plate having a series of undercut sockets, and a slot for connecting the same, and the block having a portion adjustable into any one of the sockets and movable in the connecting slot from one of the other thereof, substantially as set forth. 2nd. The combination of the door, the bail pivoted at one end to said door, and eye also pivoted to the door and adapted to be turned over the free end of the bail, and a block or cleat on said bail, substantially as set forth. 3rd. The combination of the car, having a door-way and a sliding door, having a vertical bail at its rear edge and a block secured by, and moving vertically on said bail and having a portion fitted to enter the sockets aforesaid, substantially as specified. 4th. The combination, substantially as herein described, of the car provided with a plate sunk therein and formed with undercut sockets, and a slot connecting the same, the bail supported on the rear edge of said door and a block secured by and moving vertically on said bail, and having a portion fitted to the sockets of the said plate, substantially as set forth.

No. 26,706. Cordage Spinning Machine.

(*Machine à tordre le cordage.*)

Elisha M. Fulton, New York, N.Y., U.S., 12th May, 1887; 5 years.

Claim.—1st. The combination, in a cordage spinning machine, of a twisting and spinning mechanism independently differentially

moving, combing and drawing chains, arranged one before the other in advance of the twisting and spinning mechanism, the rear one of said chains travelling at a higher rate of speed than the chain which precedes it, devices for carrying said chains, and gearing for imparting such differential speeds and endless travel to them, substantially as and for the purposes herein set forth. 2nd. The combination, in a cordage spinning machine, of a twisting and spinning mechanism, a chain of pins travelling at one velocity, another chain travelling at a higher velocity in rear of said first-named chain, but in front of the twisting and spinning mechanism, and provided with pins, guiding devices adapted automatically to incline said last-named pins in reverse directions during their upper course of travel, devices for carrying said chains and gearing for imparting differential speeds and endless travel to them, essentially as and for the purposes specified. 3rd. A cordage spinning machine, containing the following elements, arranged and operated in combination, in the manner herein described, namely: a twisting and spinning mechanism, and differentially moving, combing and drawing chains, which comb, draw and deliver the sliver to the twisting and spinning mechanism, as set forth. 4th. The combination, in a cordage spinning machine, of a twisting and spinning mechanism, a yielding condenser or regulator placed in front of said mechanism, two or more chains or pins arranged one in rear of the other in front of the condenser, the rear one of said chains travelling at a higher rate of speed than the chain which precedes it, but at a less velocity than the twisting and spinning mechanism, devices for carrying said chains, and gearing for imparting differential speeds and endless travel to them, substantially as shown and described. 5th. The chain F, consisting of the shafts I, the links I₁ and the pins I₂ arranged on the top of said shafts I, in combination with the guide arms J attached to the said shafts I, and having pins J₁ and J₂, the guides K and the guides L₁ and L₂, forming the guide-way L and having the bend L₃ intermediately of their lengths, substantially as shown and described. 6th. The chain F, having the shafts provided with the arms J, having the pins or arms J₁ and J₂ projecting therefrom, in combination with the guides L₁ and L₂ forming the guide-way L, and having the bend L₃ about centrally of their length, substantially as and for the purpose set forth. 7th. The combination, with the condenser G, of the chain F having shafts provided with pins, the guide arms J attached to the shafts thereof and provided with the pins J₁ and J₂, and the guide arms L₁ forming the guide-way L, and having the bend L₃ about centrally of its length, substantially as shown and described. 8th. The shaft P, the chain F, means for connecting the chain F with the shaft P, the spring T coiled on the said shaft P, and the friction disk V secured to the said shaft P, in combination with the pulleys Q and S placed loosely on the said shaft P, the shifting fork U, the condenser, means whereby the condenser is connected with said fork, the main driving shaft R, and means for rotating the pulley Q from said shaft R, substantially as and for the purposes set forth.

No. 26,707. Steam Boiler. (*Chaudière à vapeur*)

John Perkins, Toronto, Ont., 12th May, 1887; 5 years.

Claim.—1st. In a tubular boiler of a steam engine, the insertion of an auxiliary combustion chamber in about the middle of the boiler, in the head sheets of such combustion chamber, the inner ends of the tubes are inserted, said combustion chamber provided with a man-hole leading through the shell of the boiler, and one or more tubes leading from the interior of said chamber outside of the shell of the boiler, for the supply of oxygen to the said chamber to obtain an invigorated combustion therein, and to support and carry through the entire length of the tubes and with the smoke box, the two heat and flame obtained in the combustion chamber, substantially as set forth.

No. 26,708. Centrifugal Reel for Bolting and Dressing Flour. (*Bluteau centrifuge*)

William R. Danlap, Cincinnati, Ohio, U.S., 12th May, 1887; 5 years.

Claim.—1st. The combination, substantially as hereinbefore described, in a flour bolt, of an outer and inner cylinder geared to revolve together, the adjustable wings or beaters mounted upon and around the inner cylinder, and means, such as shown, to simultaneously adjust all the beaters around their axes for the purpose of throwing the material under treatment against the bolting cloth, upon the outer cylinder, with greater or less force, as desired. 2nd. In a flour bolting machine such as described, the combination of the outer cylinder A, the inner cylinder E₁, the beaters G mounted on the shafts G, which have their bearings upon the inner cylinder, and arms secured upon the beater shafts with a ring coupled to one end of the inner cylinder and to all the arms of the beater shafts, for the purpose specified. 3rd. The combination, in a flour-bolt, of the bolting-cylinder, a covered cylinder revolving within the same, a series of beaters arranged around the inner cylinder at an angle to the axis of rotation, the arms H secured upon the beater shafts, and the cogged ring I gearing with said arms and arranged to be moved around the axis of the cylinder and locked in any position, so that the beaters may be set and retained at any angle desired. 4th. In a centrifugal reel, the combination of the outer cloth cylinder, a skeleton cylinder revolving within it, the beater blades arranged around the inner cylinder, as shown, the staves having their leading edges projecting inward leaving longitudinal slots between the staves, for the purpose set forth. 5th. In a centrifugal reel, the combination of the outer cylinder having radially adjustable blades mounted upon shafts around said cylinder, and the staves having their leading edges curved inward, and their opposite edges curved around the beater-shafts, substantially as set forth.

No. 26,709. Wheeled Vehicle. (*Voiture à roue*.)

Henry G. M. Howard, Kalamazoo, Mich., U.S., 12th May, 1887; 5 years.

Claim.—1st. The combination of a suspended body or seat-bars, the thills, the elongated couplings having a suitable number of loops, and hangers having the end loosely surrounding the looped bar of

the coupling and movable thereon in adjusting from one loop to another, substantially as set forth. 2nd. The combination of the thills, the suspended body, the elongated couplings having a suitable number of loops, and the spiral spring hangers, substantially as set forth. 3rd. The body comprised of T-metal seat-bars, a floor, the crossed bars forming a brace to the seat-bars by being attached to the dange thereof, and the longitudinal floor-support and brace-stay attached to the brace-bars where they cross, substantially as set forth. 4th. A vehicle-body provided with the X-brace between the seat and rear side of the floor or foot-support, substantially as set forth. 5th. The combination of the thills, a vehicle body provided with the open top pockets, and the spiral springs in said pockets forming an immediate attachment at their lower end with the body and at their upper end with the thills or thill cross-bar, substantially as set forth.

No. 26,710. Reproducing Sounds from Phonograph Records. (*Reproduction des sons de phonographes.*)

Alexander G. Bell, Washington, D. C., U.S., Chichester A. Bell, London, Eng., and Sumner Tainter, Washington, D. C., U.S., 12th May, 1887; 5 years.

Claim.—1st. In the reproduction of sounds from records, the improvement consisting in causing the record to impress upon a fluid by direct contact therewith vibrations or vibrational changes similar in form to sound-waves, substantially as described. 2nd. The combination, with a sound-record, of means for subjecting a fluid to the action of said record so as to be vibrated directly thereby, such for example as a receiving-tube having its end arranged relatively to the record as explained, and containing a fluid which makes contact with said record, substantially as described. 3rd. In the reproduction of sounds from records, the improvement consisting in directing a jet of fluid against the moving record, and thereby causing the latter to impress upon said fluid vibrations or vibrational changes similar in form to sound-waves, substantially as described. 4th. In the reproduction of sounds from records, the improvement consisting in directing a jet of fluid upon the moving record and thereby inducing vibrations in said fluid, and receiving the said vibrations from said fluid after it has been acted upon by the record, substantially as described. 5th. The combination, with a sound-record, of a jet-tube arranged opposite said record for directing a jet of fluid against the same, substantially as described. 6th. The combination, with a sound-record, of a jet-tube for directing a jet of fluid against the record and receiving devices such, for example, as a sound-conveying tube having its receiving end in proximity to the record, for taking up or collecting the vibrations from said fluid after it has been acted upon by the record, substantially as described. 7th. In the production or translation from one medium to another of sonorous vibrations, the method of utilizing the moving energy of fluids by producing a current in a tube or confined space, checking the said current at the outlet in accordance with the forms of sound-waves of the successive sounds to be translated or reproduced, and receiving the vibrations from the fluid behind said outlet, substantially as described. 8th. The combination, with a tube-conveying fluid under pressure, of appliances in the nature of a vibratory valve at the outlet, for checking the flow in accordance with the varying forms of a succession of sound-waves, and receiving devices for taking up or responding to the sonorous vibrations produced in said fluid behind the said outlet, in consequence of the checking of the current, substantially as described. 9th. In the reproduction of sounds from records, the improvement consisting in producing a current of fluid in a tube or confined space, causing the record to produce a varying obstruction to the current at the outlet, and receiving from the fluid behind the sonorous vibrations impressed thereon by the checking of the current, substantially as described. 10th. The combination, with the sound-record, of a tube-conveying fluid under pressure, appliances in the nature of a vibratory valve at the outlet for checking the flow in accordance with the sound-record, and receiving devices for taking up or responding to the sonorous vibrations produced in the fluid behind the said outlet by the checking of the current, substantially as described. 11th. In the reproduction of sounds from records, the improvement consisting in producing a current of fluid in a tube or confined space, directing a jet supplied from said current upon the record and causing the inequalities in the record to act as a varying obstruction to said jet-orifice, so that the current behind the said orifice will be checked more or less and sonorous vibration thus be propagated backward from the jet-orifice, substantially as described. 12th. The combination, with a sound-record, of a jet having the jet-orifice in close proximity to said record so that the latter acts as a vibratory valve to check the flow from said orifice, substantially as described. 13th. In the reproduction of sounds from records, the improvement consisting in directing a jet of fluid upon the record causing said record to obstruct the flow through the orifice as well as to impress vibrations upon the fluid which makes contact with the record and receiving the sonorous vibrations both behind and outside of the jet-orifice, substantially as described. 14th. The combination, with a sound-record and a jet-tube having its orifice in proximity to the record, so that the latter acts the part of a vibratory valve in checking the flow from said orifice, of receiving devices for taking up or responding to the sonorous vibrations in the fluid behind the jet-orifice, and a second set of receiving devices for taking up or responding to the sonorous vibrations induced by the record in the fluid outside of the jet-orifice, substantially as described. 15th. A reproducing apparatus comprising a tube for directing a jet of fluid upon the sound-record, and the means, as described, for supporting the same and regulating its position, in combination with the sound-record and receiving devices for taking up or responding to the sonorous vibrations induced in the fluid by the record, substantially as described.

No. 26,711. Recording and Reproducing Sounds. (*Impression et reproduction des sons.*)

Sumner Tainter, Washington, D.C., U.S., 12th May, 1887; 5 years.

Claim.—1st. The improvement in the reproduction of sounds by

records in solid substances, consisting in engraving or cutting the record in magnetic material, causing by means of such record corresponding variations in the field of a magnetized needle, and converting the magnetic variations into sound waves, substantially as described. 2nd. The method of producing a magnetic record, by first cutting the record in a soft material, such as wax, and then producing from such original a copy in the magnetic material, substantially as described. 3rd. The method of producing an engraved record in magnetic material, by preparing a record in a softer material, and then causing said record, or a copy of the same, to impress movements corresponding to sound vibrations upon a cutting-tool in contact with the said magnetic material, substantially as described. 4th. The method of copying sound records by causing the record which is to be copied to impress movements corresponding to the recorded sound waves upon a cutting tool, and thereby engraving or cutting out a similar record in the surface of a suitable tablet, substantially as described. 5th. The method for reproducing sounds from magnetic records, by causing said records to produce changes in the field of a magnetized needle, and thereby inducing electric currents in a coil in said field, and converting said currents into sound waves, substantially as described. 6th. An engraved sound record in magnetic material, substantially as described. 7th. A sound record in magnetic material, having a spiral ridge, the irregularities constituting the record being formed in the top of the ridge, substantially as described. 8th. A tablet of magnetic material, having a spiral groove turned in the surface thereof, and a sound record formed in the top of the ridge between the convolutions of the groove, substantially as described. 9th. The combination, with a sound record in magnetic material, of a magnet or magnets, and a magnetic reproducing needle in the field of said magnet or magnets, substantially as described. 10th. The combination, with a magnetized sound record, of a magnetic reproducing needle, said record being magnetized independently of any magnetism induced therein by the needle, substantially as described. 11th. The combination of the magnetic record, the magnetic reproducing needle, and the inducing magnet or magnets, substantially as described. 12th. The combination, with a magnetic record of a magnetized reproducing needle, a bobbin of insulated wire in the field of said needle, and a telephone circuit including the bobbin, substantially as described. 13th. The combination, with an engraved record in magnetic material, of the magnetized reproducing needle, substantially as described. 14th. The combination, with a tablet having a record formed therein, and a tablet for receiving a record, of a follower, having a fine, though blunt, edge for rubbing over the record, a non-rotating cutter movable with said follower for engraving the record in the second tablet, and mechanism for revolving said tablets and causing the follower to follow the record and the cutter to trace a spiral line upon the second tablet, substantially as described. 15th. The combination, with the two tablets and the operating mechanism, of the follower having a fine, though blunt, edge for rubbing over the record, the spring for holding it against the record, the non-rotary cutter and the adjustable connection between the follower and the cutter to enable the depth of cut to be regulated, substantially as described. 16th. The method of preparing sound records, consisting in first cutting the record in a soft material, such as wax, by the action of sound waves upon a vibratory cutting-style, and then causing said wax record or a copy of the same to impress corresponding vibrational movements upon a graver or cutting tool in contact with a recording tablet, substantially as described.

No. 26,712. Indicator or Gauge for Steam Boilers. (*Indicateur d'eau pour chaudières à vapeur.*)

Joseph B. Little, Winnipeg, Man., 14th May, 1887; 5 years.

Claim.—1st. The combination, with a glass tube and its mountings, said mountings having valve-seats, of valves to close said seats and a rod for supporting said valves from their seats, said rod consisting of a series of sections connected by links, each having a laterally extending arm or arms, substantially as described. 2nd. The combination, with a glass tube and its mountings, said mountings having valve seats, of valves to close said seats, a jointed rod connected to said valve, said rod comprising a series of sections connected by links having bifurcated ends, in which said sections are pivoted, and arms passing through openings in said links, substantially as set forth. 3rd. The combination, with a glass sight-piece and mally holding them in an open position, one of said valves being provided with a supplemental valve, and a seat in one of the mountings, which it is adapted to engage, substantially as set forth.

No. 26,713. Printing Direct in Swift Running Rotary Web Printing Machines with Metal Engravings. (*Impression directe au moyen de Machines à imprimer rotatoires rapides avec planches métalliques.*)

Daniel C. Thomson, Dundee, Scotland, 14th May, 1887; 5 years.

Claim.—1st. The combination of casting, a recess in the stereotype with the engraved or electro-plate itself to allow the molten metal to run in the recess mould or casting box, and, when cool, is removed from the mould, and, after a slight dressing, is ready for the printing machine, substantially herein described. 2nd. The combination of the method of inserting metal printing surfaces of varying thicknesses in casts obtained by the papier-mâché process of stereotyping, for printing direct from the metal surface on the paper, the metal surfaces being adjusted to suit the impression required, substantially herein described. 3rd. The combination of the metal surfaces being changed without injury to themselves or to the stereotypes, and obviating fitting of the stereotypes for a rotary web printing machine, substantially herein described.

No. 26,714. Type Writer. (*Graphotype.*)

Don C. A. Thatcher, London, Eng., 14th May, 1887; 5 years.

Claim.—In a type writer, the combination, with a stationary paper

holder, of a type wheel or disc supported upon a movable carriage, and adapted to be rotated and depressed, substantially as and for the purpose specified.

No. 26,715. Curtain Pole Ring.

(*Anneau de bâton de rideau.*)

William P. Hill, Somerville, Mass., U.S., 14th May, 1887; 5 years.

Claim.—The combination, with a curtain pole ring, of a swinging semicircular bail or hanger B, adapted to be connected with the curtain or drapery to be suspended and extending up partially around and close to the outer periphery of the ring, and having its extremities pivoted to said ring at points *a* on opposite sides of the same, on a horizontal line passing through or near the centre of the ring when in position upon the pole, whereby the ring is maintained in a vertical, or nearly vertical position, while being slid along the pole in either direction, substantially as and for the purpose set forth.

No. 26,716. Railway Rail Chair and Tie.

(*Coussinet et traverse de rail de chemin de fer.*)

Peter DeGuerre, Toronto, Ont., 14th May, 1887; 5 years.

Claim.—1st. The chair back *k*, with its ribs *n, n*, on the inner front side ann the ribs *o, o*, on the back side, and rivets *p, p*, between the ribs on the chair back, substantially as and for the purpose hereinbefore set forth. 2nd. The steel seat *H*, in combination with the chair back *k* for a rail chair, substantially as and for the purpose hereinbefore set forth. 3rd. The steel seat *H*, enlarged and extended in length at *y* to reach across and under both rails of a railway track, in combination with two chair backs *k, k*, standing at the outside of each rail *i, i*, substantially as and for the purpose hereinbefore set forth.

No. 26,717. Packing for Piston Rods.

(*Garniture pour tiges de pistons.*)

Oliver J. Garlock, Palmyra, N.Y., U.S., 14th May, 1887; 5 years.

Claim.—Circular rings of packing for piston-rods, cut from sheets built up of alternate layers of india-rubber and a fibrous material, said rings being cut across at one side, so as to be opened, as shown, and boiled in oil with plumbago held in suspension, as and for the purpose specified.

No. 26,718. Metal Box for Holding Paint, etc. (*Boîte en métal pour la Peinture, etc.*)

Henry D. B. Wall, Liverpool, Eng., 14th May, 1887; 5 years.

Claim.—1st. In boxes, of the class herein described, a cover, consisting of a dished ring *b*, such ring having a turned down inner edge *c*, and a dished lid or bung *d*, substantially as set forth. 2nd. In boxes, of the class herein described, the combined handle *h* and fastening *h1* and *h2*, herein set forth. 3rd. In boxes, of the class herein described, securing the lid *d* or bung of such boxes by a fastening consisting essentially of a bar or piece of metal *h*, soldered to the bung at *h1* and to the cover at *h2*, in such a manner that the fastening can be readily disturbed or broken by knocking, or equivalent means.

No. 26,719. Water Heater and Steam Boiler.

(*Réchauffeur d'eau et chaudière à vapeur.*)

William E. Nolan, Brooklyn, N.Y., U.S., 14th May, 1887; 5 years.

Claim.—In a water-heater or a steam boiler, in combination, the annular sections A, A, A and E, and the headers B and C connected by the pipes D, D, D, F, F, G, G, and G', as and for the purposes set forth, shown and described.

No. 26,720. Apparatus and Circuit for Telegraphic Purposes. (*Appareil et circuit télégraphiques.*)

Joseph Kolzer, Dinsburg on the Rhine, Germany, 14th May, 1887; 5 years.

Claim.—1st. The connections of the apparatus herein described and shown in the drawing, whereby the closing of the local current *li, i*, resp *li1, i1*, and then the opening of the line *i, k*, resp *i1, k1*, and vice-versa, is effected by means of two Morse relays *Rm, Rm1* (or polarized relays). 2nd. The commutator U, herein described and shown in the drawing, with 6 plates, 4 hooks, 2 stoppers, whereby two rest current circuits, sidewise connected together may be separated immediately and at any moment and reconnected.

No. 26,721. Band or Chain for the Transmission of Work. (*Courroie ou chaîne de transmission du mouvement.*)

The Gasking Patent Driving Belt and Leather Company, London (assignee of Alfred J. Gasking, Enfield), Eng., 14th May, 1887; 5 years.

Claim.—1st. The improved belt for transmitting power, consisting of a chain work of metallic links and transverse rods, in combination with leather, or other flexible sections or pieces, which are also linked, the one to the other, by the said pins, substantially as herein set forth. 2nd. In compound belts for transmitting power, the formation of an arm or extra hole to the metallic links for the purpose of connecting other parts at intervals thereto, substantially as set forth. 3rd. In bolts, composed of metal and other soft substances where transverse pins are used, the construction of the said pins hollow in order that they may be eyeletted at the ends to save riveting, as herein set forth.

No. 26,722. Ship Saving Apparatus.*(Appareil de sauvetage des navires.)*

Joseph Ponzoletti and Alphonse Oudin, Toulon, France, 14th May, 1887; 5 years.

Claim.—1st. Providing a boat or ship with one or more buoys C attached to the sides of the ship by means of two horizontal and vertical levers A, A' respectively, and capable of being simultaneously inflated by means of air pumps or collapsed, substantially as and for the purpose specified. 2nd. In a buoy attached to the sides of a boat or ship, and capable of being inflated, the combination of the sleeve Q having a disc N and two flanges F and F' formed with the projections *f*, with the vertical rod E capable of sliding in and passing through the sleeve Q, and furnished at its lower end with the disc G having projections *f* and between the disc G and the flange F with a nut J and spiral springs I employed between the pin A fixed to the sliding rod E and the disc N, substantially as and for the purpose specified. 3rd. In a buoy attached to the sides of a boat or ship, the combination of the sleeve Q and the sliding rod E, with the ribs *o*, *o* and P, P, connected to each other and to the projections *f* of the disc, and flanges N, G and F, F' of the sleeve Q and rod E respectively hinge-like, and covered with waterproof material, substantially as and for the purpose specified.

No. 26,723. Heating Drum for Furnaces and Stoves. *(Poêle sourd.)*

Samuel A. Field, Putnam, Conn., U.S., 14th May, 1887; 5 years.

Claim.—The herein-described heating drum, consisting essentially of the inner and outer horizontally disposed sheet-metal tubes, the annular cast-metal end caps provided with the perforated lugs, and with the circular flanges for seating the ends of the tubes, the diaphragms extending from one of the end caps along the opposite sides of the central tubes to points near the opposite end cap, and the tie-rods or bolts connecting the end caps through the said perforated lugs, the whole constructed in the manner and for the purpose substantially as set forth.

No. 26,724. Corset. *(Corset.)*

Emma J. Swartwout, New York, N. Y., U. S., 14th May, 1887; 5 years.

Claim.—In a corset, the ruffled crescent-shaped elastic-hip pieces B inserted on the lower edges of both sections, the lacer slits extending upward from the lower edges of both sections to a point approximately opposite the waist-line, and provided with a lacer, and the stays arranged in pockets of both sections to extend above and below said waist-line, substantially as and for the purpose described.

No. 26,725. Shuttle Carrier and Race Mechanism for Sewing Machines.*(Porte-navette et mécanisme de coursier de navette de machines à coudre.)*

William Koch, New York, N. Y., U. S., 14th May, 1887; 5 years.

Claim.—1st. In shuttle mechanism for gang-needle sewing or quilting machines, the shuttle races thereof consisting of a series of connected sections A, each constructed with a flat or plane surface *a* on one side, and a curved surface *b* on the other side, and provided with a groove or rabbet *c* in its base, the plane surface of one section forming the flat or vertical wall of the shuttle-race formed by it and the curved side of the next adjacent section, substantially as and for the purpose described. 2nd. The series of sections A, each constructed with a flat side *a*, a curved side *b* and the groove or rabbet *c* with spaces *e* intervening between said sections, the opposite sides of adjacent sections forming ways for the shuttles, combined with shuttle carriers C which are each provided with a hook *h*, and projection *k* to engage and hold a shuttle, and also a spline *g* adapted to work in the groove or rabbet of said sections, the said carriers constructed to work in the spaces between adjacent sections, substantially as described. 3rd. The series of sections A, each constructed with a flat side *a*, a curved side *b*, and the groove or rabbet *c* with spaces *e* intervening between said sections, the opposite sides of adjacent sections forming ways for the shuttles, combined with shuttle carriers C, which are each provided with a hook *h* and projection *k* to engage and hold a shuttle, and also a spline *g* adapted to work in the groove or rabbet of said sections, the said carriers constructed to work in the spaces between adjacent sections and with a reciprocating block to which the outer ends or stems of the shuttle-carriers are detachably connected, substantially as described.

No. 26,726. Smoke Consuming Furnace for Steam Engines and Device for Feeding Fuel to the Same, *(Foyer fumivore pour machine à vapeur et appareil pour y introduire le combustible.)*

Edouard Fales St. Louis, Mo., 14th May, 1887; 5 years.

Claim.—1st. In a furnace for steam-engines and other purposes, a fire-pot or chamber having an open top, a grate in its lower portion and a grate projecting from near its top toward the walls of the combustion chamber, as and for the purpose set forth. 2nd. In a furnace for steam-engines and other purposes, a fire-chamber having its side solid or closed, a grate in its lower end, and a grate, substantially as described, surrounding its upper portion, as set forth. 3rd. In furnaces for steam-engines and other purposes, a fire-pot or chamber adapted to be suspended in the combustion chamber, and having an open top and solid sides provided with a grate at its bottom, and a grate surrounding its upper portion to hold a portion of the fire, and to receive a portion of the fuel, as described, whereby the main volume of air to effect complete combustion is caused to pass through the fire on the upper grate, and mingle with the gases formed in the main body of the pot to consume the same, as set forth.

No. 26,727. Track-Clearer for Railways.*(Nettoyeur de voie de chemin de fer.)*

Lewis J. Bergendahl, Pendleton, Oregon, U. S., 14th May, 1887; 5 years.

Claim.—1st. A wheel formed of a disk B, a spider C and radial plates D, the forward edges and ends of the plates being provided with adjustable cutters, substantially as herein shown and described. 2nd. The combination, in a track clearer, of the shaft A, the disk B and spider C secured to the shaft, the radial plates D received between the spider and the disk, and the adjustable knives *c* pivoted at the ends and edges of the plates substantially as herein shown and described. 3rd. In a track-clearer, the combination of the shaft A, the disk B and spider C secured thereto, the radial plates D received between the spider and the disk and knives at the ends, and forward edges of the plates inclined in the direction of the rotation of the wheel, substantially as herein shown and described.

No. 26,728. Method of and Machine for Swaging and Welding the ends of Wrought Metals. *(Mode et machine d'étampage et de soudage des métaux forgés.)*

John P. Kennedy, New York, N. Y., U. S., 16th May, 1887; 5 years.

Claim.—1st. The herein-described method of closing the ends of wrought metal tubes, which consists in suitably heating the end of a tube, then subjecting it to the swaging action of semi-conical or concave dies till the end is suitably contracted, then re-heating the end and sliding the tube upon a mandrel having a rounded or hemispherical end, and by means of a suitable die swaging and welding the tube end into a rounded form without seam or joint, for the purpose described. 2nd. The herein-described method of closing the ends of wrought metal tubes by welding the metal directly upon itself, and forming a rounded seamless end of thickened metal, which consists in suitably heating the end of a tube then feeding it forward and rotating it while it is subjected to the swaging action of a pair of semi-conical or concave dies till a conical end and a projecting nipple are formed, then re-heating the end and sliding the tube upon a mandrel having a rounded or hemispherical end, and then by means of a die having a concave rounded recess, swaging and welding the tube end into rounded hemispherical form of thickened metal without seam or joint, for the purpose described. 3rd. In a machine for welding the ends of wrought metal tubes, the upper and lower dies having semi-conical cavities, with extended small semi-cylindrical passages, and openings for forming a conical end and a projecting nipple on the tube, in combination with mechanism for operating the upper die, in the manner described. 4th. In a machine for welding the ends of wrought metal tubes, the upper and lower dies having semi-conical cavities, with narrow semi-cylindrical openings at the rear ends, for the purpose described, in combination with a shaft having an eccentric or short crank, and the connecting rod, substantially as described. 5th. In a machine for welding the ends of wrought metal tubes, the dies provided with cavities and openings, as described, in combination with the cross-head connecting with the upper die and having guide-tongues, the guide-ways secured to the frame A, the main shaft having an eccentric and a connecting rod, for the purpose described. 6th. In a machine for welding the ends of wrought metal tubes, the cross-head F having the lateral guide-tongues *f*, *f*, and a dove-tail groove in its bottom face, in combination with a die having a dove-tail tongue secured in the groove by a key, guide-ways upon the frame and the operating shaft and connecting rod, for the purpose described. 7th. In combination, with the dies for welding the ends of wrought metal tubes, and operating mechanism, the feed gear adapted to feed the tube forward and rotate it in the die during the swaging operation, as described. 8th. In a machine having dies for swaging and welding the ends of wrought metal tubes, the feed gear consisting of a fixed screw-threaded feed nut, and a screw-threaded feed cylinder operating in such nut, and having means for holding the tube within it, for the purpose described. 9th. In a machine for welding the ends of wrought metal tubes, the feed nut properly secured in front of the dies, in combination with the feed cylinder working in such nut, and having sliding toothed jaws and means for operating such jaws for causing them to grasp or release the tubes, substantially as described. 10th. In combination with the feed nut, the feed cylinder having dovetailed guide-ways, and toothed jaws fitted to slide therein, and the ring R provided with eccentric slots connected by bolts to the jaws, as and for the purpose described. 11th. In a machine for welding the ends of wrought metal tubes, the feed nut rigidly secured by bars L to the frame of the machine a suitable distance in front of the dies, in combination with the feed cylinder working with mechanism for gripping and holding the tube while it is being operated upon by the dies, as described. 12th. In combination with the feed cylinder, the flanged ring R fitted to the end thereof, and having eccentric slots *r*, *r* engaging with the bolts *t*, *t* in the sliding jaws V, V, as and for the purpose described. 13th. The feed cylinder having the guide-ways P, and the hand wheel *n*, all cast in one piece, as and for the purpose described.

