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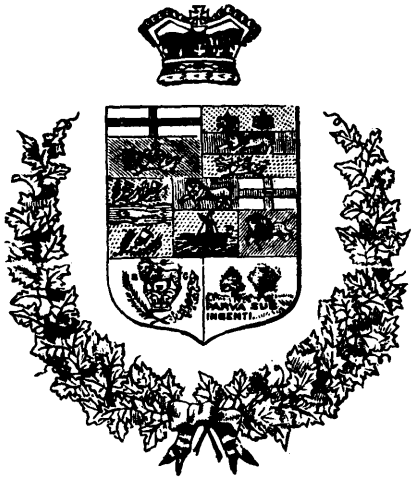
THE CANADIAN PATENT OFFICE RECORD.



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INVENTIONS PATENTED.

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

No. 30,528. Snow Shoe Attachment.

(*Ligature de raquette.*)

Benjamin C. Woodbury, Patten, Me., U.S., 31st December, 1888; 5 years.

Claim—1st. The combination, with a snowshoe, of a toe-and-heel shoe-like attachment for the foot hinged at its toe portion to the snowshoe, substantially as specified. 2nd. The combination, with a snowshoe, of the toe-piece B, of a foot attachment having side wings *d*, *d*, and the hinges D, D, by which said toe-piece is united with the snowshoe, substantially as specified. 3rd. The combination, with the snowshoe A, of the open-ended toe-piece B, having upper cross-straps F, F, and side wings *d*, *d*, and hinges D, D, uniting said toe-piece with the snowshoe, the separate heel-piece C, and the adjusting side straps *b*, *b*, connecting the toe and heel pieces, substantially as specified.

No. 30,529. Treatment of Auriferous and Auroargentiferous Ores and Wastes. (*Traitement des minerais aurifères et auroargentifères et résidus aurifères et auroargentifères.*)

Jules Weirich, Béziers, France, 2nd January, 1889; 5 years.

Résumé.—1o. Le procédé ci-dessus décrit de préparation des minerais aurifères et auroargentifères qui consiste, premièrement, à griller le minerai, deuxièmement, à le mélanger avec du carbonate de soude et du charbon, ou du carbonate de soude, et carbonate de chaux et du charbon, et troisièmement, à le soumettre à une chaleur suffisante pour former des silicates composés, ainsi que je l'ai substantiellement décrit dans la présente spécification. 2o. Le procédé ci-dessus décrit de préparation des minerais aurifères et auroargentifères qui consiste, premièrement, à griller le minerai, deuxièmement à le mélanger avec du carbonate de soude et du charbon, ou du carbonate de soude, et carbonate de chaux et du charbon, et dans les deux cas avec du quartz si le minerai n'en renferme pas assez, et troisièmement, à le soumettre à une chaleur suffisante pour former des silicates composés, ainsi qui je l'ai substantiellement décrit dans la présente spécification. 3o. Le procédé ci-dessus décrit de préparation des minerais aurifères et auroargentifères pour l'amalgamation qui consiste, premièrement, à griller le minerai, ensuite à mêler avec le minerai un ou des carbonates alcalins et du charbon, et du quartz si cela est nécessaire, puis à fondre le mélange pour former des silicates composés, et enfin à réduire la masse à l'état de poudre pour l'amalgamation, ainsi que l'ai substantiellement décrit dans la présente spécification.

No. 30,530. Manufacture of Chairs.

(*Fabrication des chaises.*)

Daniel Hibner and Solon L. Doolittle, Berlin, Ont., 7th January, 1889; 5 years.

Claim.—1st. The combination of the rocker *h*, the post *f*, the brace C, the lap *j*, and the bolts or screws *g*, *h*, *l* and *p*, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the stretchers *m*, *m*, *k k*, and the slats *q*, substantially as and for the purpose hereinbefore set forth.

No. 30,531. Electric Meter. (*Electromètre.*)

Anthony Reckenzaun London, Eng., and James A. Pentz, Philadelphia, Penn., U.S., 9th January, 1889; 5 years.

Claim.—1st. In an electric meter, the combination of a register or indicator, a shaft for transmitting motion thereto, a constant speed motor, a wheel driving a constant speed movement therefrom, a sleeve mounted on said shaft to rotate therewith and slide thereon, and to gravitate downward, a variable speed friction wheel or roller connected with said sleeve, and bearing against the face of said constant speed wheel, to derive rotative movement from it, a core connected with said sleeve, and a solenoid energized from the main current and influencing said core to change the point of contact of said variable speed wheel with the constant speed wheel to vary the speed of the former in proportion to the energy consumed, substantially as described. 2nd. In an electric meter, the combination, of the rotating shaft G, provided with worm H at one end, to transmit motion to a registering mechanism, a sleeve F mounted on said shaft to slide thereon and turn the same, and carrying a friction wheel E and core J turning therewith, a constant speed worm wheel D against the face of which said friction wheel bears, a worm C meshing with said worm wheel, a constant speed motor for revolving said worm, and the solenoid actuated by the energy to be measured for changing the bearing point of said roller on the face of said worm wheel to vary the speed of said roller, substantially as described.

No. 30,532. Galvanic Battery.

(*Batterie galvanique.*)

David Humphreys, New York, N.Y., U.S., 9th January, 1889; 5 years.

Claim.—1st. In a galvanic battery, the combination, with the positive and negative electrodes, of an ærating device provided with openings opposite the negative surface, and a blower for forcing air through said openings. 2nd. In a galvanic battery, the combination, with the positive and negative electrodes, of an ærating device provided with openings opposite the negative surface, a blower for forcing air through said openings, and means for shifting said openings over the carbon surface, whereby the air may be discharged successively against different parts of said surface. 3rd. In a galvanic battery, the combination, with the positive and negative electrodes, of an ærating device close to the negative surface, a blower for forcing air upon said negative surface, and a motor for reciprocating said device so as to discharge the air against the entire negative surface. 4th. In a galvanic battery, the combination, with the positive and negative electrodes, of an ærating device provided with openings opposite said electrodes, a blower for forcing air through the openings, and means for reciprocating the ærating device so as to discharge the air toward the electrodes at different vertical elevations. 5th. In a galvanic battery, the combination, with the positive and negative electrodes, and an exciting and depolarizing solution, of an ærating device, a mechanical agitator in said solution, and a motor for operating said agitator. 6th. In a galvanic battery, the combination, with the positive and negative electrodes, and an exciting and depolarizing solution, of a mechanical agitator, a blower for forcing a gas into the solution, and a motor for operating both the agitator and the blower. 7th. The combination of a galvanic battery, a reciprocating depolarizing device in operative relation to the negative surface of said battery, a motor for bringing said depolarizer alternately into the air and the excitant, whereby the excitant is agitated and air is brought into contact with the negative surface. 8th. In a galvanic battery, the combination of the positive and negative electrodes, the latter opposing both faces of the former, an agitator between the opposing faces, and means for reciprocating said agitator. 9th. The combination, with a galvanic battery, of a depolarizer and agitator consisting of a rod provided with air recesses, and a motor for reciprocating the rod and bringing said recesses alternately into and out of the excitant. 10th. In a galvanic battery, the combination of the positive and negative electrodes, a mechanical depolarizer provided with cross arms, and means for reciprocating said agitator and alternately shifting it into and out of the solution either partially or wholly, for the purposes set forth.

No. 30,533. Electrode for Secondary Batteries. (*Electrode pour batteries secondaires.*)

Charles H. Thompson, Detroit, Mich., U.S., 9th January, 1889; 5 years.

Claim.—1st. A blank consisting of a piece of foraminous or open-work metal, or other appropriate substance or material, in suitable shape when bent up to present a support for an electrode in the na-

ture of a receptacle or basket, the portions of the blank to be the sides of the receptacle having projections on respectively opposite edges, and the portions to be the ends having openings in respectively opposite edges, the projections on the sides fitting into the corresponding openings in the ends, there being a terminal integral with the structure, substantially as described. 2nd. An electrode for a secondary battery consisting of the foraminous or open-work receptacle, of perforated metal wire-work, or other appropriate substance, having the integral terminal and filled with active material, substantially as described, 3rd. An electrode for a secondary battery, consisting of a foraminous or open-work receptacle of perforated metal wire-work or other appropriate substance, containing active material, substantially as described.

No. 30,534. Electrode for Secondary Batteries. (*Electrode pour batteries secondaires.*)

Charles H. Thompson, Detroit, Mich., U.S., 9th January, 1889; 5 years.

Claim.—1st. The method of producing a support for an electrode for a secondary battery, by casting or moulding a suitable metallic substance in contact with a body or mass of such form that the metal in casting will penetrate the body or mass, the mould being heated to keep the metallic substance fluent for the purposes, and the body or mass afterward to be removed leaving the metallic substance in a highly porous condition throughout, with cells communicating one with another forming tortuous ducts throughout, substantially as set forth and described, 2nd. The method of producing a suitable support by casting or moulding a suitable metallic substance, in contact with a body or mass of such form that the substance in casting or moulding will penetrate the body or mass, the body or mass afterward to be removed, and either or before or after such removal, the substance to be cut or sawed into slabs or plates of suitable size, substantially as shown and described. 3rd. The method of producing a suitable support with a proper projection to serve as a terminal for electrical connection, by a casting one support in cellular form, and at the same time casting a solid projection integral therewith, substantially as set forth. 4th. The method of producing an electrode for a secondary battery, which consists in casting or moulding highly porous or cellular support with a solid terminal integral with the body thereof, then coating the support with active material, or passing it into the pores or cells thereof, substantially as described.

No. 30,535. Electrode for Secondary Batteries. (*Electrode pour batteries secondaires.*)

Charles H. Thompson, Detroit, Mich., U.S., 9th January, 1889; 5 years.

Claim.—1st. A support for an electrode, consisting of a body having tortuous ducts throuout, forming a porous mass, and a solid terminal integral with the body, substantially as described. 2nd. A support for an electrode, consisting of a highly porous metallic substance in a single piece, with cells communicating one with another forming tortuous ducts throughout, the said support having applied upon it, or pressed into its pores or cells, suitable active material, substantially as shown and described. 3rd. A support for an electrode consisting of a highly porous metallic substance in a single piece, with cells communicating one with another forming tortuous ducts throughout, and with a solid projection proper for a terminal made integral with the structure, the said support having applied upon it, or pressed into its pores or cells, suitable active material, substantially sa set forth. 4th. An e ectrode for a secondary battery, consisting of highly porous metallic substance in a single piece, with cells communicating one with another forming tortuous ducts throughout, and with a projection for a terminal made integral with the structure, the said substance having applied npon it, or pressed into its pores or cells, suitable active material, and the same being formed, all substantially as and for the purpose described.

No. 30,536. Screw-Threading Machine. (*Machine à fileter les vis.*)

Harrison H. Taylor, Detroit, Mich., U. S., 12th January, 1889; 5 years.

Claim.—1st. In a screw-threading machine, the combination, with a support of sliding beds engaged therewith, rotatable cutters journalled in said beds and adapted to move with the beds, substantially as set forth. 2nd. In a screw-threading machine, the combination, with a support of cutters, means to rotate and reciprocate said cutters, and an expansible chuck adapted to engage the work from the interior and hold it between said cutters, substantially as set forth. 3rd. In a screw-threading machine, the combination, with a support, of sliding beds engaged therewith, rotatable multiple cutters journalled therein and adapted to move with said bed, means to reciprocate said beds and a chuck to hold the work, substantially as set forth. 4th. In a screw-threading machine, the combination, with a support, of rotatable reciprocatory cutter, spindles located end to end, and a rotatable laterally movable chuck to hold the work adjacent to the cutters, substantially as set forth. 5th. In a screw-threading machine, the combination, with a support, of cutter spindles, each having a rotatable and reciprocatory movement in said support and located end to end, a rotatable chuck to hold the work adjacent to the cutters, and mechanism to simultaneously reciprocate and rotate the spindles, substantially as set forth. 6th. In a screw-threading machine, the combination, with a support, of rotatable cutter spindles located end to end, and provided each with a multiple cutter, a rotatable chuck to hold the work, and means to feed the cutters apart when in engagement with the work, substantially as set forth. 7th. In a screw-threading machine, the combination, with a support, of sliding beds A^1, A^2, connected with a feed-screw having a right and left-hand screw-threaded engagement with said beds respectively, and mechanism to rotate said feed screw to reciprocate said beds, said beds provided each with a cutter spindle, substantially as set forth. 8th. In a screw-threading machine, the combination, with a support, of sliding beds A^1, A^2, cutter spindles journalled in said beds, a rotatable chuck to engage the work, and mechanism to simultaneously reciprocate said beds and rotate said spindles, substantially as set forth. 9th. In a screw-threading machine, the combination, with a support, of sliding beds A^1, A^2, rotatable cutter spindles journalled in said beds, a feed screw having a right and left-hand engagement with said beds, a chuck to hold the work and mechanism to rotate said feed screw and said chuck, substantially as set forth. 10th. In a screw-threading machine, the combination, with a support, of a rotatable chuck to engage the work, sliding beds connected with a feed screw, having a right and left-hand screw tapped engagement therewith, cutter spindles journalled in said beds, worm gear to rotate said feed screw, and mechanism to rotate said worm gear, substantially as .set forth. 11th. In a screw-threading machine, the combination, with a support, of sliding beds A^1, A^2, a feed screw having a right and left-hand screw tapped engagement with said beds, a worm gear loosely mounted upon the feed screw, a handle having a screw tapped engagement with said screw, whereby the gear may be tightened thereupon and a worm meshing with said gear, substantially as set forth.

No. 30,537. Barley Flake and Process of Producing the same. (*Flocon d'orge et procédé de production de cet article.*)

Frederick R. Farwell and Foster P. Rhines, Watertown, N.Y., U. S., 12th January, 1889; 5 years.

Claim.—1st. As a new article of manufacture, the hearts of barley kernels in their natural dry condition freed from irritants and pressed into flakes, substantially as described. 2nd. The herein described process of forming barley flakes, consisting in grinding or removing the outer coating of the kernels without crushing the same, and then subjecting the heart in its pure condition to the action of rolls or pressers, whereby they are formed into flakes, substantially as described. 3rd. The herein described process of forming barley flakes, consisting in cleaning the grain, then subjecting it to the action of grinders to remove the outer coating or shell of the kernels, then separating the same by a suitable blast, and finally forming the hearts of the kernels in their pure condition into flakes by the action of rolls or presses, substantially as described.

No. 30,538. Mould for Casting Cellular Electrodes. (*Moule pour couler les électrodes cellulaires,*)

Charles H. Thompson, Detroit, Mich., U. S., 12th January, 1889; 5 years.

Claim.—A mould for casting a support for an electrode, consisting of the body A filled with pulverized refractory material, and having the hollow projection at its lower end, substantially as described.

No. 30,539. Raisin Seeder. (*Vide raisin.*)

Thomas Dalby, Watertown, Warren Boyd, Walpole, and James E. Gammon, Watertown (assignees of Joseph W. Calef, North Easton), Mass., U.S., 14th January, 1889; 5 years.

Claim.—1st. A raisin seeder, composed of a series of elastic ribs placed side by side, and a holder therefor, as set forth. 2nd. A raisin seeder, composed of a spiral wire, and a holder or handle therefor, as set forth. 3rd. A holder or handle provided with a shield or cover *d*, and a series of wire ribs, as set forth.

No. 30,540. Electric Meter. (*Electromètre.*)

Anthony Reckenzaun, London, Eng., and James A. Pentz, Philadelphia, Penn., U.S., 14th January, 1889; 5 years.

Claim.—1st. In an electric meter, the combination, with a variable speed gear, of means for periodically releasing contact between parts of said speed gear, substantially as and for the purposes set forth. 2nd. The combination, with the wheel having a friction roller changing its point of contact with said wheel with the change in the consumption of energy, of means for periodically releasing contact between said friction roller and wheel, substantially as described. 3rd. The combination, with the wheel having a friction roller changing its point of contact with said wheel, with the change in the consumption of energy, of a solenoid energized from the main current, and moving said friction wheel, and a second solenoid in circuit with the first solenoid, and connected with a part of said friction wheel, moving mechanism to counterpoise or compensate for the varying attractive force of one solenoid on its core, and thus establish an equilibrium, substantially as and for the purposes set forth. 4th. In an electric meter, the combination, with the two solenoids in circuits with each other, of the constant speed wheel, the variable speed roller, the shaft connecting with the registering mechanism, and having motion transmitted to it from said variable speed roller, and the lever intermediate of said solenoids, and having connection with parts of the two solenoids, substantially as and for the purpose set forth. 5th. In an electric meter, the combination, with a solenoid energized from the main current, of a second solenoid in circuit with the first solenoid and connected with said solenoid to compensate for the varying attractive force of one solenoid, substantially as and for the purpose described.

No. 30,541. Chain Link. (*Chainon de chaine.*)

Harry E. Kelley and George N. Miller, Niagara Falls, N. Y., U. S., 14th January, 1889; 5 years.

Claim.—1st. A flat chain link A, stamped or cut out of sheet metal, one end having a hole at *a*, for the reception of the next link A at that end, the other end having the link opening a^1, and slot *d*, continuing therefrom and adapted to receive the next link, and to be closed edgewise against the edge of the link itself, making a cold shut, substantially as specified. 2nd. As a new article of manufacture, the flat chain link A made from sheet metal, and having an open end or ends a_1, *d*, the side or end *c* adapted to be shut against the edge of the link A, substantially as set forth.

No. 30,542. Garment Stay. (*Busc de corset.*)

The Detroit Stay Company (assignee of Benjamin F. Wheeler), Detroit, Mich., U.S., 14th January, 1889; 5 years.

Claim.—1st. A universally flexible stay, consisting of a crimped wire bent at its ends, and interposed with a sheet of gutta-percha tissue between two surfaces of fabric, the whole pressed together, whereby the fabrics are caused to adhere, both at the edges and in the spaces between the crimps, substantially as and for the purpose described. 2nd. A universally flexible stay, consisting of a crimped wire, interposed with an adhesive substance between two sheets of the fabric, one of said fabrics with the adhesive substance folded over one or both ends of the stay onto the other fabric, and the whole united by pressure, substantially as described. 3rd. A garment stay, consisting of a crimped strand of spring wire, in combination with two embracing surfaces of fabric, and an interposed adhesive material, the whole united and made integral with pressure, said fabric brought together between the crimps and beyond its edges, and constituting a stiffening web to stiffen the stay against too great lateral flexibility, substantially as described.

No. 30,543. Electric Meter. (*Electromètre.*)

The Thomson Houston International Electric Company, Boston, (assignee of Elihu Thomson, Lynn), Mass., U. S., 14th January, 1889; 5 years.

Claim.—The combination, with an electric meter, of a current controller governing the flow of current to the same, and a controller magnet or other electro-responsive device, adjusted as described, to permit an increase in the flow of current to the meter, when the current to be measured falls below that to which the meter responds normally, as and for the purpose described.

No. 30,544. Electric Belt. (*Ceinture électrique.*)

The Pratt Electro Therapeutic Supply Company, (assignee of Harry P. Pratt,) Chicago, Ill., U.S., 14th January, 1889; 5 years.

Claim—1st. In an electric belt, the combination of a girdle portion A, a longitudinally expansible and transversely compressible battery B comprising cells C flexibly connected together, and electrodes connected by suitable conductors with the opposite poles of the battery, substantially as described. 2nd. In an electric belt, the combination of a girdle portion A, a longitudinally expansible and transversely compressible battery B, comprising cells C flexibly connected together, clasps m attached to the opposite poles of the battery, buckles m^1 on the girdle portion, elastic bands l connecting the clasps m, and buckles and electrodes connected by suitable conductors with the clasps m, substantially as described. 3rd. In an electric belt, the battery B comprising, in combination cells C composed each of an element r surrounded by absorbent material q to contain the exciting liquid, and an element p of substantially the oval form shown and provided, with the extension o, links n connecting the cells from opposite elements, and end links n having eyes n^2, substantially as described. 4th. In an electric belt, the battery B comprising in combination, cells C composed each of an element r surrounded by absorbent material q to contain the exciting liquid, and an element p of substantially the oval form shown, and provided with the extension o, links n connecting the cells from opposite elements, rings n^1 on some or all of the links, and end-links n having eyes n^2, substantially as described. 5th. In an electric belt, the combination, with the girdle portion A, of a battery B inclosed in a moisture-proof case, and having its terminals projecting from opposite ends of the said case, and connected with the girdle portion, a shifting case E on the girdle portion disconnected from the said moisture-proof case whereby the case E may be shifted to cover or uncover the case containing the battery, and electrodes connected by suitable conductors with the opposite poles of the battery, substantially as described. 6th. In an electric belt, the combination, with the battery, of a mechanically operated circuit breaker or interrupter, substantially as described. 7th. In an electric belt, the combination, with the battery, of a circuit breaker or interrupter H comprising a housing f containing loosely conducting material f^1, and contact e extending into the housing, substantially as described. 8th. In an electric belt, the combination, with the battery, of a circuit breaker or interrupter H comprising a housing f, containing loosely conducting material f^1, and contacts e extending into the housing and provided with eyes e^1, substantially as described. 9th. In an electric belt, or the like, the combination, with the battery, of a conductor to which an electrode is connected, and a clamp F at one end of the conductor formed with spring arms i^1 having hooks i^2 at their extremities extending outwardly in opposite directions, substantially as described. 10th. In an electric belt, or the like, the combination, with the battery, of a conductor to which an electrode is connected, and a clamp F at the end of the conductor formed with a coil i, and spring-arms i^1 having hooks i^2 at their extremities extending outwardly in opposite direction, substantially as described. 11th. In an electric belt, or the like, the combination, with the battery, of an electrode G connected with a pole of the battery by a suitable conductor, and self-supporting on the part of the body to which it is applied, substantially as described. 12th. In an electric belt, or the like, the combination, with the battery, of an adhesive electrode G connected with a pole of the battery by a suitable conductor, substantially as described. 13th. In an electric belt, or the like, the combination, with the battery, of an adhesive electrode G comprising a plaster having a metallic plate on its adhesive surface, and an eye g^1 extending from the said plate through the plaster, and a conductor connected at one end with a pole of the battery, and carrying at its opposite end a clamp F formed with spring-arms i terminating in hooks i inserted into the eye g^1, substantially as described.

No. 30,545. Electric Meter. (*Electromètre.*)

The Thomson-Houston International Electric Company, Boston, (assignee of Elihu Thomson, Lynn), Mass., U.S., 14th January, 1889: 5 years.

Claim.—1st. In an electric meter, a resistance or heating coil traversed by the current, or a portion of the current, or by a current induced from the current to be measured or metered, a fluid subject to the heating effect of the resistance or coil, whereby a movement of such fluid is set up, a means of resisting the said movement of the fluid, and a registry dial or apparatus for recording the amount of such fluid movement occurring in any given time. 2nd. In an electric meter, a heating coil or resistance immersed in a vaporizable liquid like alcohol, a closed receptacle for said liquid connected with a second receptacle by a narrow tube, and registry apparatus for indicating the amount of transfer of liquid from one receptacle to the other during any given time. 3rd. In an electric meter, a suspended or oscillatory structure consisting of two or more receptacles connected together at their lower portions by a narrow tube or set of narrow passages, and containing alcohol, or other vaporizable fluid, a resistance or heating coil for each receptacle, and switch devices, whereby upon each oscillation an alteration of electric connection from one heating coil to the other is made, substantially as described. 4th. In an electric meter, in combination with an oscillatory device containing vaporizable liquid, as described, and with a heating coil, or coils, or resistance, an induction-coil, one coil of which is traversed by the currents to be metered or measured, and the other coil of which is connected in circuit with the heating or evaporating coil, as described. 5th. In an electric meter, an induction-coil, one coil being in the circuit to the translating devices, and the other in the circuit to the meter apparatus proper, as described. 6th. In an electric meter, a receptacle for a vaporizable liquid in vacuo, said receptacle consisting of two chambers connected at the bottom with a restricted tube or passage, or series of passages, and each chamber having a heating conductor, substantially as described. 7th. In an electric meter, a pivoted receptacle of two parts connected by a tube of narrow bore, each part containing a heating conductor switch devices for changing the current from one heating conductor to the other, as described, and means for counting or indicating the movements of the pivoted receptacle.