No. 26,729. Fog Horn Signalling Apparatus. *(Signal de brume.)*

Edwin Martin, Limehouse, Eng., 16th May, 1887; 5 years.

Claim.—1st. A fog horn signalling apparatus comprising bellows, a horn and a cock or valve, whereby compressed air can be admitted to said horn at any desired intervals, and for any desired periods so as to produce either long or short blasts as required. 2nd. A fog horn signalling apparatus comprising bellows, an air chamber, a reservoir, a horn and a cock or valve, whereby compressed air can be admitted to said horn from said air chamber or reservoir at any desired intervals and for any desired period, so as to produce either long or short blasts as required, substantially as described. 3rd. A fog horn signalling apparatus comprising case A, with frame A' and space B for compress bellows E, E', E₂, and division F for operating

same air chamber or reservoir D with springs or weight to compress same, and escape valve to prevent excessive expansion of said chamber or reservoir, cock or valve J and horn L, to which compressed air from said chamber or reservoir D can be admitted by operating cock or valve J at any desired intervals and for any desired periods so as to produce either long or short blasts as required, substantially as described.

No. 26,730. Car Brake. (*Frein de char.*)

Frederich L. Polz, Norway, Iowa, U.S., 16th May, 1887; 5 years.

Claim.—1st. In a car-brake, the rod A having the head *a* and the central spring connection *b*, in combination with the brake-shoes B and the brake-chains F, substantially as and for the purpose set forth. 2nd. In a car brake, the combination of rod A having the central spring connection *b*, the pivoted brake-shoes B, B, chains F, F, sheaves E, E and brackets or supports D, D, all constructed, arranged and adapted to operate substantially as and for the purpose set forth. 3rd. In combination with the hand-brake H, G, the rod A having heads *a*, *a* and spring *b*, the brake-shoes B, B, chains F, F, sheaves E, E and supporting brackets D, D, adapted to be operated by an air-brake connected with the engine, substantially as and for the purpose set forth.

No. 26,731. Pavement. (*Pavage.*)

Charles C. Gilman, Eldora, Iowa, U.S., 16th May, 1887; 5 years.

Claim.—1st. A pavement, consisting of a surface layer of material, substantially as described, and a foundation, composed of slabs or blocks of porous earthenware, saturated or completely impregnated with asphaltum, substantially as set forth. 2nd. A pavement, consisting of a surface-layer of paving blocks, and a foundation, composed of slabs or blocks of porous earthenware, saturated or completely impregnated with asphaltum, substantially as described. 3rd. A pavement, consisting of a surface layer of wood paving blocks and a foundation composed of slabs or blocks of porous earthenware, saturated or completely impregnated with asphaltum, substantially as described. 4th. A pavement, consisting of a surface-layer of paving blocks, and a foundation composed of two layers of slabs or blocks of porous earthenware, saturated or completely impregnated with asphaltum, the slabs of one layer being arranged to break joint with those of the other, substantially as described.

No. 26,732. Sidewalk. (*Trottoir.*)

Charles C. Gilman, Eldora, Iowa, U.S., 16th May, 1887; 5 years.

Claim.—1st. A sidewalk or pavement, consisting of a surface layer of asphalt, mastic, or its equivalent, and a foundation, composed of slabs or blocks of porous earthenware, saturated or impregnated with asphaltum, substantially as described. 2nd. A sidewalk or pavement, consisting of a surface layer of asphalt, mastic, or its equivalent, and a foundation composed of two layers of blocks of porous earthenware, saturated or impregnated with asphaltum, and arranged to break joints with each other in both directions, substantially as described.

No. 26,733. Boot Protector.

(*Protecteur de chaussure.*)

John Blakey, Leeds, Eng., 16th May, 1887; 5 years.

Claim.—The manufacture of boot protectors made of unequal thickness, and cast with prongs on the underside, in combination with convex and concave ends, substantially as herein shown and described.

No. 26,734. Book Support and Leaf and Copy Holder. (*Pupitre et serre-papier.*)

James F. Morton, Newton Centre, Mass., U. S., 16th May, 1887; 5 years.

Claim.—1st. A book support and leaf or copy holder, containing the following elements, viz.: a stand, having two sides at right angles to each other, either of which may be used as a base to rest upon a flat plane, and having an inclined upper side, a lid hinged at one end to said stand and provided with a projecting ledge at or near its hinged end, a pair of spring-actuated fingers for holding the book open or clamping the copy-sheet, and a ratchet and pawl for adjusting said lid to different angles of inclination. 2nd. The combination of the stand A, A¹, A², the lid B hinged to said stand and provided with the ledge B¹, the ratchet-teeth *d*, *d*, the pawl G, the shaft D provided with the offset *a*, *a*, and the curved fingers *c*, *c*, and the spring E, all constructed, arranged and operating substantially as described.

No. 26,735. Incandescent Electric Lighting.

(*Eclairage Electrique Incandescent.*)

Adolphus A. Knudson, New York, N. Y., U. S., 17th May, 1887; 5 years.

Claim.—1st. A transformer for a system of incandescent electric lighting by induction, having a straight core with one or more primaries or secondaries, arranged side by side, and wound thereupon in cylindrical form, as set forth. 2nd. One or more straight cores of iron wire, having one or more primaries and secondaries wound thereupon, side by side, in cylindrical form, and a series of plates or laminations of soft iron connecting the poles of the cores together, so as to complete the magnetic circuit of the same, constituting a transformer for an incandescent electric lighting system, substantially as described. 3rd. A transformer for a system of incandescent electric lighting, consisting of two straight cores *e*, *e*, primaries and secondaries P, S wound thereupon, side by side, in cylindrical form, plates *p* connecting said cores together, and a non-magnetic bolt passing through the same for securing them firmly in position, substantially as set forth. 4th. In a system of incandescent electric lighting, the combination of a transformer having two or more pri-

maries arranged in multiple arc or series in a main line, and two or more secondaries arranged in series or multiple arc, supplying independent circuits for electric lighting, with a circuit connecting the aforesaid independent circuits together, and circuit-controlling devices for connecting the secondaries in circuit with one independent set of lights with the other at will, substantially as described. 5th. The combination in an incandescent electric lighting system, of a dynamo D sending currents of high potential over the main line L, L, in alternate directions, the said line L being of fine wire, a transformer having one or more primaries of high resistance connected with said line, and wound upon straight cores in cylindrical form, one or more secondaries also wound in cylindrical form, side by side with said primaries, laminations *p* connecting said cores together, and secondary currents connected with said secondaries in any manner desired, having incandescent lamps therein, substantially as and for the purpose described.

No. 26,736. Thill Coupling. (*Armon de limonière.*)

Lovane Mason, Hartland, and Charles B. Shaper, Gosport, N. Y., U. S., 17th May, 1887; 5 years.

Claim.—1st. The combination, with the back piece rigidly secured to the axle-clip, of the notched bolt having an inclined point, and provided with an extension hinged to said piece forming a wide shoulder at the base of the bolt, and the latch hinged to the back-piece to swing longitudinally and provided with an inclined thumb-piece, said latch entirely surrounding the bolt and forming an ample shoulder bearing directly on the eye of the thill-iron, as set forth. 2nd. The combination, with the axle and its shackle, of the back-piece A rigidly attached to the latter, and having depression *a*, flat portions *a* and the eyes B, the hinge-pins *b*, the bolt C having inclined end *d*, notch *d*¹, and the extension *c*, provided with a wide shoulder *c*¹ and double eye B¹, the anti-rattler E, having its inner side corresponding with the back piece, and having concave extension *g*, and shoulders *g*¹, the eye J of the thill-iron and the latch D having opening D¹ surrounding the bolt thumb-piece *f* and double eye B¹, as set forth.

No. 26,737. Method of Making Turned Boots and Shoes. (*Mode de fabrication des chaussures sans trépointe.*)

Augustus Seaver and Charles Curtis, Boston, Mass., U. S., 17th May, 1887; 5 years.

Claim.—The improved method of making turned boots and shoes, provided with a single sole, the same consisting in removably securing the upper to a last, right side out, pressing a cement-coated sole against the bottom portions of the upper, and thereby temporarily securing the upper and sole, and moulding the sole, removing the sole and upper from the last, and finally connecting the sole and upper, by means, substantially as set forth.

No. 26,738. Wind Mill Tower.

(*Charpente de moulin à vent.*)

Charles B. Putnam and Addison L. Daniels, Marion, Iowa, U.S., 17th May, 1887; 5 years.

Claim.—1st. The combination, substantially as herein specified, of uncut inclined corner posts and horizontal struts of iron tubing, corner-irons having tubular bodies fitted to said posts, lateral sockets fitted to the ends of said struts, and perforated webs connecting said sockets, brace-rods passing through said webs, and turn-buckles connecting said rods, for the purpose set forth. 2nd. The combination, substantially as herein specified, of corner-posts, horizontal struts, corner irons having bodies fitted to said posts, lateral sockets fitted to the ends of said struts, and perforated webs connecting said sockets and a system of brace rods and turn buckles, the former passing through said webs in inner planes, substantially parallel to those of the respective pairs of posts, for the purpose set forth. 3rd. The combination, substantially as herein specified, of three or more corner-posts, three sets of corner-irons and horizontal struts, the former having bodies fitted to said posts, sockets fitted to the ends of said struts, and perforated webs connecting said sockets, two sets of brace rods passing through said webs, each rod having a head at one end and a single series of turn-buckles connecting said rods in pairs, for the purpose set forth. 4th. The within-described interchangeable corner-irons, each constructed with a tubular body, a pair of lateral sockets, and a perforated web connecting said sockets, substantially as shown for the purpose set forth. 5th. The combination, with uncut corner-posts and interposed struts, of corner-irons having lateral sockets fitted to the ends of said struts, and tubular bodies fitted to said posts, said bodies being also drilled and tapped and provided with set screws, substantially in line with the respective lateral sockets, substantially as herein specified for the purpose set forth. 6th. The combinations, with uncut corner-posts, of the within-described collars, each having a pair of radial lugs, and a screw-tapped radial hole provided with a set screw, and a gallery surrounding said posts and supported upon said collars, substantially as herein specified for the purpose set forth.

No. 26,739. Garment Supporter. (*Bretelle.*)

The Willard Manufacturing Company (assignee of Rodney S. Willard), St. Albans, Vt., U. S., 17th May, 1887; 5 years.

Claim.—1st. As a new article of manufacture, the improved stocking supporter made of elastic tempered steel wire having the eye, the contiguous parallel holding jaws, and the loop formed by rigidly securing the wire ends together, substantially as set forth. 2nd. A garment supporter made of elastic wire, and provided with holding jaws or wires terminating in an eye having secured therein a piece or eyelet, substantially as described, whereby a garment is prevented from being drawn into said eye. 3rd. A wire garment supporter, having holding wires flattened or bent in a plane transverse to the loop, as set forth, whereby the holding surface is increased and the holding force distributed.

No. 26,740. Machine for Breaking, Cleaning and Scutching Flax. (*Machine à broyeur, nettoyer et teiller le lin.*)

John E. Wallace, Belfast, Ireland, 18th May, 1887; 5 years.

Claim.—1st. The process of treating flax, or other similar fibrous plants, which consists in subjecting the dried stalks alternately and repeatedly, first, to a crushing rolling action, and then to pricking action, and, finally, combing their ends, substantially as described. 2nd. The process of treating flax, which consists in subjecting the same alternately to crushing and to being pricked while held tight, substantially as described. 3rd. In apparatus for treating flax, the combination of a series of pairs of squeezing rolls D, with a series of pricking devices F arranged between each pair of rolls and the next, substantially as described. 4th. In a flax treating machine, the combination of frame A, B, rollers D in sliding bearings therein arranged in several pairs, feeding one to the other with devices between one pair and the next for well pricking the stalks, whereby the woody matter crushed by the one set of rolls is loosened or knocked off before passing to the next pair of rolls. 5th. In a machine for treating flax, etc., the combination of two or more pairs of rolls by which the flax or other fibre stock is held, with two or more sets of pins carried on frames or carriers reciprocating to and from each other between each pair of rolls and the next, whereby the flax is pierced or teased by the pins while held stationary by the rollers. 6th. In a machine for treating flax, etc., the combination of a series of pairs of rollers, feeding the one to the other with an intermittent motion, with a set of pricking devices between each set of rolls and the next, having an intermittent reciprocating motion alternating in time with the intermittent motion of the rolls, whereby the flax is fed forward after each pricking operation, but is held stationary while being pricked. 7th. The combination of the eccentric H¹ on a shaft moving synchronously with that actuating the roller feed mechanism, the rod I and frames E carrying pricking devices F, with the series of rollers D alternating with the pricking devices, substantially as described. 8th. The combination of the reciprocating frames E, carrying a series of pins, and the protecting plate-guide or plate G, having protecting top cover *g*, whereby the fibre is easily freed from the pins and is prevented from falling in between the plate G and frame E, and producing a block. 9th. In a machine for treating flax, etc., the guides G and their appurtenances, substantially as and for the purposes described. 10th. In a machine for treating flax or other fibre, a pair of rollers D having sliding bearings held together by springs C₁, whereby no matter what the quantity of fibre passing within reasonable limits, the pressure of the rolls is nearly the same, but a little heavier for a thick layer of fibre than for a thin one. 11th. In a flax scutching or cleaning machine, the combination of roller journals *d*, sliding bearings C, having spring steady projecting piece, with springs C₁ and cap C₂, substantially as described. 12th. The combination of the eccentric *n*, eccentric rod N pivoted at *a*, and the ratchet pawl bar M having socket at foot, substantially as described. 13th. The combination of the series of pairs of rollers D, ratchet K and bar M carrying pawls, whereby all the rolls are fed forward intermittently, but at precisely the same time. 14th. The combination of pawl bar K, feeding the rollers, and the pawl bar K¹ driven synchronously with it, feeding forward the feed rollers, whereby the entire stream of flax is simultaneously fed forward at the requisite intervals. 15th. In combination with a roller and pricking machine for flax, a combing device, Fig. 7, substantially as described. 16th. The combination of the plate R, with slit *r* and rotating beater Q, substantially as described.

No. 26,741. Prepared Food for Horses.

(*Nourriture préparée pour les chevaux.*)

Jean Baptiste Pinchard, Chicago, Ill., U. S., 18th May, 1887; 5 years.

Claim.—The herein-described animal food, consisting of a mixture or loaf of ground grain and flax seed-hulls, substantially as described and for the purpose set forth.

No. 26,742. Water Heater for Cars.

(*Calorifère à eau pour chars.*)

William A. White, Staatsburgh, N. Y., U. S., 18th May, 1887; 5 years.

Claim.—1st. In a car-heater, the combination, with a casing consisting of two metallic shells and a non-conduction filling place between the said shells, of grate-bars held in the said casing, a fuel cylinder discharging upon the said grate-bars, a heating-chamber connected with the said grate-bars, coils of pipe extending through the said heating-chamber and surrounding the said grate-bars, and a water-boiler located above the heating-chamber and the grate-bars, and into which opens one end of each of the said coils of pipe, substantially as shown and described. 2nd. In a car-heater, the combination, with a fireproof casing, of a fire-box formed in the said casing, grate-bars arranged in the said casing, an ash-pit having a draught-door formed below the said grate-bars, a fuel-cylinder opening upon the said grate-bars, a heating-chamber connected with the said grate-bars, coils of pipe extending along the said heating-chamber and around the said grate-bars, and a boiler held above the said heating-chamber and the grate-bars and formed into two compartments by a partition to equalize the heat on both sides of the car, and longitudinally extending partitions opening alternately near the ends of said boiler, substantially as shown and described.

No. 26,743. Egg Case. (*Boîte à œufs.*)

Elijah C. Power, Milwaukee, Wis., U. S., 18th May, 1887; 5 years.

Claim.—1st. In boxes or cases for the transportation or storage of eggs, fruit, soap, or other perishable material, the combination of the sides A, A, provided with series of perforations cut or bored slanting through said sides, with series of trays or receptacles consisting of straw board or analogous outer binding strips, and in-

termediate partitions having vertical slits extending from one edge to the centre and there terminating in enlarged circular openings, whereby when the trays are in place the box or case, the openings in the centre of the tray-strips will be in line with the series of openings in the box or case sides, substantially as set forth. 2nd. In an egg-tray, the binding-strips thereof severally provided with a series of central vertical perforations having vertical slots radiating therefrom in opposite directions, these slots having continuations at an obtuse angle thereto, and the continuation of one slot extended in a direction opposite that of the other, in combination with intermediate partitions also severally provided with a series of central perforations, substantially as set forth.

No. 26,744. Inside Blind for Windows.

(*Jalousie de fenêtre.*)

Alexander J. Arthur, Fort Dodge, Iowa, U. S., 18th May, 1887; 5 years.

Claim.—1st. The combination, in a folding blind section, of thin flat narrow vertical wooden slats, and metallic hinges having penetrating points driven into the slats at alternate sides, so that the slats will fold together laterally and open out flat and edge to edge, substantially as specified. 2nd. The combination, with the thin narrow slats, of wire hinges having the bows *a*, *d*, eye *e* and penetrating points *b*, *b*, *i*, substantially as set forth. 3rd. The two-part wire hinge made with the loop *a*, *d* penetrating points *b*, *b*, *i*, and the eye *e* at the end of the loop *d* for uniting the two parts of the hinge, in combination with the wooden slats that are connected by said wire hinges, substantially as set forth.

No. 26,745. Folding Blinds for Windows.

(*Jalousie brisée pour fenêtre.*)

Alexander J. Arthur, Fort Dodge, Iowa, U. S., 18th May, 1887; 5 years.

Claim.—1st. A folding blind having vertical flanges of slats hinged together at alternate edges so as to fold together, and the slats bevelled on their edges except where the hinges are applied, substantially as set forth. 2nd. The slats for folding window blind sections having square edges for the reception of the hinges, and bevelled edges between the hinges, the slats being wider at the bevelled edge than at the square portions, as set forth.

No. 26,746. Dumb Waiter. (*Armoire montante.*)

George W. Cannon, Poughkeepsie, N. Y., U. S., 18th May, 1887; 5 years.

Claim.—1st. The combination of a dumb-waiter car, having connected thereto a counterbalance weight M with the pulleys A, B, C, F, and pulley block E arranged as shown upon and beneath the shelf E, and the operating rope H secured to the shelf at J and passing under the pulley F, over the pulley A, and under the pulley P and O, and over the pulleys B and C, and under the movable block E and secured to the shelf K at J', as shown and described. 2nd. The combination of a dumb waiter car having connected therewith a counterbalance weight M, the pulleys A, B, C, F, and pulley block E, arranged as shown, upon and beneath the shelf K, the operating rope H secured to the shelf at J and passing under the pulley F over the pulley A and under the pulleys P and O, and over the pulleys B and C, and under the movable block E, and secured to the shelf K at J, the safety rope L and the pulley D, substantially as shown and described.

No. 26,747. Machine for Cleaning Bran.

(*Machine à épurer le son.*)

Andrew Hunter, Milwaukee, Wis., U. S., 18th May, 1887; 5 years.

Claim.—1st. In a bran cleaning machine, a main casing having inlet and outlet openings, and a stationary circular screen composed of a series of yielding hoop sections, longitudinal strips secured to the respective ends of the hoop sections, and a wire cloth secured inside of said sections and strips, in combination with revolving beaters operative within the screen, and means, substantially as described, for periodically vibrating said screen, as set forth. 2nd. In a bran-cleaning machine, a main casing having inlet and outlet openings, a circular elastic screen supported within the casing, a shaft carrying beaters that operate inside the screen, and a pinion keyed to one end of said shaft, in combination with a gear wheel arranged to mesh with the pinion and provided with a prismatic lug, a hammer-headed lever fulcrumed to the top of the casing and arranged to be actuated by the lug on the gear wheel, and a loose block that rests upon the screen to receive the blow of said hammer-head, substantially as and for the purpose set forth. 3rd. In a bran-cleaning machine, a main casing having inlet and outlet openings, a circular elastic screen supported in said casing, a shaft carrying beaters that operate inside the screen, and a pinion keyed to one end of said shaft, in combination with a gear wheel arranged to mesh with the pinion and provided with a prismatic lug, a hammer-headed lever fulcrumed to the top of the casing and arranged to be actuated by the lug on the gear wheel, a spring arranged to cushion the fall of the lever and a loose block that rests upon the screen to receive the blow of said hammer-head, substantially as and for the purpose set forth. 4th. In a bran-cleaning machine, a main casing having inlet and outlet openings, and a circular screen composed of end hoop sections having their lower halves bolted to the adjacent ends of the casing, and their upper halves divided and held together by spring hinges intermediate hoop sections of elastic or bent wood, longitudinal strips arranged in pairs and secured to the respective ends of the hoop sections, the lower pair of these strips being bolted together and the upper ones held apart, by a suitable elastic cushion or cushions and a wire cloth secured inside said sections and strips, in combination with revolving beaters operatively arranged within the screen, and means, substantially as described, for periodically vibrating said screen, substantially as set forth.

No. 26,748. Electric Motor and Fan for Lamps. (*Moteur et éventail électriques pour lampes.*)

The Ross Patent Lighting Company, (assignee of John H. Ross), Dublin, Ireland, 18th May, 1887; 5 years.

Claim.—1st. The combination, with a lamp or other burner, of an electric motor and a fan driven by said motor, substantially as shown and described, whereby combustion is promoted in the flame of oil lamps and gas, vapor or oil burners, as set forth. 2nd. The combination, with a lamp provided with a slotted chamber, an electric motor held in said chamber constructed with a permanent U-shaped magnet H, a fan casing attached to said magnet, a spindle carrying a fan, an armature having four arms and a four-faced commutator, an insulating plate attached to said magnet supporting pillars carrying brushes, and spring connections N, N' attached to said plate of one or more batteries, substantially as herein shown and described. 3rd. The combination, with a lamp provided with a suspended oil reservoir, an air chamber intervening said reservoir and lamp casing, a slotted chamber and an electric motor provided with a fan held in said chamber, of a revolvable battery held in the base of said lamp, substantially as herein shown and described, whereby connection is made and broken by turning said battery, as set forth.

No. 26,749. Window Blind. (*Jalousie.*)

Alexander J. Arthur, Fort Dodge, Iowa, U. S., 20th May, 1887; 5 years.

Claim.—The combination, with the vertical blind slats hinged together at alternate sides, and provided with projecting studs at the top or bottom ends or both, of a horizontal grooved guide or guides in which the studs upon the ends of the slats move in opening or closing the blind sections, substantially as set forth.

No. 26,750. Corn Planter. (*Semoir à blé d'inde.*)

Merritt E. Doolittle, Troy, Ohio, U. S., 20th May, 1887; 5 years.

Claim.—1st. The combination of a vertical conducting-chamber and a first-valve pivoted therein, and having a central rib which divides the chamber into two compartments and two side wings near its bottom, each provided with a rib which form accumulating-pockets for the seed entirely within the lower end of the conducting-chamber, substantially as hereinbefore set forth. 2nd. The combination of a conducting-chamber and a detachable frame forming the lower part of the rear wall of the chamber having on its inner side an apertured curved ledge which constitutes the bottom of the chamber, and two projections which serve as deflectors to the falling grain, substantially as hereinbefore set forth. 3rd. The combination of a conducting-chamber, the lower part of the rear wall of which is formed by a detachable glazed frame, a first-valve pivoted with said chamber and a bolt which holds the frame in place and serves as a pivot for the valve, substantially as set forth. 4th. The combination of a conducting-chamber, a first-valve pivoted therein and having two recesses at its lower extremity, a detachable frame which forms the lower end of the rear wall and is glazed opposite the recesses in the valve, a curved apertured shelf and two deflector projections formed with the frame, substantially as hereinbefore set forth. 5th. In a corn-planter, the combination of a conducting-chamber and a first-valve pivoted therein and provided at its lower end with pockets or receptacles in which the grain is accumulated near the ground, the rear wall of the chamber being cut away, and the opening glazed opposite the receptacles in the valve, substantially as and for the purposes hereinbefore set forth. 6th. The combination of a vertical conducting-chamber having an apertured bottom, and a first-valve pivoted within said chamber, and provided at its lower end with two pockets or receptacles which terminate at the ledge, and, as the valve is reciprocated, sweep across it, alternately presenting themselves over the aperture, substantially as hereinbefore set forth. 7th. The combination of a seed hopper, a measuring-valve, a conducting-chamber closed at its bottom by an apertured shelf, and a first-valve pivoted within the chamber and vibrated simultaneously with the movement of the measuring-valve, the first-valve having a central rib and two pockets at its lower extremity, which, as the valve is vibrated sweep over the apertures shelf, substantially as and for the purpose hereinbefore set forth.

No. 26,751. Harrows. (*Herse.*)

Enoch J. Rogers, Newmarket, Ont., 20th May, 1887; 5 years.

Claim.—1st. The combination of the front and rear harrow sections, composed of loops and bars formed of parallel bars D, D, connected by rings or buuls C, C and chains F, F, all of said sections being provided with clips and teeth, substantially as and for the purpose set forth. 2nd. The combination of a harrow of clips H having intersecting apertures H¹ one above the other, and a vertical hole H² intersecting said apertures, buuls and bars severally formed of two parallel bars and teeth spreading said bars in the clip, whereby the clips, buuls, bars and teeth are firmly bound together, as set forth. 3rd. The combination in a harrow, of clip I having a single aperture I¹, a hole I² intersecting the aperture, buuls formed of parallel bars and teeth spreading said bars, as set forth. 4th. The combination, with the rear section, of a harrow having buuls composed of two parallel bars, of a handle F and bolt M, and nut O, as set forth.

No. 26,752. Land Roller. (*Rouleau d'agriculture.*)

Joseph Dale, Chatham, Ont., 29th May, 1887; 5 years.

Claim.—1st. In combination, with a double or pivoted land-roller, the frame A provided with the knees D carrying the cross-bars E, to which are secured the gudgeons F, substantially as described. 2nd. The combination, in a double or pivoted land roller, of the frames A provided with knees D, the connecting bars B, B, the bushes C and the pivot bolts O, substantially as and for the purposes hereinbefore set forth. 3rd. The combination, in a double or pivoted land-roller,

of the connecting bars B, the standard H and the platform I carrying the seat J, substantially as and for the purposes hereinbefore set forth. 4th. The combination, in a double or pivoted land-roller, of the frames A, A, the connecting bars B, B, and clips N, substantially as and for the purposes hereinbefore set forth.

No. 26,753. Wire Fabric for Covering Floors. (*Toile Métallique pour les planchers.*)

Daniel C. Storer, Freeport, Ill., U. S., 20th May 1887; 5 years.

Claim.—1st. A wire fabric for floor covering, consisting of a series of suitably connected wire coils, whose wearing faces are made up of approximately straight lines of wire lying in the same plane, substantially as and for the purpose set forth. 2nd. The combination, in a floor covering, of a series of parallel wire coils forming the body of the fabric, and a transverse wire coil forming a margin at the end of the fabric, the free ends of the wires of said parallel coils being interlocked with the spirals of said transverse coil, substantially as and for the purpose set forth. 3rd. In a floor covering, the combination of a series of interlocking parallel wire coils, having their interlocking ends bent approximately at right angles to the axes of the coils, and transverse wire coils interlocking with and securing said bent ends, substantially as and for the purpose set forth. 4th. In a floor covering, the combination of a series of interlocking parallel wire coils, a transverse wire coil interlocking with the ends of said parallel coils, and a rigid angle-iron, one of whose members lies within said transverse coil, while its other member lies within the outermost of said parallel coils. 5th. In a floor covering, the combination of a series of interlocking parallel wire coils, transverse coils interlocking with the ends of said parallel coils, and angle irons inclosed by said transverse coils and the outermost of said parallel coils and rigidly connected to form a frame, substantially as and for the purpose set forth. 6th. In a floor covering, the combination of a series of interlocking parallel wire coils, transverse coils interlocking with the ends of said parallel coils, angle-irons enclosed by said transverse coils and the outermost of said parallel coils and rigidly joined to form a frame, and brace-rods joining the opposite members of said frame, substantially as and for the purpose set forth.