No. 30,546. Manufacture of Glass Bottles.

(*Fabrication des bouteilles de verre.*)

William Ambler, Jeremiah Rhodes and Samuel Rhodes, Bradford, Eng., 14th January, 1889; 5 years.

Claim.—1st. The method of manufacturing glass bottles, consisting in moulding molten glass by centrifugal force in a mould of the required form, to which rotary motion is imparted around its axis, and to which a circular motion in a direction in which its axis will radiate is simultaneously imparted. 2nd. As a new article of manufacture, a glass bottle moulded by centrifugal force from molten glass, in a mould to which rotary motion is imparted around its axis, and to which a circular motion in a direction in which its axis will radiate is simultaneously imparted. 3rd. In apparatus for moulding glass bottles from molten glass by centrifugal force, in combination, an opening and closing mould, means for automatically opening, closing, clamping and stopping the mould, means for automatically rotating the mould about its axis, and means for automatically rotating the mould and its axis, and means for automatically rotating the mould in a path in which its axis will radiate. 4th. In apparatus for moulding glass bottles from molten glass by centrifugal force, in combination, an opening and closing mould, and means for automatically opening, closing, clamping and stopping the mould. 5th. In paparatus for moulding glass bottles from molten glass by centrifugal force, a mould constructed and operating substantially as set forth. 6th. In combination, with the hinged parts 5 of the mould, the links 9, collar 10, clutch 43, rod 44, spring 45, slide bar 46, guide plate 14, pin 47, and grooved cam plates 48, 50 operating to open and close the mould, as set forth. 7th. In combination with the hinged parts 5 of the mould, the clamping ring 52, arm 51, pin 53, pinion 54, racked slide bar 55, pin 56, slotted bracket 57, slide bar 46, guide plate 14, pin 47, and grooved cam plate 48, 50, operating to clamp and release the mould, as set forth. 8th. In combination with the hinged parts 5 of the mould, the plug 7, arm 51*, pin 53*, pinion 54*, racked slide bar 55*, pin 56*, slotted bracket 57*, slide bar 46*, guide plate 14, pin 47*, and grooved cam plate 48*, 50 operating to close the mouth of the mould, as set forth. 9th. In combination with the mould 4, the supported spindle 11, friction wheel 19, friction disc 20, shaft 21, friction disc 24, friction wheel 23, lever 27, and cam 29 operating to put the friction disc 24 and wheel 23 intermittently into and out of frictional contact, lever 59, and eccentric pin 63 operating to cause disc 24 to receive a differential speed of rotation from the wheel 23, the whole operating to intermittently rotate the mould around its axis, as set forth. 10th. In combination with the mould 4, the spindle 11, bracket 12, plate 14, head 15, shaft 16, gearing 38, 37, with the locking rim 49, lock plate 40, projecting teeth 41, operating to intermittently carry around the rotating mould in a direction in which its axis will radiate, as set forth. 11th. In combination, the shaft 16, head 15, pawl 72, cam 74, 50, pawl 69, and gearing 67, 68, operating to intermittently rotate the cam plate. 12th. The ladles 80, in combination with the removable or opening bottoms or lower parts 75, and with the spring 79 automatically tending to keep the ladles normally closed.

No. 30,547. Shoe Clasp. (*Agrafe de soulier.*)

Judson L. Thomson, Syracuse, and John Hunter, Sterling Valley, (assignees of Jacob J. Unbehend, Syracuse), N.Y., U.S., 14th January, 1889; 5 years.

Claim.—1st. In a spring clasp, the combination of a base-plate having its side edges bent at right angles to the main portion of the plate, and the bent parts provided with notches or indentations for the reception of the tongue pivots, with the tongue having cam-shaped pivots seated in the indentations or notches in the angular edges of the base-plate, and a supporting spring-plate connected to the base-plate and retaining the tongue in the sockets on the base-plate, substantially as and for the purpose set forth. 2nd. In a spring clasp, the combination, of two sheet-metal plates a, b secured together at one end, the plates a bifurcated at its opposite end, and provided with sidewise extension bent at right angles to the plate, and having notches n, n therein forming bearings for the tongue pivots, the other plate b having its free end terminating in extensions

c which are adapted to rest against the base of the tongue or holding-lever, and confine the tongue-pivots in their bearings in the plate *a*, the hook-shaped tongue-lever *t*, its hook-shaped end constructed with laterally-projecting flat pivots *p* corresponding to the notches *n* in the bent edges of the plate *a*, substantially as and for the purpose set forth.

No. 30,548. Axle Grease. (*Graisse à essieux.*)

Georges Hervieux and Victor Bédard, Quebec, Que., 14th January, 1889; 5 years

Claim.—An axle grease composed of twenty-four parts of codfish-oil, sixteen parts of beef-tallow, two parts of soft soap, and one part of resin, or thereabouts, substantially as set forth.

No. 30,549. Seam for Sheet Metal.
(*Couture de métal en feuille.*)

Edward J. Dolan, Philadelphia, Penn., U.S., 15th January, 1889; 5 years.

Claim.—The herein described seam for sheet metal, the same consisting of the two adjacent S, shaped folds B and B1 interlocked as described, and provided with a covering or coating of solder upon one of the faces of the seam, substantially as described.

No. 30,550. Furniture. (*Meuble.*)

Joseph T. B. Selman, Orillia, Ont., 15th January, 1889; 5 years.

Claim.—A combination table and box, consisting of the castings *a*, *a*, *a*, *a*, the hinges *b*, *b*, the latches *c*, *c*, the box *d*, the lock or fastening *e*, the removable legs or knobs *f*, *f*, *f*, *f*, the thumb screws *g*, the pivots-bolts *h*, the projection *i*, the folding legs *j*, *j*, *j*, *j*, and the two sections of the frame *k*, *k*, all arranged and combined substantially as and for the purpose hereinbefore set forth.

No. 30,551. Brick Machine.
(*Machine à brique.*)

Herman Krutzsch, St. Louis, Mo., U.S., 15th January, 1889; 5 years.

Claim.—1st. In a brick machine, the combination, with the mould plungers, the cam-wheels 18 and the cross-head 43 for imparting motion to the mould plungers, of studs on said cam-wheels projecting in opposite directions, and the cross-head 50 connected to cross-head 43, and having cam-grooves in which said studs engage, substantially as set forth. 2nd. In a brick machine, the combination, with the cam-wheels 18, the mould plungers having actuating levers, a cross-head 43, and toggle-links connecting said cross-head to said levers, of the cross-head 50 connected to cross-head 43, and having a separate cam-groove on each side, a portion of each of which grooves is concentric with said cam-wheels, and pins or studs on said cam-wheels projecting toward each other and engaging in said cam grooves, as set forth. 3rd. In a brick machine, the combination, with the mould plungers, the cam-wheels 18 and the cross-head 43 for imparting motion to said plungers, of studs on the inner sides of said wheels projecting toward each other, the cross-head 50 connected to cross-head 43, and having its opposite sides provided with coincident cam-grooves, in which said studs engage, and the web 51*a* between the ends of said studs, substantially as set forth. 4th. In a brick machine, the combination, with the wheels 18 and the cross-head 43, of the cam-slotted cross-head 50 connected to cross-head 43, studs on said wheels engaging said cam-slotted cross-head, a guide-way and a stud or roller 56 on cross-head 50 engaging in said guide-way 57, as set forth. 5th. The combination in a brick machine, of a lower mould-plunger 23, vertically-adjustable blocks 26 with spring-blocks 29 beneath the plunger, and supporting screws turning in the blocks 26, substantially as and for the purpose set forth. 6th. The combination in a brick machine, of the lower mould-plunger 23, vertically-adjustable blocks 26, with spring-blocks 29, supporting screws working in screw sockets of the blocks, and having extensions passing axially through miter wheels, and having spline connection therewith, and miter wheels traversed by the extension of the supporting screw, substantially as and for the purpose set forth. 7th. The combination, in a brick machine, of a lower mould plunger 23, spring block 29 supported on block 26, screw 30 sustaining the block 26, and having collar resting on spring block 32, and having extension 34 passing through the spring block 32, and through the support 33 and axially into the mitre-wheel, and having spline connection therewith, substantially as and for the purpose set forth.

No. 30,552. Shirt. (*Chemise.*)

Horace W. Messer, Berlin, Ont., 15th January, 1889; 5 years.

Claim—A shirt, having an under yoke C attached to the back D, and provided with a back-band D to form a continuation of the neck-band A, substantially as and for the purpose specified.

No. 30,553. Belt Fastener. (*Agrafe de courroie.*)

Gruchy Phillip and Alfred Coté, Hull, Que., 15th January, 1889; 5 years.

Claim.—A belt fastener B of wire, bent to form a shank *c*, and cross-heads *b*, *b*, at the ends, as set forth.

No. 30,554. Display Rack. (*Râtelier-montre.*)

John M. Laudick, Delphos, Ohio, U.S., 15th January, 1889; 5 years.

Claim.—1st. A frame for holding hosiery, being of approximately the form of a leg, the said frame having a spring coil at one end and hooks for holding the same in an expanded position to receive the upper ends of the hose, and a similar coil at its opposite end or toe portion, also having a hook or stud to hold the coils open or expanded, substantially as specified. 2nd. A hosiery display frame, comprising an upright and a lateral frame of wire, a suspension hook on the lateral frame, a horizontal guide loop and a coil of wire secured at one end to the main frame, and the whole adapted to be guided by the said loop, substantially as specified. 3rd. A hosiery frame, comprising an upper and lower section adjustably connected by a socket, and each respective section carrying a horizontally disposed spiral coil of wire, to receive the tops and toes of hose between the said coil, substantially as specified. 4th. A hosiery frame, comprising a vertical and horizontal section connected at right angles, a horizontal guide loop, a coil of wire secured at one end to the main frame and passing through the guide-loop and hooks on the horizontal section of the frame, whereby the outer coil may be engaged thereby when drawn out, substantially as specified.

No. 30,555. Water-proof and Anti-Corrosive Compound. (*Composition imperméable à l'eau et anti-corrosive.*)

Edwin L. Kitchingman, Collingwood, Victoria, and Arthur Andrews, Albury, N.S.W., 15th January, 1889; 5 years.

Claim.—As a composition of matter, the combination of tar, oxide of iron, resin, sugar of lead, soft soap and shellac varnish, in the proportions described for the purpose set forth.

No. 30,556. Rotary Engine.
(*Machine rotatoire.*)

Elie Raymond, Montreal (assignee of Joseph E. Beauchemin, Sorel), Que., 15th January, 1889; 5 years.

Claim.—1st. In a rotary engine, the combination, with a hub forming a valve-seat having parts, and an exhaust chamber, of a valve held on the said seat and operating over the said ports, a series of cylinders secured radially on the said hub and into which lead the said ports, pistons having central openings operating in the said cylinders, and a wheel held eccentrically to the said hub, and on the rim of which the said pistons operate, substantially as shown and described. 2nd. In a rotary engine, the combination, with a hub forming a valve-seat having ports and an exhaust chamber, of a valve held on the said seat and operating over the said ports, cylinders secured radially on the said hub, and into which lead the said ports, pistons operating in the said cylinders, a plate secured to the outer end of each piston, and a wheel provided with slots in which operate said plates, said wheel being held eccentrically to the said hub, substantially as shown and described. 3rd. In a rotary engine, the combination, with a hub forming a valve-seat, having ports and an exhaust chamber, of a fixed valve held on the said seat and operating over the said ports in the valve seat, cylinders secured radially on the said hub and into which lead said ports, pistons operating in the said cylinders, plates secured to the outer ends of the said pistons, a wheel provided with slots in which said plates travel, said wheel being held eccentrically to the said hub, and a casing made in two parts forming bearings for the said hnb and the said wheel, and also serving as an exhaust chest connected with the said exhoust chamber, substantially as shown and described. 4th. In a rotary engine, the combination, with a hub farming a valve-seat having ports, and an exhaust chamber of an inlet valve held on the said valve-seat and provided with an inlet port and an outlet port operating over the said ports in the valve-seat, an inlet-pipe supporting said valve, an offset formed on the said valve and provided with radial openings connected with the said pipe, a governor valve consisting of a cap held to slide on the said offset over the said openings, and an annular inclined flange secured to the said cap, and weighted slides having inclined slots engaging the said annular flange of the governor valve, so as to move the latter forward or backward in its bearings to open and close the said openings in the valve, substantially as shown and described. 5th. In a rotary engine, the combination, with a hub, having a valve-seat and having a rotary motion, of a valve held on the said valve-seat and operating on the ports of the said valve-seat, an inlet pipe carrying said valve and discharging into openings formed in an offset on the said valve, a cap held to slide on the said offset to open and close the openings in said offset, an annular inclined flange formed on the said cap, weighted slides having inclined slots engaging the said inclined flange, said weighted slides being mounted to slide radially on the said hub and springs pressing against said weighted slides, substantially as shown and described. 6th. In a rotary engine, the combination, with a hub having a valve-seat and having a rotary motion, of a valve held on the said valve-seat and operating on the ports of the said valve-seat, an inlet pipe carrying said valve and discharging into openings formed in an offset on the said valve, a cap held to slide on the said offset to open and close said openings in it, an annular inclined flange formed on the said cap, weighted slides having inclined slots engaging the said inclined flange, said weighted slides being mounted to slide radially in the said hub, springs pressing against the said weighted slides, and set-screws for regulating the tension of the said springs, substantially as shown and described.

No. 30,557. Combination Hinged and Halved Umbrella Stand. (*Porte-parapluie brisé.*)

James Goodwin, London, Eng., 15th January, 1889; 5 years.

Claim.—1st. An umbrella stand, composed essentially of one or more of three parts, such as A, E and E1, any one of which with its adjuncts constitutes a distinct stand, each having a lower portion, such as A1 or E2, pivoted to it as by a pivot B, and arranged to intercalate the one with the other, in order that the under edge of A, E, or E1 shall rest on the floor or other supporting surface, substantially as and for the purpose herein described and illustrated in the accompanying drawings. 2nd. In an umbrella stand, the combination, with two parts, such as A and A1, or E or E1 and E2, of a pivot, such as B, for connecting together the said two parts and permitting them to be moved independently of and intercalate the one with the other, substantially as herein described and illustrated in the accompanying drawings. 3rd. In an umbrella stand, such as described, the combination, with the pivot B, of one or more bolts or catches C, substantially as herein described and illustrated in the accompanying drawings. 4th. In an umbrella stand, the combination, with the parts, such as A, E, or E1, of divided hinges, such as D and D1, sub-

stantially in the manner described and illustrated in the accompanying drawings. 5th. In an umbrella stand, such as described, the combination, with the part A, A_1, of the part E, E_2 or E_1, E_2, substantially as described and illustrated in the accompanying drawings. 6th. In an umbrella stand, the combination, with the part E, E_2, of the part E_1, E_2, substantially as described.

No. 30,558. Road Cart or Two-Wheeled Vehicle. (*Désobligeante ou voiture à deux roues.*)

William B. Altick, Lancaster, Penn., U. S., 15th January, 1889; 5 years.

Claim.—1st. In a two-wheeled vehicle, the combination, with the thills, of a spring secured to said thills, bearing bars extending from the spring to the seat, and side-bars hinged to the splinter bar and curving backward over and to the rear of the axle and thence upward to the seat, so that upon the giving way of the spring the said axle may catch and uphold said side bars, substantially as and for the purpose specified. 2nd. In a two-wheeled vehicle, the combination, with the thills, of a spring attached thereto, and bearing bars having one end fastened to the foot-board and extending to and connected with the spring, and thence passing to the seat, substantially as and for the purpose specified. 3rd. In a two-wheeled vehicle, the combination, with the thills, a spring connecting said thills, and bearing bars extending from the spring to the seat of side bars, of the foot board hinged to the splinter bar and extending backward beneath said spring to the seat, as and for the purpose specified.

No. 30,559. Stoppering Bottles, Jars, etc.

(*Bouchage des bouteilles, cruches, etc.*)

William Shepherd, London, Eng., 15th January, 1889; 5 years.

Claim.—1st. In stoppers for bottles, the valve or plug *a*, combined with the screw cap *b*, arranged and constructed substantially in the manner and for the purposes hereinbefore described and illustrated in the drawings hereto annexed. 2nd. The improved bottle stopper, constructed, arranged and combined substantially in the manner and for the purposes hereinbefore described and represented by the drawings hereto annexed.

No. 30,560. Liquid Meter. (*Compteur à liquide.*)

George Teideman, London, Eng., 15th January, 1889; 5 years.

Claim.—1st. In a liquid meter, the combination, substantially as described, consisting of a main measuring chamber with a piston or diaphragm working within it, an auxiliary or smaller chamber also with a piston or diaphragm, valves in connection with these chambers, controlling the passage of liquid into and from the chambers, valve gear connecting the piston or diaphragm of one chamber with the valve of the other chamber, and locking apparatus restraining the piston or diaphragm of the auxiliary or smaller chamber, so that it can only commence to move when the piston or diaphragm of the main chamber is at one end or other of its stroke. 2nd. In a liquid meter, the combination, substantially as described, consisting of the main measuring chamber A with its piston or diaphragm, the auxiliary chamber D with its piston or diaphragm, the valves G and H, and the gear actuating the same, the locking projection C_1 on the head of the rod of the main piston or diaphragm, and the corresponding projection F on the head of the rod of the auxiliary piston or diaphragm.

No. 30,561. Heating Apparatus. (*Calorifère.*)

George A. Barnard, East Orange, N.J., U.S., 15th January, 1889; 5 years.

Claim.—1st. In a steam heating apparatus, in combination with a source of steam supply, a supply-pipe, the radiators, the return-pipes, the closed tank and the closed condensing apparatus located at the end of the system, whereby a vacuum is produced and maintained at the end of the circulatory system, all substantially as described. 2nd. In a steam-heating apparatus, in combination, with a source of steam supply, the steam supply pipe P, the reservoir C, the riser D, the radiators E, the return pipes F, the closed tank G, the pipe J connecting said tank with the closed condenser H, the closed condenser H, and the reducing valve M located in the pipe J, all substantially as described. 3rd. In combination with a source of steam supply, the steam-pipe B, the reservoir C, the supply-pipe D, the radiators E, the return-pipes F, the receiver G into which the return pipes lead, the vacuum-pipe J, the condenser H, the pipe K connecting the reservoir, and the receiver, and the several steam valves in the pipes D, K, and J, all substantially as described. 4th. In combination with a steam boiler, the steam reservoir C, the connecting-pipe P having therein a reducing valve P_1, the steam-supply pipes, the radiators, and the return pipes, the receiver G into which the return pipes lead, the condenser H, the vacuum pipes J, the pipe K_1 connecting the boiler and the receiver, and the reducing valve M in the vacuum pipe, all substantially as described.

No. 30,562. Powder Dusting Machine.

(*Machine à distribuer la poudre.*)

Earl A. Dodgson, Batavia, N.Y., U.S., 15th January, 1889; 5 years.

Claim.—1st. The perforated drum, the drum-carrying shaft, the drum supporting-frame, the opening for placing the feed within the drum and the cone to the opening, in combination with the drum-operating mechanism, arranged substantially as described and for the purpose hereinbefore set forth. 2nd. The drum-head having the hub attached thereto, the set-screw in the hub, the hub-carrying shaft, the perforated shell, the drum-head made adjustable upon the shaft, and the drum-supporting frame, in combination with the operating mechanism, arranged substantially as described and for the purpose hereinbefore set forth. 3rd. The perforated drum, the drum shaft, the drum-supporting frame, and the feed agitator, in combination with the drum-operating mechanism arranged substantially as described and for the purpose hereinbefore set forth. 4th. The perforated drum, the longitudinal feed slides adjustably secured upon the periphery of the drum, the drum-shaft, and the drum-supporting frame, in combination with the operating mechanism, arranged substantially as described and for the purpose hereinbefore set forth. 5th. The perforated drum, the shaft carrying the same, and having the sprocket wheel mounted thereupon, the carrying and operating wheels, and the revolving wheel axle having the sprocket wheel and clutch mounted thereupon, in combination with the raising lowering mechanism, arranged and operating substantially as described and for the purposes hereinbefore set forth.

No. 30,563. Cuff-Holder. (*Bouton de manchette.*)

Richard J. Newman, Norwich, Kan., U.S., 15th January, 1889; 5 years.

Claim.—1st. In a cuff holder, the plate F, button H, and the slotted arm G, substantially as specified. 2nd. The herein described cuff-holder comprising the main plate F provided with a notch *f*, and the arm G which is provided with slot *g*, and the loose button H, substantially as specified.

No. 30,564. Wire Screen. (*Tamis en fil de fer.*)

John Burkhart and William H. Jackson and Company, New York, N.Y., U.S., 15th January, 1889; 5 years.

Claim.—1st. The above described method of forming wire screens, and similar articles, which consists in inserting longitudinal wire through a hollow perforated body or joint cover, then producing a bend of said wire within the interior of said body, and then passing the transverse wire through other perforations of the body, and through the bend, or its equivalent, in the longitudinal wire therein, as set forth. 2nd. The wire screen consisting of a series of straight wires or rods, and a transverse series of bent wires, in combination with the covers A, each of which includes a single joint or intersection of a straight and bent wire at the bend thereof, substantially as and for the purpose set forth.

No. 30,565. Machine for Making Metal Washers. (*Machine à faire les rondelles métalliques.*)

Samuel J. Shimer, Milton, Penn., U,S., 16th January, 1889; 5 years.

Claim.—1st. The combination of the punch, the die, the centre-punch, and the centering-pin, substantially as described. 2nd. The combination of the punch, the spring-supported die-bed, the die, the centre-punch, and the centering-pin, substantially as described. 3rd. The combination of the bed-piece with seats to receive springs, and the walls of which seats constitute guiding surfaces for the die-bed, and provided with an adjustable centering pin, elastic cushions arranged in said seats, the die-bed having guide-flanges to engage the sides of the seats on the bed-piece, a die arranged in the die-bed, the centre-punch, and the punch, substantially as described. 4th. The combination, with the punch, the die, and the centering-pin having a convex upper end, of the centre-punch formed with a tapering lower end, and concave bottom, substantially as described and for the purpose stated. 5th. The combination, with the punch, of the die formed with a flaring lower portion, the centre-punch having a tapering lower end, and the centering-pin, substantially as described. 6th. The combination, with the punch, the die, and the centre-punch, of the carrying-belts, arranged to receive and carry the discharged washers from the die, substantially as described. 7th. The combination, with the bed-piece formed with belt-channels in its upper face, and the die, of the carrying-belts arranged to travel in the channels of the bed-piece, and receive the discharged washers from the die, substantially as described. 8th. In combination, a die filled with washers, a centre-punch held in cutting position by the impacted washers in the die, and a movable punch to cut and push the washers through the die and off the centre punch in the direction of the cutting-stroke of the moving-punch, substantially as described. 9th, A moving or cutting-punch, in combination, with a die filled with washers, and a centre-punch supported by the washers in the die, whereby the descent of every washer cut by the punch discharges a washer at the opposite end of the die, substantially as specified. 10th. The combination, with the spring-supported die-bed, and die arranged therein, of a centre-punch held in the die by the washers impacted therein, and a reciprocating punch to cut the washers and press them through the die at the opposite end from their entrance thereto, substantially as specified. 11th. The combination, with the die-bed, and centre-punch arranged therein, and supported by a series of cut washers in the die, of the centre-punch pin formed with a central-bore, substantially as described and for the purpose specified. 12th. The combination, with the die-bed, of a centre-punch formed with a central-bore extending partially through it, and the centering punch-pin formed with a centre-bore, substantially as described and for the purpose specified.