No. 26,754. Turbine Water Wheel. (*Turbine Hydraulique.*)

Fuller Trump, Springfield, Ohio, U. S., 20th May, 1887; 5 years.

Claim.—1st. In a turbine water wheel, a case, substantially in the form of a hollow ring contracted towards the bottom and having curved sides, substantially as described. 2nd. In a turbine water wheel, a case, substantially in the form of a hollow ring contracted towards the bottom and having curved sides, in combination with a wheel located in the opening of said case, substantially as described. 3rd. In a turbine water wheel, a ring-shaped case having curved sides, in combination with discharge pipes having enlarged openings fitting the openings to the case, and having contracted exits, substantially as described. 4th. In a turbine water wheel, a ring-shaped casing having curved sides, in combination with cylinders or rings surrounding a wheel therein, and discharge pipes secured to each side of the case, each pipe having an enlarged inlet fitting the opening in the case, and having a downwardly extending and contracted exit, substantially as described. 5th. The combination, with the vertically arranged ring-shaped case, and downwardly-extending discharge pipes attached to the sides thereof, of a horizontal shaft and a double discharge wheel rotating within the case and between the discharge pipes, substantially as described. 6th. The combination, in a turbine water wheel, of a horizontal shaft, a wheel supported thereon, having two sets of buckets and two sets of gates controlling the flow of water to each set of buckets independently, substantially as described. 7th. The combination, in a turbine water wheel, of a horizontal shaft, a wheel supported thereon having two sets of buckets opening outward, separate discharge pipes for each set of buckets, and two sets of gates, each provided with independent operating devices, substantially as described. 8th. The combination, with a horizontal shaft and a wheel mounted thereon, having two sets of buckets discharging outwardly, of rings surrounding the wheel, two sets of gates supported by said rings, and two sets of gate-operating devices mounted on said rings and controlling the flow of water to the buckets, substantially as described. 9th. The combination, in a turbine water wheel, of a ring-shaped case, discharge pipes attached to the sides of the case, a horizontal shaft, a wheel, having two sets of buckets mounted on said shaft, rings surrounding the wheel gate, operating devices mounted on the rings and independent operating devices for the gates, substantially as described. 10th. The combination, in a turbine water wheel, with a wheel having a central diaphragm, and a set of buckets opening outwardly on each side of the diaphragm, of gate-supporting rings having a central partition and a set of independently operated gates upon each side of the partition, substantially as described. 11th. The combination, with the gate-supporting rings, of gate-operating rings mounted thereon, links connecting the latter to the gates, both rings being provided with slots or openings permitting the free movement of the links and access to the connections between the links and gates, substantially as described.

No. 26,755. Wood or like Boxes. (*Boîte en bois ou autres.*)

Ellis Carr, Bermondsey, Eng., 20th May, 1887; 5 years.

Claim.—1st. The improvements in and connected with wood and like boxes or cases, and in corner clips to secure the sides and ends together, substantially as hereinbefore described, said clips by a modification being applicable for box lids, also for bottoms. 2nd. Grooving sides, ends, bottoms and lids of boxes for the reception of shaped clip pieces, which can be slid into position, and firmly bind the several pieces together according to the portion of the box to which said clips have to be applied, as described.

No. 26,756. Balanced Throttle Valve.*(Soupape d'admission équilibrée.)*

William A. Pendry, Detroit, Mich., U.S., 21st May, 1887; 5 years.

Claim.—1st. The combination, with the shell of a valve, of a seat formed in or on said shell, a pot suspended below said seat, a valve adapted to close said seat and extending through said seat in said pot and having a passage therethrough, a valve-stem adapted to close said passage through said valve-lifting mechanism connected with said stem, and a lost motion connection between said valve and the lifting mechanism, whereby the action of the lifting mechanism will first raise said valve stem and then raise the valve, substantially as shown and described. 2nd. In combination with the valve C, having the passage I therethrough, the stem H, lifting mechanism connected with said stem, and a lost motion connection between the upper end of valve C and the lifting mechanism, substantially as shown and described. 3rd. The combination, with a valve-shell and seat, of a pot suspended below said seat by a skeleton support and valve C, with its enlargement Cr, substantially as shown and described.

No. 26,757. Loom for Weaving Wire Cloth.*(Métier à tisser la toile Métallique.)*

Samuel O. Greening, Hamilton, Ont., 21st May, 1887; 5 years.

Claim.—1st. In a wire-weaving loom, the combination, with the main frame of a loom, of a whip roll E over and in connection with a warp beam, the said roll E provided with oscillating arms Et, guide wheel J and weight Jr, substantially as and for the purpose hereinbefore set forth. 2nd. The combination in a wire-weaving loom, of a warp beam having friction wheels D and straps Dr, with a whip roll E and its attachments, substantially as and for the purpose hereinbefore described and set forth. 3rd. In a wire-weaving loom, the combination of the wheel k arranged to drive the friction wheel L, the ratchet wheel O, pawl P and the gear wheels R and S, substantially as and for the purpose hereinbefore set forth. 4th. In a wire weaving loom, the combination of a warp beam having friction wheels D and strap Dr, the whip roll E and its attachments Et, J and Jr, the cam shaft wheel K and driven wheel L, the ratchet-wheel S and pawl P and the gear wheels R and S, substantially as and for the purpose hereinbefore set forth.

No. 26,758. Cuff Holder. (Agraffe de Manchette.)

Andrew W. Sawyer, Providence, R.I., U.S., 21st May, 1887; 5 years.

Claim.—1st. A cuff-holder, consisting of a metal plate having a clamping hook at one end, a spring having a bent portion adapted to bear against said hook, and the other end of the holder being bent in the opposite direction to that of the hook to provide means for attachment to the cuff, substantially as described. 2nd. A cuff holder, consisting of a metal plate having a clamping hook at one end, a spring having a bent portion adapted to bear against said hooks, and a plate having also a button or similar means for attachment to the cuff, substantially as described. 3rd. A cuff-holder, having at one end a clamping hook and a bent spring adapted to bear against said hook, and having at its other end a fastening device on that side of the holder opposite that of said clamping hook, the main body or shank being in two parts longitudinally adjustable one upon the other, substantially as shown and described.

No. 26,759. Halter Mountings.*(Assemblage de licou.)*

William F. Heney, Montreal, Que., 21st May, 1887; 5 years.

Claim.—A clamped halter or brace mounting, composed of two plates having on their inside faces interspaced projections entering into the fabric of the straps, to be joined and secured together by a pin or rivet, all substantially as herein set forth.

No. 26,760. Shirt and Supplementary Bosom*(Chemise et devant de chemise postiche.)*

Samuel Butz, Easton, Penn., U.S., 21st May, 1887; 5 years.

Claim.—1st. The combination of a shirt, with a neck-band, as described, and a supplemental bosom, the ends of the band of which are provided with means for securing them to the neck band of the shirt. 2nd. A shirt neck band, having formed in it the notches S, substantially as set forth. 3rd. The hereinbefore described method of making a supplementary bosom for shirts, consisting in first forming the outer ply thereof of a suitable size, then forming the lining or inner ply thereof of a large size, then folding the outer edge of the latter back upon itself in a fan-fold until the lining ply has a peripheral boundary coinciding with that of the outer ply, and then sewing the lining ply to the outer ply by a series of stitches which pass through both plies at the innermost line of the folded edge of the lining, as set forth.

No. 26,761. Process of Treating Paper Pulp Ware, etc. (Procédé de traitement des objets en pâte à papier, etc.)

Henry Carmichael, Boston, Mass., U.S., 21st May, 1887; 5 years.

Claim.—The process of treating fibrous or porous articles of the class described, by first saturating said articles in a dry condition with colophony, or a mixture thereof, and after the colophony or mixture thereof has been absorbed, exposing the articles to oven heat substantially as described.

No. 26,762. Attachment for Mowers and Reapers. (Disposition aux faucheuses Moissonneuses.)

Frank W. Seidl, Manitowoc, Wis., U.S., 21st May, 1887; 5 years.

Claim.—1st. The combination, with the board or plank, and the

cutter bar or head of the shoes or runners secured to said board or plank, substantially as shown and described. 2nd. The combination, with the board or plank and the cutter-bar, of the shoes or runners having their forward ends curved upwardly, substantially as shown and described. 3rd. The combination, with the board or plank, the cutter-bar and the guard of the shoes or runners having the socketed bar for securing the ends of said guards, and the rearwardly projecting bar secured to said board or plank, substantially as shown and described. 4th. The herein described mower attachment, consisting of the shoes or runners, the upwardly-curved ends, the rearwardly and upwardly-extended bars, having vertical portions, the socketed bar and the rearwardly-extended bar, said latter bar and the flanged portion of the vertical bar being secured by a nutted bolt, substantially as shown and described.

No. 26,763. Permanent Way of Railway and Tramway. (Voie permanente de chemin de fer et de tramway.)

Benison Rathbone, Liverpool, Eng., 21st April, 1887; 5 years.

Claim.—1st. In the permanent way of railway or tramways, the combination with the rails of metal sleepers with the sides at an angle to each other. 2nd. The combination, with metal sleepers formed of plates at an angle to each other and flanged of clips and chairs, as and for the purposes described.

No. 26,764. Hot Air Drum.*(Poêle sourd à air.)*

Thomas F. Purdo, Aldboro, Ont., 23rd May, 1887; 5 years.

Claim.—A hot air drum having the hot air chamber E D E within the external case B A B, and having the hot air pipes F, J, F connected with the upper conical end E of the said hot air chamber E D E, and passing through the upper conical end B of the said external case B A B, also having the cold air pipes G, J, G, connected with the lower conical end E of the hot air chamber E D E and passing through the lower conical end B of the said external case B A B, and terminating in the funnels H, J, H, substantially as and for the purposes hereinbefore set forth.

No. 26,765. Composition of Matter to be used as Paint. (Composition pour peinture.)

Jean B. Courville, jr., St. Justine, Que., 23rd May, 1887; 5 years.

Claim.—A paint composed of coal-tar, rosin, salt, sulphur, ochre, oxide of iron and cement, in the proportions and for the purposes specified.

No. 26,766. Window Screen. (Rideau de fenêtre.)

Joseph A. Bryan, Prescott, Ark., U.S., 23rd May, 1887; 5 years.

Claim.—1st. The combination, with the window-frame A, of the screen C, additional stay-strip b, perforated plates c, d secured to the inner face of the jambs of said window-frame, loose pulley D secured to the lower face of the upper lintel of said frame, spring-bolts 13 secured to the upper edge of said screen and locking in said plates, loose pulleys e, e secured in the upper edge of said screen, and cords 14 having one end attached to the said spring-bolts, then passing under said loose pulleys e, e, then over pulley D, substantially as shown and described. 2nd. The combination, with the window-frame A and sash B, of perforated plates 8 secured to the upper and lower pieces of said sash, the screen C, additional stay-strip b, perforated plates c, d secured to the inner face of the jambs of said frame, loose pulley D secured to the lower face of the upper lintel of said frame, spring-bolts 13 secured to the upper edge of said screen and locking in said plates, loose pulleys e, e secured on the same edge of said screen, cords 14 having one end attached to each of said spring-bolts, then passing under said loose pulleys e, e, then over pulley D and spring-bolt 16 secured in the lower piece 2 of said screen and locking in plates 8, substantially as shown and described.

No. 26,767. Joint for Crossing Parts of Corrugated Metal. (Joint pour métal plissé.)

Henry C. Hodges, Detroit, Mich., U.S., 23rd May, 1887; 5 years.

Claim.—1st. An improved joint for use at the crossing, of corrugated metal parts consisting of the combination with the corrugated metal parts A, Ar of the filling piece B, said filling piece dressed substantially as described to conform to the interior surfaces of both said parts, and means for uniting the three, substantially as and for the purpose described. 2nd. An improved joint for use at the crossing or corrugated metal parts, consisting of the combination with the corrugated metal parts A, Ar of the filling piece B said filling piece dressed, substantially as described, to conform to the interior surfaces of both said parts and a uniting bolt or rivet, substantially as and for the purpose set forth. 3rd. A joint for the crossing parts of corrugated metal consisting of the combination with the said parts A, Ar, of the filling piece B, said filling piece made to conform to and fit the inner surfaces of both said parts A, Ar, the same made hollow and the whole uniting by a bolt or rivet, substantially as described. 4th. The filling piece B, provided with an opening for the passage of a bolt or rivet and shaped upon its sides to correspond with and fit into the channels of its crossing parts of corrugated metal, substantially as and for the purpose described.

No. 26,768. Excavating Snow Shovel.*(Pelle à déblayer la neige.)*

George A. Collins, John K. Collins and Myron C. Burnside, Sleepy-Eye-Lake, Minn., U.S., 23rd May, 1887; 5 years.

Claim.—1st. The combination of the main shaft B, and shafts C, C

operated by horizontal arm D and arm E, E, shafts H, H and J, J, arm G, plate I, I and pin L, L, all working together substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the shaft P and shafts R, R, operating by connecting rod h, h and cross-head b, b, all working together substantially as shown and for the purpose hereinbefore set forth.

No. 26,769. Hypodermic Syringe.

(*Seringue hypodermique.*)

James J. King, Jasper, and William J. Worley, Dahlouega, Ga., U. S., 23rd May, 1887; 5 years.

Claim.—1st. A car-coupler having a pair of pivoted jaws on each end, each pair being capable of adjustment in a vertical arc, whereby the coupler is adapted to engage a pin upon a high, low or medium height truck, as set forth. 2nd. A car-coupler consisting of the central pivot-piece and the pair of pivoted jaws on each end, both pairs of jaws and the pivot-piece being relatively movable in vertical direction, as set forth. 3rd. In a car-coupler, a pair of jaws having an entrance passage between them for the pin formed in a double inclined or curved direction, and terminating at the inner end on one side of the open space between the side of the jaws, so that one of the jaws only has the abutment for the pin to rest against when the coupler is in use. 4th. The combination of the pivot-piece having vertical slots, as described, and the jaws pivoted at their inner ends to said pivot-piece, and having projections or bolts for entering said slots and limiting the movement of the jaws, as set forth. 5th. In a car-coupler, the combination, with the central pivot-piece and jaws pivoted thereto at each end, in such manner as to enable the jaws and the pivot-piece to be adjustable vertically of a rod or connection extending to the top of the car and connected to the outer jaws to control, elevate or depress said jaws and pivot-piece, as set forth. 6th. A car-coupler consisting of the central pivot-piece A, the pair of jaws B, B pivoted thereto at each end and capable of adjustment, as described, and a spring-latch d set in the opening between the jaws in such position as to be covered and hidden by said jaws when closed, substantially as and for the purpose set forth. 7th. The combination, with the coupling jaws B having the non-circular openings b₁, and the pivot-block a having circular openings of the pivot pin having the non-circular portions d₁ at the ends and the central circular portion d₂, as and for the purpose set forth.

No. 26,770. Balance Throttle Valve.

(*Soupepe d'admission équilibrée.*)

William A. Pendry, Detroit, Mich., U.S., 23rd May, 1887; 5 years.

Claim.—The combination, with a cup valve of a piston rigidly supported within the valve, and having a steam passage leading through its supporting-stem to the steam-space of the boiler, a secondary valve adapted to close said steam-passage, and lifting-mechanism connected with the secondary valve and cup-valve, whereby the secondary valve lifts before the cup-valve, substantially as described.

No. 26,771. Harrow Attachment.

(*Disposition aux herbes.*)

Noel W. Rew, Garden City, Minn., U.S., 23rd May, 1887; 5 years.

Claim.—1st. The combination of the plough, the harrow arranged at one side of the plough and rigidly attached thereto, a whiffletree attached to the plough, and a draft-rod connected to the harrow and the whiffletree, one end of the rod being adjustably connected to the whiffletree, as and for the purpose described. 2nd. The combination of the plough, the harrow attached to one side thereof, a whiffletree connected to the front of the plow, an endwise movable evener loosely connected to the whiffletree, and a draft-rod intermediate the harrow and evener, the front end of said rod being adjustably connected to the evener, substantially as described. 3rd. The combination of the plough, the whiffletree attached thereto, the harrow attached to one side of the plow, and the draft-rod connecting the harrow with the whiffletree, the said draft-rod being adapted to be attached to the whiffletree at any desired distance from the end thereof, substantially as described. 4th. The combination of the plough, the whiffletree attached thereto, the harrow attached to one side of the plough, the evener-bar attached to the whiffletree and adjustable longitudinally thereon, and the draft-rod connecting the harrow with the evener-bar, substantially as described. 5th. The combination of the plough, a harrow arranged at one side thereof, and a rod I extending diagonally over the harrow and connected at two points of its length to the harrow, the inner end of the rod being fixed to the plough, substantially as described for the purpose set forth.

No. 26,772. Turbine Water Wheel.

(*Turbine hydraulique.*)

Philip H. Holmes, Gardiner, Me., U.S., 23rd May, 1887; 5 years.

Claim.—1st. The combination with a turbine wheel, and two gates for wholly or partly cutting off the supply of water, of gradually contracting water-conduits extending above the wheel and connected to the flume and curved, substantially as shown, to conduct the water upon the wheel at right angles to its axis of rotation, substantially as set forth. 2nd. The combination, with a flume a, wheel gates encircling the wheel, and a casing covering the wheel and gates, of the tapering and inwardly curved water-guides, the outer guide being connected to the flume and the inner guide attached to the casing over the wheel and gates, substantially as set forth. 3rd. The combination, with turbine wheel and a gate suspended above and encircling the wheel, of a casing extending over the gate and wheel, and serving to protect the gate and wheel from the weight of the column of water, and also supplying water to the wheel and rods extending vertically through said casing and attached to the upper portion of the gate for operating the same, substantially as set forth. 4th. The combination, with a turbine water wheel of two vertically adjustable gates, one encircling the other, and independent devices for operating the gates. 5th. The combination, with a turbine

water-wheel, of an outer gate for admitting water to the wheel, and an inner gate situated within the outer gate and connected to a governor for automatically regulating the supply of water admitted to the wheel, substantially as set forth. 6th. The combination, with a turbine water-wheel, a ring-gate for opening and closing the water supply, and a second gate located within the first-named gate for regulating the water supply, substantially as set forth. 7th. The combination, with a turbine water-wheel, of inner and outer casings encircling the wheel and extending above the same, the lower ends of said casings being located one above the other in the same horizontal plane as the wheel floats, while the upper end of the outer casing is connected with the flume and the upper end of the inner casing is attached to a casing located over the wheel and within the flume. 8th. The combination, with a water-wheel of two concentric gates for admitting water to the wheel gearing for operating one of said gates by hand, and a governor for automatically operating the other gate. 9th. The combination, with a horizontal wheel and an annular water channel adapted to supply the water to the upper portions of the floats, a combined wheel protection and water-guide box, a ring-gate adapted to slide vertically into said combined wheel protection, and water-guide box, operating-rods attached to the gate and means for simultaneously elevating or depressing the rods, substantially as set forth. 10th. The combination, with a turbine water-wheel, of inner and outer casings encircling the wheel, and provided with guides or chutes arranged to give the water in its downward and inward motion, a course in the direction of its action on the wheel-floats, the lower ends of said casings being located one above the other in the same horizontal plane with the wheel-floats, while the upper end of the outer casing is connected with the flume and the upper end of the inner casing is attached to a casing or dome located over the wheel and within the flume, substantially as set forth.

No. 26,773. Door Lock. (*Serrure de Porte.*)

Christian J. Letzing, Boston, Mass., U.S., 23rd May, 1887; 5 years.

Claim.—1st. In a lock, the combination of a bolt or latch, shaped, as described, and adapted to be moved by a spring to engage with a catch, and to be moved by the knob or handle outwardly to be disengaged from the catch, and to engage with the locking-bar E and the plate d, having the shoulders d₃, all substantially as and for the purposes described. 2nd. The combination, in a lock, of the bolt or latch, shaped substantially as described, and adapted to be moved by a spring to engage with a latch, and to be moved by the knob or handle outward to be disengaged from the catch to engage with the locking bar, the plate d, having the shoulders d₃ forming the catch, the swinging locking bar E secured to said plate, and the cross-piece, block or stop e for limiting the extent of the movement of the bolt or latch, all substantially as and for the purpose described. 3rd. The combination of the latch-bolt c, shaped substantially as specified, to act as a latch and as a locking device, the operating arm f, spring f₁ and the guides e₂ and the latch knob or handle, whereby the latch bolt is adapted to automatically engage the catch and to be moved by hand both outward and inward from the position to which it is automatically moved, all substantially as and for the purposes described. 4th. The combination, in a lock, of a bolt adapted to be moved from its casing to two different positions or points, with a catch and a hinged or pivoted locking bar, located and arranged in relation to the latch, so that the latch may be used in either one position with the catch or in another position with the locking bar, as and for the purposes specified. 5th. A latch, having movements in relation to its case, as specified, mechanism for locking and unlocking the same in various positions, as described, in combination with a catch and a pivoted locking bar adapted to be successively or alternately engaged by the latch, as described.

No. 26,774. Drip-Cup for Umbrellas.

(*Réceptacle de Parapluie.*)

Alfred G. Niggard, San Francisco, Cal., U. S., 25th May, 1887; 5 years.

Claim.—1st. The drip-cup for umbrellas, which consists in a cylindrical vessel or water container, provided with a spring or springs for connecting the cup or water holder to the lower end or tip of an umbrella, as described. 2nd. In a drip-cup for the tips of umbrellas, provided with a retaining spring or springs, the enlarged upper portion thereof forming a chamber or water container, and the outlet holes communicating with the chamber, as and for the purpose set forth and specified.

No. 26,775. Automatic Car Brake.

(*Frein automatique de char.*)

Thomas F. Howell, Saint George, Ont., 25th May, 1887; 5 years.

Claim.—The combination, with a brake beam F, having shoes G, of chain P, rod O, a spring M connecting with a fixed block Z, the resistancy of the springs holding the brake shoes against the wheels, a brake lever I pivoted to the bottom of the car, one end connected to the spring M and rod O, and the other end provided with hand wheel H and winding chain Q, to release the brakes by hand, and a spring S, chain T and link U to hitch to a ratchet hook or bar V on the preceding car W, whereby the brakes will be automatically applied when the cars are slowed or stopped, and relieved when the car is pulled by the preceding car in starting and running, as set forth.

No. 26,776. Body Brace for Vehicles.

(*Sommier de Voiture.*)

William W. Grier, Hulton, Penn., U.S., 25th May, 1887; 5 years.

Claim.—1st. A body-brace for non-perch vehicles of general U-form, and having horizontal arms whereby it is adapted to connect two sets of springs arranged in different planes, in combination with independent detachable clasp-plates adapted to bind the brace rigidly to the body, substantially as and for the purposes specified. 2nd. The combination, with two sets of springs arranged in different horizon-

tal planes, and a bed or body, of a body-brace of general U-form provided with horizontal arms *a*, and independent adjustable clasp-plates, having grooves to embrace the horizontal arms of the body-brace, and lugs or wings for attachment to the sill of the vehicle body, substantially as and for the purposes specified. 3rd. The combination, with a vehicle body-brace, of a clasp-plate made separate from the brace, and having a groove inclosing the brace, and a rivet or bolt which connects the plate and brace, substantially as and for the purposes specified.

No. 26,777. Lock. (Serrure.)

Arthur Thornton, Ottawa, Ont., 25th May, 1877; 5 years.

Claim.—1st. A lock, consisting of a suitable casing having a projecting cover plate fastened thereto from the rear, which is adapted to be secured to the object to be locked, a spring shot-bolt having a square-shouldered crank-neck engaging a catch secured to a plate-spring, its nose adapted to enter and retain a staple inserted through a slot in the face-plate, and pressed against said spring catch, so as to release the bolt, a series of pivoted spring tumblers engaging a stud upon the bolt, and preventing it from being retracted until brought into such a position that said stud may enter a slot in said tumblers, substantially as set forth. 2nd. The combination of a case *A*, a projecting cover *A'*, studs *A¹*, *A²*, *A³*, *A⁴*, *A⁵*, *A⁶*, bar *A⁷*, chamber *A⁸*, bolt *B*, spring *C*, catch *C'*, *C¹*, *C²*, spring *D* and a series of tumblers, substantially as set forth. 3rd. The combination of a back plate *A*, rim *a*, screw-holes *a¹*, screws *a²*, face-plate *A¹*, rivet holes *a³*, key-hole *a⁴*, studs *A¹*, *A²*, *A³*, *A⁴*, *A⁵*, *A⁶*, chamber *A⁸*, slot *a⁵*, spring *C* and staple *S*, substantially as set forth. 4th. The combination of the plate *A*, spring *C* and catch block *C¹*, *C²*, substantially as set forth. 5th. The combination of the plate *A*, bar *A⁷*, stud *A¹* and bolt *B*, substantially as set forth. 6th. The combination, with the bolt *B*, of the shoulders *b*, *b¹*, square crank neck *b²*, square stud *B¹* and slotted tail, substantially as set forth. 7th. The combination of the plate *A*, bar *A⁷*, stud *A¹*, *A²*, spring *D*, bolt *B*, shoulders *b*, *b¹*, neck *b²*, stud *B¹*, spring block, catch *C¹*, *C²*, and a series of pivoted tumblers, each having a shoulder *e¹*, slot *e²*, shaped edges *e³* and spring *e⁴*, substantially as set forth. 8th. The combination of the plate *A*, stud *A¹*, bar *A⁷*, bolt *B*, neck *b¹*, catch block *C¹* and spring *C*, substantially as set forth. 5th. The combination of the studs *A¹*, *A²*, bolt *B*, shoulder *b¹*, stud *B¹* and tumblers *E*, *E¹*, *E²*, *E³*, substantially as set forth. 10th. The combination of the stud *A¹*, bolt *B*, shoulder *b¹* and tumblers *E*, *E¹*, *E²* and *E³*, substantially as set forth. 11th. The combination, with a plate *E*, of an eye *e*, shoulder *e¹* slot *e²*, shaped edges *e³* and spring *e⁴*, substantially as set forth.

No. 26,778. Hypodermic Syringe.

(Seringue hypodermique.)

Addison Dunbar, Campbell, Texas, U.S., 25th May, 1887; 5 years.

Claim.—1st. The combination, in a syringe, of the barrel, a sleeve secured at one end thereto, a spring-actuated needle-carrier working in said sleeve, and a latch carried by said sleeve and engaging the needle-carrier, substantially as set forth. 2nd. The combination, in a hypodermic syringe, of a barrel, a sleeve secured thereto, a spring-actuated needle-carrier working in said sleeve, an outlet-pipe secured to the needle-carrier and extending into the barrel, a tubular needle secured to the needle-carrier, and a spring-actuated latch secured to the sleeve to retain the needle-carrier therein, substantially as set forth. 3rd. In a syringe, the combination of a barrel, a sleeve secured to said barrel and having a diaphragm adapted to close the end of the barrel, a needle-carrier having a cylindrical projection working in the sleeve, an outlet tube secured to the needle-carrier and extending through the diaphragm in the sleeve, and a coiled spring arranged around said tube within the cylindrical projection of the needle-carrier, substantially as specified. 4th. In a syringe, the combination of the barrel, the sleeve secured to the barrel, the needle-carrier working in said sleeve and having an annular groove, and a spring-actuated latch secured to said sleeve and engaging the annular groove in the needle-carrier, substantially as set forth.

No. 26,779. Door Hanger. (Coulisse de porte.)

Ancil B. Morse and Isaac Green, Baraboo, Wis., U. S., 27th May, 1887; 5 years.

Claim.—1st. In a door-hanger, the hanger casting comprising the base-plate *F₁*, the parallel arms *F₂*, with hooks at their upper ends and the screw bolt *G*, all in a single piece, as set forth. 2nd. In a door hanger, the hanger casting formed in a single piece with the base plate *F₁*, the buffer *L* and the suspending arms *F₂* having hooks, as set forth. 3rd. In a door hanger, the track *C*, in combination with the fixed bridge-plate *D* supporting the track at an intermediate point, and the hanger having a roller travelling on the track and provided with a projecting buffer adapted to come in contact with the bridge-plate, whereby the latter serves both as a support for the track and a stop for the hanger, substantially as set forth. 4th. The combination of the housing, comprising the parallel sides and the transverse plates connecting the sides, the track arranged between the sides, and having the threaded ends passed through aligned openings in the said transverse connecting plates, the nuts fitted on the threaded ends of the track, and the hanger having the suspending arms and roller, substantially as described for the purpose set forth.

No. 26,780. Combined Latch and Lock.

(Loquet et serrure combinés.)

George B. Underwood, Toronto (assignee of Moses Jobborn, Hamilton), Ont., 27th May, 1887; 5 years.

Claim.—1st. The lock case 1, having ridges 2, 3, in combination, with slide 11, provided with grooves 12, 13, and gravitating lever 6 for locking bolt 8, as set forth. 2nd. The combination with the lock case having bolt 8, and tappet 9, and provided with ridges 2, 3, of the slide 11, and provided with post 16, gravitating lever 6 locked by said slide and gravitating weight 7, having slot 17, whereby the locking of bolt

8 is effected by lifting the weight and reciprocating the slide independently of the lever, as set forth. 3rd. In a combined latch and lock, having a gravitating lever or weight, the flexible cushions inserted in grooves or cavities, where the parts have a pounding contact to diminish the jar and lessen noise, as set forth.

No. 26,781. Leather Splitting Machine.

(Machine à refendre les peaux.)

Edward F. Bradford (assignee of William E. Adams), Cincinnati, Ohio, U.S., 27th May, 1887; 15 years.

Claim.—1st. The combination with the feed-roll shafts of the equalizer-levers and the sliding block *u* and its actuating spring, for the purposes and substantially as shown and described. 2nd. The combination with the feed-roll, shafts *N P* journaled in sliding boxes, of the equalizer levers *t* pivoted to said boxes and to the sliding block *u*, the block *u*, the rod *a⁴* secured thereto, and the spiral spring *u⁶* and cap, substantially as set forth. 3rd. The combination with the main shaft *C*, having the gears *F₁* and the bevelled pinion *G*, of the feed-rolls *N₁*, *P₁*, their shafts *N* and *P* connected by gearing with the said gears *F* and *F₁*, the presser roll *g* set at right angles to the roll *N₁* and *P₁*, a shaft by which the said presser roll is carried, and the bevelled gear *H* on said shaft, substantially as set forth. 4th. The combination, with the feed rolls *P₁*, *N₁*, of the vertical splitting knife, its adjustable support *e* and the adjusting piece *d₁* and its operating screws, substantially as described. 5th. The combination with the feed rolls *P₁*, *N₁*, of the vertical splitting knife, its adjustable support *e* and wedge-shaped adjusting block *C₁* for vertically adjusting said knife, substantially as described. 6th. The combination in a leather splitting machine, of suitable feed-rolls, the vertically set splitting knife, the vertical edge guide and the horizontal presser rolls *g*, *h*, set at right angles to the feed rolls, substantially as described. 7th. The combination, with the horizontal feed rolls, the edge guide, the vertical splitting knife and the opener of the horizontal carrying roll and the presser rolls set at right angles to the feed rolls, substantially as set forth. 8th. In a leather splitting machine, the presser-rolls *g*, *h*, the shaft of roll *h* having sliding journal boxes provided with springs *j₃*, in combination with the adjusting piece *i₁*, provided with wedge-shaped projections acting in reversely inclined slots in the frame, and an adjusting screw, whereby by moving the piece *i₁* the pressure of the rolls may be increased or diminished, substantially as set forth. 9th. In a leather splitting machine, the combination with the feed rolls and edge guide of a splitting knife and opener secured to the same support, whereby their adjustment relative to said guide may be accomplished simultaneously, substantially as set forth. 10th. The combination with a pair of feed rolls, as *N₁*, *P₁*, of a trimming knife, a vertical splitting knife and an opener, and presser-rolls, as *g*, *h* journaled in sliding boxes, substantially as set forth.

No. 26,782. Dump Cart. (Tombereau.)

Alexander Logan, North Sidney, U.S., 27th May, 1887; 5 years.

Claim.—1st. In a dump-cart, the hook-piece *C* secured to the cart box and having the sloping face *d₁* and the slot *e₁* to engage on the pin *f₁* fixed in the cross-bar of the shafts, substantially as shown and described. 2nd. The combination of a tilting body of a dump cart, having a holding-down latch consisting of the hook-piece *C*, spring *e₁* and pin *f₁* with the tail-board *F* supported independently of the body *A* by another part of the vehicle, substantially as shown and described. 3rd. In a dump-cart, the tail-board *F* supported by the rear end of the shafts and held in an inclined position by the brackets *G* attached to the shafts substantially as shown and for the purpose set forth.

No. 26,783. Rolling Glass to Produce Designs or Patterns thereon, and Apparatus therefor. (Laminage du verre pour produire des dessins ou patrons, et appareil pour cet objet.)

Anthony D. Brogan and Andrew M. Malloch, Firhill, Scotland, 30th May, 1887; 5 years.

Claim.—1st. The herein-described method of rolling glass sheets having produced upon one surface designs or patterns of various forms said method consisting in rolling out molten glass upon a casting table by means of a smooth roller and at the operation impressing the pattern upon the sheet so rolled by means of an impressing roller or rollers, substantially as set forth. 2nd. In a glass rolling apparatus, the combination with a smooth roller adapted to roll out molten glass, of one or more rollers or followers engraved or otherwise suitably impressed to produce in the rolling operation ornamental or other patterns or designs upon the surface of the rolled sheet, substantially as described.

No. 26,784. Electric Clock. (Horloge électrique.)

John J. Abell and Clarence B. Gifford, Colesburg, Ky., U. S., 30th May, 1887; 5 years.

Claim.—1st. In the escapement mechanism of a clock, the combination, of the escapement wheel, the anchor, the ratchet wheel free to move independently of the escapement wheel, the pawl movable with the anchor and engage the ratchet wheel, the detent to prevent retrograde movement thereof and the spring to connect the ratchet wheel and the escapement wheel to move the latter during the instant that it is disengaged by the anchor, substantially as described. 2nd. In the escapement mechanism of a clock, the combination of the escapement wheel, the anchor, the rotating wheel *d* independent of the escapement wheel, and the spring connecting the said wheel *d* and the escapement wheel to move the latter during the instant it is disengaged by the anchor, substantially as described. 3rd. In a primary electric clock, the combination, of the anchor, the escapement wheel movable by the anchor, and the spring *r* and electromagnet to operate the latter, the ratchet wheel *d* independent of the escapement wheel and having the contact point *t* forming the

terminal of the electric circuit, the detent to prevent retrograde rotation of the ratchet wheel, the pawl carried by the anchor and engaging the ratchet wheel, the spring connecting the ratchet wheel and the escapement wheel for the purpose set forth, and the vibrating point *u* carried by the anchor and forming the other terminal of the circuit and adapted to come in contact with the point *t* at regular intervals of time, for the purpose set forth substantially as described.

No. 26,785. Pulley Hoister. (*Monte poulie*.)

James W. Provan and John W. Provan, Oshawa, Ont., 30th May, 1887; 5 years.

Claim.—1st. A hooked stem A connected to the pulley block B and provided with a latch formed in the hooked end of the stem and operated substantially as and for the purpose specified. 2nd. A stem A having a hooked end connected to the rope E and provided with the latch D pivoted at *b* and connected at its other end to the rope E substantially as and for the purpose specified. 3rd. A stem A having a hooked end as shown, connected to the rope E and provided with the latch D pivoted at *b* and extending through the slot *a* to form a connection with the rope E on the outside of the stem A, substantially as and for the purpose specified. 4th. A stem A with a hooked end having a rope E connected at both ends to the pivot *b* located near the end of the hook, one portion of the rope passing over the hook C and the other through the slot *a*, substantially as described.

No. 26,786. Oil Well Pump Valve.

(*Soupage de pompe de puits d'huile*.)

William Sanson, Oil Springs, Ont., 30th May, 1887; 5 years.

Claim.—The combination of the body of the valve D, and the threads E, K, and the lock collar or sleeve F, with the cage B, and the valve C, and the cups G, G, G, and the rings H, H, H, and the nut I, substantially as and for the purposes hereinbefore set forth.

No. 26,787. Driving Gear of the Feed Rod of a Grass Seed Hopper. (*Engrenage de la tige d'alimentation d'un semoir à graine de foin*.)

Thomas H. Noxon, Ingersoll Ont., 30th May, 1887; 5 years

Claim.—1st. A grass-seed feed-rod connected to the centre of a gear-pinion, in combination with a handle having a hub journalled in the frame of the machine and eccentrically connected to the gear-pinion so that the same may readily be thrown in and out of gear with its driver, substantially as and for the purpose specified. 2nd. A handle D having a hub E formed on it and journalled in the frame of the machine, in combination with the pinion B having a hub *a* formed on it to fit into the eccentric hole *d* and connected to the feed-rod C, substantially as and for the purpose specified.

No. 26,788. Door Knob. (*Bouton de porte*.)

Charles M. Green and Charles Brewer, Toronto, Ont., 30th May, 1887; 5 years.

Claim.—As a new article of manufacture, a door-knob composed of a sheet-brass back secured to a metal stem and cupped to receive and retain an earthenware tile or ornament, substantially as shown.

No. 26,789. Hub Band for Vehicles.

(*Boite de moyeu de roue*.)

Charles M. Green and Charles Brewer, Toronto, Ont., 30th May, 1887; 5 years.

Claim.—1st. As a new article of manufacture, a hub-band composed of an iron ring having a sheet-brass cover with an internally-projecting flange extending around the outer edge of the band to cover the exposed portion of its interior, substantially as and for the purpose specified. 2nd. An iron ring A having its inner edge *b* bevelled in combination with a sheet-brass cover B having an inwardly projecting flange *a* and clamped at its other end around the bevelled edge of the ring A, substantially as and for the purpose specified.

No. 26,790. Wrapping or Toilet Paper Roll.

(*Rouleau à papier de garde-robe*.)

Leth Wheeler, Albany, N.Y., U.S., 30th May, 1887; 5 years.

Claim.—1st. A new article of manufacture, consisting of a roll of wrapping or toilet paper, the ends of which are parallel and the edges of the series of sheets contained therein having broken or curved lines, substantially as described.

No. 26,791. Folding Table. (*Table pliante*.)

Douglas Baxter Three Rivers, Que., 31st May, 1887; 5 years.

Claim.—1st. A table having its legs hinged to its top so that they may be folded under it, and having its top and frame divided longitudinally into two halves which are connected by hinges so that it may be folded transversely enclosing the legs, substantially as shown and described. 2nd. A table having its top and frame made in two parts connected by hinges and each of its corner legs connected by the rails *c* and *d* with the divided leg B, and the frame thus constituted and connected together by the hinges *d* and to the table top by the hinges *e*, substantially as shown and for the purposes set forth. 3rd. A table having its legs arranged to fold under and against its top and provided with the hinged brace-bars C and the hinged wings *f*, substantially as set forth and for the purposes described. 4th. In a folding table, the rails *i* pivoted to the top rail near to one of the corner legs, and extending to opposite corner leg where it is

secured to the frame *a* by means of bolts *j* entering into nuts set substantially as and for the purposes described. 5th. A table divided longitudinally into two halves which are hinged together having its legs hinged to the top to fold under, and provided with the diagonal braces *k* pivoted at one end to the frame *a* and having the bolts *l* at its other end, substantially as and for the purposes set forth and described. 6th. A table divided longitudinally into two halves which are hinged together and also divided transversely in the centre and connected by the extension slides *N* and having its legs to fold under and against its top, said legs fitting into square notches *m* cut in the frame and bolted thereto by means of nuts *j* or otherwise stayed as set forth and for the purposes hereinbefore set forth and described.

No. 26,792. Quarrying Plug used as a Wedge in Quarries. (*Pointe-rolle*.)

Matthew Bentley and John Bentley, Dudswell, Que., 31st May, 1887; 5 years.

Claim.—A tapered quarry plug having the flattened sides B, substantially as shown and for the purpose set forth.

No. 26,793. Thrashing Machine.

(*Machine à battre*.)

George W. Morris, Brantford, Ont., 31st May, 1887; 5 years.

Claim.—1st. In a thrashing machine, a spring pitman E rigidly, connected at one end to the swinging grain-table, and at its other end to the crank-shaft from which it derives motion, in combination with the straw-deck extension I connected to the pitman E, substantially as and for the purpose specified. 2nd. In a thrashing machine, the tapering spring pitmans actuated by a crank which communicates motion to the upper straw-deck, grain-deck and straw-deck extension, in combination with the extension irons or brackets journalled on the crank arranged to support the straw-deck extension and pitmans, substantially as described. 3rd. In a thrashing machine, the light table X₂ attached to the tapering spring pitmans E, which table X₂ is placed over the shoe S, substantially as described and for the purpose specified. 4th. In a thrashing machine, the light extension trap F suitably connected to the chaff-extension D and deriving motion through the chaff-extension D attached to the grain-deck U, in combination with the spring hangers K attached to the main frame of the machine, substantially as described. 5th. A cylindrical casing for a grain scourer or smutter formed in halves and hinged together, the upper half of which is lined with sheet-metal and the lower half with wire netting, substantially as described. 6th. In a grain scourer or smutter for a thrashing machine, the half-rings X and sheet-iron casing R attached, the flanges S in combination with the half-rings X and wire netting *f*, the said flanges being hinged at one side and bolted to the other, the whole forming a cylindrical casing, as and for the purpose specified. 7th. In a grain scourer or smutter for a thrashing machine, the half-rings X carrying sheet-iron casing R, the flanges Y, Y₁, and the half-rings X₁ carrying wire netting *f*, in combination with the conveyor-box N having the angular roof O forming with the side casing A the dust-spaces P, substantially as described. 8th. In a grain scourer or smutter for a thrashing machine, the half-rings X, sheet-iron casing R, flanges Y, Y₁, and the half-rings X₁ carrying wire netting *f*, the conveyor-box N having the angular roof O forming with the side casing A₂, the dust-spaces P in combination with the conveyor Z, and movable discharge-spout b, substantially as described. 9th. In a grain scourer or smutter for a thrashing machine, the shaft *b* carrying the screw M, and grain smutter or scourer cylinder M₁ having knife-sections *m* all enclosed in a cylindrical casing, the opening *n* to the conveyor box N having angular roof O and forming with the outer casing A₂, the dust-spaces P in combination with the conveyor Z and movable spout b, as and for the purpose specified.

No. 26,794. Stone Sawing Machine.

(*Machine à scier la pierre*.)

James Peckoner, Philadelphia, Penn., U.S., 31st May, 1887; 5 years.

Claim.—1st. The combination of the frames of adjacent sawing machines with reciprocating saw frames, and bars H, and cams to act on the said bars, substantially as described. 2nd. The combination of the frames of adjacent sawing machines, and the reciprocating saw frames thereof with operating T-bars H, cams and devices, substantially as described, for attaching the sawing machines to, and detaching them from, the said bars, as and for the purpose set forth. 3rd. The combination of the operating cams and reciprocating T-bars H, with saw frames having spring gripping jaws, substantially as described. 4th. The combination of the frame of a sawing machine with a vertically adjustable frame B carrying the saws, ropes b, pulleys *b*, and pulleys D on the shaft to which all the ropes are connected. 5th. The combination of a stone sawing machine, with a sand-feeding hopper provided with a number of spouts, and a series of conduits depending from said spouts and adjustable independently to bring their discharge-points immediately over the saw blades, all substantially as described. 6th. The combination of a stone sawing machine, with a sand-feeding hopper having spouts containing fluted cones, with conduits leading from the outlets of the said cones to discharge the sand over the saws, substantially as set forth. 7th. The combination of a stone sawing machine, with a sand-feeding hopper over the saws and conduits leading therefrom to the saws, and a sand-sieve over the top of the hopper, all substantially as specified. 8th. The combination of a stone sawing machine, and a sand-feeding hopper therefor, with an inclined sieve over the feed-hopper, and having its sieve surface tapering from its upper to its lower edge for the more even feeding of the sand through the hopper, substantially as described. 9th. The combination of a stone sawing machine, and a sand-feeding hopper having spouts with telescopic conduits leading from the spouts to discharge the sand to the saws, substantially as set forth. 10th. A stone sawing machine having saw-blades of varying thickness throughout its length, substantially as described.

**CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO
THE FOLLOWING PATENTS.**

878. J. and T. H. NOXON, 3rd 5 years of No. 7441, from the tenth day of May, 1887. Improvements in Seeding Machines, 2nd May, 1887.
879. A. M. LESLIE and THE LESLIE SEWING MACHINE CO., 2nd 5 years of No. 14,833, from the twenty-fifth day of May, 1887. Improvements in Sewing Machines, 2nd May, 1887.
880. E. G. PACKHURST, 2nd 5 years of No. 14,989, from the twentieth day of June, 1887. Improvements in Ammunition Cases, 2nd May, 1887.
881. T. H. HOVENDEN, 2nd 5 years of No. 14,367, from the twentieth day of May, 1887. Improvements on Perpetual Calendars, 3rd May, 1887.
882. O. C. WHITE, 2nd 5 years of No. 15,056, from the fifth day of July, 1887. Improvements on Ball and Socket Joints, 3rd May, 1887.
883. C. S. UPTON and J. C. LIGHTHOUSE, 2nd 5 years of No. 14,729, from the fourth day of May, 1887. Improvements on Halters, 4th May, 1887.
884. J. HEWITT, 2nd 5 years of No. 14,744, from the sixth day of May, 1887. Improvements on Machines for Manufacturing Metal Fence Strips, 5th May, 1887.
885. E. E. WHIPPLE, 2nd 5 years of No. 14,771, from the twelfth day of May, 1887. Improvements on Harrows, 6th May, 1887.
886. C. SHUMAN, 2nd 5 years of No. 14,751, from the eighth day of May, 1887. Improvements in Neck Yoke Rings, 6th May, 1887.
- 886½. E. A. EDWARDS, 2nd 5 years of No. 14,747, from the sixth day of May, 1887. Improvements in Hydrocarbon Burners, 6th May, 1887.
887. G. T. LEWIS, 2nd 5 years of No. 14,817, from the twenty-third day of May, 1887. Improvements in the Process for Producing a Perfumed Caustic Soda, 9th May, 1887.
888. G. T. LEWIS, 2nd 5 years of No. 14,879, from the thirty-first day of May, 1887. Improvements in the Process of Manufacturing White Lead Pigments, 9th May, 1887.
889. H. P. KIRKHAM, 2nd 5 years of No. 14,826, from the twenty-third day of May, 1887. Improvements in Cofferdams, 9th May, 1887.
890. THE ALABASTINE CO., (assignee), 2nd 5 years of No. 14,800, from the twenty-second day of May, 1887. Improvements in Plastic Material, 11th May, 1887.
891. W. BOWKER and R. WILLIAMS, 2nd 5 years of No. 14,835, from the twenty-fifth day of May, 1887. Improvements in Machinery for Sawing Barrel Hoops from Poles, 11th May, 1887.
892. E. LYMAN GOOLD, J. O. WISMER, and WAREHAM S. WISMER, (assignees), 3rd 5 years of No. 7,567, from the twenty-third day of June, 1887. Improvements on a Machine for Raking Hay, 13th May, 1887.
893. W. HUNTER, 2nd 5 years of No. 14,778, from the fifteenth day of May, 1887. Improvements in Car-Couplers, 14th May, 1887.
894. A. W. BURKE, 2nd 5 years of No. 15,175, from the twenty-fifth day of July, 1887. Improvements in Paint Compounds, 14th May, 1887.
895. O. C. WHITNEY, 2nd 5 years of No. 15,122, from the 15th day of May, 1887. Improvements in Cabinet Organ Cases, 14th May, 1887.
896. G. O. S. CONWAY, J. COOPER, and F. FAIRMAN, 2nd 5 years of No. 14,788, from the 17th day of May, 1887. Improvements on Railway Brakes, 14th May, 1887.
897. G. O. S. CONWAY, J. COOPER, and F. FAIRMAN, 2nd 5 years of No. 14,789, from the seventeenth day of May, 1887. Improvements on Car-Couplers, 14th May, 1887.
898. F. A. ROEDER and A. SPRINGER, 2nd 5 years of No. 15,346, from the twenty-second day of August, 1887. Improvements in Balances, 16th May, 1887.
899. F. WINSLOW, 3rd 5 years of No. 7484, from the eighteenth day of May, 1887. Shoe Sole Buffer, 16th May, 1887.
900. I. M. ROSE, 2nd 5 years of No. 14,807, from the twenty-second day of May, 1887. Improvements in Lighting Mechanism for Gas Lamps, etc., 20th May, 1887.
901. J. I. and H. PELLERIN, 3rd 5 years of No. 7510, from the first day of June, 1887. Leather Cutting Machine, 20th May, 1887.
902. W. COOPER, jr., R. STONEHOUSE, and E. NUGENT, 2nd 5 years of No. 14,841, from the twenty-fifth day of May, 1887. Improvements in Treadle Power, 20th May, 1887.
903. E. W. BOWSLOUGH, 2nd 5 years of No. 14,837, from the twenty-fifth day of May, 1887. Improvements on Window Blinds, 23rd May, 1887.
904. F. W. BREWSTER, 2nd 5 years of No. 14,867, from the thirtieth day of May, 1887. Improvements on Buoyant Devices, 25th May, 1887.
905. V. ENGLAND FULLER, (assignee), 3rd 5 years of No. 7540, from the eighth day of June, 1887. Broom Bag, 25th May, 1887.
906. W. J. CARSHORE, 2nd 5 years of No. 14,843, from the twenty-sixth day of May, 1887. Improvements on Radiators, 25th May, 1887.
907. G. DRAPER, 2nd 5 years of No. 14,932, from the tenth day of June, 1887. Improvements on Harvesters and Binders, 28th May, 1887.

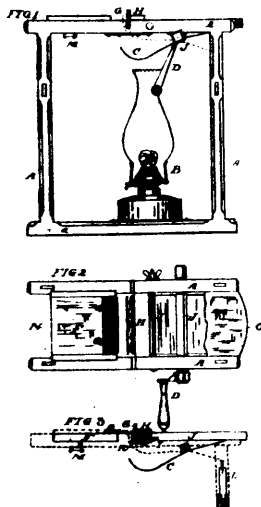
THE CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

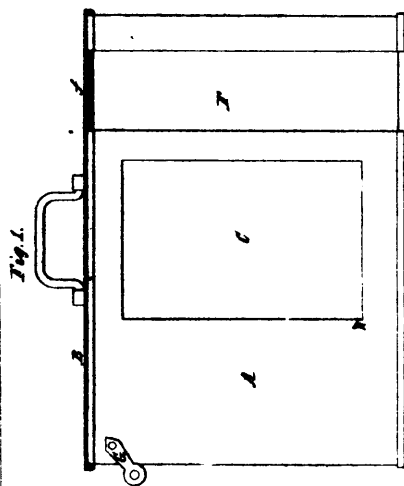
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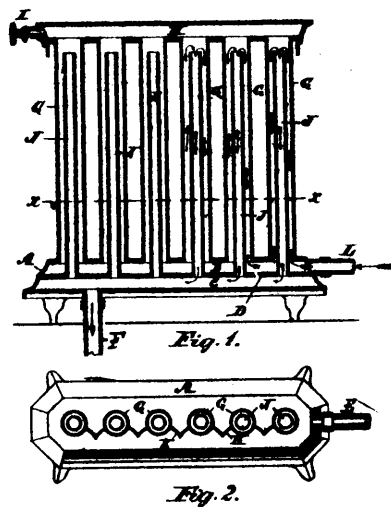
No. 6.



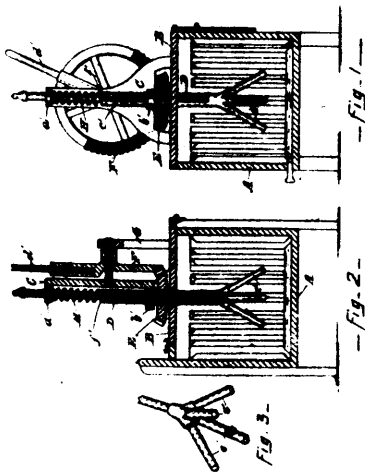
26567 Edén's Comb Foundation Fastening Machine.



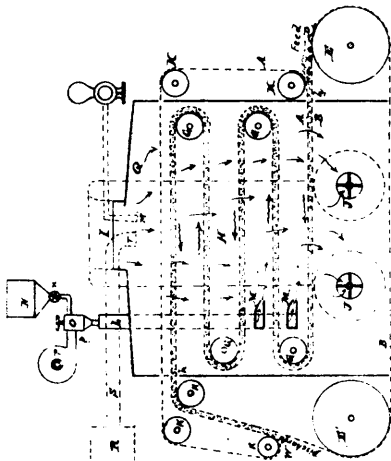
26569 Woodruff's Portable Safe.



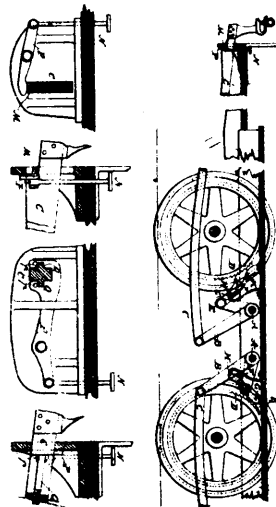
26570 Barcelow's Hot Water Radiator.



26573 Léger's Washing Machine.



26574 Lorimer's Process and Apparatus for Drying Various Materials.



26575 Gilmore & Clark's Starting Device for Vehicles.

Fig. 1

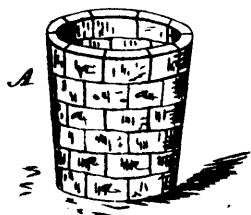
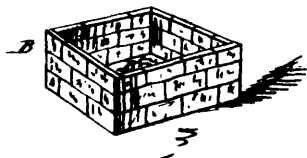
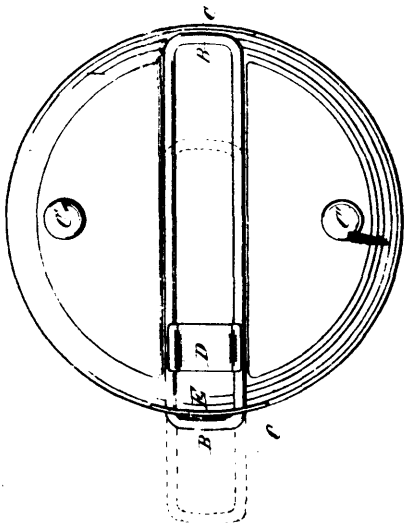


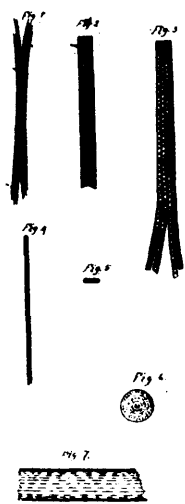
Fig. 2



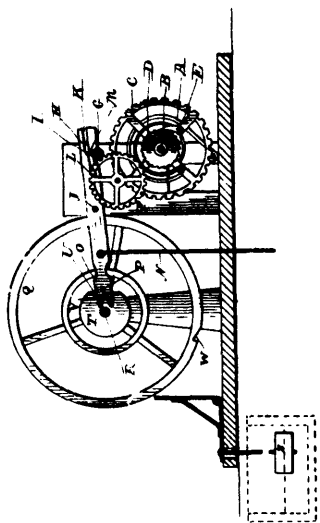
26576 Hoyt's Hollow Ware, such as Vases, Boxes, etc.



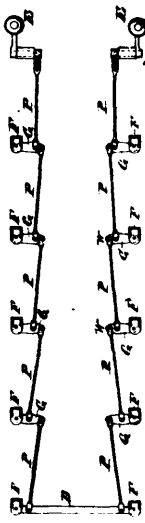
26577 Bixby's Handled Blacking Box.



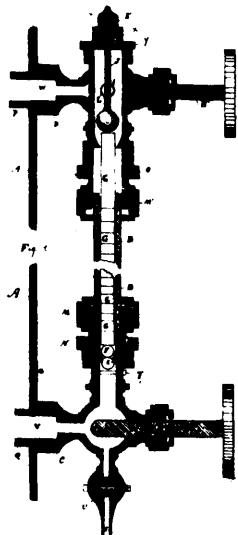
26578 Holden's Stay or Stiffener for Dress Waists and Corsets.



26579 Evans' Spring Motor



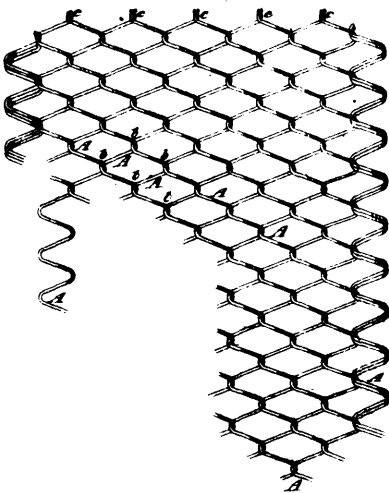
26580 Poor's Brake for Locomotives, etc.



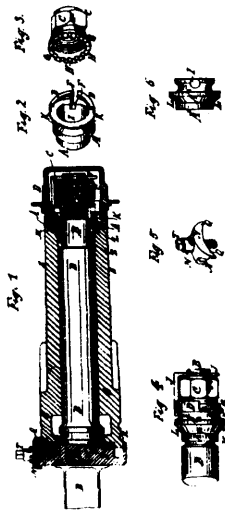
26581 Drummond's Water Gauge for Steam Boilers.



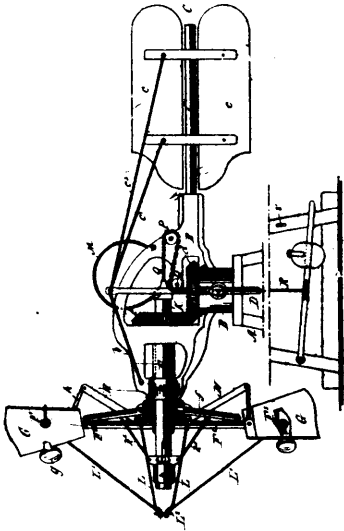
26582 Clarke's Wheel Fender for Railway Cars.