No. 30,566. Valve. (*Soupape.*)

Henry V. Goll, Chicago, Ill., U.S., 16th January, 1889; 5 years.

Claim.—1st. For circular cylinder pipes or passages, the swinging oval angular seated valve, the valve being oval angular, automatic, hung diametrically in a circular cylinder pipe or passage fitting the pipe or passage, and having the wings H and A of unequal length, shape, size, weight and area, substantially as described and for the purpose as specified. 2nd. For circular cylinder pipes or passages, the swinging oval angular valve, the valve having bevelled oval angular seat or seats M, G, K and L, G, O, the swinging bearing G, the cross-bearing G of the two oval angular seats, substantially as described and for the purpose as specified. 3rd. The combination of the swinging oval angular seated valve, constructed and arranged as herein described, with the circular cylinder part of pipe B, the axis R, and the passages controlled by the valve, substantially as described and for the purposes set forth in the specifiation.

No. 30,567. Letter and Document File.

(Serre-papier.)

John Young, Mount Forest, Ont., 16th January, 1889; 5 years.

Claim.—The combination of the circular vertical revolving case A and stand T, and the file drawer g, with the combination of the locking spring B, and file spring f, f, and locking bar C in connection with wire pull D, and the slides grooves p, p, and stay bar i, with pivots G_1, and spring fastening block e, and finger knob H, substantially as and for the purpose hereinbefore set forth.

No. 30,568. Dumping Car. (*Char-tombereau*)

Joseph Duff, Lansing, Ont., 16th January, 1889; 5 years.

Claim.—1st. A dumping car consisting of a main frame, and a tilting body or box journalled therein, a compressed-air cylinder carried by said frame, the piston of which causes said body or box to tilt, and means for locking the latter in position, substantially as set forth and described. 2nd. In a dumping car, the combination, with a main frame or platform, and a tilting box journalled therein, of a compressed air cylinder, the piston of which causes the box to tilt, a second cylinder having a sliding valve operated from an ordinary compressor, and adapted to automatically supply the tilting cylinder, and suitable connecting pipes, substantially as described. 3rd. In a dumping car, the combination, with a main frame or platform, and a tilting box journalled therein, of a compressed air cylinder, the piston of which causes the box to tilt, a second cylinder having a sliding valve, and a reservoir, said second cylinder and reservoir being supplied with air from an ordinary compresser, and both being also in connection with the tilting cylinder, and having pipes leading to a second car, substantially as and for the purpose specified. 4th. In a dumping car, the combination, with a main frame or platform, and a tilting box journalled therein, of a compressed air cylinder, the piston of which causes the box to tilt, a cylinder having a sliding valve, and a reservoir, both supplied with air from an ordinary compressor, pipes connecting same together, and with the tilting cylinder, and an extra cylinder having a sliding valve, a handle for moving same in one direction, and a spring for retaining it, said extra cylinder being also connected to the tilting cylinder, whereby one particular car may be dumped, substantially as described. 6th. In a dumping car, the combination, with the frame, and tilting box journalled therein, of the compressed air cylinder E having piston e_2, rod e_1, and cross-head e, and lever d_1 pivoted to said cross-head, and adapted to operating the tilting box, substantially as described. 6th. The combination, with the frame and tilting box, and with the tilting cylinder, and means whereby said box is caused to tilt by the operation of its piston, of the frame H carrying a locking pin, said frame and pin being drawn backward by the upward movement of the piston, the locking bar J pivoted to the box, and a spring for causing said locking pin to engage with said locking bar, substantially as and for the purpose specified. 7th. The combination, with the frame A, box B, and tilting cylinder E, the piston rod of which has cross-head e having inclines e_3, of the frame H having locking pin h, and roller G impinged upon by said inclines, so as to force back said frame and pin, springs k, and the locking bar J, all arranged and operated substantially as and for the purpose specified. 8th. The combination, with the frame A, of the tilting box B having swinging door B_1, and a system of levers connected to said door, and to the frame and box, in such manner that the tilting of the box will cause said levers to operate said door, substantially as shown and described. 9th. The combination, with the cylinder M having an air pipe connected thereto, operating ports k_1, m and m_1, and waste ports 1, 2, of the sliding sliding piston valve P having passage O, and waste openings m_3, m_4, and a spring for moving said piston valve in one direction, substantially as described.

No. 30,569. Dumping Car. (*Char-tombereau.*)

Joseph Duff, Lansing, Ont., 16th January, 1889; 5 years.

Claim.—1st. A dumping car, consisting of a main platform, and a box or bucket carried thereby, and adapted to be tilted in either direction, levers connected with said box or bucket, a sliding bar actuating such levers, and a compressed-air cylinder for operating such sliding bar, substantially as set forth and described. 2nd. In a dumping car, the combination, with a main platform, and a box or bucket carried thereby, and capable of being tilted in either direction, and with levers connected with said box or bucket, of a sliding bar actuating such levers, a compressed-air cylinder carried by such platform, and having cross-heads in connection with its piston rod operating said sliding frame, and adapted to move the latter in either direction longitudinally, an air-cylinder having a sliding valve and supplied from an ordinary compressor, and connected to both ends of said operating cylinder, substantially as and for the purpose described. 3rd. In a dumping car, the combination, with the platform, and a bucket adapted to be tilted in either direction, of a segmental gear C connected with said box or bucket, sliding rack D having slots d, d_1, sliding bar E having pin e fitting into one of said slots, and compressed-air cylinder G, the piston rod of which has cross-heads in connection with said sliding bar, substantially as and for the purpose specified. 4th. The combination, with the segmental gear C having projection C_2, and with the sliding bar E, of the rollers P, P_1, vertical bars P_2, P_3 carrying said rollers, cross-heads or cranks Q, Q_1 hung from the platform, and connected with the lower ends of said bars, the locking bars R, R_1 adapted to lock the segmental gear, and suitable tension springs, and substantially as and for the purpose specified. 5th. The combination, with the sliding bar E, and cylinder G having chambers g and g_1, a single piston, and a piston rod, with cross-heads G_3 and G_4 on its ends, of the air pipe g_4 connected to the chambers of said operating cylinder, and to the air cylinders K_1 and M, and air pipes K and L, all arranged substantially as and for the purpose specified.

No. 30,570. Clam Extract and Process of Making the same. (*Extrait de clam et procédé de préparation de cet extrait.*)

Arthur H. Bailey, Newton, Mass., U.S., 16th January, 1889; 5 years,

Claim.—1st, The improved liquid clam extract, consisting of clam juice liberated from uncooked clams by steam, and subsequently filtered and boiled, as set forth. 2nd. The improved process of making clam juice, or extract, herein described, the same consisting in subjecting uncooked clams to live steam in closed air-tight or steam-tight retorts or tanks, thereby liberating and thoroughly cooking the juice therein, filtering the collected juice or liquid, and finally boiling and condensing the same, as set forth.

No. 30,571. Oyster Knife. (*Couteau d'écaillère.*)

Charles B. De Lamarre, Biloxi, Miss., U.S., 16th January, 1889; 5 years.

Claim.—1st. An oyster knife comprising a handle A, a rigid blade B, a guard block F, substantially as described. 2nd. In on oyster the combination, with the hollow handle A, the screw plug C having the piece of rubber attached thereto, substantially as specified. 3rd. In an oyster knife, the combination, with the guard block F, the spring E, and the side bars G, of the detent H, substantially as specified.

No. 30,572. Mechanism for Detachably Connecting Wheel Hubs and Axles.

(Appareil à clé pour assembler les moyeus et les essieux.)

Adolph F. C. Garben, Minneapolis, Minn., U. S., 16th January, 1889; 5 years.

Claim.—1st. In a device for attaching wheels to vehicles, a spindle, in combination with a loosely mounted rotating washer, and suitable automatically operating spring jaws, adapted to engage the washer and rotate the same by frictional contact, substantially as herein described. 2nd. The combination, with a spindle, having a rigid collar h, of a loosely mounted washer, rotated by frictional contact with automatically operating jaws, substantially as described. 3rd. In a device for attachment of wheels to vehicles, a hub, having automatically operating spring jaws, in combination with a spindle having a loose washer, whereby the spindle may be inserted within the hub, and be held by means of the jaws rigidly engaging the washer, substantially as herein described. 4th. An improved means for attaching hubs of wheeled vehicles to their spindles, consisting in a spindle having an immovable collar and a loosely-revolving washer J, in combination with a hub, having the automatically operating jaws E, and an actuating bolt F having projections which engage the jaws, substantially as described. 5th. The spindle H, having rigid collar h and the loosely-revolving washer J, in combination with the hub A, the cap C having the pins d, the automatically-operating curved jaws E, provided with catches, the bolt F, having projections which engage the slotted upper ends of the jaws, a spring G and a disk D, substantially as herein described. 6th. In combination for detachably connecting wheels to vehicles, the spindle H, provided with rigid collar h, the hub A, the cap C, having the fulcrum-pins d, the automatically-operating curved jaws E fulcrumed on said pins d and provided with the catches e, the actuating bolt F, having projections engaging the slotted upper ends of the jaws E, and a spring G for holding the jaws in their locking position, substantially as and for the purpose described. 7th. In combination, the spindle H, provided with the rigid collar h, the hub A, the cap C having fulcrum pins d, the curved jaws L, provided with catches e on their lower extremities, and having transverse slots in their upper extremities, the actuating bolt F, having projections g engaging said slots, a spring G for holding the jaws in their locking position and the shielding disk D, substantially as and for the purpose set forth.

No. 30,573. Manufacture of Corsets.

(Fabrication des corsets.)

James F. J. Gunning, Toronto, Ont., 16th January, 1889; 5 years.

Claim.—1st. I claim in a corset, a wire or rod formed with loops or loops and hooks, or hooks alone, to which a lacing cord may be attached, and forms at same time a part of the stiffening material material in the corset, substantially as described and for the purpose specified. 2nd. I claim, making folds in the cloth, so as completely to cover the eyelets, loops, or hooks, and prevent their coming in contact with other garments, substantially as described, and for the purpose set forth. 3rd. I claim the closed back or front for a corset, formed by having a wide and a narrow fold or lapel of cloth on each side, and projecting beyond the loops or hooks or eyelets, so that a wide lapel is opposite te a narrow one, and when adjusted by the lacing cord a closed back or front is formed, substantially as described and for the purpose specified. 4th. I claim the interlining piece of cloth, with the slots cut at right angles to those cut in the outside cloth, substantially as described and the purpose specified. 5th. I claim the combination of the wire, with loops or hooks with the interlining piece, and the narrow and wide lapels forming or closed back or front in a corset, substantially as described and for the purpose set forth. 6th. I claim as a stiffening material for a section of a corset, the use of split bamboo or cane, with the ends folded over and stitched into the section, substantially as described and for the purpose set forth. 7th. I claim using split bamboo or cane, having the ends folded over and inserted into pockets, so that the cuticle side of the bamboo or cane is towards the body of the wearer, substantially as described and for the purpose set forth. 8th. I claim as a stiffening material, inserting split bamboo or cane, with the ends folded into pockets sewn in a corset, substantially as described and for the purposes set forth. 9th. I claim folding the ends of pieces of split bamboo or cane, as a means of drawing them into pockets in the section of a corset, substantially as described and for the purpose set forth. 10th. I claim, drawing the pieces into the pockets by means of wire tongs, substantially as described and for the purpose set forth. 11th. I claim, as a stiffening material in a corset, split bamboo ar cane folded at one end only, the fold being towards the split side of the bamboo or cane, and inserted in pockets, as herein described and for the purposes set forth. 12th. I claim the wire tongs, made of one piece, having the ends bent over, substantially as described and for the purpose set forth.

No. 30,574. Knitted Undervest.

(Gilet tricoté.)

The Wilcomb Manufacturing Company, San Francisco, Cal., (assignee of Frank Wilcomb, Providence, R.I.), U.S., 16th January, 1889; 5 years.

Claam.—As a new article of manufacture, an under shirt or vest, the body of which is formed of fashioned seamless knitted fabric, terminating at its upper part in front and rear flaps stitched on their upper edges, a neck-opening, and sleeves formed of fashioned seamless knitted fabric secured to the edges of the arm holes, as set orth.

No. 30,575. Tube Expander.

(Expanseur de tube.)

A. B. Jardine & Co., (assignees of John Jardine and Peter Jardine), Hespeler, Ont., 16th January, 1889; 5 years.

Claim—1st. The combination, with the tapering mandrel A, of a surrounding body or stock having a flange *a*, and provided with longitudinal slots, carrying rollers C, one or more of said rollers rotating obliquely to the axis of the mandril, whereby the mandril is automatically fed into the stock to effect expansion of the tube, as set forth. 2nd. In a tube expander, the combination, with the tapering mandril A, of radially separating sections B, B1, B2, provided with a slot carrying a roller C, one or more of said rollers rotating obliquely to the axis of the mandrel, as and for the purpose set forth, and connected by equiangular arranged bars D, D1, D2, as described. 3rd. A tube expander comprising a mandril A, surrounded by a body or stock composed of three or more radial converging longitudinal sections B, B1, B2, each provided with a roller C, and connected by equiangular arranged bars D, D1, D2, substantially as set forth.

No. 30,576. Alarm for Grain Elevators, etc.

(Indicateur pour élevateurs à grains, etc.)

John R. Beynon and James B. Murphy, Watertown, Wis., U.S., 16th January, 1889; 5 years.

Claim.—1st. The combination, with a grain elevator, or analogous device, having one of its sides provided with an opening, of a valve arranged to normally close said opening, and an alarm-mechanism connected to the valve to signal the opening of the latter, substantially as set forth. 2nd. The combination, with an elevator or analogous device for handling grain, or other loose material, of a discharge chute, a valve normally closed against the upper end of the chute, and arranged to be actuated by an accumulation of the material, another valve also normally closed against said chute at or near the mouth of the same, and an alarm-mechanism connected to the latter valve to signal the opening thereof, substantially as set forth. 3rd. The combination, with an elevator or analogous device, for handling grain or other loose material, of a discharge chute, a return chute arranged adjacent to the discharge chute and communicating therewith, a valve normally closed against said discharge chute, and arranged to be actuated by an accumulation of the material, a cut-off valve normally closed against the return chute, another valve also normally closed against said discharge chute, and an alarm-mechanism connected to the latter valve to signal the opening thereof, substantially as set forth. 4th. The combination, with an elevator or analogous device for handling grain, or other loose material, of the casing D provided with the deflector plates E, I, and communicating chutes G, L, the valves F, N, K, pivoted to the sides of the casing, and individually provided with an angular-extension or counterpoise, the arm P secured to the pivot of valve N, the pivoted arm Q arranged to be actuated by arm P, and an alarm-mechanism connected to said arm Q, substantially as set forth.

No. 30,577. Mechanical Accountant.

(Calculateur mécanique.)

The American Arithmometer Company, (assignee of William S. Burroughs), St. Louis, Mo., U.S., 16th January, 1889: 5 years.

Claim.—1st. The combination, with the register and register-actuating devices of a calculator, of a key-board capable of the movement and provided with a series of adjustable keys, and movably supported upon the frame of the machine, to bring the keys that have been set into operative connection with the register-actuating devices upon the movement of the board, after such setting of the keys, substantially as described. 2nd. The combination, in a calculating machine, of a series of register wheels, wheel actuating devices, a frame supporting the same, a movable key-board secured to have a limited movement on the frame, and a series of adjustable keys carried by said key-board, whereby such keys as are set by hand are brought into connection with the wheel actuating devices on the movement of the key-board after such setting of the keys, substantially as described. 3rd. The combination of the register actuating levers F and stops limiting the movements of said levers, with a movable key-board carrying series of adjustable keys and connections between each stop, and one of the keys arranged to be operated by such key after it is set and upon the movement of the board, substantially as described. 4th. The combination of the register, the retainers, the operating levers, and the regulators thereof, with a movable key-board carrying series of keys, and connections between each series of keys, and one of the retainers and connections between each key, and a stop of the corresponding regulator, the latter connections arranged in position to be actuated only by the keys that are set and on the movement of the board, substantially as described. 5th. The combination, with the register and the actuating mechanism of a calculating machine, of a movable key-board carrying series of adjustable operating-keys, substantially as and for the purpose set forth. 6th. The combination of the register-actuating levers F, and a retainer of each lever, with a movable key-board, series of keys carried thereby, movable studs arranged to contact with such keys as have been set, and a connection between the studs of each series of keys, and the retainer of the co-operating lever F, substantially as described. 7th. The combination, with the register-actuating devices, of a movable key-board and series of keys adjustably carried thereby, to contact with said devices upon the movement of the board after the adjustment of the keys, substantially as described. 8th. The combination, with the frame of the machine register and register-actuating devices, of a key-board sliding on said frame, and series of keys adjustably mounted upon said board, and adjustable into and out of operative relation to said devices, substantially as described. 9th. The combination, in a calculating machine, with the register, and actuating devices, of the sliding key-board, series of keys, and a locking-slide to each series, to hold the keys after being set in operative relation to the register-actuating devices, substantially as described. 10th. The combination, with a series of keys, each having a bearing shoulder, of a locking slide arranged to be moved by the setting of any of the keys, and adapted to engage all of said shoulders to hold any key after it is set, and until moved by the setting of another key, substantially as described. 11th. The combinationof a series of spring-actuated keys, a locking-slide, and spring for moving the same, and a shoulder and an incline on each key, the incline arranged to bear on and force back the slide as a key is depressed until said slide engages with the the shoulder and locks the key, substantially as described. 12th. The combination of the movable key-board, series of keys, locking devices for holding the keys in position after they are set, and an automatic unlocking device for replacing the keys as the key-board is restored to its normal position, substantially as described. 13th. The combination, with the rack-levers having bearings, of a series of pinions having studs, a swinging frame carrying said pinions, a pawl with two shoulders, one engaging with a stud on one of the pinions, a spring-actuated lever L with which the other shoulder engages, and detents M engaging with the bearings on the rack-levers, and in position to contact with the levers L, substantially as described. 14th. The combination, with the rack-levers and detents affording bearing therefor, of striking-levers L, pawls for holding said striking-levers out of contact with the detents, and a series of pinions gearing with the rack-levers, and each provided with a stop arranged to contact with the adjacent pawl, substantially as described. 15th. The combination, with the rack-levers, actuating automatic motors and detents, and keys, and register of a mechanical calculator, of spring-actuated striking-levers for operating said detents, substantially as described. 16th. The combination, in a mechanical calculator, having a rack-lever, keys and a register, and with a detent for restraining the movement of the rack-lever, of a striking-lever, a detent for holding it back, and releasing mechanism, substantially as described. 17th. The combination with the rack-levers, and the carrying pinions, of detents affording bearings for said levers, striking-levers and actuating springs, pawls for normally holding the striking-levers out of contact with said detents, and studs on the pinions arranged to contact with the pawls, substantially as described. 18th. The combination, with the detents, the striking-levers, spring and pawls for holding the levers away from the detents, of studded pinions for moving the pawls to release the striking levers, and a movable resetting bar arranged to contact with all of said levers, substantially as described. 19th. The combination, in a calculating machine, having register wheels, of levers F, each consisting of two sections jointed to permit a limited play of one in respect to the other, the rear section in gear with the wheels of the register, a spring tending to maintain a bearing of one section against a bearing of the other, a movable bar for swinging the rear sections to carry the bearings out of contact, and a lifter provided with motor springs for operating the forward sections of the levers, substantially as described. 20th. The combination, with the register and jointed rack-operating levers F of a caculating machine, of pivoted side arms carrying a cross-bar 45, for elevating the front ends of the lever, and also carrying a cross-bar 110, for depressing the rear sections of the levers, substantially as described. 21st. The combination, with a mechanical calculator, having a movable key-board, and with an operating driver T, of a detent for holding the driver in an inoperative position, and connections between the detent and the movable key-board, whereby the detent is displaced as the key-board is moved after setting its keys, substantially as set forth. 22nd. The combination, with the registers, pinions 60, frame K and reciprocating cam *h*, of a rod 162, a lever *k* pivoted thereto, and a spring for holding it in its normal position, a movable arm Q, and the arm 171 provided with lugs 170, 200, adapted to be brought respectively below and above one end of the lever, according to the position of said arm, substantially as set forth. 23rd. The combination, with the keys, register wheels, and rack-levers F, of a movable frame carrying a series of pinions 60, intermediate frame, adjusting devices, and a lever Q2 connected with the adjusting devices of said frame to regulate the position of the frame, substantially as set forth. 24th. The combination, in a calculating machine, and with the register, operating devices, keys, and movable key-board carrying said keys, of a lock holding said key-board in place, and connections between the lock and a movable part of the machine for holding the lock in place until all parts of the machine are in their normal position, substantially as set forth. 25th. The combination, with a caculating machine, its actuating lever, driver, and parts carried therewith, of a pawl bearing on one of the moving parts, to permit a return movement after a movement is begun in either direction, and devices, substantially as described, for reversing the pawl and throwing it out of retaining action at the limit of each movement, substantially as described. 26th. The combination, with a calculating machine having keys, and a register, and intermediate connections of a driver, a reciprocating rack connected with the driver, and having shallow teeth or notches along its length, and deeper notches at the ends, and a reversible pawl adapted to said rack, substantially as set forth. 27th. The combination, with keys, registers, intermediate connections, and the operating driver of a calculating machine, of a spring connected to move the driver in one direction, a treadle to move the driver in the opposite direction, and intermediate yielding spring-connections between the treadle and driver, substantially as set forth. 28th. The combination, with the calculating machine having keys, a register, connections, and an operating treadle and motor, of a detent for locking the treadle in its position after the power is stored in the motor, and detent-releasing devices, whereby the detent is withdrawn when the motor power is required, substantially as set forth.

No. 30,578. Blank Supporting Device for Screw Threading Machines.

(*Porte-ébauche de machine à fileter les vis.*)

The American Screw Company, (assignee of Charles D. Rogers), Providence, R.I., U.S., 17th January, 1889; 15 years.

Claim.—1st. In a screw-threading machine, the combination of holding-jaws for guiding the blanks laterally and presenting them to the threading mechanism, a series of thread-forming dies and combined blank-supporting and guiding plates mounted in advance of said dies, all arranged and operating substantially as hereinbefore described. 2nd. In a screw-threading machine, the combination, with the threading dies, of bars or ribs mounted in advance of the dies, and travelling in unison therewith, said bars or ribs being separated and adapted to receive the point portion of the blanks, substantially as described and for the purpose set forth. 3rd. In a screw-threading machine, the combination, with actuated blank-holding jaws, constructed to support the blank laterally, of oppositely mounted and actuated threading dies, and bars, as *s*, mounted in advance of, and moving in unison with the dies, and having the upper edges of the bars separated and arranged to receive the sides of the point of the blank, so as to support the blank and properly introduce it to the dies, substantially as set forth. 4th. In a screw-threading machine, the combination, with threading-dies, and holding-jaws, of two parallel adjustably mounted and actuated bars, as *s*, bevelled at their upper adjacent edges to receive the cone-shaped point of a screw blank, thereby assisting to support the blank in position to properly engage the threading dies, substantially as hereinbefore described. 5th. The combination, with two oppositely mounted threading-dies and holding-jaws, of duplicate supporting bars arranged side by side but reversed in their movement, and connected each with the forward end of a threading die, so as to support a blank at its point and properly present it to the dies, substantially as set forth. 6th. The improvement hereinbefore described, for guiding and supporting the points of screw-blanks by means of which they are accurately and uniformly brought into engagement with the thread-forming dies, the same consisting of supporting bars mounted in advance of, and arranged to travel in unison with the said thread-forming dies, the bar being separated to receive the points of the blank, but not admitting the cylindrical portion of the blanks between them, substantially as described.

No. 30,579. Manufacture of Artificial Stone or Marble. (*Fabrication de la pierre ou du marbre artificiels.*)

Benjamin L. Mosely and Crompton Chambers, Hastings (assignees of Archibald C. Ponton, Parkstone), Eng., 17th January, 1889; 5 years.

Claim.—1st. An artificial stone of tridymite crystallization, substantially as described. 2nd. The manufacture of artificial stone by the combination of pulverulent, granular or coarse material, with a silicious cement, the mixing and moulding of the same in a plastic mass, and the exposure of the said mass to red or white heat in a kiln until tridymite crystallization has taken place, substantially as described. 3rd. The combination of tridymite crystals of silicia in the form of small aggregates or powder, with other aggregates or powdered material in the manufacture of artificial stone, substantially as described. 4th. The manufacture of pulverulent, granular or coarse particles of matter into a stone like mass, by the conversion into tridymite crystals of the silicious cement used for binding the said particles together, substantially as described. 5th. The manufacture of artificial stone by the mixing of pulverulent, granular or coarse particles of matter, with a siliceous cement into a plastic mass, the moulding of the said mass, a subsequent treatment thereof in a silicious bath to increase its density, and a final exposure of the mass to kiln heat, until tridymite crystallization has taken place, substantially as described. 6th. An artificial or imitation marble of tridymite crystallization capable of being moulded into blocks during its process of manufacture, and of withstanding the effect of acids and white heat in a kiln without distortion, substantially as described.

No. 30,580. Knitted Drawer. (*Caleçon tricoté.*)

The Wilcomb Manufacturing Company, San Francisco, Cal. (assignee of Frank Wilcomb, Providence, R.I.), U.S., 17th January, 1889; 5 years.

Claim.—A pair of drawers, formed of two parts, consisting of a leg of knitted seamless fabric, fashioned, having continuous therewith a part *a* of flat knitted fabric, closed at one side and open at the other, forming one-half of the body, the rear edges of the flat part of each half being united to the corresponding edge of the other leg, or half to form the complete garment, as described.

No. 30,581. Art of Forming Justified Lines of Types. (*Mode de formation des lignes de caractères justifiées.*)

The Lanston Type Machine Company (assignee of Tolbert Lanston), Washington, D.C., U.S., 17th January, 1889; 5 years.

Claim.—The hereinbefore described improvement in the art of forming justified lines of type, consisting in, first, ascertaining the amount of space required to be filled up by justification, if types of normal or standard size were used, and then forming successively the types that are to compose the line, the printing types of normal width and the space types of a width varying in proportion to the ascertained amount of space required to be filled out or absorbed by justification.

No. 30,582. Art of Forming Justified Lines of Types. (*Mode de formation des lignes de caractères justifiées.*)

The Lanston Type Machine Company (assignee of Tolbert Lanston), Washington, D.C., U.S., 17th January, 1889; 5 years.

Claim.—1st. The herein described improvement in the art of producing justified lines of type, which consists in ascertaining the space in a line required to be filled by justification, if types of a normal or standard size were used, and then making in succession the types for the proposed line, the bodies of the desired number of said types being varied from normal as to width an amount equal in the aggregate to the ascertained space required to be filled by justification, whereby each line is formed by a continuous process from beginning to end of succession of types specially made for it, which just fill it out and which require no manipulation or disturbance whatever to effect the justification of said line. 2nd. The herein described improvement in the art of forming justified lines of type, consisting in first ascertaining the space which would be required to be filled by justifiation, if types of normal size were employed, secondly, forming a series of types for the designated line, each of said types being made of a width varying from the normal in proportion to the space which would otherwise be filled by justification, and, finally, assembling the said types to form a line, substantially as described.

No. 30,583. Art of Forming Justified Lines of Types. (*Mode de formation des lignes de caractères justifiées.*)

The Lanston Type Machine Company (assignee of Tolbert Lanston), Washington, D.C., U.S., 17th January, 1889; 5 years.

Claim.—A form from which to print or stereotype, composed of a series of lines of matter, each consisting of a succession of separate types, the bodies of a predetermined number, of which are varied as to width from the normal and from types representing the same characters or spaces in other lines in the form, thereby rendering each line self-justifying, substantially as described.

No. 30,584. Art of Forming Justified Lines of Types. (*Mode de formation des lignes de caractères justifiées.*)

The Lanston Type Machine Company (assignee of Tolbert Lanston), Washington, D.C., U.S., 17th January, 1889; 5 years.

Claim.—The herein described improvement in the art of producing justified lines of type, consisting in forming the types for a given line of a width varying from the width of normal or standard type, a percentage equal to the percentage of variation required in an unjustified line of normal or standard characters to just fill out the line, substantially as described.

No. 30,585. Sewing Machine.

(*Machine à coudre.*)

The Singer Manufacturing Company, New York, N. Y. (assignee of Philip Diehl, Elizabeth, N.J.), U.S., 17th January, 1889; 5 years.

Claim.—1st. In a sewing machine, the following instrumentalities, viz: a rock-shaft D, its attached carrier, a shuttle therein having a beak, and a loop-discharger extended in the direction of, but longer than the said beak, and pointed toward the periphery of the bobbin-case, the bobbin, the bobbin-case, a central stud to support it and form a centre for it about which the bobbin may rotate, a bobbin-case holder to hold the bobbin-case while the shuttle oscillates in one and then in an opposite direction about it, a needle-bar to carry an eye-pointed needle, a rotating shaft to actuate the needle-bar, and mechanism intermediate the said rotating shaft, and the rock-shaft to which the carrier is attached, to turn the said rock-shaft and cause the beak of the shuttle to travel at each oscillation through an arc of more than one hundred and eighty degrees, the combination being and operating substantially as described. 2nd. The shaft D and its attached shuttle-carrier, having arms or prongs h^2, h^3, h^4, h^5 and h^6, and the attached carrier-face or segmental finger combined with a shuttle, a bobbin-case and bobbin, and means to restrain the bobbin-case from rotating with the bobbin, substantially as described. 3rd. The rock-shaft D, its attached carrier, having arms to engage and carry a shuttle, a shuttle having a post in line with the centre of oscillation of the said rock-shaft, and having a beak b^1 and loop-discharger b^3, combined with a bobbin-case, means to restrain its rotation, and a bobbin, the latter having as its centre of rotation the centre of the said rock-shaft, substantially as described. 4th. The combination, in a sewing machine, of the following instrumentalities, viz: a needle-bar to carry an eye-pointed needle, a rotating shaft to actuate it, a shuttle-carrier, rock-shaft D, means intermediate it and the said rotating shaft to oscillate the rock-shaft for more than one hundred and eighty degrees, a carrier having a series of arms or prongs to sustain and carry a shuttle, a shuttle having a heel, a beak, a loop-discharger and a post 5, and a bobbin and bobbin-case, the loop-discharger discharging the loop of needle-thread upon the bobbin case at a point beyond a vertical line drawn through the centre of the rock-shaft and bobbin-case, substantially as described. 5th. In a sewing machine, a rock-shaft, an attached carrier having arms to hold a shuttle, a shuttle having a heel, a beak b^1, and a forwardly extended loop discharger, the point of which extends beyond the said beak, a bobbin-case and bobbin, and a carrier face attached to the carrier and extended back from the beak of the shuttle to act upon the outer face of the shuttle between its ends, the combination being and operating substantially as described. 6th. In a sewing machine, a rock-shaft, an attached carrier having arms to hold a shuttle, a shuttle having a heel, a beak b^1 and a forwardly-extended loop-discharger, the point of which extends beyond the said beak, a bobbin case and bobbin, and a carrier-face attached to the carrier and extended back from the beak of the shuttle, to act upon the outer face of the shuttle between its ends, and with a spring to act against the shuttle near the base of the beak, substantially as described. 7th. The rock-shaft D, its attached carrier, having arms to hold the shuttle, the shuttle having a heel, a beak b^1, a slotted loop-discharger and a post 5 in line with the axis of the said rock-shaft, the face n^2, the bobbin-case bevelled, as at g^3, the bobbin m, means to restrain the bobbin case from rotation, the needle-bar, means to move it, and a take-up to take up the loop of needle-thread as it is discharged from the loop-discharger, the parts being combined to

bined to operate substantially as described. 8th. The rock-shaft D, its attached carrier having arms, as described, and a carrier-face n^2, to hold the shuttle, combined with a bobbin-case, a bobbin, a shuttle, having a beak, a loop-discharger b^3 longer than the beak and terminating near the bobbin-case, all as shown and described, to discharge the loop of needle-thread on the bobbin-case beyond a vertical line drawn, through its centre, and a tension device, substantially as described, connected to the bobbin-case. 9th. The bobbin-case, the bobbin and the shuttle, combined with the tension spring 33, having feet 34, 35 and 36, and with a screw 32, the foot 34 and the bobbin case being bevelled, all as set forth to give up the loop of needle thread quickly, substantially as described. 10th. In a sewing machine, an eye-pointed needle, means to reciprocate it, an oscillating shaft provided with a shuttle-carrier, a shuttle having a beak, and a loop-discharger extended in advance of the beak, and a post 5 combined with a bobbin-case holder, a bobbin-case and a bobbin mounted on the said post, the said post being located in line with the centre of oscillation of the said oscillation shaft, to operate all substantially as described. 11th. The bobbin-case and tension spring, having a thread-pressing end and feet, and a teat 36 to support one part of the tension-spring between its ends from contact with the said bobbin case and provided with a concavity, combined with a tension-regulating screw, the head of which enters the said concavity, thereby preventing the needle-thread catching upon the said screw, substantially as described. 12th. The oscillating carrier and shuttle therein combined, with the carrier-face secured to and moving with the carrier, the said carrier face having an inwardly-bent free end terminating between the periphery of the bobbin case and the periphery of the shuttle, to prevent the entrance of the bobbin or under thread under the said face, as the carrier and shuttle are being moved backward, substantially as described.

No. 30,586. Device for Boring Artesian Wells. (*Appareil pour percer les puits artésiens.*)

Misaël Fontaine, Notre Dame du Mont Carmel, Joseph A. Blondin and François X. Blondin, St. Maurice, Que., 17th January, 1889; 5 years.

Claim.—In a device for boring artesian wells, the combination, with a well tube A B C, and boring tool D E F G, of the plugs H and I, as above described and for the purposes set forth.

No. 30,587. Steam Engine. (*Machine à vapeur.*)

Joel T. Case, Bristol, Conn., U.S., 19th January, 1889; 5 years.

Claim.—1st. In a double acting engine, the combination, with a steam chest or cylinder casing F, of an oscillating cylinder H located within, and supported by rounded seats formed in the steam chest or cylinder casing, and ports for conveying the entire amount of steam used in operating the engine into the opposite ends of the cylinder, and for its exhaust therefrom into the steam chest, substantially as set forth. 2nd. In an engine, the combination, with a steam chest or cylinder casing F, of an oscillating cylinder H, wholly enclosed within the steam chest and wholly supported on the cylindrical valve seat of the steam chest, substantially as set forth. 3rd. In an engine, an oscilling cylinder block H, constructed with a cylindrical bearing surface, and with flat sides, substantially as set forth. 4th. The combination, with the crank disk E, of the shaft bearing a, provided with an inclined oil duct, and perforations for conveying oil to the shaft journal, substantially as set forth. 5th. In an engine, the combination, with a casing or frame provided with a rounded seat having an opening P^1 for the passage of the piston rod, and sleeve P, of a cylinder constructed with a rounded end which is fitted to, and supported by the rounded seat G, the latter serving as the sole support of the cylinder, said rounded cylinder end and seat having ports for the admission and exhaust of steam, substantially as set forth. 6th. In an engine, the combination, with a casing or frame F, provided with a rounded seat G, of a cylinder constructed with a rounded end, which is fitted to, and supported by the rounded seat, said rounded cylinder end and its seat having ports for the admission and exhaust of steam, and suitable intervening steam chambers or passages for ballancing the cylinder and relieving its bearing and seat of undue pressure and wear, substantially as set forth.

No. 30,588. Vehicle Wheel. (*Roue de voiture.*)

Arthur P. Ricard, Toledo, Ohio, U.S., 19th January, 1889; 5 years.

Claim.—1st. In a metal vehicle-wheel, the dished flanges B, B, provided with a series of internal and lateral winding-grooves e, e, e, e, and slight internal and external projections b, b, etc., between these grooves e, e, in combination, with the box A, and spokes C, C and C^1 C^1, substantially as shown and described. 2nd. In a metal wheel for vehicles, the combination, of the tire D, spokes C, C and C^1, C^1, the dished flanges B, B, and box A, all substantially as shown and described.

No. 30,589. Radiator. (*Calorifère.*)

Patrick J. Kelly, Elizabethport, N.J., U.S., 19th January, 1889; 5 years.

Claim.—The radiator herein described, consisting of cast-metal sections, each composed of a base portion B, and U-shaped tubes A, the sections being secured together side by side, and each having chambers, as c, c^1 and c^2, with which the legs of the tubes A respectively communicate, and with the end chambers c and c^1, in combination alternately at opposite sides of the radiator with each other, to provide for circulation through the base portions and tubes of the sections in succession, substantially as herein set forth.

No. 30,590. Railroad Frog. (*Rail de croisement.*)

James F. Hart and Charles M. Hendry, Union Point, Ga., U.S., 19th January, 1889; 5 years.

Claim.—1st. In a railway-frog, the combination, with a main truck A, and siding B, and a frog-rail C having a portion of its lower face cut away, of a supplemental rail D adapted to form a bearing on which the frog-rail rests when the latter is closed to the main line, and provided with a rigid shoulder forming a stop for limiting the movement of the frog-rail, substantially as set forth. 2nd. In a railway-frog, the combination, with a main track A, and siding B, and a frog-rail C having a bevelled lower face, of a supplemental rail D adapted to form a bearing on which the lower face of the frog-rail rests, when the latter is closed to the main line, and provided with a rigid shoulder forming a stop for limiting the movement of the frog, substantially as set forth.

No. 30,591. Attachment to Blacksmith's Anvils. (*Disposition aux enclumes de forges.*)

Benjamin E. Robinson, Lyn, Ont., 19th January, 1889; 5 years.

Claim.—An attachment to anvils comprising a yoke B, provided at the ends with a clamping screw b, and having a post or standard C rising vertically, a horizontal lever D fulcrumed pivotally to said post, and provided at the front end with a cam d, or key d^1, to force the opposite end of the lever sidewise against the anvil when the yoke is attached to encompass the tail end and clamped by the screw, as set forth.

No 30,592. Apparatus for Raising or Lifting Heavy Weights. (*Appareil pour soulever les fardeaux.*)

Fischel Landau and Sigmun Scharfberg, Vienna, Austria, 19th January, 1889: 5 years.

Claim.—1st. A machine for raising weights, having a loaded truck reciprocated by power and provided with wheels, some of which run upon fixed horizontal rails while others run upon fixed inclined rails, and one of which runs along and depresses a movable inclined rail forming part of a lever, substantially as described. 2nd. In a machine for raising weights or accumulating power, the combination of the loaded truck A having wheels, such as a a^1, b, with the fixed and movable rails B, C, D, forming ways for said truck A, to reciprocate upon said truck, being connected with any suitable source of power, such as the crank E, by means of a connecting rod k, substantially as described. 3rd. A double acting weight raising machine having the above enumerated parts in duplicate, substantially as described with reference to Fig. 7.

No. 30,593. Balanced Gearing for Wind-Mills. (*Engrenage équilibré pour moulins à vent.*)

Charles H. Tuckwood and William Tuckwood, Janesville, Wis., U. S., 19th January, 1889; 5 years.

Claim.—1st. The combination, with a base plate A, a hollow stump B, and a bracket arm C^1 loosely mounted on the base plate, said arm having a wind wheel shaft journalled therein, this shaft having a gear wheel F^1 on one end, of a main shaft M adapted to turn in the stump, gear wheels loosely mounted on the main shaft, and hollow stump, and bevel pinions H and K between said gear wheels, the axis of one being secured to the hollow stump, and the axis of the other to the main shaft, substantially as set forth. 2nd. The combination, with a base plate A, a hollow stump B formed integral therewith, and a bracket arm C^1 loosely mounted on the base plate, said bracket arm having a wind wheel, shaft D journalled therein, the shaft carrying a gear wheel F^1, of a main shaft M adapted to rotate in the hollow stump, gear wheels loosely mounted on the stump and on the shaft, in position for their teeth to mesh with the teeth on the wind wheel, shaft, gear wheel, intermediate gear wheel also loosely mounted on the main shaft, and bevel pinions K and H between said intermediate wheels, and the gear wheels on the main shaft, the axis of one of said wheels being secured to the hollow stump, and the axis of the other to the main shaft, substantially as set forth. 3rd. The combination, with a base plate A, a circular supporting flange A^1 projecting therefrom, a hollow stump B formed integral with the base plate, and a bracket arm C^1 mounted on the flange, of a horizontal wind wheel shaft D journalled in the bracket arm, and provided with a gear wheel F^1, a vertical shaft M journalled in the stump, bevel gear wheels loosely mounted on the vertical shaft meshing with the gear wheel on the horizontal shaft, intermediate bevel gear wheels, and the intermediate bevel pinions, one secured to the vertical shaft, and the other to the hollow stump, for the purpose substantially as set forth.

No. 30,594. Car Truck. (*Châssis de char.*)

James E. W. Currier, Ottawa, Ont., 19th January, 1889; 5 years

Claim.—1st. The car A provided with the loop H, in combination with the truck B provided with the tongue E inserted in said loop, said truck being pivotally connected with said car by the king-bolt C, substantially as described. 2nd. The car A provided with the loop H, the truck E provided with the tongue E, and pivotally connected with said car by the king-bolt C, and a spring or springs for cushioning and centering the tongue, combined and arranged to operate substantially as set forth. 3rd. The combination, with a car-body, of a truck pivoted thereto, and provided with a tongue at one end, and a loose chain connected to the car-body and tongue, substantially as described. 4th. The combination, with a car-body provided with a loop attached to its bottom, of a truck pivoted to the car-body, and provided with a tongue at one end, which projects through said loop, and a loose chain connected to the car-body and tongue, substantially as described. 5th. The truck B provided with the tongue E, braces x, and ring z, the car A provided with the loop h, the chains y, g, connecting said ring and car, the springs r for cushioning said tongue, and the king-bolt C for connecting the truck and car, all constructed, combined and arranged to operate to operate substantially as set forth.

No. 30,595. Skate. (*Patin.*)

John Forbes, Halifax, N.S., 19th January, 1889; 5 years.

Claim.—1st. In a skate, the combination of self-adapting spring sole-clamps 13, 13, 16, 16 with a self-fastening clamp for the breast of the heel, substantially as described, whereby the skate is capable of being clamped to a sole of a boot or shoe without the necessity of any previous setting of the sole and heel clamps. 2nd. In a skate, the self-adapting spring sole-clamps 13, 13, 16, 16, substantially as described, whereby the skate may be clamped to the sole of a boot or shoe without the necessity of any previous setting of the sole clamps. 3rd. In a skate, the self-fastening heel-clamp 2, for the breast of the heel, substantially as described, whereby the heel of a boot or shoe may be clamped, without the necessity of any previous setting or adjustment of the heel-clamps by pinching or binding screws, or similar devices. 4th. In a skate sole and heel plates, constructed by the bending down therefrom, or attaching thereto, a loop forming a double bracket, such loop being slitted to receive the runner, with a pin passing through the runner and inside the loop, for the purpose of securing the runner to the bracket, substantially as described. 5th. In a skate, the combination of heel or sole plates bent down at their ends, such ends being slitted to receive the runner, and having a loop bent down from, or attached thereto, in form of a double bracket, said loop being also slitted to receive the runner, with a pin passing through the runner for the purpose of securing such heel or sole plate onto the runner, substantially as described. 6th. In a skate, the heel-clamp 2 with its spring-tongue 4, such heel-clamp being bent down and slotted so as to embrace the forward end of the heel-plate *l*, the heel-plate containing serrations 3 on its upper surface, substantially as described. 7th. In a skate, the springs 13, 13, secured firmly at their ends to the toggle-clamp 2, and carrying on their forward ends sole-clamps 16, 16, substantially as described.

No. 30,596. Automatically Closing Can and Bottle. (*Boîte et bouteille à fermeture automatique.*)

George A. Poole, Chicago, Ill., U.S, 21st January, 1889; 5 years.

Claim.—1st. In an automatically opening and closing can or bottle, a tube passing through the mouth of the vessel, in combination with a cork or valve at the outer end of said tube, and a weight within said vessel connected to said valve by means of mechanism adapted to operate on the inner end of said tube, whereby said valve may be opened and closed through the said attached mechanism by the action of gravity by moving such vessel into suitable positions, substantially as specified. 2nd. In an automatically opening and closing can, tube in combination with cork, and a weight within the can arranged eccentrically to the axis of the tube, and connected to a rod having an inclined part f^1, to operate upon the inner end of the tube, substantially as specified.

No. 30,597. Mowing and Reaping Machine. (*Faucheuse-moissonneuse.*)

John T. Jackson and Thomas Jackson, Toronto, Ont., 21st January, 1889; 5 years.

Claim.—1st. In a mowing or reaping machine, the cutter-bar A having formed in it the longitudinal corrugations B, substantially as shown and described. 2nd. In a mowing or reaping machine, the guard finger C having on the upper side of its shank the corrugations D, to fit into notches or corrugations in the cutter-bar, substantially as shown and described. 3rd. The combinations, in a mowing or reaping machine, of a guard finger having a corrugated shank, and a washer having a corrugated contact surface, with a corrugated cutter-bar, substantially as described and for the purpose set forth.

No. 30,598. Double and Whiffletree. (*Volée d'arrière et palonnier.*)

John Bear, Jr., and Benjamin Bear, Waterloo, Ont., 21st January, 1889; 5 years.

Claim.—The combination of steel channel bars A and F, in connection with steel bars B and G, also malleable wire centre pieces C and H, substantially as and for the purpose hereinbefore set forth.

No. 30,599. Fence Post. (*Pieu de clôture.*)

Silas J. Saxon and William H. James, Colfax, W. T., U. S., 21st January, 1889; 5 years.

Claim.—1st. In a fence-post, the combination, with a foot-piece, adapted for insertion in the ground, and having at its upper end a tubular extension, of a post, having in its lower end a slot adapted to receive and hold the extension of said foot-piece, substantially as shown and described. 2nd. The combination, with the post B, having the annular slot *b*, and provided with the ferrule *c*, concentric with said slot, of the foot-piece A, having the radial wings *a*, and provided with the tubular extension a^1, substantially as shown and described.