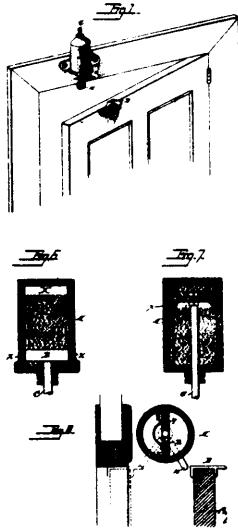
26583 Pitt's Manufacture of Wire Mats.



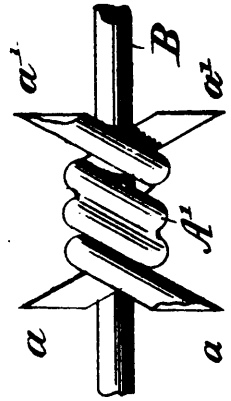
26584 Partridge's Apparatus for Securing Wheels on their Axles.



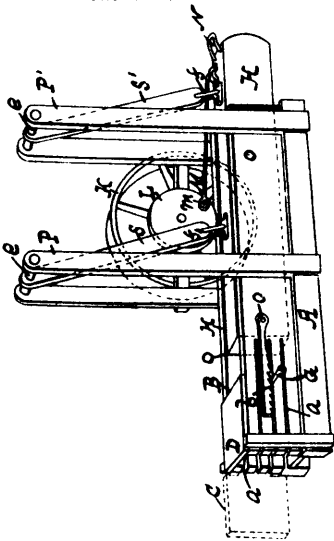
26585 Artley's Wind Mill.



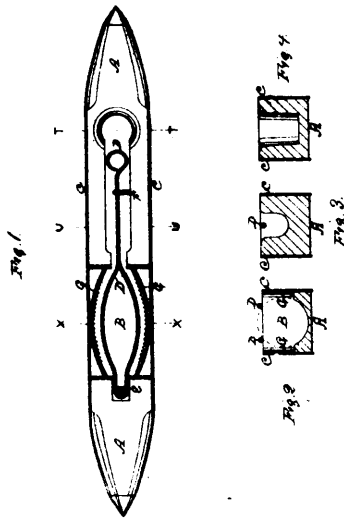
26587 House's Door Check.



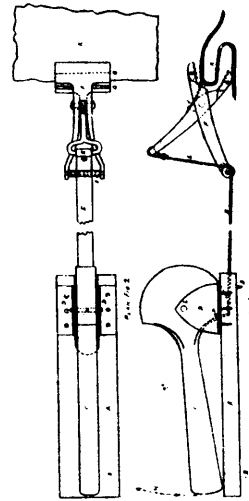
26588 Rodden's Barb for Wire Fencing.



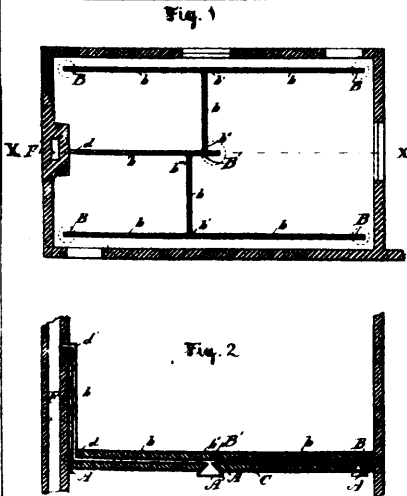
26589 McCanless' Baling Press for Hay, etc.



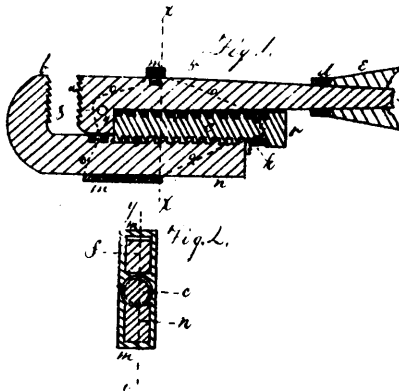
26590 Greening's Wire Cloth Weaving Shuttle.



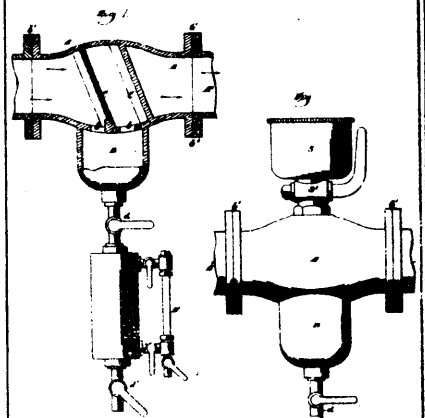
26591 Porter's Implement for Stretching Carpets.



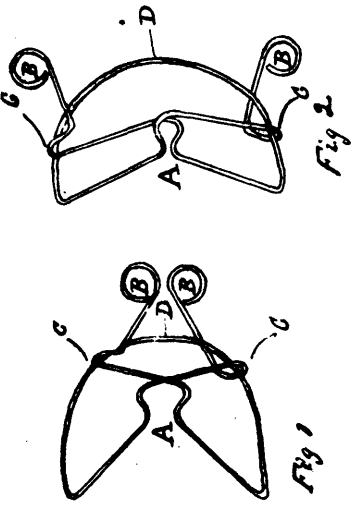
26592 McDonald's Ventilator



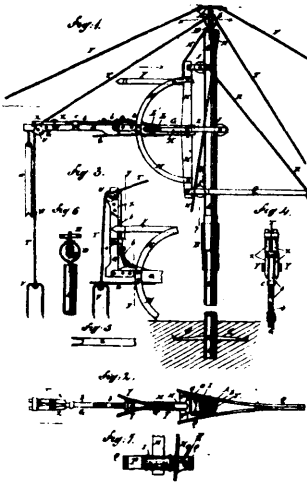
26593 Fairbank's Pipe Wrench.



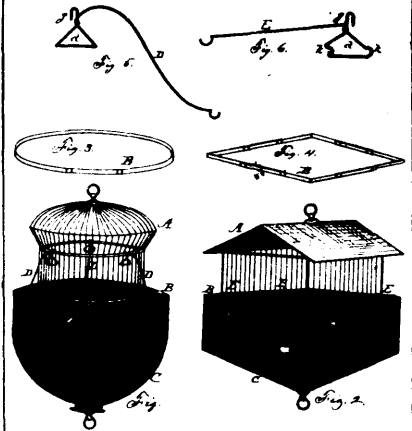
26594 Stuart's Apparatus for Separating Oil, Water and Grease from Steam.



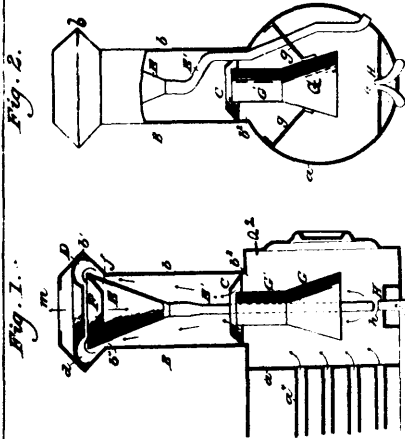
26596 Ball's Clothes Pin.



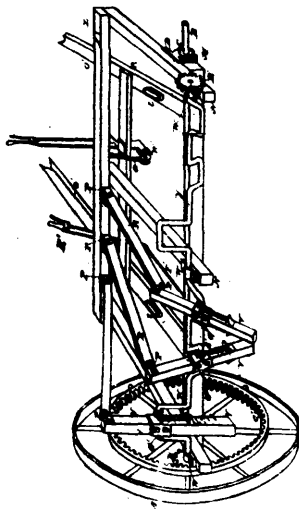
26597 Roseman's Hay Stacker.



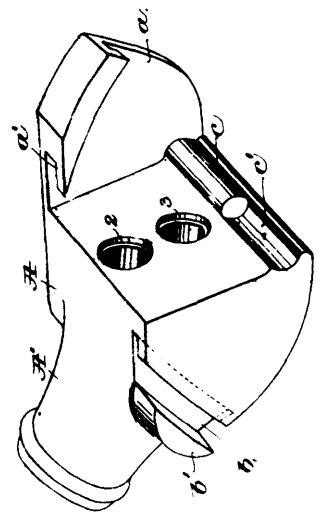
26598 Armstrong's Bird Cage Protector.



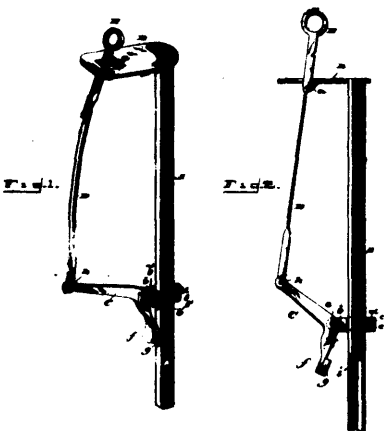
26599 Adams' Spark Arrester.



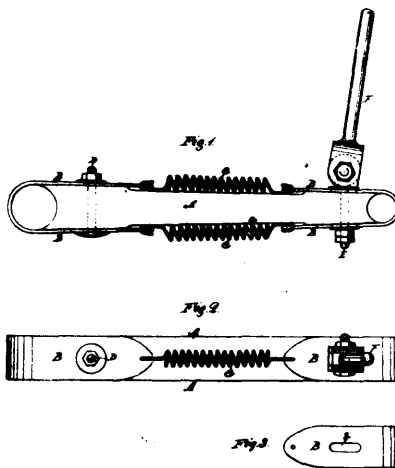
26600 Offutt's Hay Rake and Tedder.



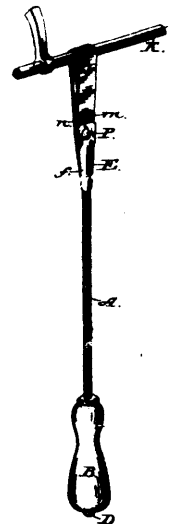
26601 Sewall's Hose Coupling.



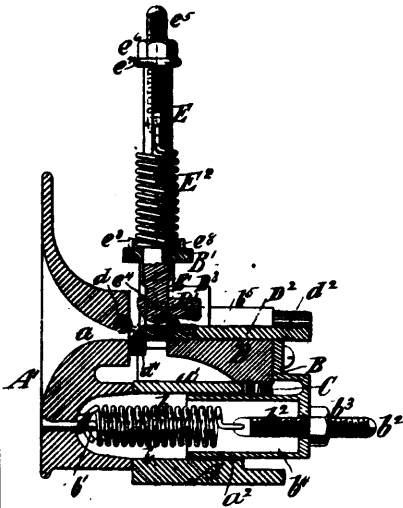
26602 Gosch's Vent-Stopper for Drive Well Tubes.



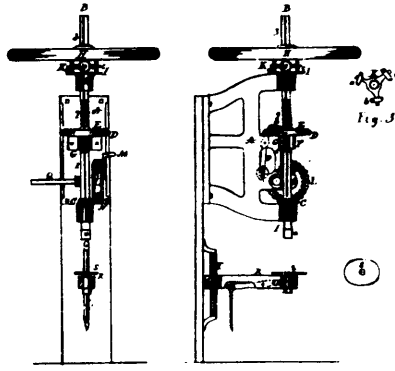
26603 Greening's Beater Arm for Wire Weaving Looms.



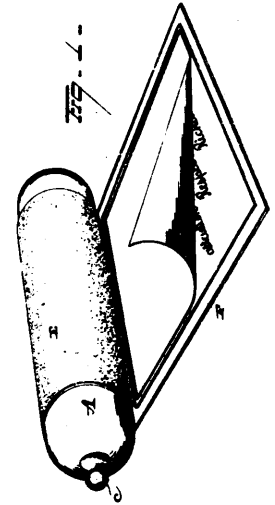
26604 Brandon's Car Strap.



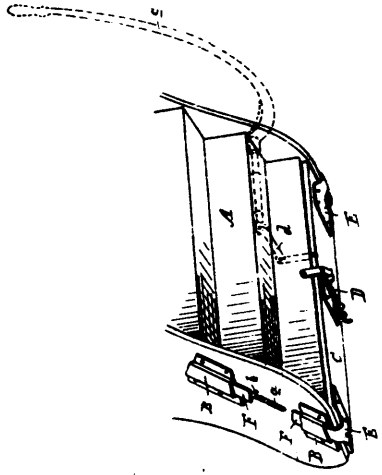
26605 Ormsby's Nipper Heads for Spinning Machine.



26606 Fuller's Vertical Boring or Drilling Machine.



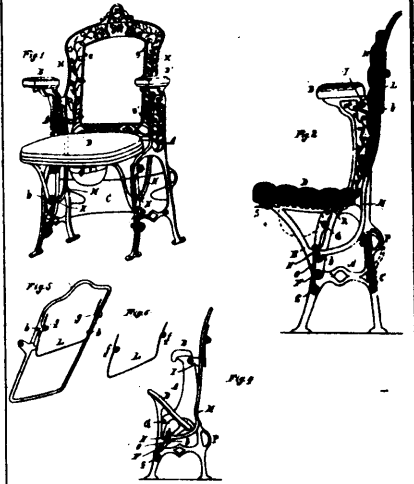
26607 Griffith's Copying Device.



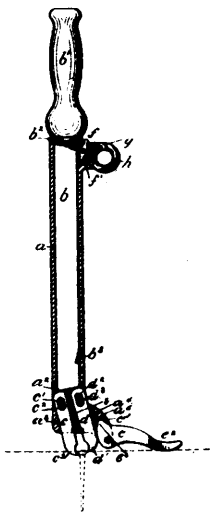
26608 Beauséjour's Railway Car Step.



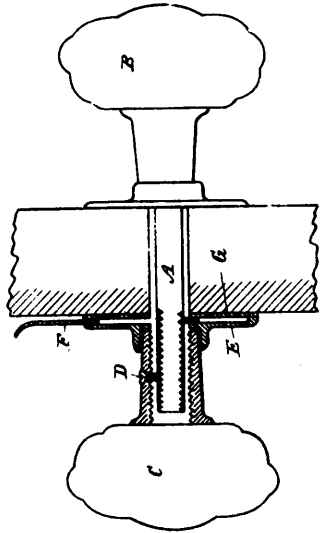
26611 Farmer's Method of and Apparatus for Signalling through Submarine Cables.



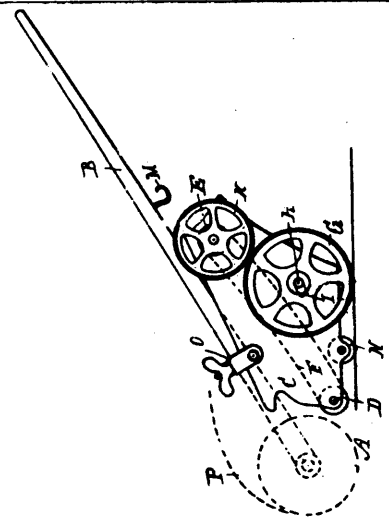
26612 Peregrine's Opera Chair.



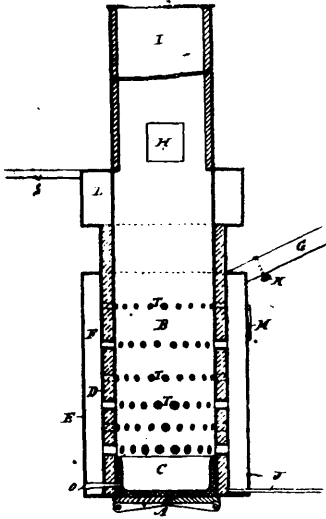
26613 Capewell's Nail Extractor.



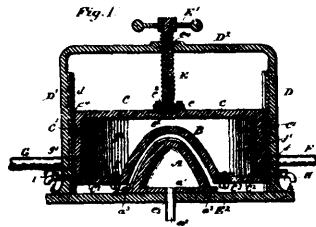
26614 Humphrey's Locking Attachment for Door-Knobs.



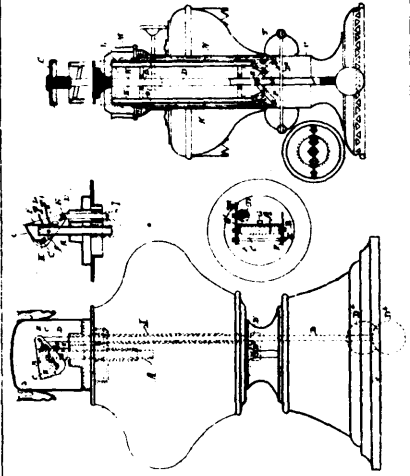
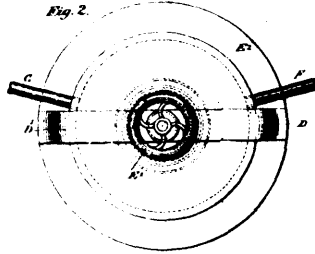
26615 Zistel's Lawn Mower.



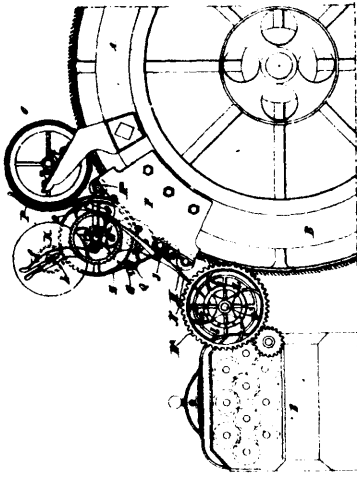
26616 Collan's Steam Generator.



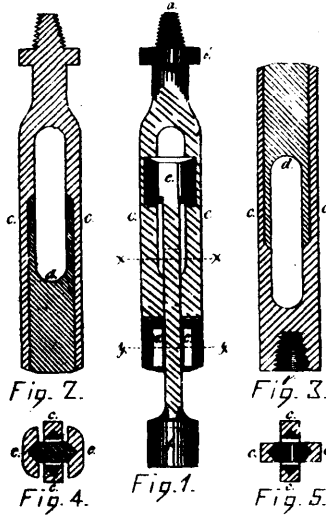
26617 Rogers' Art of Preparing Moulds for the Electric Deposition of Metals.



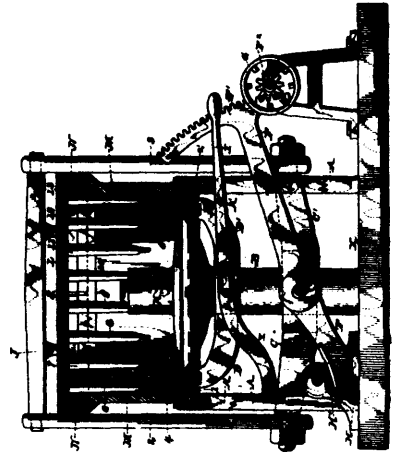
26618 Phillips' Extinguishing Apparatus for Lamps.



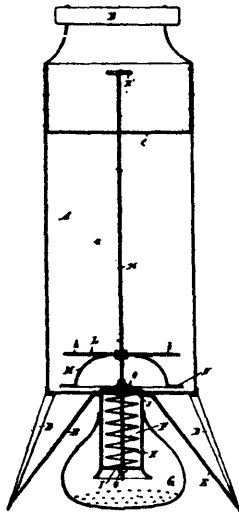
26619 Robb's Carding Machine.



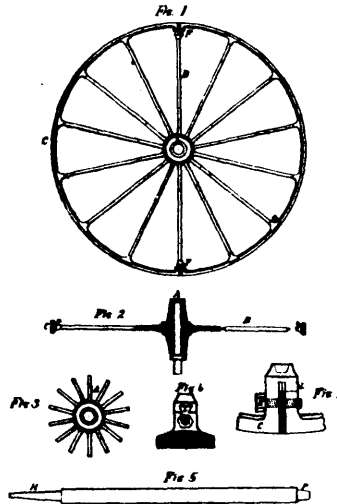
26620 Rosford's Drilling Jar.



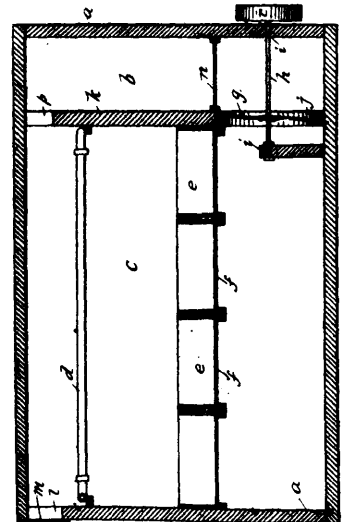
26621 Wheeler & Cokeley's Moulding Machine.



26622 Parks' Sprinkler.



26623 Blais' Waggon Wheel.



26625 Schreiber's Process of and means for Drying and Carbonizing Wool.

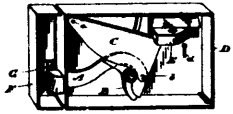


Fig. 1.

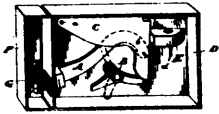


Fig. 2.



Fig. 3.

2662b Dunbar's Lock and Keeper.

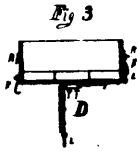


Fig. 3

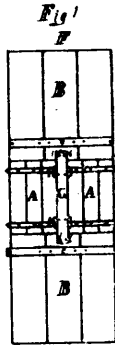
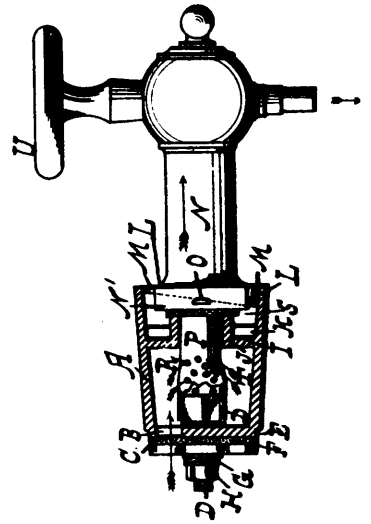


Fig. 1

Fig. 2



26627 Scott's Waggon Box for Unloading Roots, etc.



26628 Anthony's Faucet and Bushing.

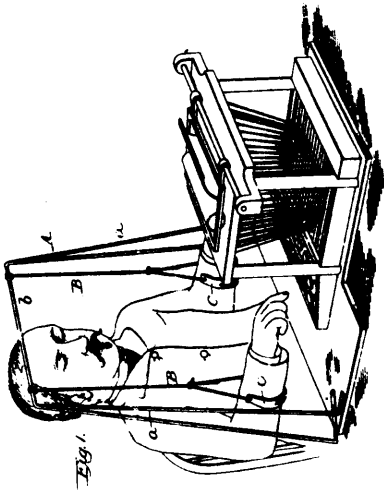
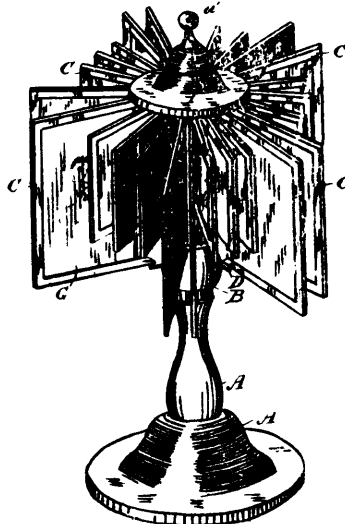
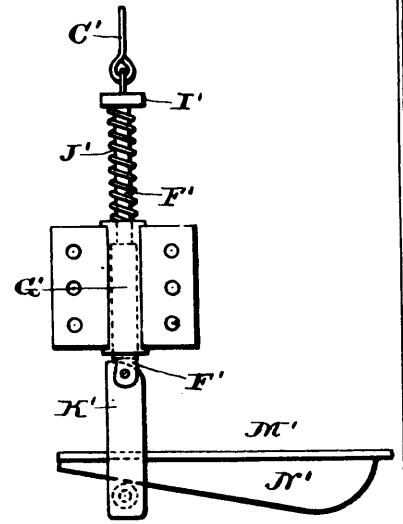


Fig. 1.

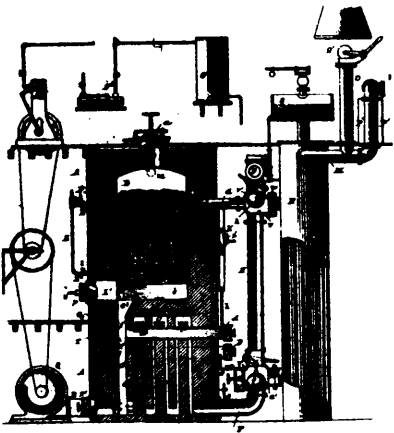
26629 Jurey's Arm Rest for Key Board Operator.



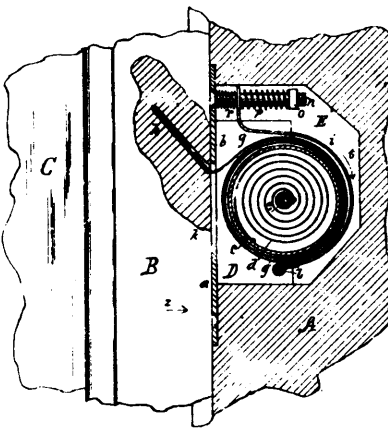
26630 Merriam's Picture Exhibiting Stand.



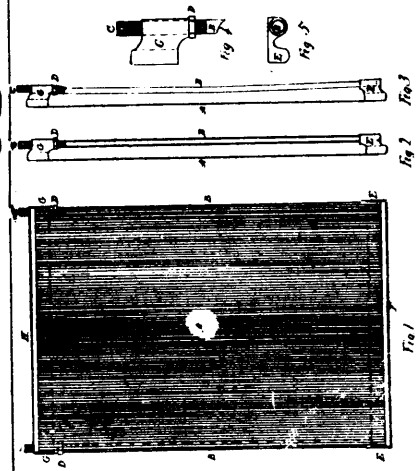
26631 Anthony's Station Indicator.



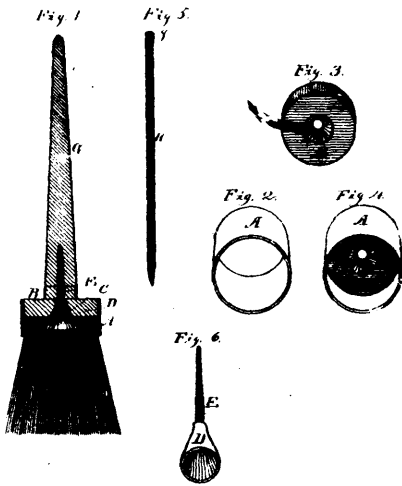
26632 Loomis' Process of and Apparatus for Manufacturing Gas.



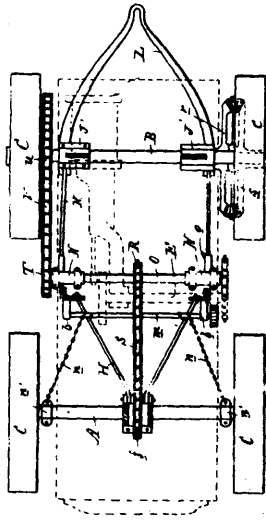
26633 McArthur's Sash Balance.



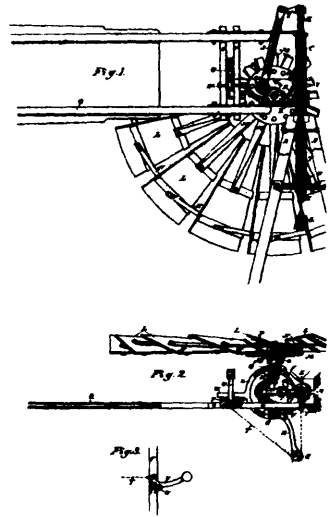
26634 Long's Bed Bottom.



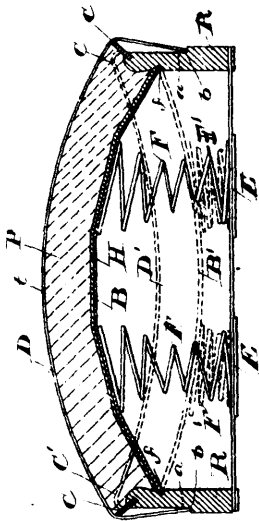
26635 Bartlett's Brush.



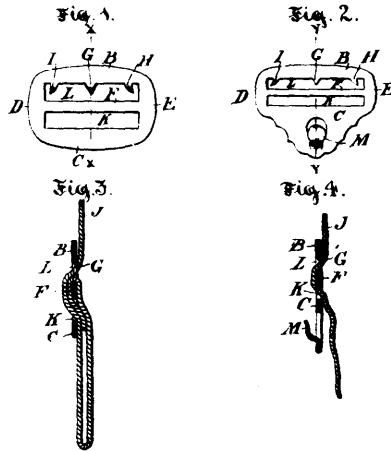
26636 Jarvis' Traction Engine.



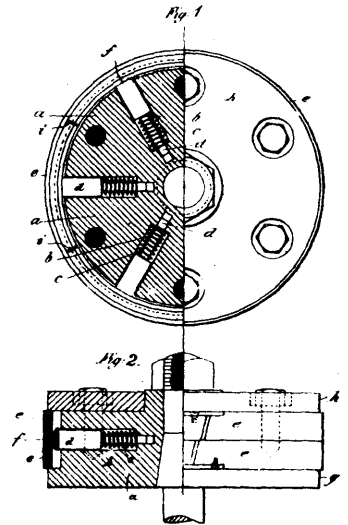
26637 Bentley's Windmill.