No. 30,600. Pipe for Smoking Tobacco. etc., Cigar Holder, etc. (*Pipe de fumeur, porte-cigare, etc.*)

Stephen Backus, Chatham, Ont., 21st January, 1889; 5 years.

Claim.—1st. A nicotine absorber for pipes, cigar-holders, etc., consisting of a mass or lump of felt, or similar absorbent, placed in the smoke passage of the pipe or cigar-holder, substantially as described. 2nd. A nicotine absorber for pipes, consisting of the combination, with the pipe bowl, of a removable mass or lump of felt or similar absorbent placed in the bottom thereof, said mass or lump provided with a cap of metal or other incombustible material, substantially as substantially as described. 3rd. A nicotine absorber for pipes, cigar-holders, etc., consisting of the combination with a divided stem united by the tube D, of a mass or lump of absorptive material, located in said tube, substantially as described. 4th. A nicotine absorber for pipes, cigar-holders, etc., consisting of the combination with a divided stem having the smoke passage or a part of the smoke passage large enough to contain the absorber, and the parts of the stem joined by any device, of a mass or lump of absorptive material located in said smoke passage, substantially as described. 5th. A nicotine absorber for pipes, consisting of a mass or lump of absorptive material, provided with a cap of incombustible material, said cap provided with one or more perforations, substantially as described.

No. 30,601. Elevator. (*Monte-charge.*)

Rudolph C. Smith, New York, N. Y., U. S., 21st January, 1889; 5 years.

Claim.—1st. The combination, with the cage operating engine valve, auxiliary engine and stopping and starting device, of an elevator, of a travelling cable suspended within the well, connected with the cage and with the stopping and starting device to operate the latter, and means, substantially as described, for operating upon said cable from within the cage. 2nd. The combination, with the cage operating engine, stopping and starting device and travelling cable, of a weight connected with said cable to take up the slack thereof, in the manner substantially as set forth. 3rd. The combination, with the cage and elevator engine, and stopping and starting device, of a suspended cable in two sections connected with the stopping and starting device, supported by a counter-weighted lever at the upper end, and device upon the cage for deflecting either section of the cable at the will of the operator, substantially as set forth.

No. 30,602. Police Nippers. (*Menottes.*)

Amos Eisaman, Putnam, and George Rome, Mansfield Valley, Penn., U.S., 21st January, 1889; 5 years.

Claim.—1st. The nippers having the pivoted jaws C, provided with operating arms D, in combination with the cam K and the handle M, substantially as specified. 2nd. In nippers, the body provided with a spindle H, and the jaws C provided with operating arms D, in combination with the hollow shaft I provided with a cam K, the handle M mounted on the hollow shaft, the stationary ratchet plate P, a similar ratchet Q on the handle, and the spring O, substantially as specified. 3rd. In nippers, the body A having lateral ears B, and the spindle H, the jaws C mounted between the ears and provided with operating arms D, and the spring F, in combination with the hollow shaft I, provided with a squared end L, and the shoulder *l*, the cam K, the handle M, having a central barrel N, provided with the interior shoulder *n*, and the ratchet Q, the ratchet plate P, and the spring O, bearing at its ends against the shoulders *l*, *n*, whereby the ratchet Q is held normally in engagement with the ratchet plate, substantially as and for the purpose specified.

No. 30,603. Rotary Cutting Knife. (*Ciseau rotatoire.*)

James M. Butters, Brighton, Vt., U.S., 21st January, 1889; 5 years.

Claim.—A rotary cutting-knife (for plaining regular or irregular shapes in wood), having its cutting face bevelled, substantially as described and for the purpose set forth.

No. 30,604. Faucet for Regulating the Discharge of Liquids from Vats, Tanks, Cisterns, etc. (*Robinet pour régler le décantage des liquides des cuves, réservoirs, citernes, etc.*)

Arthur Stafford, Lancaster, Ont., 21st January, 1889; 5 years.

Claim.—1st. Plug A with handles c^1 and threaded at *b*, b^1, and solid end d^1, having a grooved recess a^1, in combination with body B having threaded part *b* and projection *a*, substantially as and for the purpose hereinbefore set forth. 2nd. Plug A and body B, in combination with collar C, having set-screw a^{11}, substantially as and for the purpose hereinbefore set forth.

No. 30,605. Elevator and Separator for Mills. (*Elévateur et séparateur pour moulins.*)

John R. Beynon and James B. Murphy, Watertown, Wis., U.S., 21st January 1889; 5 years.

Claim.—1st. In a separator for grain, etc., the combination of a main hopper, a supplemental hopper, the latter formed with a valve on one side, means for operating said valve from the outside of the main hopper, and an elastic tube surrounding the supplemental hopper, substantially as set forth. 2nd. In a separator for grain, etc., the combination of a receptacle having a depending chamber or well provided with an outlet opening, a hooded draft tube leading up through the chamber or well, and a disk adjustably arranged to open or close the tube, substantially as set forth. 3rd. In a separator for grain, etc., the combination, of a main receptacle provided with a depending chamber or well, having an outlet opening, a hooded draft tube leading up through the chamber or well, a disk adjustably arranged to open or close the tube, a partition arranged to extend from the top of the receptacle to within a certain distance of its bottom, a flue communicating at its upper end with the passage formed by the partition and adjacent wall of said receptacle, a hopper arranged to have a direct outlet into the flue, and a fan communicating with the receptacle, substantially as set forth.

No. 30,606. Roller Mill. (*Moulin à rouleaux.*)

John R. Beynon and James B. Murphy, Watertown, Wis., U.S., 21st January, 1889; 5 years.

Claim.—1st. In a roller mill, the combination, with the yielding roller and its adjusting rods, of a wheel fast on each adjusting rod, a hanger suspended from the hub of each wheel, and provided with an

elongated bearing, and a handle journalled in the bearings and geared to said wheels, substantially as set forth. 2nd. In a roller mill, the combination, with the yielding roller and its adjusting rods, of a wheel fast on each adjusting rod, a hanger suspended from the hub of each wheel, opposing spindles journalled in the hangers and geared to said wheels, and a handle detachably connected at its ends to the spindles, substantially as and for the purpose set forth. 3rd. In a roller mill, the combination, with the yielding roller and its adjusting rods, of a wheel fast on each adjusting rod, a bearing suspended from the hub of each wheel, opposing spindles journalled in the bearings and geared to said wheels, and a handle connected to the spindles and adjustable in length, substantially as set forth. 4th. In a roller mill, the combination, with the yielding roller and its adjusting reds, of a wheel arranged on each adjusting rod, a casing made in two sections hinged together and fitted to the hub of each wheel, a spindle journalled in each casing and geared to the wheel encased thereby, and a handle uniting the opposing spindles, substantially as and for the purpose set forth. 5th. In a roller mill, the combination, with the yielding roller and its adjusting rods, of a wheel arranged on each adjusting rod, a casing fitted to the hub of each wheel, and having its sides depressed to form opposing bearing points, and its ends provided with elongated bearings, a spindle arranged in the elongated bearings of each casing to impinge against said points, whereby the spindle is kept in line with the centre of the adjacent wheel, a gear connection established between said spindle and wheel, and a handle uniting the opposing spindles, substantially as set forth.

No. 30,607. Pump. (*Pompe.*)

William H. McIntyre, Brandon, Man., 23rd January, 1889 ; 5 years.

Claim.—The combination, with a pump A, provided with a handle E, and a cylinder B having a leak-hole *b* and a plunger or bucket C, of the pump rod D, tubular throughout its entire length and having at top a removable cap or plug F, and perforations *a* above the plunger or bucket, substantially as and for the purpose set forth.

No. 30,608. Combined Latch and Lock. (*Loquet serrure.*)

John Maynard, Bowmanville, Ont., 23rd January, 1889 ; 5 years.

Claim.—1st. In a combined latch and lock, the combination, of the bolt, the tumbler secured thereto, the knob collar or sleeve, and the lever arm adapted to be engaged by the said collar or sleeve, the said tumbler being adapted to engage and disengage the said lever arm, substantially as described. 2nd. The combination, in a combined latch and lock, of the bolt, the tumbler pivoted thereto and having the hook R, the gravity lever S, normally engaging the bolt and having the arm U, the knob sleeve or collar and the lever arm A1, the latter having the arms engaged by the knob sleeve or collar and the arm U, and provided further with a stud E1, adapted to be engaged or disengaged by the hook R, of the tumbler, substantially as described. 3rd. The combination, in a lock, of the relatively fixed stud E1, the bolt and the tumbler pivotally connected to the bolt and having the hook adapted to engage the stud, substantially as described. 4th. The combination of the bolt, the tumbler pivoted thereto and having the hook R, the lever arm adapted to be engaged by the said hook, and the detent weight lever connected to the lever arm, substantially as described. 5th. In a lock, the latch bolt comprising the sections D and E joined together, substantially as described. 6th. The combination of the knob, sleeve, or collar, the lever arm engaged by the same, the latch bolt, the tumbler pivoted thereto and adapted to be engaged by the lever arm, and detent to lock the lever arm in place, and thereby prevent the bolt from being withdrawn by a key, substantially as described. 7th. In combination with the latch bolt, the lever arm engaging the same, knob, sleeve or collar to engage the lever arm, and the detent to lock the lever arm and prevent the bolt from being withdrawn by a key, substantially as described. 8th. The lock case having the flange G, combined with the bolt slotted to work on the flange, as set forth. 9th. In a combined latch and lock, the latch bolt having the key engaging point or recess I, combined with the knob sleeve or collar, and connections between the latter and the latch bolt, whereby the latter can be operated by the knob or the key, as set forth. 10th. In combination with the latch bolt, the knob having connections therewith to operate the bolt, the tumbler O on the latch bolt, and establishing the connection between the knob and the bolt, said tumber being arranged in such proximity to the key-hole that it will be actuated by the key when the latter is inserted, whereby, when said tumbler is actuated, it will disengage the connection between the knob and the bolt, as set forth. 11th. In a lock, the latch bolt, comprising the sections D, E, detachably joined together, the section E being slotted to run on a rigid flange of the lock case, as set forth. 12th. In combination with the latch bolt, the lever A1 connected with the same, the gravity detent S normally engaging the arm A1, and the knob sleeve, or collar engaging the arm A1, as set forth.

No. 30,609. Ammunition and its Manufacture. (*Ammunition et sa fabrication*)

David Johnson and William D. Borland, London, Eng., 23rd January, 1889 ; 5 years.

Claim.—1st. Compressing a charge of powder or explosive compound into a cartridge case carrying a primer at the centre of its base, the compression being effected by means of a plunger having a tapering point projecting from it, of sufficient length to reach nearly down to the cap chamber at the bottom of the case, substantially as described. 2nd. Ammunition composed of a cartridge case with central primer at the base, and with the rear end of the case filled with powder compressed into a block, having a central tapering hole extending from its front end nearly, but not quite to, the cap chamber, and with the larger end of the hole towards the projectile. 3rd. A cartridge similarly formed but with powder in rings having different rates of combustion.

No. 30,610. Machine for Assembling Radiator Loops. (*Machine à assembler les anneaux des calorifères.*)

Harrison H. Taylor, Detroit, Mich., U.S., 23rd January, 1889 ; 5 years.

Claim.—1st. In a machine for assembling radiator loops, a rotatable chuck to engage a nipple and unite the nipple with the adjacent loops, substantially as described. 2nd. In a machine for assembling radiator loops. a chuck to engage a nipple, and mechanism to rotate said chuck, whereby the nipple will be simultaneously united with the adjacent loops, substantially as described. 3rd. In a machine for assembling radiator loops, a rotatable chuck constructed to enter the hub of the loop to be added and interiorly engage a nipple, and simultaneously unite the nipple with the adjacent loops, substantially as described. 4th. In a machine for assembling radiator loops, a reciprocatory rotatable chuck to engage a nipple and unite the nipple with the adjacent loops, substantially as described. 5th. In a machine for assembling radiator loops, a support to hold one or more loops in position, and a rotatable chuck to engage a nipple, and unite the nipple with the adjacent loops, substantially as described. 6th. In a machine for assembling radiator loops, a support to hold one or more loops in position, and a reciprocatory rotatable chuck to engage a nipple and unite the nipple with the adjacent loops, substantially as described. 7th. In a machine for assembling radiator loops, a support to hold one or more loops in position, a reciprocating head block to engage the new loop to be added, and hold said loop against the nipple upon which it is to be united, and a rotatable chuck to engage the nipple, substantially as and for the purposes described. 8th. In a machine for assembling radiator loops, a support to hold one or more loops in position having, in combination therewith, a reciprocatory head block and a rotatable chuck carried by said head block, substantially as and for the purpose described. 9th. In a machine for assembling radiator loops, a support for holding one or more loops, and in combination therewith, a reciprocating head block, a rotatable chuck carried by said head block, and having a reciprocatory engagement therewith, substantially as described. 10th. In a machine for assembling radiator loops, a support to hold one or more loops, a head block to engage the new loop to be added, and a rotatable chuck to engage a nipple, said support and said head block made movable the one toward the other, substantially as and for the purpose described. 11th. In a machine for assembling radiator loops, a support to hold one or more loops in position, a head block to engage the new loop to be added, and in combination therewith, centering mechanism, whereby the several hubs of the loops will be located axially in line, and a rotable chuck to engage a nipple and unite it with the adjacent loops, substantially as described. 12th. In a machine for assembling radiator loops, the combination, with a support for one or more loops, of a head block to engage the new loop to be added, a rotatable chuck, and means for centering the added loops upon said head block, substantially as described. 13th. In a machine for assembling radiator loops, a support for one or more loops, and in combination therewith, a head block to engage the loop to be added, a rotatable chuck to engage and rotate a nipple to be united with the adjacent loops, and means for feeding forward the said support or head block the one toward the other, as the nipple is united with the loops, substantially as described. 14th. In a machine for assembling radiator loops, an expansible chuck to interiorly engage a nipple, and mechanism to rotate said chuck, substantially as described. 15th. In a machine for assembling radiator loops, the combination, with a support, of a rotatable chuck, a driving pulley geared with said chuck, and a clutch to engage a pulley, substantially as described. 16th. In a machine for assembling radiator loops, rotatable chucks to engage nipples at both ends of the loops respectively, and simultaneously unite the loops at both ends, substantially as described. 17th. In a machine for assembling radiator loops, rotatable chucks to engage nipples at each end of the loops respectively, and simultaneously unite the respective nipples with the adjacent loops, and means for reciprocating said chucks, substantially as described. 18th. In a machine for assembling radiator loops, a support for one or more loops, rotatable chucks to engage nipples and unite them with loops at each end of said loops respectively, said support made adjustable for different lengths of loops, substantially as described. 19th. In a machine for assembling radiator loops, a support for holding one or more loops in position, and provided with a rack bar, and in combination therewith, a head block arranged to travel along said rock bar, a rotatable chuck to engage a nipple, and means for rotating said chuck, substantially as described. 20th. The process of assembling radiator loops by means of a right and left hand screw threaded nipple, consisting of interiorly engaging the nipple by an expansible chuck, and thereby screwing the nipple into the adjacent loops, substantially as described. 21st. The chuck herein described, for assembling radiator loops, said chuck constructed to interiorly engage a nipple, and means to rotate said chuck and thereby unite the nipple with the adjacent loop, substantially as set forth. 22nd. The chuck herein described for assembling radiator loops, consisting of expansible jaws to interiorly engage a nipple, and means to rotate said chuck and thereby unite the nipple with the adjacent loops, substantially as set forth.

No. 30,611. Fireproofing of Buildings. (*Moyens de rendre les bâtisses à l'épreuve du feu.*)

George Hayes, New York, N.Y., U.S., 23rd January, 1889 ; 5 years,

Claim.—1st. An opening in sheet metal formed by puncturing through and pressing forward the metal at the edge of the cut, in such manner that a dovetail slot is produced without removal of any portion of the metal, essentially as and for the purpose herein set forth. 2nd. In sheet metal, a tongue, lip or hook formed by puncturing through the sheet, and spreading outward and backward the metal at the side of the opening, in the manner shown for the purpose set forth. 3rd. A sheet or strip of sheet metal, having at intervals throughout its extent punctured apertures, each having its edge spread outwardly, constituting it a wedge-shaped or dovetail slot for reception of plaster, essentially as shown and described. 4th. A sheet or strip of sheet metal having at intervals, throughout its ex-

tent, raised hooks or catches formed of the edge-metal by puncturing and turning outwardly with a backward curl or roll the edge of the opening, essentially as shown and described. 5th. Sheet metal lathing prepared for the reception and holding of plaster by apertures and raised tongues, essentially as shown and described. 6th. In sheet metal lathing or backing for plaster, the combination of apertures, and tongues or catches arranged at intervals throughout, essentially as shown and described. 7th. Sheet metal, corrugated at intervals and prepared for holding plaster by punctured apertures, the edges of which are raised to form tongues or catches, essentially as shown and described. 8th. In metallic lathing, a projecting bend or fold adapted to serve as a screed, essentially as shown and described. 9th. In combination with metallic lathing, a separate angle-screed or moulding applied thereto, essentially as shown and described. 10th. In metallic lathing, backward projecting corrugations or folds adapted to hold the plane of the sheet or strip at a suitable distance from the wall (when applied thereto) to prevent passage of dampness, essentially as shown and described. 11th. The combination of sheets or strips of sheet metal, all apertured with raised tongues or catches, as herein set forth, with furring folds arranged and secured together back to back to form partitions, essentially as shown and described. 12th. A single faced partition composed of the lathing sheets having formed therein ribs for the purpose of strengthening and sustaining the same, essentially as shown and described. 13th. A double faced partition composed of the lathing sheets having formed therein ribs, the sheets of the two faces secured together back to back with the ribs between, essentially as shown and described. 14th. The combination of the lathing sheets and iron posts, essentially as and for the purpose herein set forth. 15th. The combination of furring and lathing in the same sheet, formed essentially as herein shown and described.

No. 30,612. Waterproofing Compound.

(*Composition imperméable à l'eau.*)

Charles T. Snedeker, New York, N.Y., U.S., 23rd January, 1889; 5 years.

Claim.—1st. A composition of matter for waterproofing purposes, consisting of asphalt, English gloy, cotton seed oil, peroxide of manganese, talc, China clay, isingglass, ammonia, linseed oil, copal gum, pyrites and coloring material, substantially as described. 2nd. A composition of matter for waterproofing purposes, consisting of liquid asphalt, English gloy, cotton seed oil, peroxide of manganese, French talc, China clay, Russian isinglass, ammonia, linseed oil, West India copal gum, Zanzibar copal gum, pyrites, and lamp black, substantially as described.

No. 30,613. Lead Pigment and Process of Preparing the same. (*Pigment de plomb et procédé de préparation.*)

Ambose G. Fell, New York, N.Y., U,S., 23rd January, 1889; 5 years.

Claim.—1st. The herein described method of producing the new pigment herein described, which consists in forming a solution of a salt of lead, forcing sulphurous acid through the said solution, whereby the lead is converted into normal sulphite, separating said sulphite from the liquid, steaming it and drying it. 2nd. The herein described process of treating sulphite of lead, for the productions of a lead pigment, which process consists in subjectiug the sulphite to the action of steam, or its equivalent, for the purpose and in the manner described. 3rd. The method of producing the new pigment herein described, which consists in forming a solution of acetate of lead, forcing sulphurous acid through the said solution, whereby the lead is converted into normal sulphite, separating said sulphite from the liquid, steaming and drying it, substantially as described. 4th. As a new manufacture, a lead pigment, consisting substantially of a lead sulphite, white in color and distinguished by yielding a blue streak, and by the other properties and characteristics herein set forth.

No. 30,614. Signal for Railway and other purposes. (*Signal de chemin de fer et autres.*)

Charles H. Koyl, Swarthmore, Penn., U.S., 23rd January, 1889; 5 years.

Claim—1st. In a signalling apparatus, the combination, with a support or standard, of a reflector having the shape, or approximately the shape, of the section of a paraboloid, as described, and mounted on, or pivoted to said support, so as to be rotatable about an axis corresponding to, or coincident with, the axis of the paraboloid, of which said reflector is a section, substantially as and for the purposes hereinbefore set forth. 2nd. The combination, in a signalling apparatus, of a support or standard, a reflector having the shape, or approximately the shape of the section of a paraboloid, as described, and mounted on, or pivoted to, said support, so as to be rotatable about an axis coincident with the axis of the paraboloid, of which the said reflector is a section, and a lamp or other source of light located on said support at the focal point of the said paraboloid reflecting section, substantially as and for the purposes hereinbefore set forth.

No. 30,615. Lime Tray for Purifying Gas.

(*Auge à chaux pour purifier le gaz.*)

George H. Turnbull, New Westminster, B.C., 23rd January, 1889; 5 years.

Claim.—1st A gas purifying tray or gird, consisting of spaced united slats, essentially oval in cross section, substantially as shown and described. 2nd. A gas purifying tray or gird, consisting of a series of parallel slats, oval in cross section, a tie-rod passing through the series of slats and washers, carried by the said tie-rod, spacing the slats, substantially as shown and described. 3rd. In a gas purifying tray or gird, the combination, with a series of parallel slats, oval in cross section, of headed tie-rods passed transversely through the said slats, at or near their ends, washers carried by the said tie-rods spacing the several slats, and a lock-nut screwed upon one end of the said tie-rod, all combined for operation substantially as shown and described.

No. 30,616. Laced Rubber Boot or Shoe.

(*Chaussure de caoutchouc lacée.*)

Minnie Howitt, Owen Sound, Ont., 24th January, 1889; 5 years.

Claim.—A rubber boot or shoe, having ankle pieces B, B1, or gossamer rubber cloth secured to the foot portion A, along the edge *b*, said pieces lacing together vertically at the inner side of the foot, as set forth.

No. 30,617. Process of Disintegrating Fibrous Substances. (*Procédé de désagrégation des substances fibreuses.*)

Sidney S. Boyce, New York, N.Y., U.S., 24th January, 1889; 5 years.

Claim—A new process of disintegrating fibrous substances, consisting of, first, breaking the straw; second, subjecting the fibres to the action of a boiling, neutral soapy solution, made by dissolving soap high in fatty matters, in water; third, drying the fibers and, fourth, subjecting the dried fibers to rolling and finishing, as herein described.

No. 30,618. Clamp. (*Serre-joint.*)

William D. Hawley, Syracuse, N. Y., U. S., 24th January, 1889; 5 years.

Claim.—The improved adjustable clamp, composed of the shank B, provided with the perforations *a*, *a*, *a*, and formed integral with the gripping hook A, and perforated lateral projection *b* respectively at opposite ends, and the shank B1 formed integral with the gripping hook A1, and coupling hook C respectively at opposite ends, and adapted to slide with said coupling-hook through the perforated projection *b*, and pass said coupling hook into the perforation of the shank B, substantially as described and shown.

No. 30,619. Packing and Binding Wood.

(*Empaquetage du bois.*)

Thomas V. Wheeler, Fort Ellice, Man., 24th January, 1889; 5 years.

Claim.—1st. In means for packing and holding masses of wood together, the spring binding poles arranged on opposite sides of the mass, and crossing each other at their ends beyond the mass, in combination with locking sticks secured in position between the crossing ends of the poles, substantially as specified. 2nd. In means for packing and holding masses of wood together, the spring binding poles B, B, arranged on opposite sides of the mass, crossing each other at their ends beyond the mass, in combination with the locking sticks C, C, arranged in between the crossing ends of the poles, and said poles and crossing sticks being fitted in locking engagement with each other by means of notches *c*, *c* made in them, essentially as described. 3rd. A package of sticks of wood *b*, *b*, having combined with and applied to them a series of bent spring binding poles B, B, arranged to cross them on opposite sides of the mass, and to cross each other beyond the latter, and secured in position by transverse locking sticks C, C, between the crossing ends of the poles, substantially as specified.