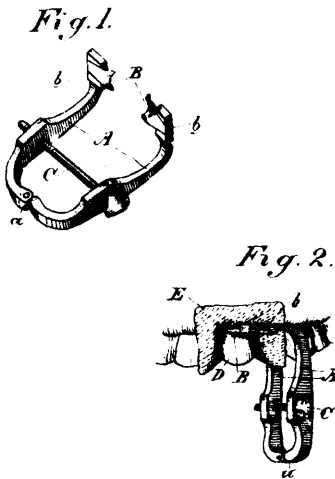
26638 Clark's Manufacture of Upholstered Furniture.



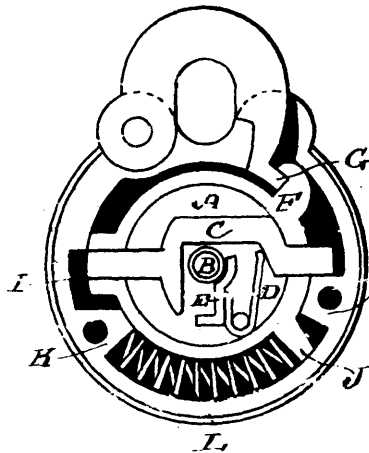
26640 Atwood's Buckle.



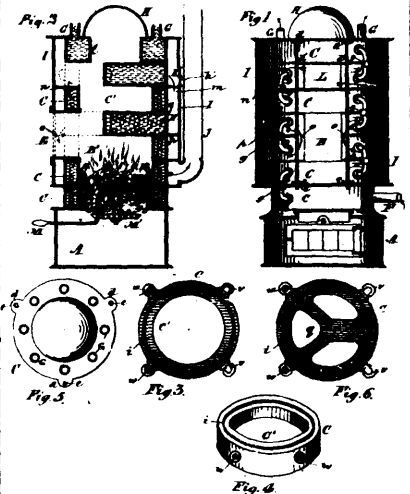
26641 Dixon & Thompson's Piston adapted to Pumps and Valves as well as to engine cylinders.



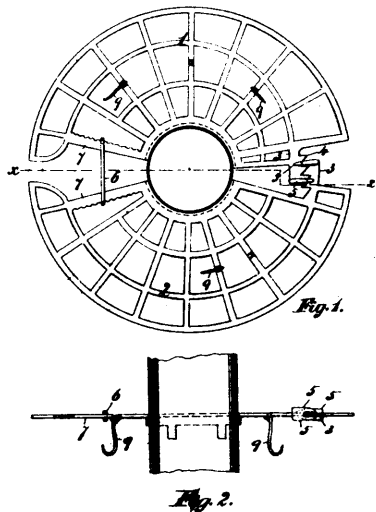
26642 Carpenter's Rubber Dam Clamp.



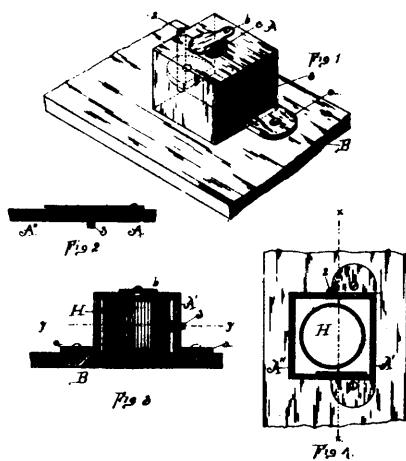
26643 Alvord's Padlock.



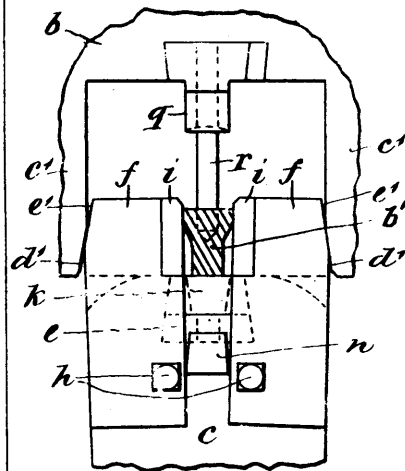
26644 Stewart's Hot Water Heater.



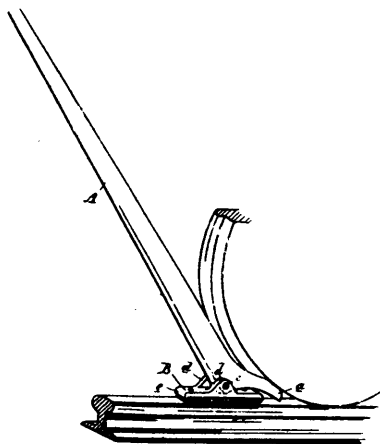
26645 Bailey's Stove-pipe Shelf.



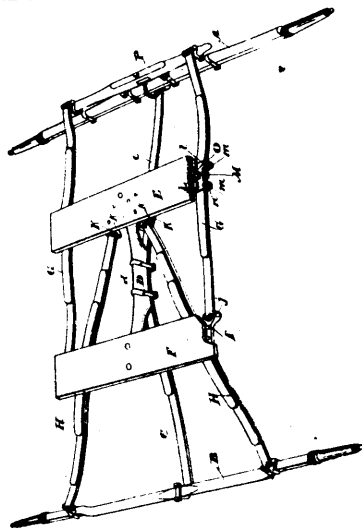
26646 Smith's Ink well.



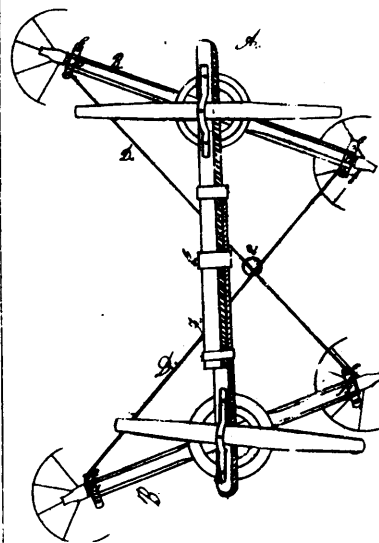
26647 Warren's Mechanism for forging Hammers and other Tools.



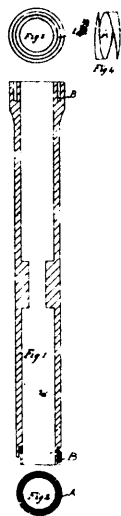
26648 Letts' Pinch Bars for Starting and Moving Cars on a Railway Track.



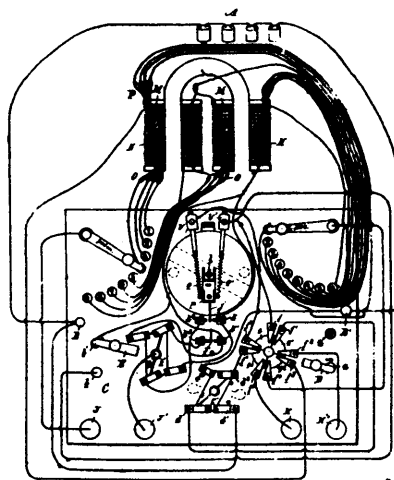
26649 Steele's Spring Gear for Vehicle.



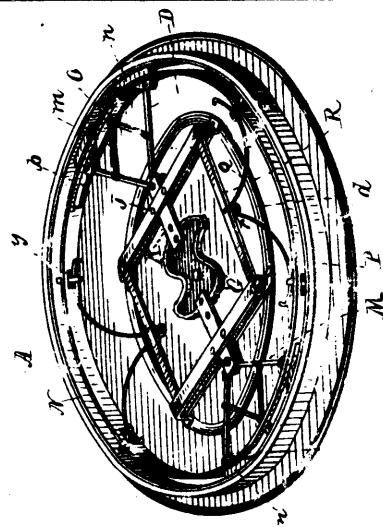
26650 Fraser & Hall's Waggon and other Vehicles.



26651 Thompson's Bobbin and Spool.

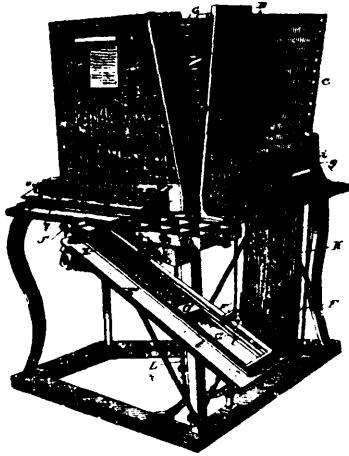


26652 Hicks' Electro-Medical Battery.



26653 Schwab's Gas Trap Cover.

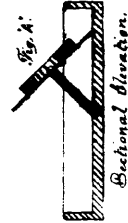
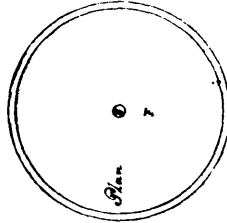
Fig. 1.



26654 McMillan's Type-Setting Machine.

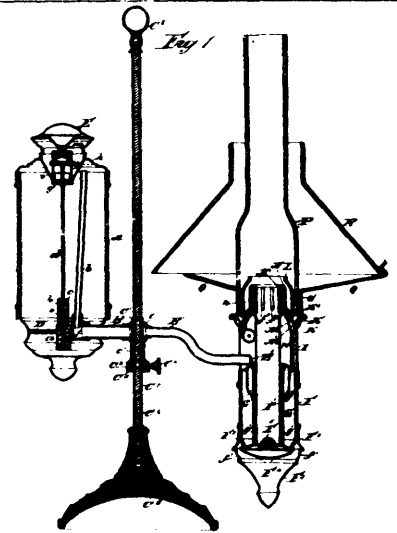
Direction of Motion

Plan of A

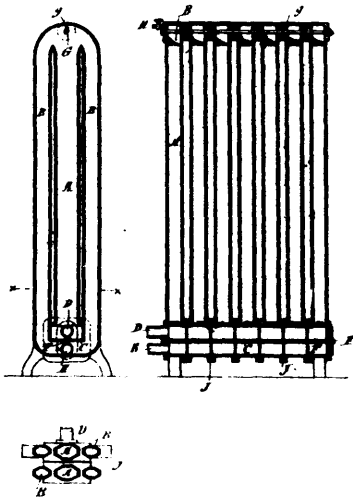


26655 Millers's Machine for Soldering Tin Cans.

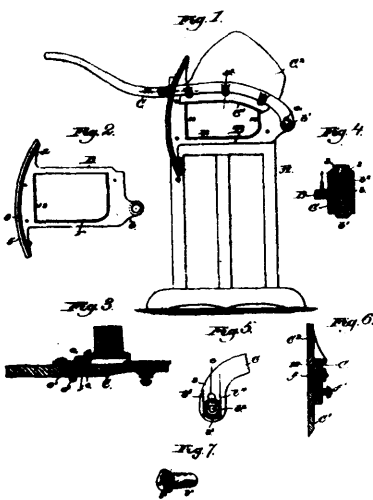
Fig. 1



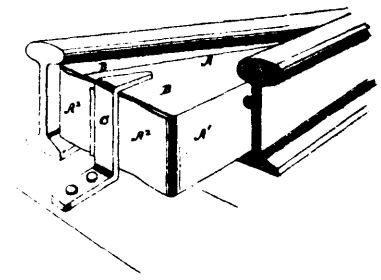
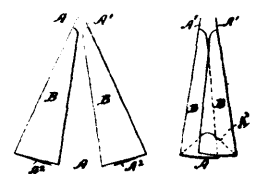
26656 Wellington's Lamp.



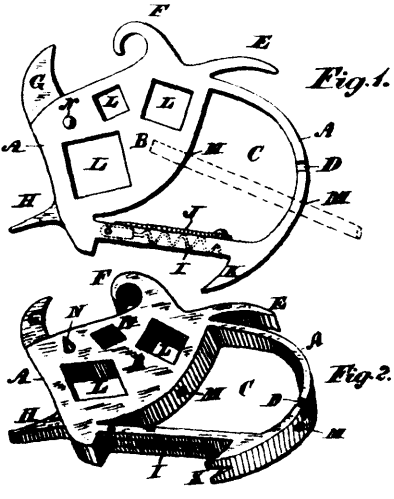
26657 Rodden's Radiator.



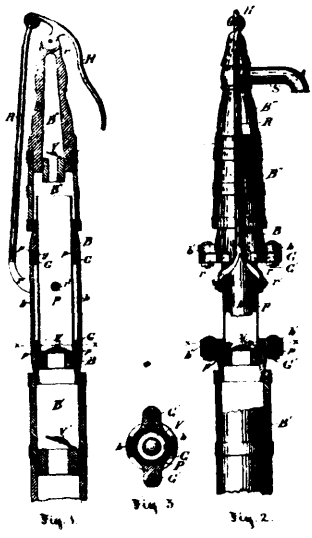
26658 Rich's Fodder Cutter.



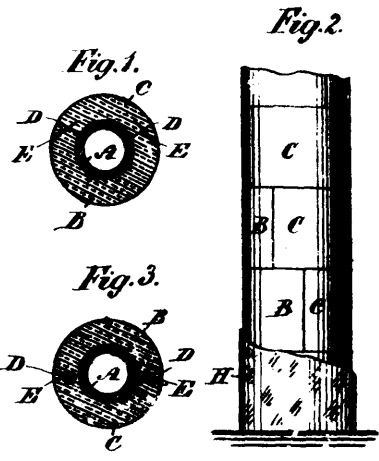
26659 Nichol's Safety Appliance for Railway Frogs.



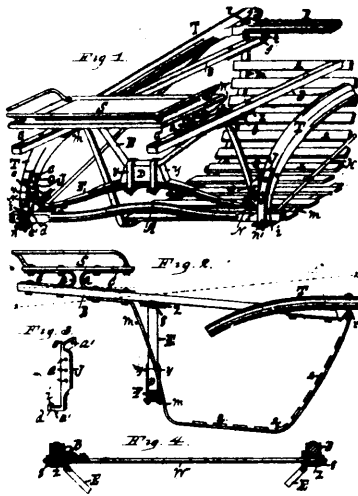
26660 Angus' Household Implement.



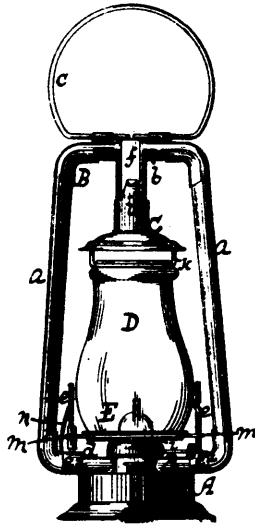
26661 Field's Pump.



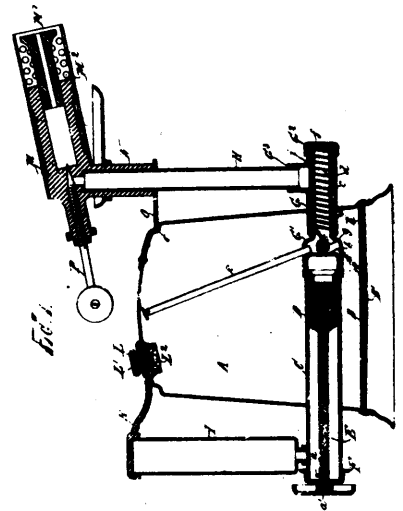
26662 Gilman's Fireproof Posts and Columns.



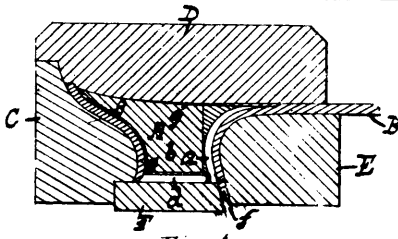
26663 Rumsey's Road Cart.



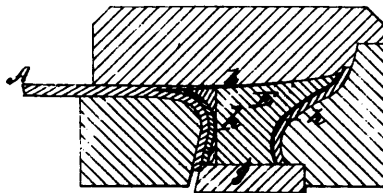
26664 Buck's Tubular Lantern.



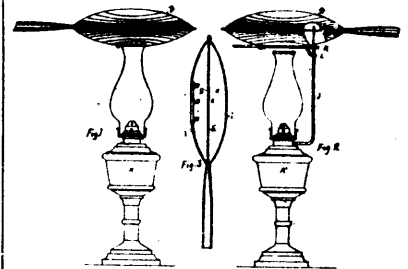
26665 Wellington's Torch.



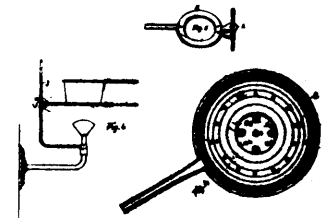
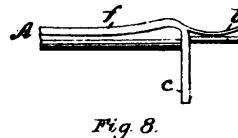
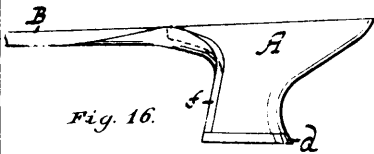
26666 LeGay's Soles and Heels for Boots and Shoes.



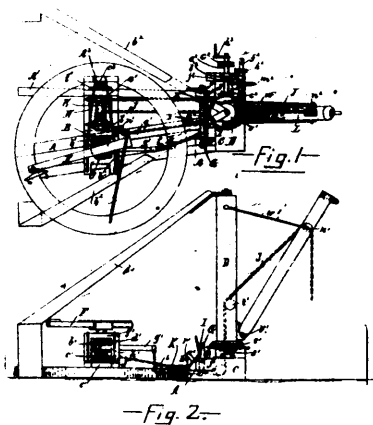
26667 LeGay's Uniting Soles and Heels of Boots and Shoes.



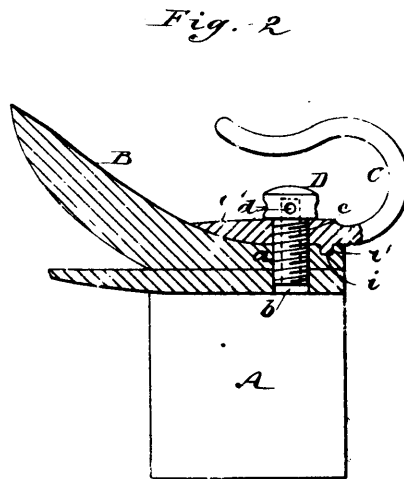
26669 Kinney's Bed Warmer.



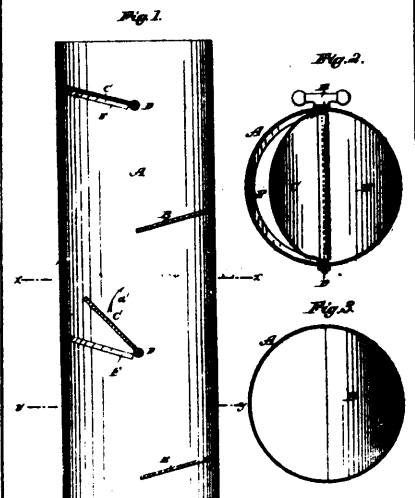
26672 Fraser's Stove-pipe Damper.



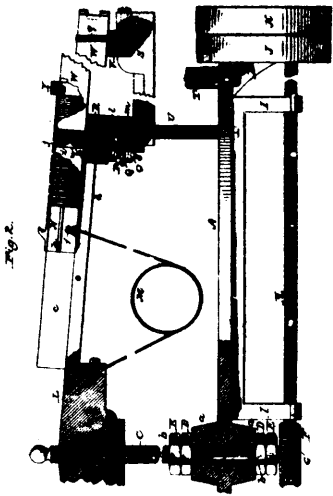
26670 Bentley's Derrick.



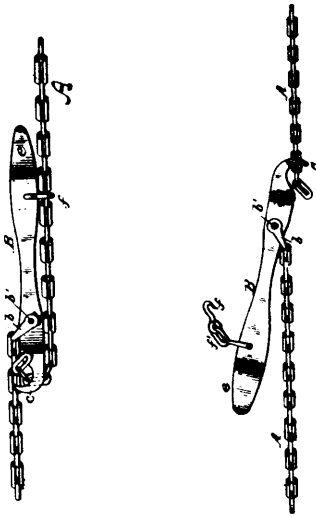
26671 Palmer's Saddle Tree and Check Hook.



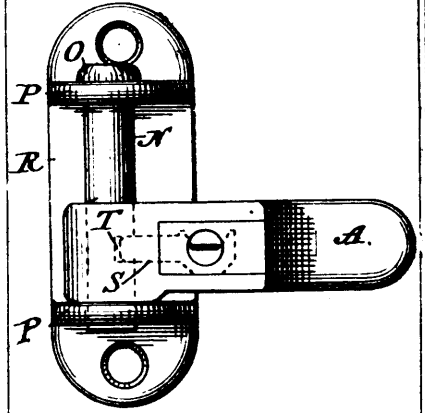
26672 Fraser's Stove-pipe Damper.



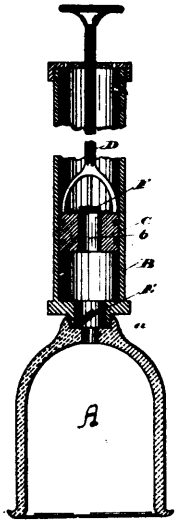
26673 McMillan's Type-Distributing Machine.



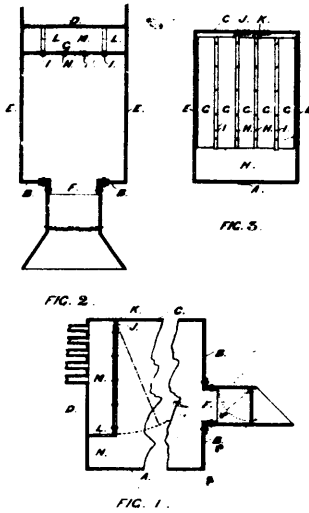
26674 Baynes' Lumber Binder.



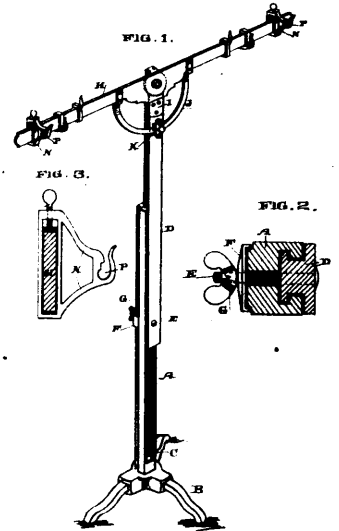
26675 Smith's Fastening for Doors or Gates.



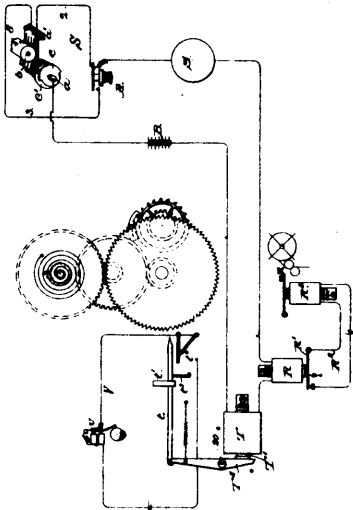
26676 Black's Cupping Glass and Breast Pump



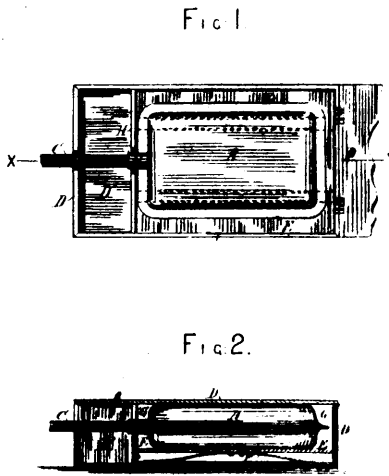
26678 Thomas' Flue Shield.



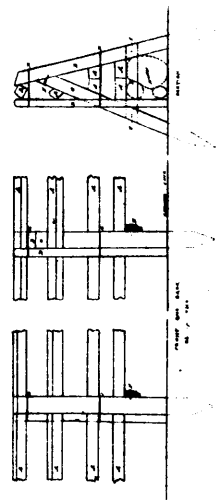
26679 Fox's Standard for Maps and Charts.



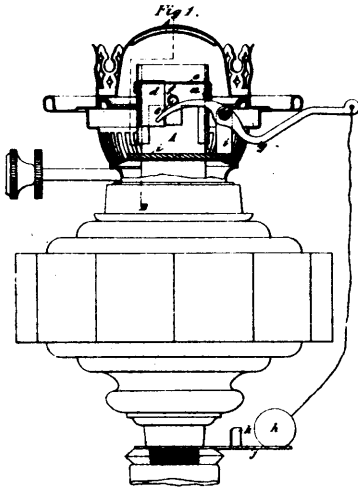
26680 Noyes' Municipal Signal System.



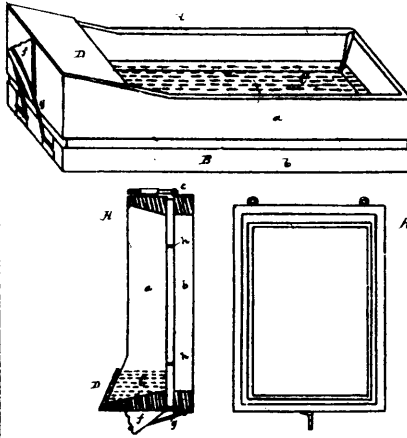
26681 Browne's Surgical Apparatus for administering Injections.



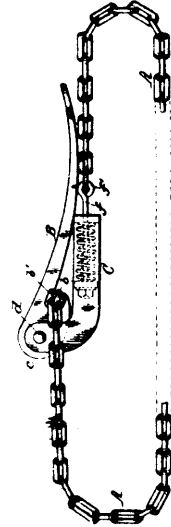
26682 Elliott's Farm Fence.



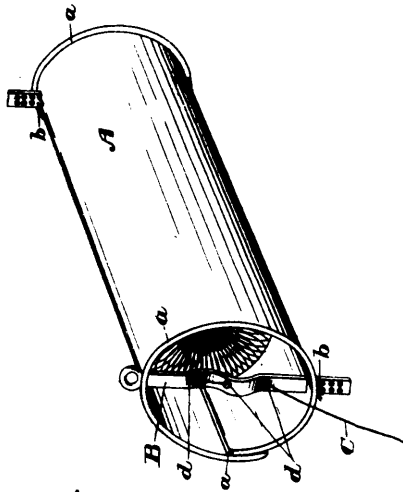
26683 Cunningham's Lamp.



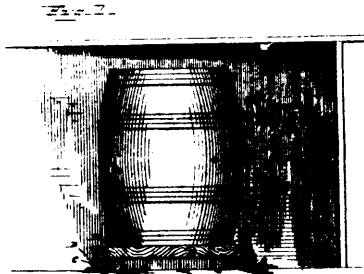
26684 Atkinson's Tray for Developing Photographic Plates.



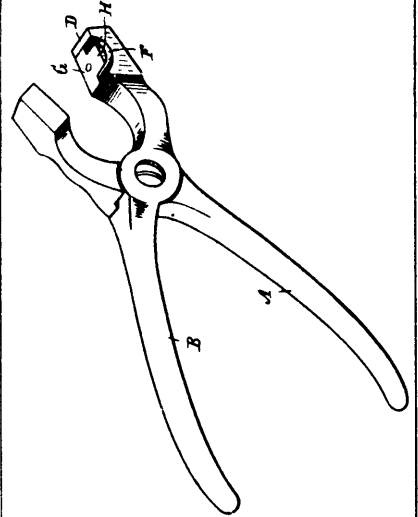
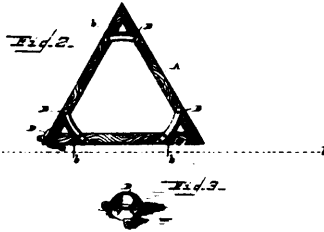
26685 Clark's Lumber Binder.



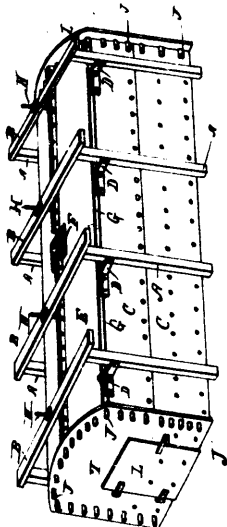
26686 Clokey's Twine Box for Harvesters.



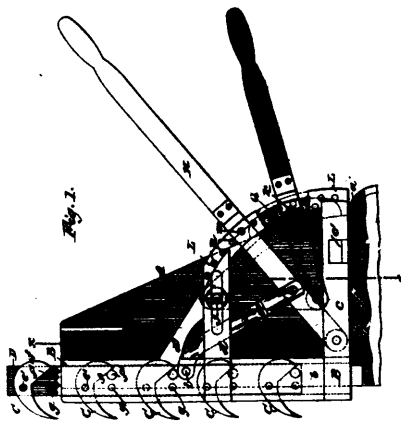
26687 Stone's Barrel Truck and Platform.