No. 30,620. Stove Pipe. (*Tuyau de poêle.*)

Emmanuel Samuel and John O. Thorn (assignees of Levi H. Montross), Toronto, Ont., 24th January, 1889; 5 years.

Claim.—1st. A stove-pipe section, having a longitudinal joint formed by a fold near one edge of the plate, forming the section to receive the opposite edge of the said plate, substantially as and for the purpose specified. 2nd. A stove-pipe section, having a pocket A, formed near one edge of the plate, forming the section to receive the opposite edge of the said plate, which is bent to form a ridge to butt against the top fold of the pocket, when the edge is fitted therein, substantially as and for the purpose specified.

No. 30,621. Attachment to Rotary Snow Ploughs. (*Disposition aux charrues à neige rotatoires.*)

The Canadian Pacific Railway Company (assignee of Francis B. F. Brown), Montreal, Que., 24th January, 1889; 5 years.

Claim.—1st. In a rotary snow plough, the combination with the scoop, of wings attached to the sides thereof and extending from the top of same to a point sufficiently high to clear permanent structures along the sides of the track, as and for the purposes described. 2nd. In a rotary snow plough, the combination with the scoop, of wings hinged thereto and adapted to be secured in a forward position, so as to project beyond face of scoop, and also be folded back of same, and means for locking them in either position, as and for the purposes set forth.

No. 30,622. Lamp Holder for Music Stands.

(*Porte-lampe pour pupitres à musique.*)

Max A. O. L. Liebich, Berthier en haut, and Benjamin Tooke, Montreal, Que., 24th January, 1889; 5 years.

Claim.—The combination of the stand *a*, having rail *b*, with clamp *c*, having arm *d*, fore-arm *g*, having eye *h* and clamping screw *i*, rod *k*, holding light *l*, and reflector *m*, the whole substantially as described and for the purposes set forth.

No. 30,623. Spring Stay. (*Busc élastique.*)

George N. Clark, Woodstock, N. B. (assignee of Samuel K. Butterfield, Swanton, Vt., U.S.), 24th January, 1889; 5 years.

Claim.—1st. A spring stay, composed of the two wires A, secured

together centrally, and provided with elongated loops B, formed of the end portions of the crossed wires, substantially as shown and described. 2nd. The combination of a spring stay, composed of the crossed wires A, having the loops B, with the spiral spring C, substantially as shown and described.

No. 30,624. Hub Attaching Device.

(Appareil à assujétir les moyeux.)

Albert P. Olmstead, Troy, and Alexander T. Porter, West Troy, N.Y., U.S., 24th January, 1889; 5 years.

Claim.—1st. In a hub attaching device, the combination, with an interiorly threaded thimble, secured to revolve upon the axle, and a hub revoluble with said thimble, and provided with an interiorly-projecting flange threaded to correspond with the threaded part of the thimble, of a lock-screw threaded to correspond with and fit the threads of the thimble, and hub or box flange, substantially as described. 2nd. In a hub-attaching device, the combination, with a thimble secured to revolve upon the axle, and having an angular exterior surface, of a thimble-inclosing hub-box, having its inner inclosing surface, of a size and form to receive and fit the exterior angular surface of the thimble, and means for securing the thimble within the box, substantially as described.

No. 30,625. Rail Joint Union.

(Eclisse de rail.)

William Lowe and Shepherd Tappen, Troy, N.Y., U.S., 24th January, 1889; 5 years.

Claim.—1st. In a rail joint union, the combination, with a chair provided with a rail seat, and having on one side of such seat a cross tie flange, and a laterally-supporting rail flange, and on the opposite side a pivotal hook projecting above and to one side of such seat, of a locking bar provided on its opposite edges with a cross tie flange and a laterally supporting rail flange and intermediately of such flanges, with an eye adapted to receive such pivotal hook, substantially as described. 2nd. In a rail joint union, the combination, with a chair having a rail-seat, and provided with a cross tie flange, a laterally-supporting rail flange, having end extensions d_1, and a pivotal hook A4, of a locking bar provided with a cross tie flange, a laterally-supporting rail flange, having end extensions d_1, and intermediately of such flanges, with an eye adapted to receive such pivotal hook, substantially as described.

No. 30,626. Button Hole Attachment for Sewing Machines. *(Appareil à boutonnières pour machines à coudre.)*

Samuel Halliwell (assignee of Albert W. Johnson), New Haven, Conn., U.S., 24th January, 1889; 5 years.

Claim.—1st. In a button-hole attachment, substantially such as described, the combination of the feed disk G, the actuating lever adapted to swing under the reciprocating movement of the needle-bar, the divided band 4, around said feed disk G, the ends of the said divided band overlapping and constructed respectively with shoulders 6, 7, the plate 5 hung upon the axis of the feed disk and adapted to oscillate thereon, the dog 9 hung to said plate 5, its nose extending between said shoulders 6 and 7, and so as to take a bearing thereon, with connections, substantially such as described, between said actuating lever and said plate 5, substantially as described. 2nd. In a button-hole attachment, substantially such as described, the combination of the feed-disk G, the actuating lever adapted to swing under the reciprocating movement of the needle, the combination between said actuating lever and said disk, whereby a step by step rotative movement is imparted to sad disk, a frictional band Q around said disk G, the said band divided its two ends extending one beyond the other, and the said two ends constructed respectively with shoulders R_1, S, with a dog T hung upon the frame of the attachment, its nose extending between said two shoulders R_1, S, and adapted to bear thereon, substantially as and for the purpose described. 3rd, In a button-hole attachment, the combination of the actuating lever J adapted to swing under the reciprocating movement of the needle-bar, the feed disk G, the plate 5 hung upon the axis of said feed disk, mechanism, substantially such as described, to engage said disk and plate in one direction, but leave said disk free in the opposite direction, the dog 2 hung to said actuating lever, the said dog constructed with an arm 12 to engage with the said plate 5, and also constructed with an arm 13 to engage a bearing upon the side of the dog opposite the arm I2, the said plate provided with a stop above said dog, substantially as and for the purpose described. 4th. In a button-hole attachment, substantially such as described, having a cloth holder and feeding mechanism, the combination therewith of the feed disk G, the actuating lever J, the plate 5 hung upon the axis of the said disk G, mechanism, substantially such as described, to engage said disk and plate in one direction, and leave said disk free in the opposite direction, the said plate provided with the stud 11, the dog 2 hung upon the said actuating lever, the cam 7 fixed to the axis of said feed disk, the said dog constructed with an arm 12 upon one side to engage the stud 11, and with a nose 14 upon the opposite side to engage said cam, the said plate provided with a stop above said dog, substantially as described. 5th. In a button-hole attachment, substantially such as described, having a cloth holder and feeding mechanism, the combination therewith of the feed disk G, the actuating lever J, the plate 5 hung upon the axis of the said disk G, to engage said disk and plate in one direction, and leave said disk free in the opposite direction, the said plates, provided with the stud 11, the dog 2 hung upon the said actuating lever, the cam 7 fixed to the axis of said feed disk, the said dog constructed with an arm 12 upon one side to engage the stud 11, and with a nose 14 upon the opposite side to engage said cam, an adjustable stop 15 on the said plate 5 and above said dog, substantially as and for the purpose specified. 6th. In a button-hole attachment for sewing machines, the combination therewith of work plate 38, constructed with a needle hole 39, and with a tubular pivot 43 around said needle hole upon the under side of the plate, with the shuttle race cover 40, the said plate loosely hung to said cover, substantially as described, and so as to permit universal oscillation of said work plate, substantially as described.

No. 30,627. Axle Box or Bearing of Carriages and other Vehicles. *(Boîte à graisse pour voitures de toutes sortes.)*

Dan Rylands, Barnsley, Eng. (assignee of John A. Wilson, Dundee, Scotland), 24th January, 1889; 5 years.

Claim.—1st. A cup cap or cover for the axle box or bearing of a carriage or other vehicle, which cup, cap, or cover is formed wholly or partially of glass, or other suitable transparent substance, for the purpose above specified. 2nd. The combination, with an axle box or bearing, of the cup, cap, or cover formed wholly or partially of glass or other suitable transparent material, and provided with a guard or shield, substantially as and for the purposes set forth. 3rd. The combination, with the cup, cap, or cover, formed wholly or partially of glass or other suitable transparent material, of means for automatically cleaning the said glass or other material, substantially as and for the purpose set forth.

No. 30,628. Alternating Current Dynamo.

(Dynamo à courant alternatif.)

The Thomson Houston International Electric Company, Boston (assignee of Elihu Thomson, Lynn), Mass., U. S., 24th January, 1889: 5 years.

Claim—1st. In a self-exciting alternating current, a commutator for rectifying the current taken from the machine to the exciting coil or circuit, in combination with a reactive coil in the connection to the commutator, as and for the purpose described. 2nd. The combination with the armature supplying alternate currents to mains, of a field exciting coil or circuit connected with a branch, a commutator in said branch and a reactive coil between the commutator and the main. 3rd. The combination, with the main carrying alternating currents, of a branch, a commutator for rectifying the currents in the branch, and a reactive coil between the commutator and main, as and for the purpose described. 4th. The combination, with the branch supplied with current from a main carrying alternating currents or their equivalent, as described, of a commutator in the branch, and a reactive coil, provided with means for adjusting its self-induction or reaction, as and for the purpose described. 5th. The combination, with the reactive coil and core on an alternating or other vibratory current circuit, of a counterbalancing retractor, whereby the immersion of the core in the coils may be stationary with a normal flow of current, and may be increased on an increase of current, so as to automatically adjust the reaction to the strength of the alternations or vibrations, as and for the purpose described. 6th. The combination, with the alternating current main, of the branch containing a commutator, a reactive coil in said branch between the main and commutator, and a main circuit coil combined with the reactive coil in inductive relation thereto, as and for the purpose described. 7th. The combination with a reactive coil in the alternating current branch, of a compensating coil in a circuit from which the branch is derived, as and for the purpose described. 8th. The combination, with an alternating current dynamo having a field coil in a branch or derived circuit, of a self-inductive coil in said branch, whereby a field coil of comparatively low resistance may be employed. 9th. The combination, with a commutator connected with a source of alternating currents of their equivalent, as described, of a reactive coil in the commutator connection, as and for the purpose described. 10th. The combination, with an alternating current dynamo, whose field is sustained by the action of current on a branch of a commutator for rectifying the currents that are used to excite the field, and a compound reactive coil, part of the winding of which is traversed by the branch current and a part by the main current. 11th. The combination of the field circuit of a dynamo machine, and a commutator for said field circuit with a reactive coil in an alternating current circuit to said commutator, and a source of alternating current, the rapidity of the alternations in which is dependent on the speed of the dynamo increasing and decreasing with such speed, for the purpose of automatically varying the current in the field-circuit to compensate for differences of potential developed at different speeds by regulating the strength of the field magnetism. 12th. The combination, with a dynamo machine, of an alternating current source delivering alternating currents, whose rapidity varies with the speed of the machine, and a reactive coil in the connection between said source, and the wires or connections which deliver field exciting energy to the machine, as and for the purpose described. 13th. A compound or differential reactive coil, placed on an alternating current circuit, and having one portion G wound and adjusted as described, so as to tend to overcome the effect of the self-induction in the other or active portion. 14th. In an alternating current dynamo, a field sustaining branch from the main, containing a reactive coil, in combination with a compensating main circuit coil, as and for the purpose described.

No. 30,629. Flood Fence. *(Clôture fluviale.)*

Harvey A. Mace, William B. Hunter and John R. Wonscott, Mount Zion, Ill., U.S., 24th January, 1889; 5 years.

Claim.—In a flood fence, the combination of the fence posts, sills carrying upwardly-projecting pickets, and loosely hinged to the upstream sides of said posts at such a point that they will come in contact with the under side of the upper guide braces of the posts, to retain said pickets in horizontal adjustment while the water is passing over them, and a board loosely hinged to the down stream sides of the sills and extending below the same, whereby the pickets and board when under action of the water will fold into a horizontal position, substantially as described.

No. 30,630. Apparatus for Cleansing and Recovering Saw-dust, or other Similar Hydrate Substances from Filtrates. (*Appareil pour nettoyer et recouvrer le bran de scie ou autres substances hydrates des matières filtrés.*)

The Casamajor Filter Company, New York (assignee of Louise J. Casamajor, administratrix of the estate of Paul Casamajor, Brooklyn, N.Y., U.S., 24th January, 1889; 5 years.

Claim.—1st. The combination of an agitating vat for agitating a filtering substance in the presence of water, with a series of straining devices located on different levels, and provided with means for passing the filtering substance upward through the series of straining devices. 2nd. The combination of an agitating vat, a series of straining devices located on different levels, and provided with means for passing the strained material upward through the series of straining devices, and sprinkling devices interposed between each pair of straining devices. 3rd. The combination, with an agitating vat, of a vertically rotating sieve provided with a circumferential straining network or mesh elevating buckets, an elevated trough within said sieve, and sprinkling devices located above said sieve, and adapted to wash the material from said buckets into said troughs. 4th. In combination, an agitating vat, a vertically rotating sieve, having a circumferential network, a conveying trough between the vat and sieve, elevating buckets within the sieve and an elevated trough, said buckets serving to convey the material from the bottom of said sieve to said trough, as described. 5th. An organized apparatus for cleansing and straining filtering substances, comprising an agitating vat, having a pipe connecting with a rotary sieve, a vertically rotating sieve provided with interior circumferential elevators or buckets, a second agitating vat provided with a pipe leading to a second sieve, a second rotating sieve provided with interior elevators, troughs leading from the sieves and sprinkling devices above each sieve, all arranged to operate as described. 6th. In apparatus for cleansing filtering substances, an agitating vat connections from the same to a rotating sieve, prodided with means for elevating the strained material to a higher level within the sieve, and a casing for the drip water, disconnected from the agitating vat.

No. 30,631. Roller Mill. (*Moulin à rouleaux.*)

John A. McAnulty, Minneapolis, Minn., U.S.. 25th January, 1889; 5 years.

Claim.—1st In a roller mill, the feeding device consisting of the hopper 6 having the sub-divisions 12, and provided with the yielding gates, and a valve provided with adjustable wings to direct the flow to either or both of the said sub-divisions, substantially as described. 2nd. In a feeding device, the combination, with the inlet spout and the hopper, of the plate 10 located between the hopper and the spout, and the wings 12 oppositely secured to the plate and adjustable thereon, by which the stock is directed to either side of the hopper, substantially as described. 3rd. In a roller mill, the combination, with the frame or body 2 supporting the fixed rolls 4, of the shoe or frame section 42 supporting the movable rolls 5, and adjustably secured to the said frame, substantially as described. 4th. In a roller mill, the combination, with the movable rolls and shoe 42 in which the said rolls are journalled, of the yoke 46 adjustably secured to the shoe, and the cam or eccentric shaft 48 operating upon the inner end of the said yoke to draw the rolls into or out of grinding contact, substanstantially as described. 5th. In a roller mill, the combination, with the movable rolls, and the shoes 42 in which the said rolls are journalled, of the yokes 46 attached to the shoes 42, and the series of cams or eccentrics 52 bearing against the said yoke, the shaft 48 upon which the said cams or eccentrics are mounted, and the lever 50 secured to, and operating said shaft, whereby one or both sets of rolls may be thrown out of or into grinding contact by a single operation of the lever, substantially as described. 6th. In a roller mill, in combination with the yoke 48 secured to the bearings of the movable roll, having its upper and lower members formed of spring metal, the upturned end 62 of the lower member, and the shoulder 64 for allowing the rolls to spread automatically when undue pressure is brought against them, and the stirrup 68 binding the upper and lower members together, and allowing for the adjusting of the spring tension of the yoke, subtantially as described. 7th. The combination, with the rolls 4, 4, 5, 5, and the pulleys 77, 81, 75 and 79 for driving said rolls, of the driving pulley 74 located below the roller mill, the adjustable tightener pulley 78 also located below the mill but above the driving pulley, and the swivelled idler pulleys 80 and 82 secured above the base of the machine, all connected and driven by one continuous and open belt, substantially as described. 8th. The belt drive for a four roller mill consisting of one continuous open belt passing from a driving pulley 74 over the pulley 75, driving the outer roll of one series downward around the idler 82, upward and around the pulley 77, driving the inner roll of said series downward around the adjustable tightener pulley 78, upward and around the pulley 79, driving the outer roll of the opposite series downward and around the idler pulley 80, upward and around the pulley 81, driving the inner roll of this series and thence to the main driving pulley 74, substantially as described.

No. 30,632. Automatic Boiler Feeder.

(*Alimentateur automatique de chaudière.*)

Cléophas Gosselin, Montreal, Que., 25th January, 1889; 5 years.

Claim.—1st. In a feed water heater, the boiler M provided with hot air passage B, B, and feed water boiler A, as shown and described and for the purpose hereinbefore set forth. 2nd. In a feed water heater, the boiler A provided with steam and water pipes D and E of different sizes, and main boiler M, as shown and described and for the purpose hereinbefore set forth. 3rd. The combination in a feed water heater, of the boilers M and A, steam and water pipes C, D and E, and valves C_1, D_1 and E_1, and hot air passage B B, the whole as shown and described and for the purpose hereinbefore set forth.

No. 30,633. Oil Burner. (*Bruleur d'huile.*)

Louis Schutte, Philadelphia, Penn., U.S., 25th January, 1889; 5 years.

Claim.—1st. In an oil-burner, a final oil-delivery nozzle provided with a round unobstructed delivery orifice, and with internal spiral blades terminating at a distance from the delivery orifice, whereby the oil is first given a rotary motion, and thereafter delivered in a solid jet through the orifice to the end, that it may be atomized by centrifugal force. 2nd. In an oil-burner, the combination, of an air delivery nozzle, and a central and final oil-delivery nozzle, the latter provided with a round unobstructed oil-delivery orifice, and with internal blades terminating in rear of said orifice, whereby the oil is delivered through the orifice as a rotating solid stream atomized by centrifugal force, and delivered in its atomized condition centrally into the column of air flowing through the surrounding air nozzle. 3rd. In an oil burner, the combination, of the central and final oil-delivery nozzle having the round unobstructed delivery orifice, and the internal spiral blades terminating in rear of said orifice, the air-delivery nozzle *a* surrounding the first-named nozzle and terminating in rear of the oil-delivery, and an external nozzle A surrounding and extending slightly beyond the nozzle *a*, as shown.

No. 30,634. Clock Escapement.

(*Echappement d'horloge.*)

William H. Douglas, Stonebridge, Eng., 25th January, 1889; 5 years.

Claim—1st. Applying a rotating pendulum to a detached lever escapment, a horizontal escapement, or a duplex escapement, substantially as herein set forth and specified. 2nd. Regulating rotating pendulums by means of a curb, substantially as herein set forth and specified.

No. 30,635. Device for Sharpening Stone Cutting Tools, etc. (*Appareil pour aiguiser les outils à tailler la pierre, etc.*)

Edward England, Duluth, Minn., U.S., 25th January, 1889; 5 years.

Claim—1st. In a machine for sharpening or cutting stone-cutters, tooth-chisels, tooth-axes, etc., the combination of the upright shaft A, the shank or chunk B, the cutter or punch C, the throat-plate D, the rigid jaw G, the lever F, and the fulcrum K, as and for the purposes substantially as described. 2nd. The combination of the open and rigid jaw G, the upright shaft A moving freely through the box formed by the plate L and L_1, and secured to the upper jaw by the bolt M and M_1, the square head and mortise or slot with the short arm of the lever F moving freely therein, the shank or chunk B, the the cutter C with its bevelled edge, the throat-plate D, the lever F, the fulcrum K, the guide H, and the gauge I, as and for the purposes substantially as described.

No. 30,636. Plastering Composition.

(*Composition pour crépir.*)

John H. Fitzgerald, Frankford, W.V., U.S., 25th January, 1889; 5 years.

Claim.—A plastering composition composed of sand, sawdust, plaster-of-paris, slaked lime, sugar, and carbonate of soda, in or about the proportions described.

No. 30,637. Plastering Composition.

(*Composition pour crépir.*)

John H. Fitzgerald, Frankford, W.V., U.S., 25th January, 1889; 5 years.

Claim.—A plastering composition consisting of cream of tartar, pumice-stone, sugar, lime, and plaster-of-paris, in or about the proportions described.

No. 30,638. Spring for Vehicles.

(*Ressort de voiture.*)

Albert E. Cook, Knowlton, Que., 25th January, 1889; 5 years.

Claim.—1st. The combination of the lower short spring lever E, E, having their inner ends provided with hooks F, F, the connecting coiled or spiral spring G, the recessed blocks R, R, secured by clips U, and nuts T, T, with a vehicle spring, substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with a vehicle spring, of the socket plate K with its circular recess I, and ears N, N formed in the lug J, substantially as and for the purpose hereinbefore set forth.

No. 30,639. Automatic Scales for Weighing Cars and Recording the Weights (*Pont à bascule pour peser les chars et enrégistrer le poids.*)

Edward H. Amet, Chicago. Ill., U.S., 25th January, 1889; 5 years.

Claim.—1st. The combination, in a printing or recording scale, of the scale beam and variable counterpoise, with a type wheel connected with, and operated by the scale beam, an impression block or hammer, and a dash pot and its piston connected with the type wheel for regulating the movement of the type wheel, and holding the same stationary at the true balance during the printing operation, substantially as specified. 2nd. The combination, in an electric printing scale for weighing railroad cars, of the scale platform having track rails thereon, with a long lever parallel to one of the track rails, an electric circuit, and electric printing mechanism, and a pair of contact points closed by said lever when depressed by the front wheel of the car, substantially as specified. 3rd. The combination, in an automatic electric scale for weighing railroad cars, with the scale platform having track rails thereon, of the electric circuit, and the

electric printing mechanism, mechanism for closing the electric circuit when the last wheel of the car passes on to the scale platform, and a long bail lever for holding said circuit closed by the front wheel of the car, substantially as specified. 4th. The combination, in an electric printing weighing scale, with the scale beam, type wheel connected therewith, printing levers, and the scale platform having track rails thereon, of a wheel operated lever in the middle of the scale platform for raising the printing lever, and mechanism operated by the last wheel of the car as it passes onto the scale platform, for closing an electric circuit to release the printing lever, substantially as specified. 5th. The combination, in an automatic printing weighing scale, of the scale platform having track rails thereon, with the printing mechanism, and a wheel operated lever G adjacent to the track rail, and near the middle of the scale platform for giving motion to the printing mechanism preparatory to the printing operation, substantially as specified. 6th. In an automatic printing weighing scale, the combination, of the printing wheel, and printing lever, a spring for operating the printing lever, the scale platform, the wheel operated lever on the scale platform for raising the printing lever, and a pawl for holding it in its elevated position until ready for printing, substantially as specified. 7th. In an automatic printing weighing scale, the combination, of the printing wheel, and printing lever, a spring for operating the printing lever, the scale platform, the wheel operated lever on the scale platform for raising the printing lever, and a pawl for holding it in its elevated position until ready for printing, and mechanism operated or controlled by the passage of the last wheel of the car onto the scale platform for releasing the printing lever, so that its spring may cause it to strike the blow against the printing wheel, substantially as specified. 8th. The combination in a railroad car weighing scale, of the scale platform A, having track rails A^1 thereon, with track rails A^2 at the side of the track rails A^1 rigidly supported, one of said track rails A^2 bridging the scale platform, substantially as specified. 9th. The combination of the weighing scale platform A, having track rails A^1, an electric circuit, the operating lever a for closing said electric circuit, and a bail lever P at the opposite end of the scale platform for closing the circuit at another point, substantially as specified. 10th. The combination of weighing scale platform A, track rails A^1 thereon, an electric circuit, the operating levers a, a, one at each of the scale platforms for closing said electric circuit, and operating levers P, P for closing said circuit at another point, and a switch R R^1 for causing the circuit to be closed by one or the other of said levers P, P according as the car to be weighed approaches from one direction or the other, substantially as specified. 11th. The combination of the scale platform A, and track rails A^1, thereon, car wheel, operated lever a, pawl lever H, and a line, and pulleys connecting the same with said lever a, the ratchet wheel K having contacts k at intervals for closing an electric circuit, a printing wheel connected to the scale beam, a printing lever, a car wheel, operated lever on the scale platform for raising the printing lever in an elevated position, and a magnet included in the circuit closed by said contacts k for releasing said printing lever, substantially as specified. 12th. The combination of the scale platform A, and track rails A^1 thereon, car wheel, operated lever a, pawl lever H, and a line, and pulleys connecting the same with said lever a, the ratchet wheel K having contacts k at intervals for closing an electric circuit, a printing wheel connected to the scale beam, a printing lever, a car wheel operated lever on the scale platform for raising the printing lever in an elevated position, and a magnet included in the circuit closed by said contacts k for releasing said printing lever, and a wheel operated bail lever P at the opposite end of the scale platform for simultaneously closing said electric circuit at another point, substantially as specified. 13th. The combination in an automatic electric weighing scale, of the electric circuit, with the scale platform, a wheel operated lever for closing the electric circuit by the last wheel of the car as it passes onto the scale platform, and a wheel operated lever near the opposite end of the scale platform for simultaneously closing said circuit by the front wheel of the car, substantially as specified. 14th. In an automatic printing weighing scale, the scale platform A furnished with track rails A^1, and with car wheel operated levers for controlling the operation of the printing mechanism located at or near each end of the scale platform, so that one of said levers will be operated by the last wheel of the car, and the other by the front wheel of the car, whereby the scale platform is adapted to weigh long or short cars while coupled in a train and passing over the scale platform, substantially as specified. 15th. The combination in an automatic weighing and printing scale, with the scale beam, and variable counterpoise, of a wooden type wheel connected with the scale beam, and adjusted or controlled thereby, and having a thin, metal band furnished with type, whereby the error due to the inertia of a heavy type wheel is eliminated, substantially as specified. 16th. The combination in an automatic printing weighing scale, with the scale beam, and variable counterpoise, of a wooden type wheel connected with the scale beam, and adjusted or controlled thereby, and having an electrotype peripheral, whereby the error due to the inertia of a heavy type wheel is eliminated, substantially as specified. 17th. The combination, with the scale beam B, of the type wheel C connecting link c^3, adjusting nut c^4, and swivel c^7 connected to said scale beam, substantially as specified. 18th. The combination, with the scale beam B, of the laterally projecting arm b^6, type wheel C, and a connecting link detachably secured to said laterally projecting arm, substantially as specified.

No. 30,640. Steam Boiler. (*Chaudière à vapeur.*)

Herbert Hackney, Topeka, Kan., U.S., 25th January, 1889; 5 years.

Claim.—1st. The combination of the boiler O, the mud-drum G, and the circulation pipe F, as and for the purpose above set forth. 2nd. The combination of the boiler O, the mud-drum G, and the circulation pipe F, with the coupling E provided with the removable cap e, as and for the purpose stated.

No. 30,641. Photographic Plate to be developed in Water. (*Plaque-photographique à bain d'eau.*)

Leo Backelandt, Ghent, Belgium, 25th January, 1889; 5 years.

Claim—The coating of the back of photographic dry plates, with suitable developing substances, such as hydrochinone, rendered adhesive and preserved against oxidation by the use of a light varnish, substantially as and for the purpose specified.

No. 30,642. Grape Harvester. (*Cisailles de vigne.*)

Jonathan Phillips, Oakville, Ont., 25th January, 1889; 5 years.

Claim.—An improved grape harvester, consisting of a pair of tongs A having fixed to one of its jaws a, a cutting blade B extending beyond its face, and designed to overlap the edge of the opposite jaw a, substantially as and for the purpose specified.

No. 30,643. Telegraphic Relay. (*Relai télégraphique.*)

Patrick B. Delany, New York, N.Y., U.S., 28th January, 1889; 15 years.

Claim.—1st. A main line having a table of contacts, and a rotating circuit-completer which traverses the table at each end of the line, whereby each signal transmitted over said line is formed by a series or group of momentary impulses of electricity, in combination with a relay, and a condenser or source of electric energy from which a current is discharged to magnetize the relay-magnet, during the brief interval between the successive impulses of electricity composing a given signal. 2nd. The combination, with a synchronous system of telegraphy in which each unitary signal is made up of a group of impulses, of a relay having a permanent magnet arranged with its poles adjacent to the poles of the relay, the adjacent poles being of like polarity when the current is traversing the circuit, substantially as and for the purpose set forth. 3rd. The combination of the relay-magnet, its armature, the permanent magnet arranged in proximity thereto, an electric circuit in which the relay is included, a source of electric energy, the current from which produces in such relay-core a polarity the same as the polarity of the adjacent pole of the permanent magnet, and the condenser and circuit connections, whereby the discharge from the condenser prevents the relay from releasing its armature when momentary interruptions in the main line occur during the transmission of a unitary signal.

No. 30,644. Synchronous Multiplex Printing Telegraphy. (*Télégraphie synchronique à impression multiple.*)

Patrick B. Delany, New York, N.Y., U.S., 28th January, 1889; 15 years.

Claim.—1st. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a table of independent working contacts at each end of the main line connected in branch lines at each station, the corresponding branch lines being connected with one or more corresponding contacts, and step-by-step printing or indicating apparatus in the branch lines, for the purpose set forth. 2nd. The combination, with the main line, of synchronously-actuated apparatus at each end of the main line, a series of insulated contact at each station, mechanism for successively placing the main line in connection with each of said contacts, step-by-step printing or indicating apparatus connected in branch lines at each station, corresponding branch lines being connected with one or more corresponding contacts at the stations, and other of said contacts placed at intervals around the table through which correcting impulses of electricity are sent over the main line to insure the synchronous rotation of the two apparatus. 3rd. The combination of the main line, the relay actuated by periodic impulses of electricity transmitted over the main line, the actuating magnet and its local circuit which is made and broken by said relay as the impulses are transmitted over the line, the print magnet, and the tardy circuit-completer which completes the print magnet circuit when a more than normal period of time has elapsed between said impulses. 4th. The combination, substantially as set forth, of a main line, the tables, contacts, and synchronously-moving circuit completers at each end of the line, step-by-step printing instruments connected with corresponding contacts on the tables of contacts, a battery from which impulses are sent over the line to advance the instruments step-by-step, the print magnets and tardy circuit completers in the circuits of the print magnets, for the purpose set forth.

No. 30,645. Synchronous Movement and Telegraphy. (*Mouvement et télégraphie synchroniques.*)

Patrick B. Delany, New York, N.Y., U.S., 28th January, 1889; 15 years.

Claim.—1st. The combination of the main line, synchronously-actuated apparatus at each end of the main line, the correcting battery from which impulses are sent over the line, correcting devices at one end of the main line for accelerating or retarding the apparatus by varying the resistance of its controlling circuit or circuits, and contacts or devices at the other end of the main line for completing the circuit of the correcting battery through said correcting devices, whenever the apparatus at the station to be corrected runs too fast or too slow. 2nd. The combination of the main line, synchronously-actuated apparatus connected at each end of the main line, the 9 and 10 contacts at one station, the alternate 10's being connected with one set of correcting devices, and the alternate 9's farthest removed from said connected 10's, being connected with the other set of correcting devices, a correcting-battery, and the 9 and 10 battery contacts at the distant station corresponding with the unconnected 9 and 10 contacts at the first station connected to earth, whereby the correcting battery-circuit is completed to actuate the correcting devices whenever the apparatus runs out of time, as set forth. 3rd. The method of synchronizing apparatus which consists in sending a correcting impulse of electricity from one station to a distant station whenever the apparatus runs out of synchronism, utilizing said impulse at the distant station to correct the speed of the apparatus at that station, and simultaneously utilizing the same impulse to cor-

rect the speed of the apparatus at the station from which the impulse is sent out. 4th. The combination of a main line, synchronously-actuated apparatus at each end of the main line, a battery from which correcting impulses are sent into the line, and mechanism, substantially such as described, by which the speed of the apparatus at the station where the correcting impulse is sent into the line is corrected by the action of said impulse to maintain its synchronous movement with the apparatus at the distant station. 5th. The combination of a main line, the tables of message and line discharge contacts, and synchronously-rotating circuit completers, a ground line connected with the discharge contacts through which the main line is grounded after each completion of the circuit, and a resistance in the ground line. 6th. The combination of the branch line or lines, main and ground contacts, the bridging circuit completer, and a resistance in the circuit, or circuits, completed by the bridging of the circuit completer. 7th. The combination of a continuously automatically-acting circuit-interrupting vibrator, a vibrator magnet, and means for adjusting the pole of the magnet in the direction of the length of the vibrator to change its normal rate. 8th. The manner, substantially as herein described, of adjusting the normal rate of vibration of a continuously-actuated vibrator, by means of a permanent magnet located in proximity to the vibrator, and having a moving keeper x (Fig. 81). 9th. The combination, substantially as set forth, of the continuously-actuated vibrator, its vibrator magnet, an independent magnet located in proximity to the vibrator, and means for varying the power of the magnet to adjust the normal rate of vibration. 10th. The combination of the vibrator, its magnet and circuit, a branch or shunt circuit around said magnet, a resistance in said shunt, and means for controlling the shunt and correcting the speed of the vibrator. 11th. The combination of a constantly regularly-acting automatic circuit-interrupting vibrator, its support, and flexible or elastic devices for supporting it, whereby a uniform rate and greater amplitude of vibration are obtained. 12th. The combination of a vibrator, its magnet, and circuit magnetic correcting devices independent of the vibrator magnet, the local circuit of said correcting devices, and a relay in the main line for rendering the correcting impulses effective. 13th. The combination of a vibrating reed or bar, the vibrator magnet, and the independent correcting magnet having its poles arranged to envelop and act on both sides of the vibrator. 14th. The combination of the vibrator, its normally energized correcting magnet, and means for varying the power of said magnet upon the reception of a correcting impulse, substantially as set forth. (Fig. 16). 15th. The combination of the vibrator, its local driving circuit, the motor and the motor circuit which is made and broken by the vibrator, and is arranged entirely independent of the vibrator circuit. 16th. The combination of the vibrator which is free to vibrate at one end, and devices for clamping it at two or more points at the other end, for the purpose set forth. 17th. The combination of the vibrator, its vibrator magnet and circuit, and an independent correcting magnet either permanent or electro, and means for causing said magnet to approach or recede from the vibrator on the reception of a correcting impulse to effect its correction. 18th. The combination of the vibrator, the correcting relay, and the elastic finger for mechanically correcting the vibrator. 19th. The combination of a table of contacts, a synchronously-actuated circuit completer, the correcting contacts, the controlling vibrator, and the device for mechanically correcting the speed of said vibrator.

No. 30,646. Twine and Device for Making the same. *(Cordonnet et appareil pour le fabriquer.)*

James Lyall, New York, N.Y., U.S., 28th January, 1889; 5 years.

Claim.—1st. A twine of jute sized to strengthen the twine, and containing a mildew proof composition to prevent the twine becoming injured by heat or moisture while around the grain, substantially as set forth. 2nd. The method herein specified of manufacturing twine, consisting in giving to the roving or thread a preliminary twist, flattening the same between rolls, and rolling up and twisting the flattened thread, and winding it on spools or bobbins, and then sizing and drying the same, substantially as set forth. 3rd. The method herein specified of sizing and rounding up twine, consisting in passing the twine through the sizing solution, squeezing out the surplus moisture by passing the twine between rolls, and then rounding up the twine that has become flattened by the action of the rolls, by passing such twine into grooves having semicircular bottom surfaces, and pressing the twine into such grooves, substantially as set forth. 4th. The combination, with the sizing vat, squeezing rolls for sizing twine and pressing out the surplus moisture of one or more grooved rolls, the bottoms of the grooves being semi-circular, and a weighted presser grooved upon its surface for pressing the twine against the grooved roll, substantially as set forth. 5th. The combination, with the sizing vat, and squeezing rolls for sizing twine, of a grooved roll over which the twine passes, the drying chamber for drying the twine, and a beam made of sections upon which the respective twines are wound, substantially as set forth. 6th. The herein described combination of steps in the manufacture of twine, consisting in sizing the same, pressing out the surplus moisture, rounding up the twine to obliterate the flattening caused by the squeezing rolls, drying the twine, winding the same upon a beam, rewinding the separate pieces of twine upon spools, and then winding the twine from the spools into balls, substantially as set forth.

No. 30,647. Indicator for Hotels.

(Indicateur pour les hotels.

Roch R. Gareau, Detroit, Mich., U.S., 28th January, 1889; 5 years.

Claim.—1st. In a device for the purpose described, the combination of the frame or case, divided into compartments or boxes, provided with doors adapted to close and disclose such compartments, of a slit provided in each compartment, and of a series of indicating devices displayed on such door for the purpose of indicating the number of the room, the floor on which said room is located, and the name of the occupant, and the time indicating devices, substantially as and for the purpose described. 2nd. In a combined indicator for hotels, the combination of a frame or case divided into compartments or boxes, provided with doors adapted to open and close such boxes, of a slit into each compartment, and of the indicating devices displayed upon the door, consisting of the clock dial with the indicator hands, the variable room number, the name or card space provided for and the series of rollers L, M and N, substantially as and for the purpose described. 5th. The combination in an indicator for hotels, provided with a series of compartments or boxes adapted to indicate the absence or presence of the occupant of the room indicated on said compartment or box, a tape or ribbon displayed on the face of said compartment or box, mounted on rollers and provided with a series of numbers for changing the number of the room, substantially as and for the purpose described.

No. 30,648. Engine. *(Machine à vapeur.)*

The Dake Engine Manufacturing Company (assignee of William F. Dake), Grand Haven, Mich., U.S., 28th January, 1889: 5 years.

Claim.—1st. In an engine, the combination, with a casing and a piston reciprocating therein, of a second piston arranged within, and having a reciprocating motion at right angles to the line of movement of the first named piston, the outer face of the said second piston forming a valve for operating both pistons, substantially as described. 2nd. In an engine, the combination of a casing, having a central opening in the inner surface of its front plate, a piston reciprocating therein, a second piston arranged within and having a reciprocating motion at right angles to and line of movement of the first named piston, and provided with ports on its outer face, said ports being arranged in a circle and operating over the said central opening of the casing, substantially as herein shown and described. 3rd. In a steam engine of the class described, the combination, with an inner piston having steam ports arranged in a circle, of a cover having a central opening and an annular opening adapted to register with the said ports, substantially as shown and described. 4th. In a steam engine of the class described, the combination, with an inner piston provided with the ports i, i_1, i_2 and i_3, of an outer piston having the openings k and k_1 connecting with the said ports i and i_2, and a casing surrounding the said outer piston, substantially as shown and described. 5th. In an engine of the class described, the combination, with a casing and a steam chest held on the said casing, of a piston mounted to slide horizontally in the said casing, packing plates held at the back of the said piston, and pressed against the back of the said casing by live steam passing from the said steam chest through suitable openings in the casing between the said packing plates and the said piston, substantially as shown and described.

No. 30,649. Pointing and Cutting off Die.

(Etampe à faire les pointes et découper.)

The American Screw Company (assignee of Charles D. Rogers), Providence, R.I., U.S., 28th January, 1889; 15 years.

Claim.—1st. A cutting-off die of the class hereinbefore described, having its working face provided with a point-forming recess, and also having a cavity arranged to produce a convex-shaped end upon the wire, substantially as set forth. 2nd. A combined pointing and cutting-off die, having a cone-shaped cavity, and a concave recess communicating with said cavity formed in its working face, and having the circumscribing edges of the die cavities adapted for cutting, substantially as shown and described and for the purpose hereinbefore set forth. 3rd. In a machine for making wood-screw blanks, the combination, with wire-feeding mechanism, a mounted heading-die and actuated heading hammers, of a pair of reversely mounted and actuated cutting-off dies, having the working faces constructed to engage the wire and reduce it to a cone-shaped form, and, at the same time, sever the blank and produce a convex shape on the end of the wire contiguous to the blank's point, preparatory to upsetting the metal into the heading-die, substantially as hereinbefore described. 4th. The combination in a screw-blank machine, of a mounted solid heading die, and two suitably mounted cutting-off and swaging dies A, having the working or meeting faces thereof provided with a cone-shaped recess or mould r, communicating with or in close proximity to a concave recess r formed in the lower edge of the dies, substantially as shown and described and for the purpose hereinbefore set forth.

No. 30,650. Ice Creeper.

(Grappin de chaussure.)

Donald Munro and Andrew Hislop, Pictou, N.S., 28th January, 1889; 5 years.

Claim.—An ice creeper, comprising a plate A, having an offset at both ends, provided with a notch d, a lever B having a prong b at right angles, and pivoted through the angle to said plate, substantially as set forth.

No. 30,651. Glass Bevelling Machine.

(Machine à chanfreiner le verre.)

Alonzo Langlais and A. Ramsay and Son, Montreal, Que., 28th January, 1889; 5 years.

Claim.—1st. In a glass bevelling machine, the combination of framework supporting tracks, a movable carriage adapted to travel along same, hangers suspended from such carriage, a table carried in such hangers on which glass plates are placed, a grinding disc in stationary bearings, and means for giving said carriage reciprocal motion, whereby the glass plates are subjected to the action of such disc. 2nd. In a glass bevelling machine, the combination of framework supporting tracks, a movable carriage adapted to travel along same, hangers suspended from such carriage, a table supporting the glass plates carried axially in such hangers, and being capable of adjustment at various angles, means for securing such adjustment, a grinding disc in stationary bearings and means for giving the aforesaid carriage reciprocal motion, whereby the glass plates are subjected to abrasion from the under surface of said disc. 3rd. In a glass bevelling machine, the combination, with a frame work supporting tracks, a movable carriage travelling on same and hangers suspended

from said carriage, a shaft carried in movable blocks, capable of adjustment in said hangers, and means for obtaining such adjustment, of a table for supporting the glass plates mounted eccentrically on such shaft, and an adjustable counterpoise adapted to counterbalance the preponderance of table on one side of its axis, and secure the pressure of the glass plates against the face of the grinding disc. 4th. In a glass bevelling machine, the combination of a frame A, tracks a, a, carriage B, hangers B_2 and blocks c, c, working in same, means for adjusting said blocks, shaft C_1 carried by said blocks, table C mounted on such shaft, means for imparting to said carriage reciprocal motion, and means for governing such reciprocal motion, all substantially as herein shown and described. 5th. In a glass bevelling machine, the combination, with carriage B, means for imparting to it reciprocal motion, and means for governing such motion, of cut-off mechanism, substantially as shown and described, consisting of dog M, lever O and pin O_1 on same. 6th. In a glass bevelling machine, a grinding disc mounted on a rotating shaft set at an angle in stationary bearings, the grinding face being on the underside of said disc. 7th. In a glass bevelling machine, a grinding disc mounted on a rotary shaft, set at a compound angle in stationary bearings, the grinding face being on the under side of such disc and bevelled to compensate for the tilt that is imparted to such shaft to secure the compound angle. 8th. In a glass bevelling machine, the combination, of the rotating shaft e mounted in bearings, and hub F_2 arranged on such shaft, as and for the purpose described. 9th. In combination with the shaft e, carried in bearings, the cover H, as and for the purpose described.

No. 30,652. Cornice for the Interior of Dwelling-Houses and other Public and Private Edifices.

(*Corniche d'intérieur de maisons et autres édifices publiques et privés.*)

Henry N. Black, Woodstock, N.B., 29th January, 1889; 5 years.

Claim.—1st. The general device and form for cornices, constructed or prepared leather-bound, and materials hereinbefore mentioned. 2nd. The adapting and method and manner of adapting the several kinds of materials hereinbefore mentioned for interior cornices, substantially as and for the purposes hereinbefore set forth.

No. 30,653. Store Service Apparatus.

(*Appareil de service de magasin.*)

Hubert Herbert, Lake Linden, Mich., U. S., 29th January, 1889: 5 years.

Claim.—1st. In a store service apparatus, the combination, with a carrier provided with two open bottom compartments, of a bottom for alternately closing the lower ends of the compartments carried by the errrier, and means for preventing the bottom from moving with the carrier as it nears the end of its route, substantially as described. 2nd. In a store service apparatus, the combination, with a track, of a carrier provided with two compartments, and a bottom adapted to close said two compartments alternately, substantially as shown and described. 3rd. In a store service apparatus, the combination, with a carrier provided with two open bottom compartments, of a bottom fitted to slide on the carrier, and provided with downwardly projecting lugs, and a stationary plate with which the lugs of the bottom engage to prevent it from moving with the carrier, substantially as described. 4th. In a store service apparatus, the combination, with a track, of the carrier D provided with the plate E, having the upwardly-projecting lugs K, K_1, and on which are mounted the wheels F travelling on the track, the springs L, L_1 for engaging the lugs K, K_1 of the carrier, the pivoted and spring held levers N, N_1 and the cords O, O_1, substantially as herein shown and described. 5th. In a store service apparatus, the combination, with a carrier, provided with two compartments, and a track on which the said carrier is held to travel, of a spring catch at each end of the track for locking the said carrier in place at either end of the track, a spring operating on the said carrier to force it from one ene ef the track to the other, a lever acting on the said spring to give it the necessary tension, a rope connected with the said lever, a block secured on the said rope, and adapted to operate on the said spring-catch, so as to release the carrier after the said spring has received the necessary tension, and a second rope connected with one of the said ropes and extending to the other end of the track, substantially as shown and described. 6th. In a store service apparatus, the combination, with a track and two fixed plates held at either end of the said track, of a carrier provided with two compartments and travelling on the said track, and a bottom adapted to close alternately the lower ends of the said two compartments, said bottom being held to slide on suitable guideways secured to the said two compartments, substantially as shown and described. 7th. In a store-service apparatus, the combination, with a track and two fixed plates held at either end of the said track, of a carrier provided with two compartments and travelling on the said track, a bottom adapted to close alternately the lower ends of the said two compartments, said bottom being held to slide on suitable guideways, secured to the said two compartments, and vertically sliding bolts operated by the said plates and adapted to lock said bottom in place under either compartment, substantially as shown and described.

No. 30,654. Stamping Device for Cuff Blank, Hem-folding and Cutting Machines. (*Appareil à étamper pour les machines à plier les ourlets et tailler les manchettes.*)

Fred B. Ide, Troy, N.Y., U.S., 29th January, 1889; 5 years.

Claim.—1st. The combination, with the pressing roller R_1, the rollers R_2 and R_3, of the roller O made with the recess M in the cylindrical face thereof, the type-holder D constructed with the spring I arranged in said recess, and the inking roller I, constructed and arranged to operate substantially in the manner as and for the purposes set forth. 2nd. The combination, with the roller O, made with the recess M, of the type-holder D constructed with the leaf spring L, and the ink-roller I arranged with reference to said roller O, substantially as and for the purpose set forth. 3rd. The combination, with the roller O, made with the recess M in its cylindrical face, of the type-holder D constructed with the leaf spring L, journals J and rod A, the ink-roller I and the hot-roller R_2 arranged with reference to said roller O, substantially as and for the purpose set forth.