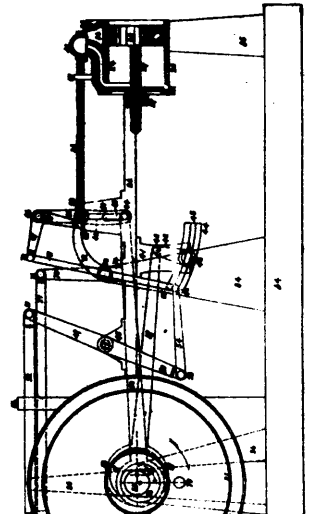
26688 Sullivan's Setting Instrument for Shoe Lace Holders.



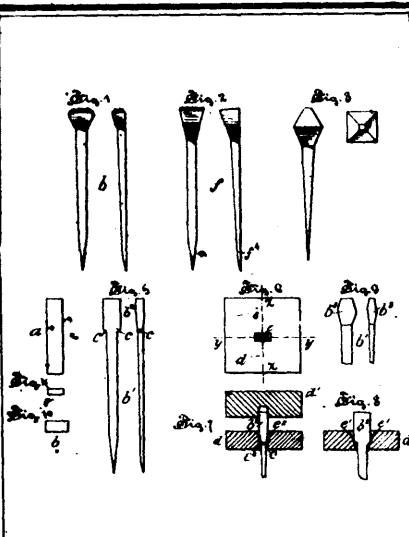
26689 McNaughton's Charcoal Kiln.



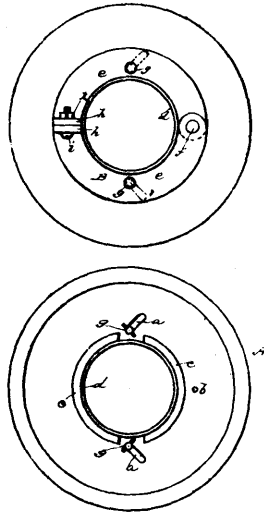
26690 Manley's Saw Mill Dog.



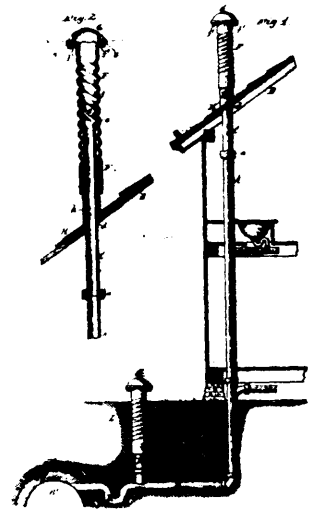
26691 Fay's Valve Gear.



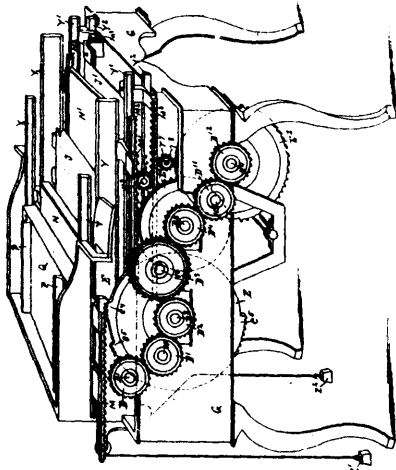
26692 Capewell's Horse Shoe Nail.



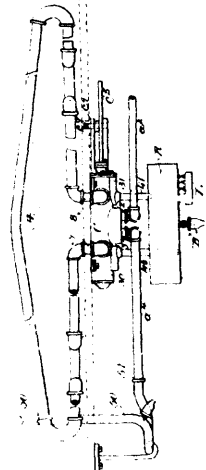
26693 Smith's Stove Pipe Thimble.



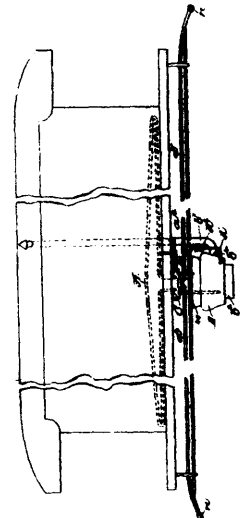
26694 Griffin's Ventilator for Soil Pipe.



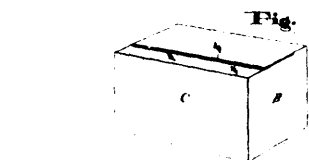
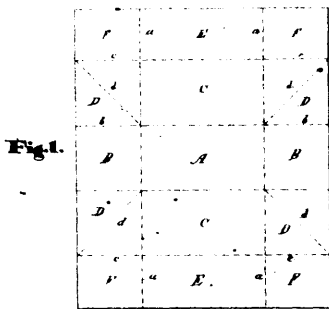
26695 Drier's Machine for Making Cigars.



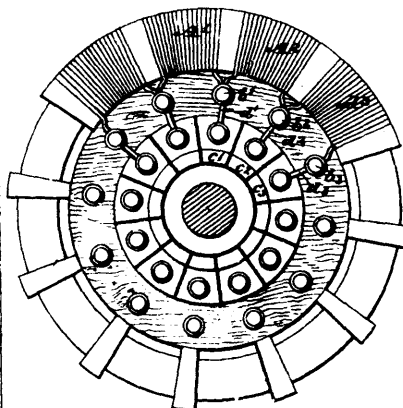
26696 Sewall's Car Heating Apparatus.



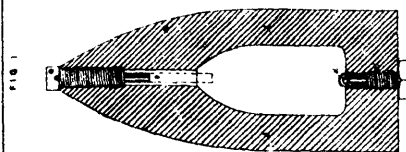
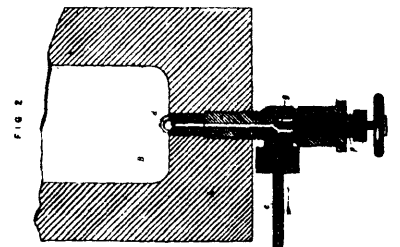
26697 Sewall's Ca. Heating Apparatus.



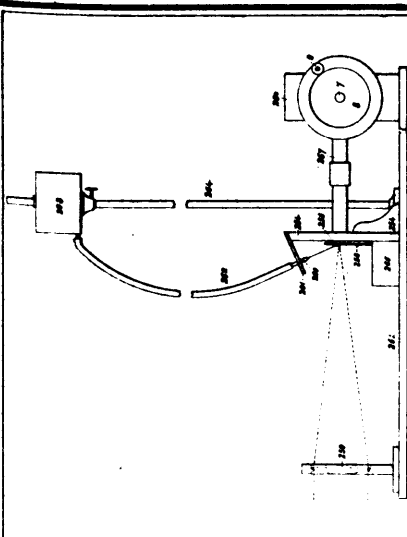
26698 Smith's Paper Box.



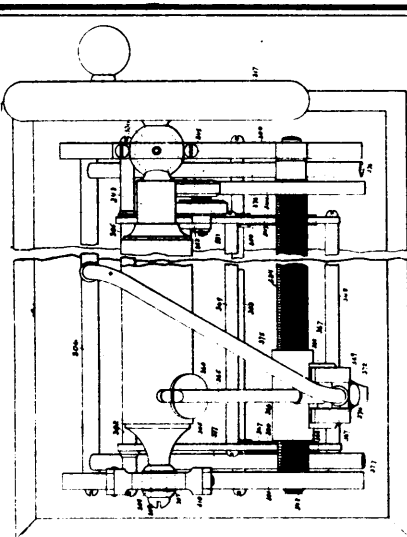
26699 Easton's Connection for Electric Generators.



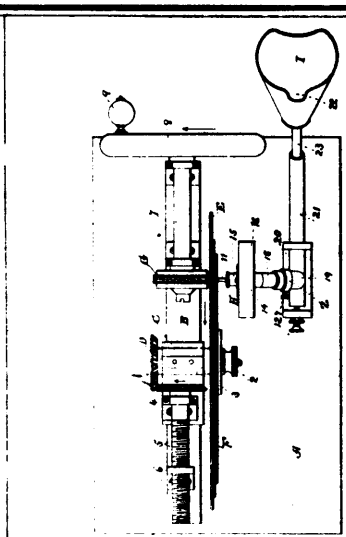
26700 Nobel's Method of Using Explosives.



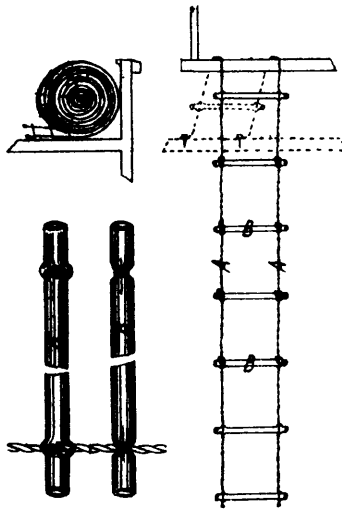
26701 Bell & Tainter's Method of Transmitting and Recording Sounds by Radiant energy.



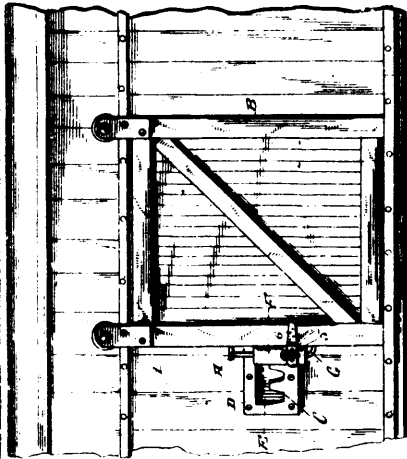
26702 Tainter's Apparatus for Recording and Reproducing Sounds.



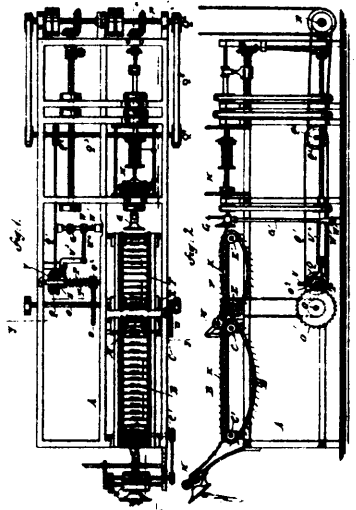
26703 Bell & Tainter's Method of Recording and Reproducing Speech.



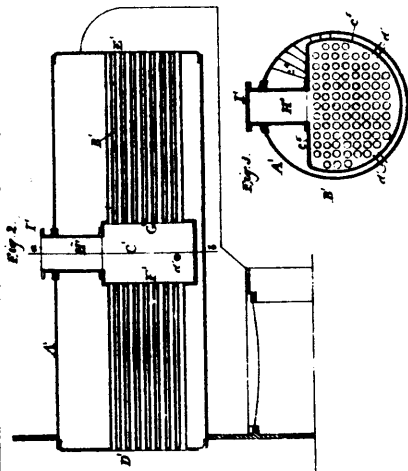
26704 McDonald's Fire-Escape Ladder.



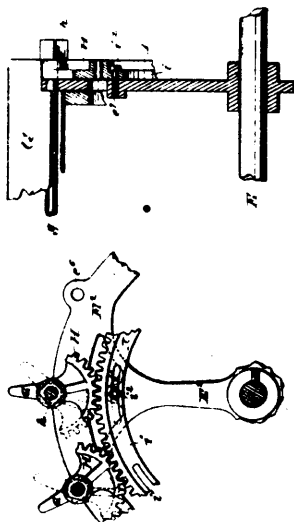
26705 Searles' Car Door Fastening.



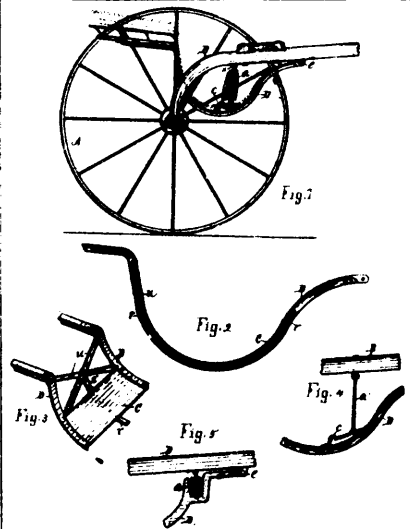
26706 Fulton's Cordage Spinning Machine.



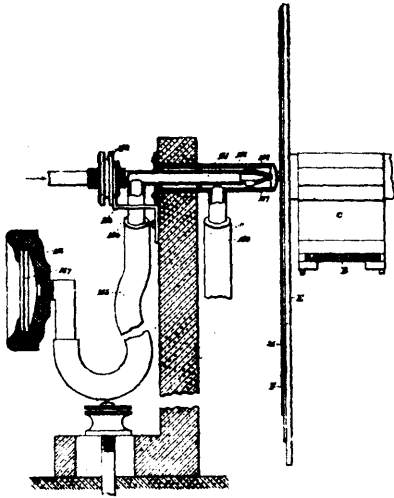
26707 Perkins' Steam Boiler.



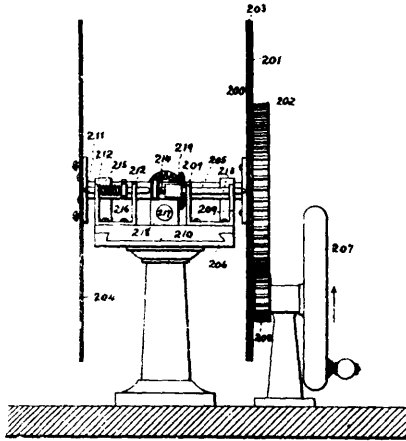
26708 Dunlap's Flour Bolt.



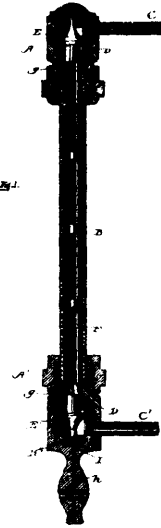
26709 Howard's Two-Wheeled Vehicle.



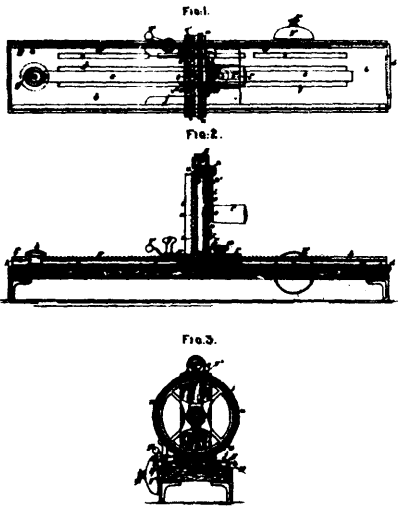
26710 Bell & Tainter's Method of Reproducing Sounds from Phonograph Records.



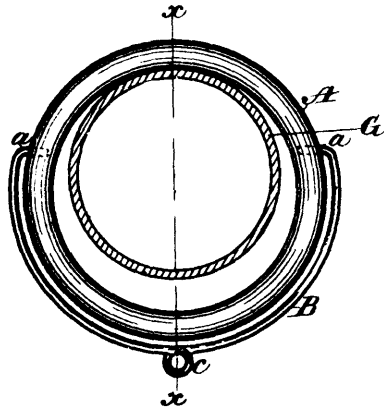
26711 Tainter's Method of Recording and Reproducing Sounds.



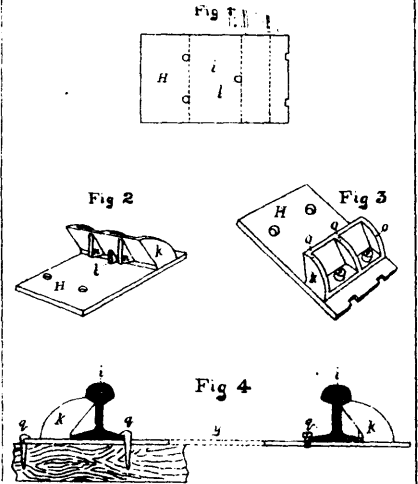
26712 Little's Gauge for Steam Boilers.



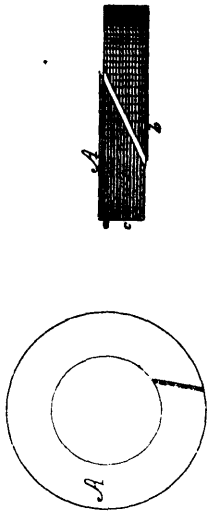
26714 Thatcher's Type Writer.



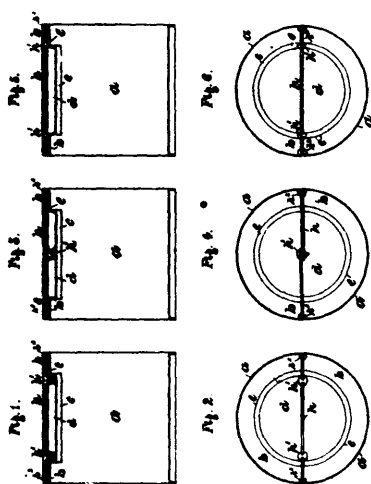
26715 Hill's Curtain Pole Ring.



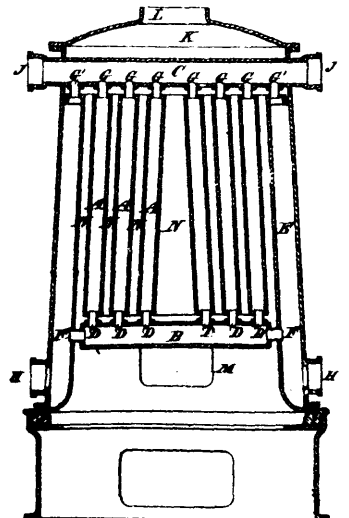
26716 De Guerre's Railway Rail Chair and Tie.



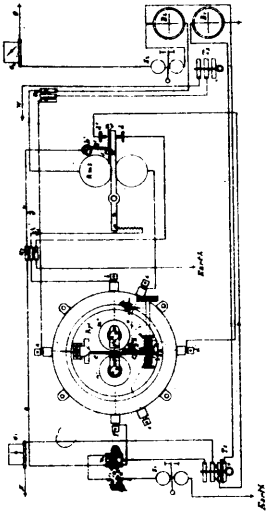
26717 Garlock's Packing for Piston Rods.



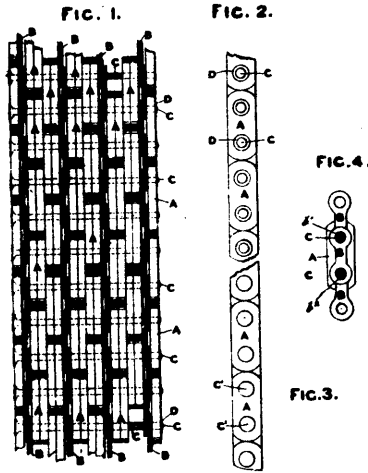
26718 Wall's Metal Box for Paint, etc.



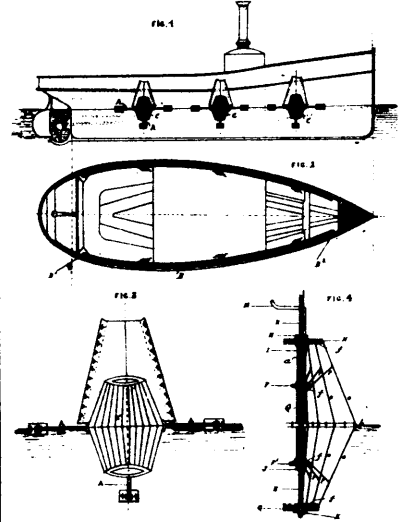
26719 Nolan's Water Heater and Steam Boiler.



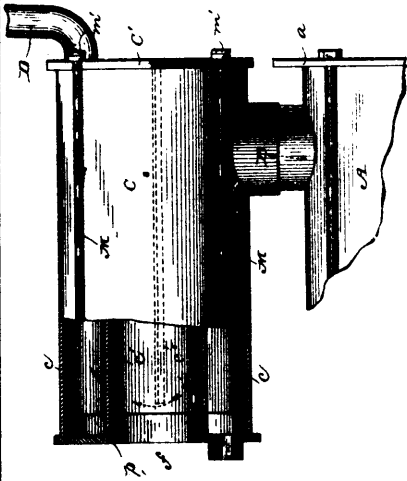
26720 Kötzer's Telegraph Apparatus and Circuit.



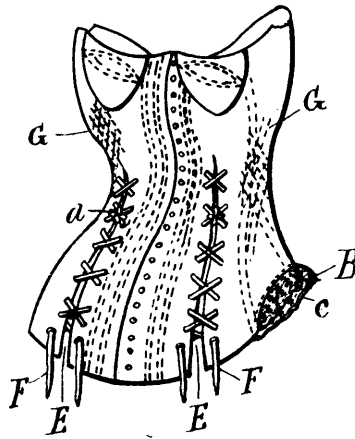
26721 Gasking's Band or Chain for the Transmission of Work.



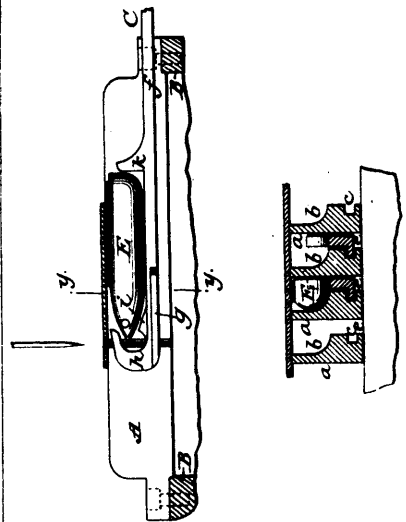
26722 Ponzetti & Oudin's Ship Saving Apparatus.



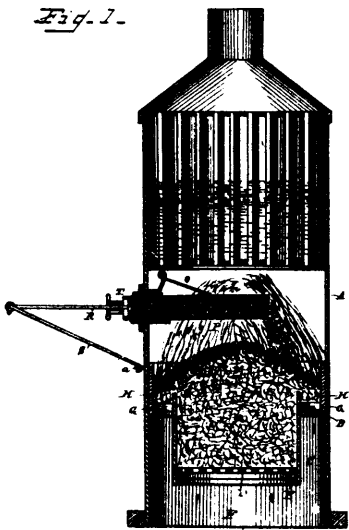
26723 Field's Heating Drum for Furnaces and Stoves.



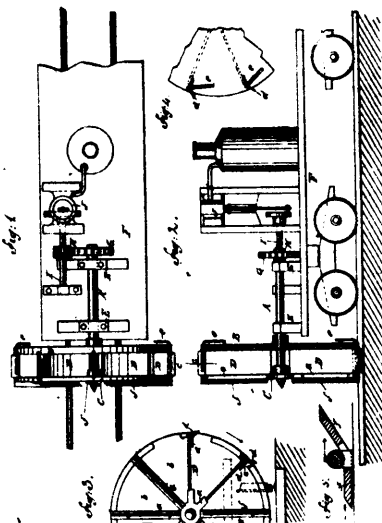
26724 Swartwout's Corset.



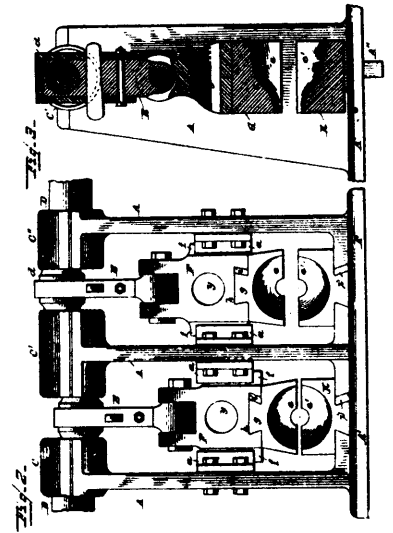
26725 Koch's Shuttle Carrier and Race Mechanism for Sewing Machines.



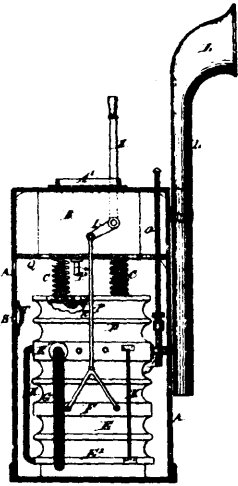
26726 Fales' Smoke Consuming Furnace.



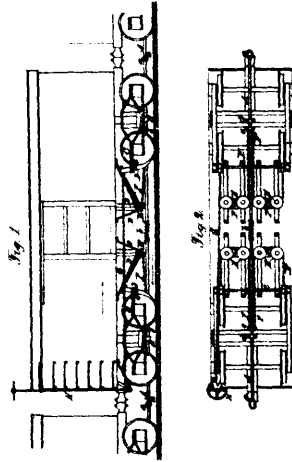
26727 Bergendahl's Railway Track Clearer.



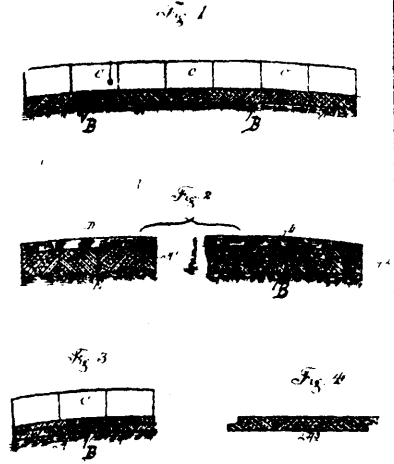
26728 Kennedy's Machine for Swaging, etc., Metal Tubes.



26729 Martin's Fog Horn Signalling Apparatus.



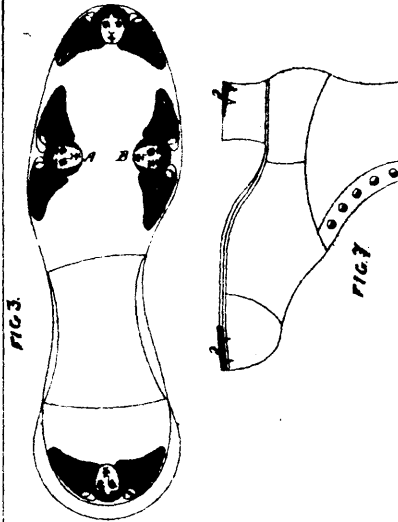
26730 Volz's Car Brake.



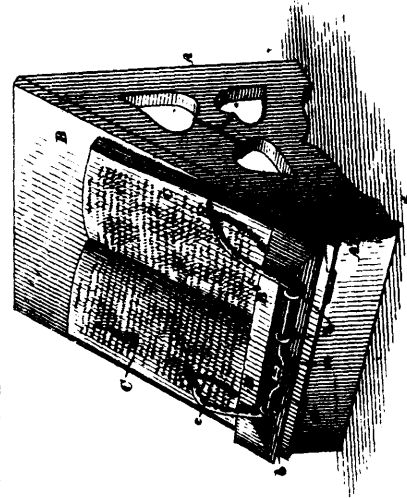
26731 Gilman's Pavement.



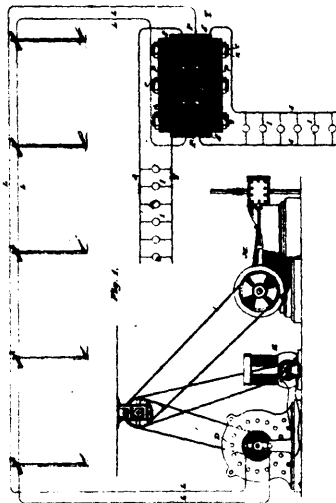
26732 Gilman's Side Walk.



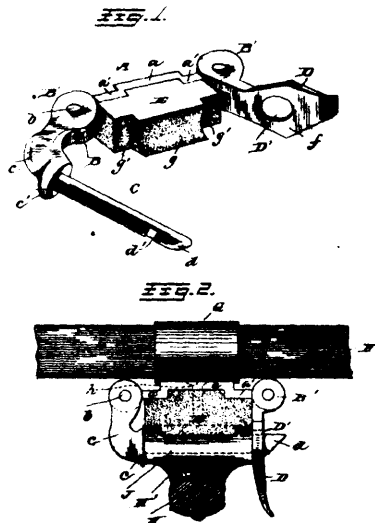
26733 Blakey's Boot Protector.



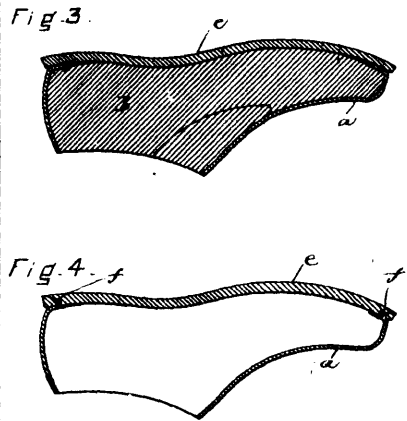
26734 Morton's Book Support and Leaf and Copy Holder.



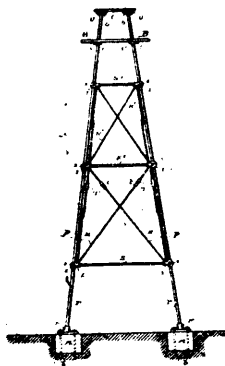
26735 Knudson's Incandescent Electric Lighting.



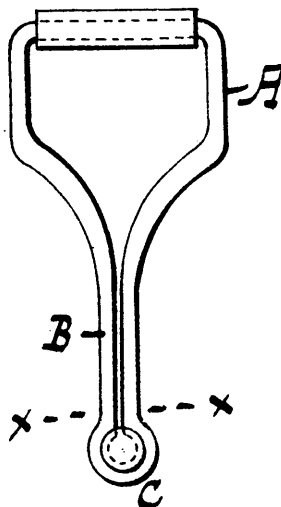
26736 Mason's Thill Coupling.



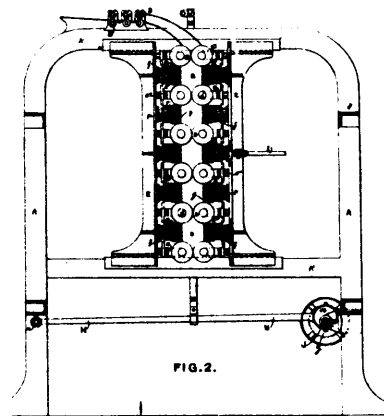
26737 Seaver's Method of Making Unturned Boots and Shoes.



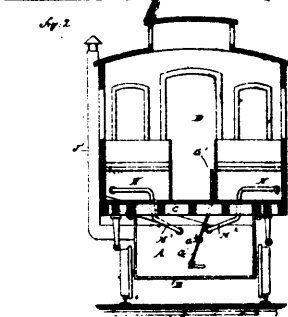
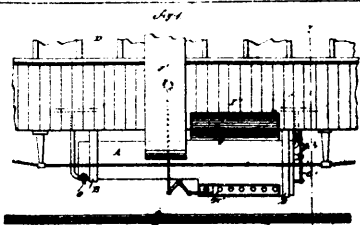
26738 Putnam's Windmill Tower.



26739 Willard's Garment Support.



26740 Wallace's Machine for Breaking, Cleaning and Scutching Flax.



26742 White's Water Heater for Cars.



26743 Bower's Egg Case.

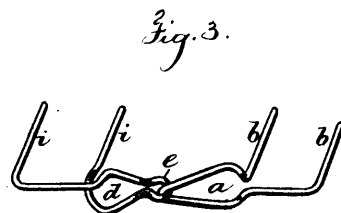
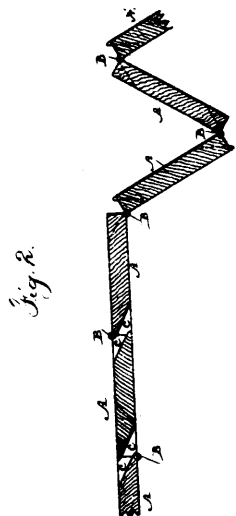


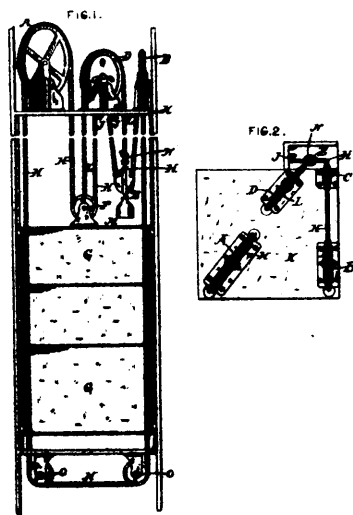
Fig. 3.



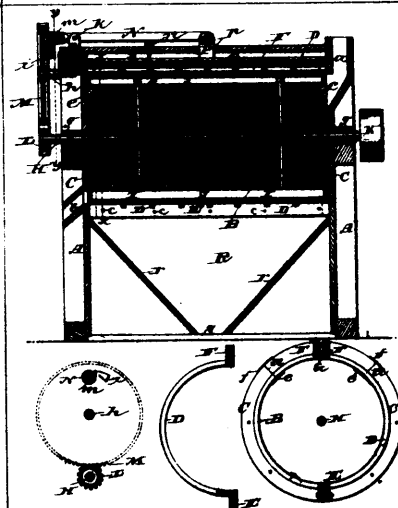
26744 Arthur's Inside Blind for Windows.



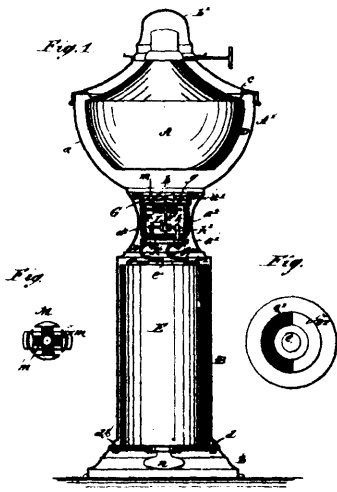
26745 Arthur's Folding Blind for Windows.



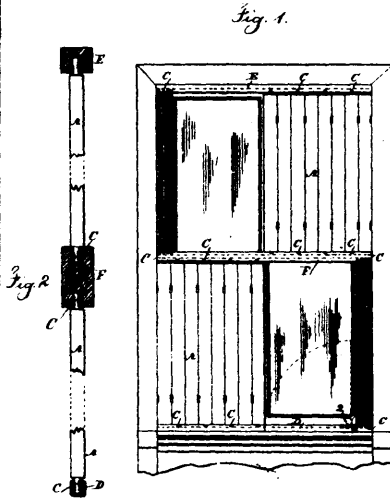
26746 Cannon's Dumb Waster.



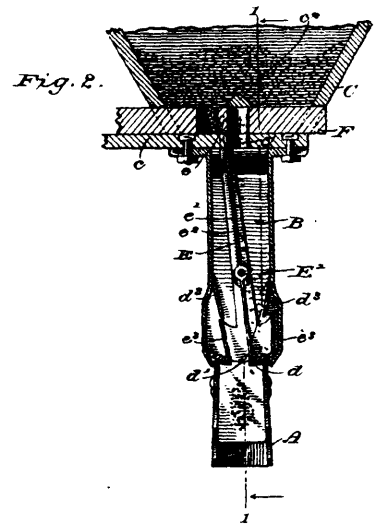
26747 Hunter's Machine for Cleaning Bran.



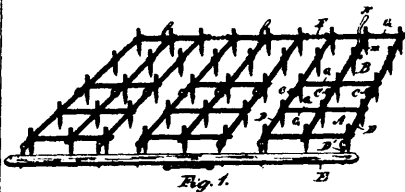
26748 Ross' Electric Motor and Fan for Lamps.



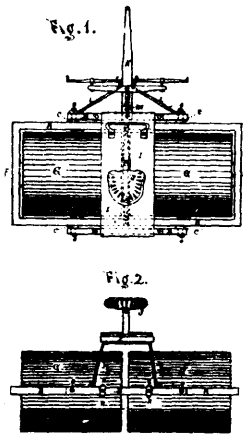
26749 Arthur's Window Blinds.



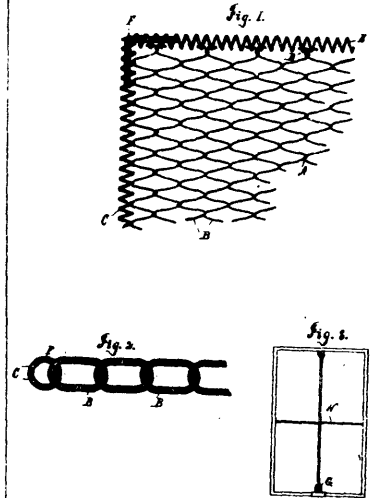
26750 Doolittle's Corn Planter.



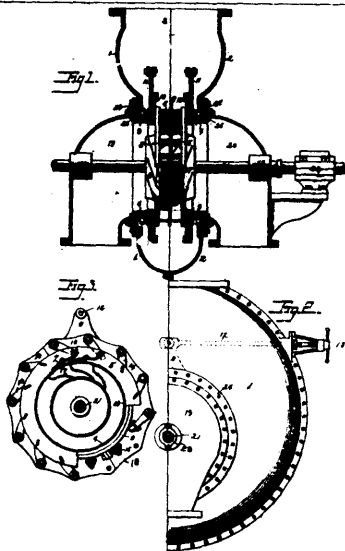
26751 Bogers' Harrow.



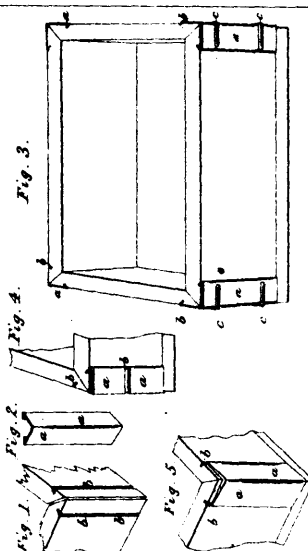
26752 Dale's Land Roller.



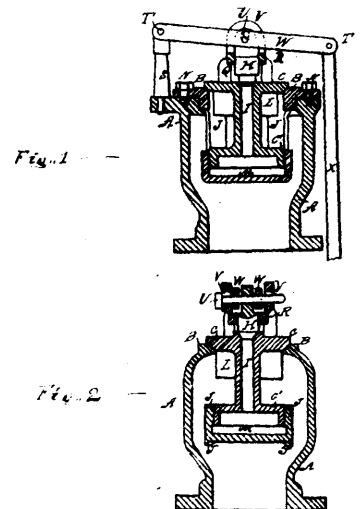
26753 Stoner's Wire Fabric for Floor Covering.



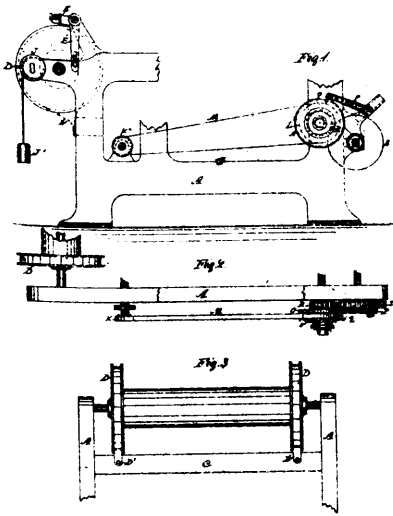
26754 Trump's Turbine Water Wheel



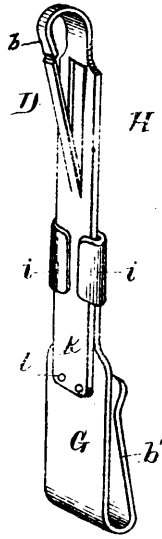
26755 Carr's Wooden Boxes, etc.



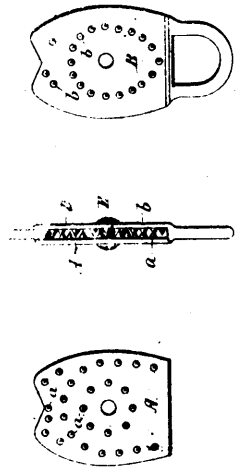
26756 Pandy's Balanced Throttle Valve.



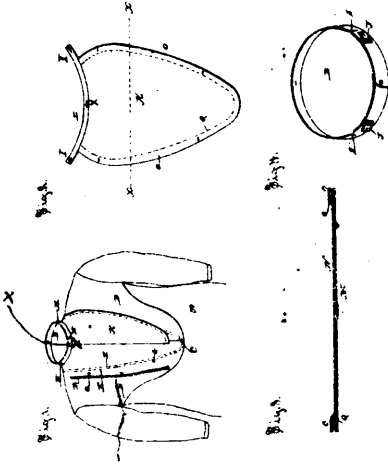
26757 Greening's Loom for Weaving Wire Cloth.



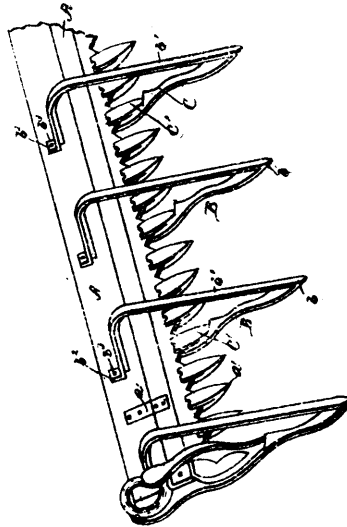
26758 Sawyer's Cuff Holder.



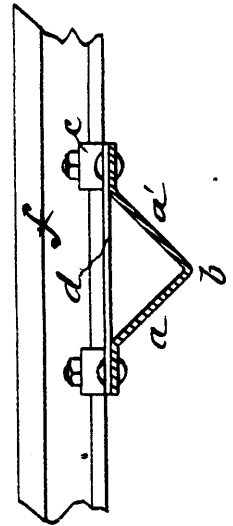
26759 Honey's Halter Mountings.



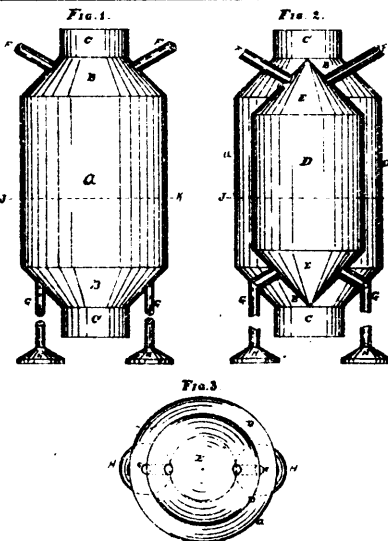
26760 Butz's Shirt and Supplementary Bosom.



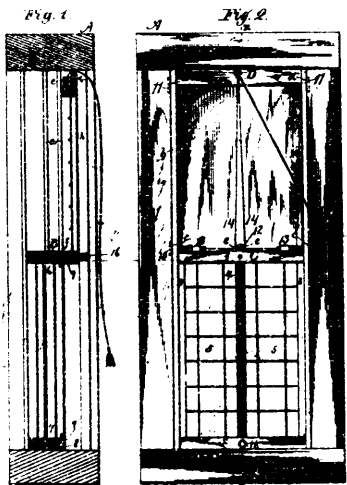
26762 Seidl's Mower, Reaper and Harvester.



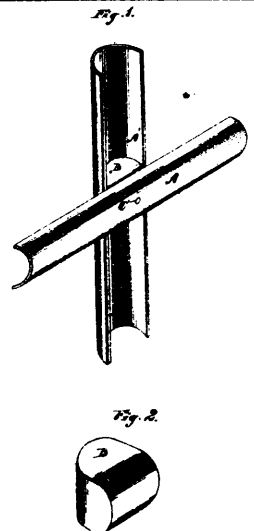
26763 Rathbone's Permanent Way of Railways and Tramways.



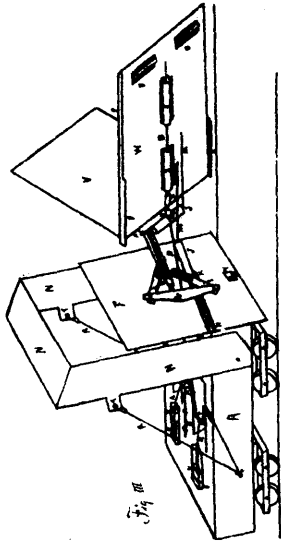
26764 Purdy's Hot Air Drum



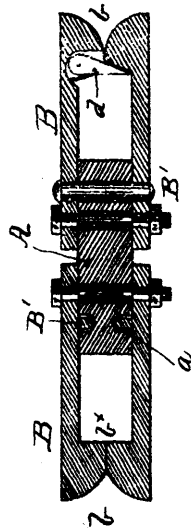
26766 Bryan's Window Screen.



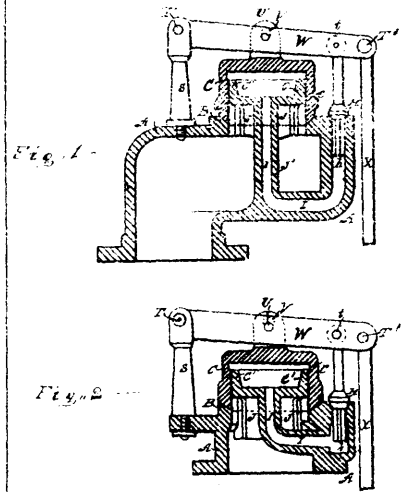
26767 Hodges' Joint for Crossing Parts of Corrugated Metal.



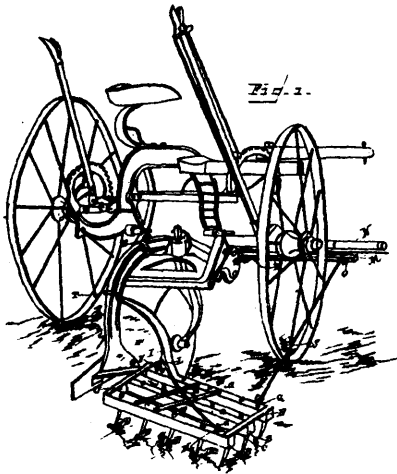
26768 Collins & Burnside's Excavating Snow Shovel.



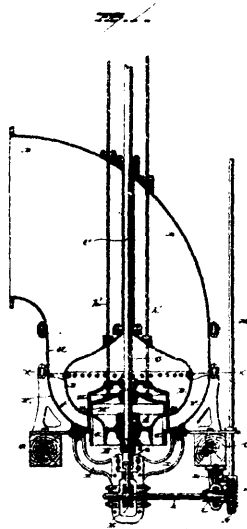
26769 King & Worley's Automatic Car-Coupler.



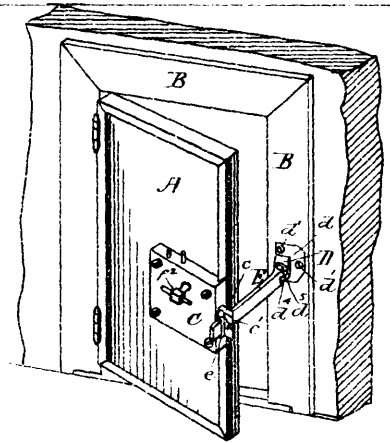
26770 Pandy's Balance Throttle Valve.



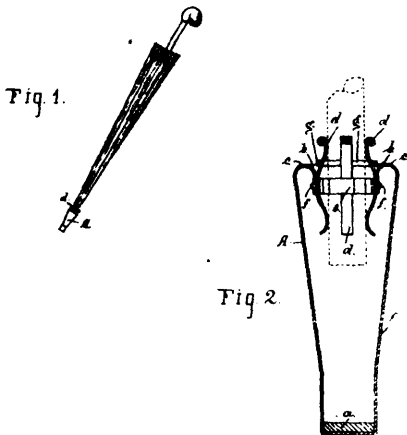
26771 Rew's Harrow Attachment.



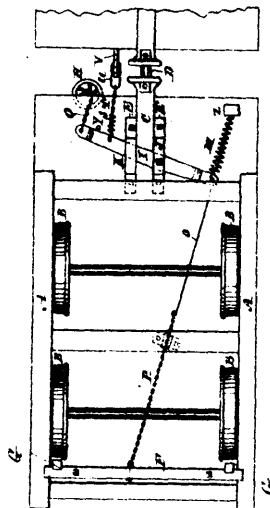
26772 Holmes' Turbine Water Wheel.



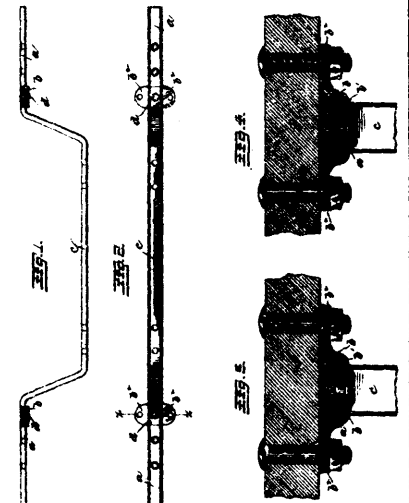
26773 Letzing's Door Lock.



26774 Nygard's Drip Cup for Umbrella.

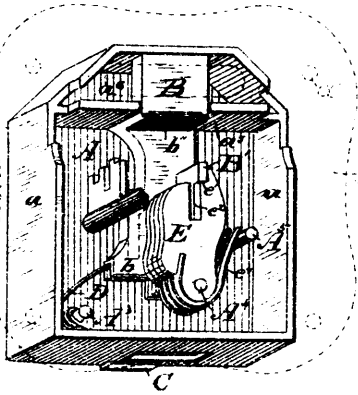


26775 Howell's Automatic Car Brake

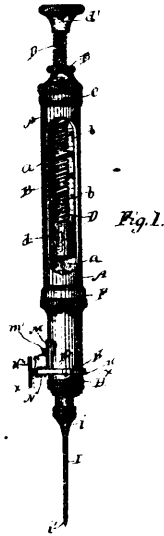


26776 Grier's Body-brace for Vehicle.

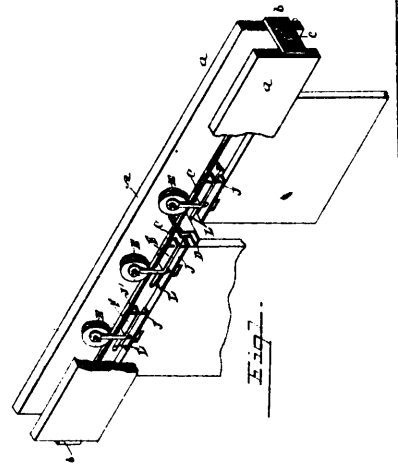
Fig. 2.



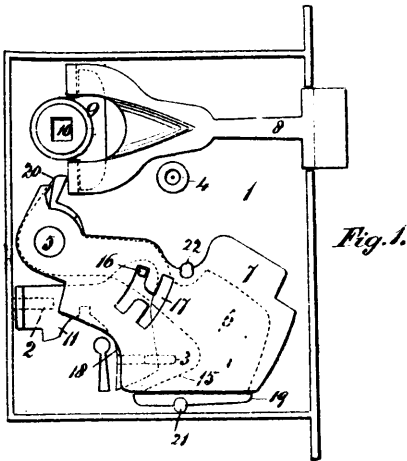
26777 Thornton's Lock.



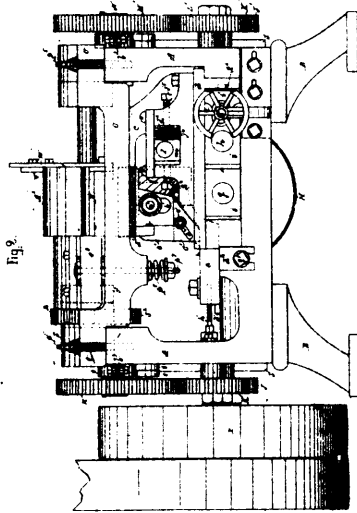
26778 Dunbar's Hypodermic Syringe.



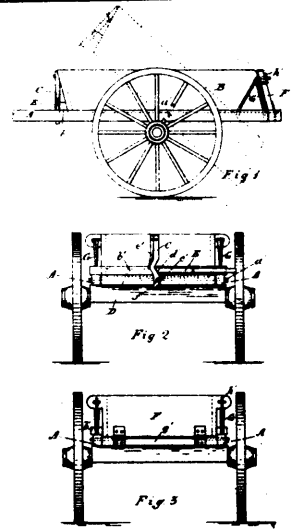
26779 Morse's Door Hanger.



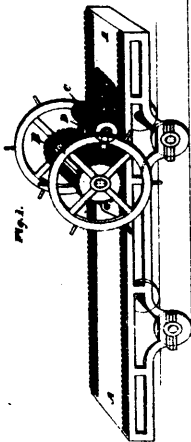
26780 Jobborn's Latch and Lock.



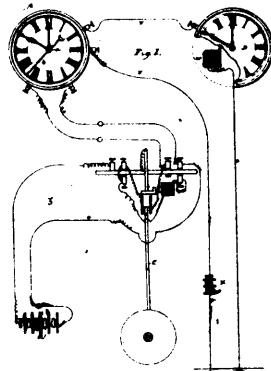
26781 Adams & Smith's Leather Splitting Machine.



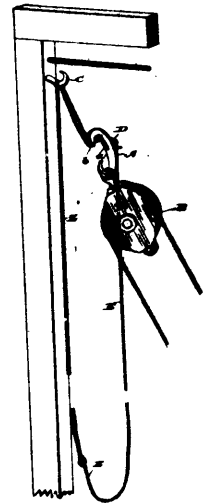
26782 Logan's Dump Cart.



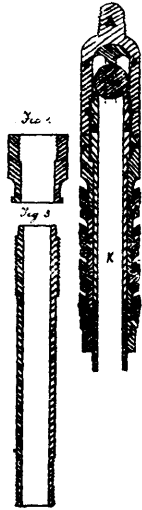
26783 Brogan & Malloch's Rolling Glass to produce Design or Pattern therein, and apparatus therefor.



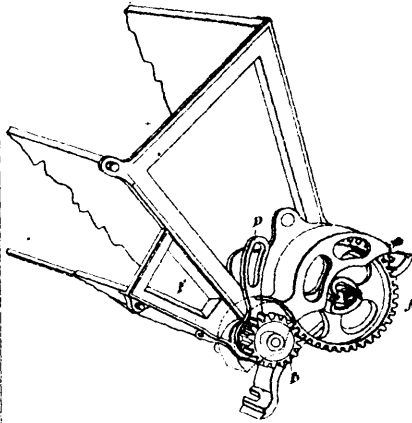
26784 Abell & Gifford's Electric Clock.



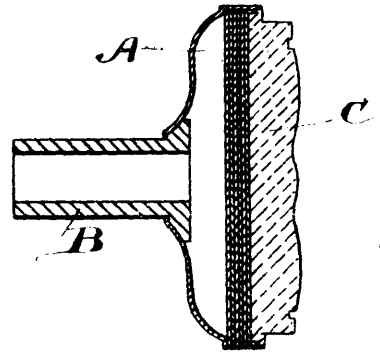
26785 Provan's Pulley Hoister.



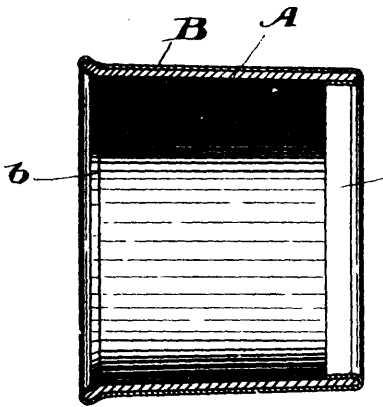
26786 Sanson's Oil Well Pump Valve.



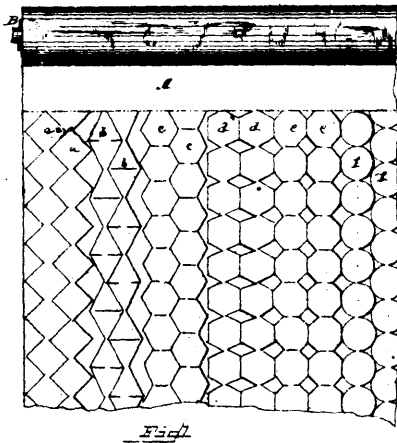
26787 Noxan's Driving Gear of the Feed-rod of a Grass Seed Hopper.



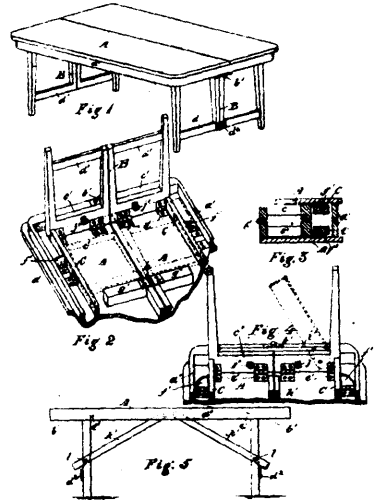
26788 Green & Brewer's Door Knob.



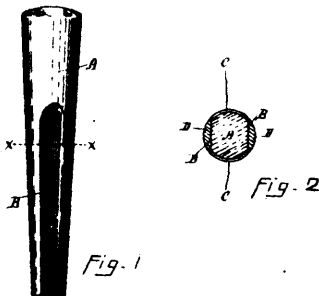
26789 Green & Brewer's Hub Band for Vehicles.



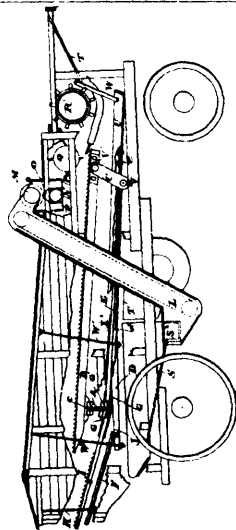
26790 Wheeler's Wrapping or Toilet Paper Roll.



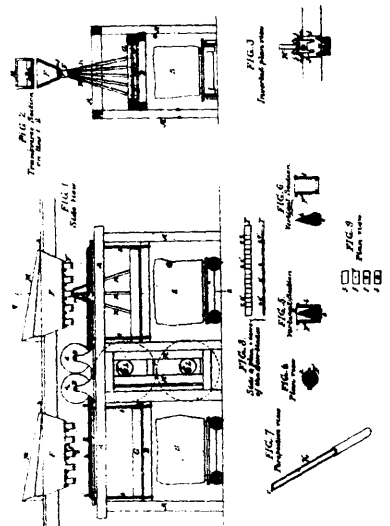
26791 Baxter's Folding Table.



26792 Bentley's Quarrying Plug.



26793 Morris' Thrashing Machine.



26794 Peckover's Stone Sawing Machine.