No. 30,655. Method of Making Apparel Cuffs. (*Mode de fabrication des manchettes de vêtements.*)

Fred. B. Ide, Troy, N.Y., U.S., 29th January, 1889; 5 years

Claim.—The method of making apparel cufis herein described, and consisting of cutting the two exterior cuff facings of the same size, hemfolding their side edges, placing the two facings together with their hemfold edges reversed, with the hemfold of the facing forming the cuff exterior when worn, embracing the edges of the ply placed over said facing, and then stitching the blanks as laid to connect the parts, then turning them through one of the open sides, and border stitching the ends and sides, for the purposes set forth.

No. 30,656. Bag Lock. (*Serrure de sac.*)

Thomas W. Harrison, Topeka, Kan., U.S., 29th January, 1889; 5 years.

Claim.—1st. In a bag lock, the combination, with the side A, and the side B having an oblong opening, of the lock-bolt C having an oblong head, and a spring having a locking-lug which is adapted to engage with the said bolt, substantially as and for the purpose described. 2nd. The combination, with the side A, the side B, the lock-bolt having a longitudinal opening, and side openings, and the springs having locking-lugs, of the key composed of two members pivoted together, and having oppositely-disposed extensions to enter the lateral openings in the said bolt, substantially as and for the purpose described. 3rd. The combination, with the side A, and the side B, having an oblong opening b, the recesses 23 and the lateral openings b_1, of the springs 22 having locking-lugs, and the lock-bolt having openings in its side to receive the said locking-lugs, substantially as and for the purpose described. 4th. The combination of the sides A and B, the springs 22 having locking-lugs, the lock-bolt having a longitudinal bore, and lateral openings, and the key composed of two members pivotally connected together midway of their ends, the front ends of the members extending parallel and terminating in oppositely-disposed extensions, and the rear ends of the members curving in opposite directions to form a circle, one end having a socket and a spring, and the other end having a tenon which is adapted to enter the said socket, substantially as and for the purpose described.

No. 30,657. Oar Lock. (*Toletière.*)

Warren R. Briggs and Frank C. Lyon, Bridgeport, Conn., U.S., 29th January, 1889; 5 years.

Claim.—1st. In an oar lock, the recesses thole pin, in combination with a spring catch secured therein, and adapted to lock said pin within its socket, substantially as set forth. 2nd. In an oar lock, the combination, with the socket, of the thole pin carrying a spring adapted to lock automaticaily underneath said socket, whereby the oar lock is secured as against retraction, substantially as shown and for the purpooes set forth.

No. 30,658. Photographic Process for Printing in Colors. (*Procédé photographique pour imprimer en couleurs.*)

Johnann C. Hösch, Vienna, Austria, 29th January, 1889; 5 years.

Claim.—The process for reproducing colored copies of originals by first taking a photographic negative from the original, and taking from this negative a number of glass positives, and preparing the same by means of transparent and opaque varnishes for each color, then transferring said prepared glass positives into glass negatives bp the ordinary photographic process, and retouching the reversed portions, and then printing the sheets from said negatives successively, substantially as herein described,

Fo. 30,659. Composition of Matter to be used as a Medicine. (*Composition médicinale.*)

Camillus E. Bizzozero and Ernest Bizzozero, Quincy, Mass., U. S., 29th January, 1889; 5 years.

Claim—The herein described composition of matter, consisting of alcohol, centaury, yarrow, angelica, calamus, cinnamon, myrrh, aloes, vanilla, cloves, nutmeg, and camphor, combined in about the specified.

No. 30,660. Envelope Machine.

(*Machine à enveloppes.*)

Louis P. Bouvier, Toronto, Ont., 29th January, 1889; 5 years.

Claim.—1st. A gum-dish supported above the pile of blanks, in such a manner that the top blank is held in contact with the bottom of the dish through which an opening is made, to permit the gum in the dish to fall through onto the top blank, in combination with fingers arranged in connection with a reciprocating frame, whereby each blank as it is raised by the picker is gripped by the fingers and carried towards the folder, substantially as and for the purpose specified. 2nd. The gum-dish D having an opening a formed in it, in combination with the plate b connected to and operated by levers so arranged that the tilting of the dish shall cause the plate b to close the opening a, substantially as and for the purpose specified. 3rd.

The finger L fixed to the reciprocating bar G, and the finger M carried by the journalled rod N actuated by the spring P, in combination with the dog Q, pivoted finger R, and finger T, arranged substantially as and for the purpose specified.

No. 30,661. Tool Head and Handle.

(*Tête et manche d'outil.*)

Frederick Latulip, Syracuse, N.Y., U.S., 29th January, 1889; 5 years.

Claim.—The herein described tool head or handle, as an improved article of manufacture, having grooves, serrations, or inequalities in its periphery, and provided with one or more rawhide caps to serve as ferrules formed permanently and directly upon one or both of its ends, and shrunk into said serrations or inequalities, as set forth.

No. 30,662. Faucet. (*Robinet.*)

Albert P. Howes, Worcester, Mass., U.S., 29th January, 1889; 5 years.

Claim.—1st. A faucet having a primary valve that closes in the direction of the flow, an auxiliary valve or cup provided with small orifices in its side, arranged over said valve, and fitting an annular seat around the primary valve-seat, and having a chamber above the valve from which the liquid is forced by the action of opening the valve, and into which liquid must return through limited space as the valve closes, for the purpose set forth. 2nd. The combination, substantially as described, with the faucet-body, or shell A, having the valve seat a, inlet passage m, and discharge passage a^1, of the valve poppet B, the cup c arranged over said valve, with its flange extending downward and surrounding said valve-poppet, and having the chamber E between said cup and valve, substantially as and for the purpose set forth. 3rd. The combination, substantially as described, of the faucet-body A having the valve seats a, a^3, the valve-poppet B, having the dependent spindle B^1, and auxiliary disk B^2, the cup C having orifices c in its side arranged over said valve, and closing upon the seat A^3 around said valve, and a movable discharge nozzle having a stop that engages the valve-spindle, for the purpose set forth. 4th. The combination, substantially as described, of the shell A, valve-poppet B, cup C inverted over and surrounding said valve-poppet, movable nozzle D, sliding upon the body extension A^1, having the engaging step F arranged across the interior of said nozzle below said extension, the lever I fulcrumed on a projection of the body at K, with its ends engaging a projection upon the exterior of said nozzle, for the purpose set forth. 5th. In a faucet, the cup C provided with a shoulder or lug C^1 disposed for engaging with the valve-poppet at an intermediate point in its movement, to lift the flange of the cup from its seat a^2, as described, in combination with the valve-poppet, poppet-lifter, discharge-nozzle, and faucet-body, whereby the faucet is adapted for delivering the liquid in greater force and volume, substantially as set forth. 6th. The combination, with the valve B, and valve-operating nozzle D, of the bearing step provided with an adjusting screw-stud F, for the purpose set forth. 7th. The bridge or bearing-step F^1, separately constructed with the ends of its arms slightly inclined, in combination with the faucet-body A, valve B, and valve-operating nozzle D internally bored, with an intermediate bevelled surface to match the end of said arm, and against which said arms are wedged for retaining the step in position, as set forth. 8th. In a faucet wherein the valve is lifted by a step in connection with the discharge-nozzle, the valve-stem having a cavity f in its lower end, and the adjustable supporting stud F having its point f^1 of less diameter than said cavity, in combination with the valve-operating step, and discharge-nozzle, substantially as described and for the purpose set forth. 9th. In a faucent wherein the valve is lifted by a step in connection with the discharge nozzle, the combination of the cup C, with the spindle B^1, valve B provided with the plate b, disk B^2 provided with the projection 45, and nut B^3, substantially as described. 10th. In a faucet of the character described, the valve B provided with the plate b, the disk B^2, nut B^3, and stem B^1, combined and arranged to operate substantially as set forth.

No. 30,663. Steam Engine Valve.

(*Soupape de machine à vapeur.*)

Andrew Tolton, Guelph, Ont., 29th January, 1889; 5 years.

Claim.—1st. A cylindrical valve A having ports E and H, as described, and fitted into a correspondingly-formed chamber having a steam-space K surrounding it, and steam-ports C and D leading to the ends of the cylinder, substantially as and for the purpose specified. 2nd. A cylindrical valve A having ports E, communicating through the ports F, with the steam-chest G, and with the exhaust-chamber I through the exhaust ports H, in combination with the cut-off sleeve M having ports N to correspond with the ports F, the said sleeve being operated by a governer or lever, substantially as and for the purpose specified. 3rd. The tapered cylindrical valve A fitted into a correspondingly-shaped chamber, and provided with ports, as described, in combination with the set-screw L, arranged substantially as and for the purpose specified. 4th. The combination, with a revolving cylindrical valve having suitable steam and exhaust ports, to communicaie with the engine-cylinder parts, of an adjustable sleeve fitted onto the said cylindrical valve, and having ports to communicate with the ports of the latter.

No. 30,664. Water Motor. (*Moteur à eau.*)

Henry E. Trumbull, Kalamazoo, Mich., U.S., 29th January, 1889; 5 years.

Claim.—1st. The combination of a suitable flume or support, a vibrating piston, and the adjustable stop-gates hinged in the induction port, substantially as set forth. 2nd. The combination of a suitable flume, a jointed vibration piston therein, and an automatic valve in the exhaust port, substantially as set forth.

No. 30,665. Process of and Apparatus for the Manufacture of Gas. (*Procédé et appareil de production du gaz.*)

Alexander M. Sutherland, New York, N.Y., U.S., 29th January, 1889; 5 years.

Claim.—1st. The process of manufacturing illuminating gas, which consists in substituting gas coal, or other gas-producing substance, to heat in closed vessels or retorts, thoroughly breaking up and disintegrating and commingling the volatile products as they come off, and, while being disintegrated and commingled, reheating them in their finely divided condition at a lower heat than that to which they have previously been subjected, substantially as and for the purpose set forth. 2nd. The process of manufacturing illuminating gas, which consists in subjecting gas coal, or other suitable gas-producing substance, to heat in the usual manner, immediately disintegrating the products as they come off, reheating the same at a lower heat, and introducing oil and steam, substantially as and for the purpose specified. 3rd. In apparatus for making oil-gas, the combination, with an oil-feed, of retorts provided with disintegrating devices, and means for heating said retorts, the disintegrating devices, consisting of toothed or roughened partitions or auger-shaped sections, serving as triturating surfaces and commingling devices, substantially as described. 4th. In apparatus for manufacturing gas, the combination, with a main retort, with a supplemental retort, containing toothed or roughened partitions, and with means for heating said retorts, of an atomizing oil feed, substantially as described.

No. 30,666. Holdback. (*Ragot de limonière.*)

Daniel A. Camp, Barre, Vt., U.S., 29th January, 1889; 5 years.

Claim.—1st. The combination, with the case having the closed front, and also having standard G provided with the brace H, of the pivoted arms C, D, having the cam projection d, the spring a and cap E, said cap having an opening through which the standard G passes, substantially as and for the purpose hereinbefore set forth.

No. 30,667. Cake or Bread Beater.

(*Pétrin mécanique.*)

Samuel F. Stowe, Providence, R.I., U.S., 29th January, 1889; 5 years.

Claim.—1st. The combination, with the beater-chamber 4, provided with the zig-zag guideways 18, of the beater 8 working in said ways, and having means for operating the beater, whereby the zig-zag reciprocating motion about the horizontal axis is obtained, substantially as and for the purpose herein described. 2nd. The combination, with the beater chamber 4, provided with the zig-zag guideways 18 and with the air vent 6, and the gate 22, of the beater 8 provided with the means for reciprocating the beater, substantially as and for the purpose herein described. 3rd. The combination, with the beater-chamber 4, provided with the ways 18 and the springs 21, of the beater 8 having the guide projections 19 working in the ways 18, and provided with the means for reciprocating the beater, substantially as and for the purpose herein described. 4th. The combination, with the beater-chamber 4, provided with the zig-zag guideways 18, and the beater 8 working in said ways, of the hand-wheel 12 and the connecting-rod 11, intermediate the wheel and beater, and the link 15 for supporting said rod, substantially as and for the purpose herein described.

No. 30,668. Bed Bottom. (*Sommier élastique.*)

Samuel J. Dickson, Chicago, Ill., U.S., 29th January, 1889; 5 years.

Claim—1st. In a bed bottom, the combination, with the side frames, provided at opposite ends with suitable brackets, of a cross-bar C journalled in the brackets at one end of said frame, a stretching roller B journalled in said brackets and arranged above the cross-bar C, and provided with a suitable ratchet device, a roller B^1 journalled in brackets secured to the opposite end of said frame, and a continuous strip of canvas D, extending around the roller B^1 at one end of the frame, and secured at its ends to the cross-bar C, and roller B at the opposite end of the frame forming a double bottom, substantially as set forth. 2nd. The combination, with the roller B, provided at one end with a ratchet-wheel h, of a bracket F, provided with a socket i, having a marginal rim or flange i^1 made slightly larger than the ratchet-wheel, and provided on a portion of its inner face with ratchet teeth j, which engage with the teeth of the ratchet wheel h, substantially as set forth. 3rd. The combination, with the frame of the bedstead, the roller B^1 and cross-bar C, having angular ends of the stretching-roller B, provided at one end with a ratchet-wheel h, a bracket F^1, provided with angular and round sockets f^1, φ, for receiving one end of said stretching roller and cross-bar, and a bracket F provided with an angular socket f, for receiving the opposite end of the cross-bar C, and with a socket i, supporting the opposite end of the stretching roller, and having internal teeth j, substantially as set forth.

No. 30,669. Spring Seat for Vehicles, and Spring Foot Rest or Spring Bottom for such Vehicles. (*Siège et appui-pieds ou sommier élastiques pour voitures.*)

Lewis Warren, McGrawville, N.Y., U.S., 29th January, 1889; 5 years.

Claim.—1st. In a spring seat of a side bar vehicle, the combination of the seat or seat frame, the front springs serving as made of spring bars of wood or metal, the rear springs made of two or more separate metal springs, suitably shackled or pivoted to the seat or seat frames and fastened or attached at their rear ends to the side bars, so as to be in contact at such rear ends, but separating at a suitable point at or above the side bars of the vehicle, substantially as shown and described for the purpose hereinbefore set forth. 2nd. In a side bar vehicle, the combination, with the seat and side bars, of the front and rear springs, each composed of two leaves secured at different

points to shackles attached to the seat and to side bars by means of suitable clips, substantially as specified. 3rd. In a side bar vehicle, the combination of the springs V and U, supporting the bottom of the vehicle, whereby spring motion is communicated in said bottom, substantially as and for the purposes shown and described.

No. 30,670. Combined Hot Water and Hot Air Heating Furnace. *(Calorifère à eau et à air.)*

William St. Croix, Toronto, Ont., 29th January, 1889; 5 years.

Claim.—1st. The cylindrical coal feeder and water heater letter A, Fig. 5, combined in one arrangement, substantially as described above, and shown on the several figures of the drawings accompanying this specification. 2nd. The coal shute or feed box letter B, Fig. 5, arranged with the ventilator in the door thereof, letter J, with the slide H at the bottom thereof, and the gas escape G at the top thereof, all shown on fixure. 3rd. The gas tight joint or attachment of the cylinder to the furnace, as above described and shown in the drawings, letters E and F, Fig. 4, also the mode of placing the coal feeder and water heater A into the furnace without fastenings, so that the same may be lifted out of the furnace and replaced again at pleasure without difficulty or injury to the furnace. 4th. The combination of hot water and hot air generators in one furnace, as shown, and described in this specification and in the accompanping drawings, all substantially as set forth.

No. 30,671. Horse Boot. *(Bottine de cheval.)*

Peter J. Schild, Frank L. Schild and Charlie C. Schild, Ionia, Mich., U.S., 29th January, 1889; 5 years.

Claim.—1st. In a hoof boot, the clamp C adapted to receive the front portion of the casing, and the strap C1 secured thereto, substantially as and for the purpose described, 2nd. In combination with the casing A, provided with the curved recess, of the strap C1 secured thereto and to clamp C, curved throughout its length, and consisting of the sides c^1 and c^2, and formed integral with the clamp and adapted to receive the front of the casing A, substantially as described. 3rd. The combination of the metallic sponge-lined casing A, provided with the curved recess a, the strap connecting the ends of the casing, the clamp and toe strap formed integral with each other, the sponge lined pad attached to the strap connecting the ends of the casing, the strap H and the rubber tube I surrounding said strap H, substantially as and for the purpose described.

No. 30,672. Wood-Working Machine.

(Machine à travailler le bois.)

Samuel F. Tibbets, Biddeford, Me., U. S., 29th January, 1889: 5 years.

Claim.—1st. The cutting tool J, to which a rotary motion is imparted, in combination with the tool-holder G supported by a block H, adjustable on plate I in front of the machine, an oscillating motion being imparted to the tool-holder G, substantially as shown and described. 2nd. The tool-holders G, carrying rotating cutting-tools J, in combination with bars q, sliding blocks n, sliding bar l, bar k and disk j mounted on shaft i, that also carries drum h driven by belt g for imparting a horizontal oscillating motion to the tool-holders, substantially as shown and described. 3rd. The oscillating tool-holders G, supported by blocks H, adjustable on plate I in front of the machine and carrying rotating cutting tools J, in combination with the pulleys K, belts Q, drums L mounted in frames M, belt A1, tightening pulley B1 and pulley S, for imparting a rotary motion to the cutting tools J, substantially as shown and described. 4th. The angle-iron table B, working in guides C, in combination with bar D, arms E mounted upon shaft F, to which an intermittent rotary motion is imparted for lowering the table, and levers W and springs X, for returning the table to its normal position, substantially as shown and described. 5th. The pinion x, mounted on shaft Z, to which a rotary motion is imparted, in combination with the lever Y, provided with recess y^1 and pin 5, bar y^{111}, provided with a pin y^{11}, and eccentric 4 on shaft F, and spring 6 for throwing the pinion x into and out of gear with the wheel y, on shaft F, substantially as shown and described. 6th. The clamping device, consisting of a rectangular piece 15, hollow block 16, with a space 17 between, to fit onto the angle iron table B, and a slide 18 provided with an arm 19, for attachment to a lever fulcrumed at 20, the front end of the slide being provided with a toothed plate 21, substantially as shown and described.

No. 30,673. Spark Arrester. *(Arrête-étincelle.)*

Robert H. Coleman, Cornwall, Penn., U. S., 31st January, 1889; 5 years.

Claim.—1st. In a spark arrester, the combination of a deflection plate between the flue sheet and the exhaust nozzle, a channel plate provided with a screen and a valve, as f, or damper for covering said screen, a dead plate in front of the exhaust nozzle, and a baffle plate projecting forward of the dead plate, substantially as described. 2nd. In a spark arrester, the combination of a deflection plate between the flue sheet and the exhaust nozzle, a channel plate provided with a draft opening, and a valve, as f, for controlling it, a dead plate, an extended passage for the draft, a baffle plate and a screen between the baffle plate and the well of the smoke box, substantially as described. 3rd. In a spark-arrester, the combination of a deflection plate, a channel provided with a section of wire gauze and a draft opening valve, as f, h, i, for controlling said section and opening, and a baffle plate projecting from its upper end, a dead plate and a wire gauze section between the baffle plate and the crown of the smoke box, substantially as described.

No. 30,674. Scaffold Bracket.

(Boulin d'échafaud.)

James A. Long, Spokane Falls, W. T., U. S., 31st January, 1889; 5 years.

Claim.—The combination, with the brace A formed of a Y-shape strip of flat iron, having apertured flanges at its free ends, and having transverse apertures through the opposite spaced ends of its side arms, a transverse strip bolted to the flanges, and hooks B secured by the same bolts, of the transversely-apertured brace-rod C passed between the spaced ends of the brace A, the pin D connecting said rod and brace, and the clip E formed of a transverse rod E, extending through the lower end of the brace-rod C, and having hooks at its opposite ends, substantially as set forth. 2nd. The combination, with the brace A, composed of the arms a, the free ends of the arms being provided with hooks B, and their other ends spaced and provided with apertures, of the brace-rod C, provided with the apertures c, and having its other end headed, the lock bolt D and the clip E provided with hooks e and bend e^2, substantially as shown and described.

No. 30,675. Spark-Arrester for Coal Burning Locomotives and other Engines. *(Arrête-étincelle pour machines locomotives consumant le charbon et autres.)*

Robert H. Coleman, Cornwall, Penn., U.S., 31st January, 1889; 5 years.

Claim.—1st. In a spark-arrester, the combination of a deflection plate between the tube sheet and the exhaust nozzle, a channel plate and a dead plate on the opposite side of the nozzle, substantially as described. 2nd. In a spark-arrester, the combination of a deflection plate between the tube sheet and the exhaust nozzle, a channel plate, a nozzle plate between the deflection plate and the channel plate, a dead plate, a baffle plate and an extended passage formed by the channel plate, and the dead plate, substantially as described. 3rd. In a spark-arrester, the combination of a deflection plate, a channel plate, a dead plate, a baffle plate, and a screen between the upper end of the channel plate and the wall of the smoke box, substantially as described. 4th. In a spark-arrester, the combination of a deflection plate, a channel plate provided with a perforated section or wire screen, a dead plate, a contracted passage between the channel plate and the dead plate, a baffle plate, and a screen between the upper end of the channel plate and the wall of the smoke box, substantially as described.

No. 30,676. Moulding Coal Dust or Small Coal into Solid Blocks. *(Agglomére de charbon.)*

William H. Lindsay, London, Eng., 31st January, 1839; 5 years.

Claim.—1st. In the compressing machine making the cylinder capable of sliding away from the crank axis and restraining it by springs, substantially as described. 2nd. The manufacture of blocks of artificial fuel from small coal or coal dust by heating such coal, and after admixing therewith about 1 per cent. of sugar, or other saccharine matter, compressing it into blocks, substantially as described. 3rd. The manufacture of blocks of artificial fuel from small coal or coal dust, by admixing such coal with about 5 per cent. of lime and compressing it into blocks, after having previously moistened it with water in which sugar or other saccharine matter is dissolved, substantially as described.

No. 30,677. Rheostat or Resistance for Electric Circuits. *(Rhéostat ou résistance pour circuits électriques.)*

The Thomson-Houston International Electric Company, Boston, (assignee of Edwin W. Rice, Jr., Lynn), Mass., U.S., 31st January, 1889; 5 years.

Claim.—1st. In an electric resistance frame, the combination of a series of conducting pins or studs projecting inward from a suitable support, and cast in one piece, with contact-plates C arranged upon the outer face of the support, a second set arranged parallel with the first, and electric resistance strips or pieces supported by said studs and bridging the space between the sets. 2nd. In an electric resistance frame, the combination of a series of conducting pins or studs projection inwardly from a suitably supported plate, a second set of pins arranged parallel with the first but insulated therefrom, a continuous resistance strip or wire strung upon the two set of studs and bridging the space between the two sets, and a series of switch contacts cast in one piece with the conducting pins, and arranged upon the outer face of the support, as and for the purpose described. 3rd. In a rheostat, the combination, with two set of pins or studs arranged in circles, one within the other, of a set of contacts connected with the pins of one set, a contact arm or circuit-closer adapted to move over the same, and an electric resistance wound upon the two sets of pins, and in electric connection with the pins connected with the contacts, as and for the purpose described. 4th. In an electric resistance frame, the combination of two sets of pins or studs projecting from the same side of a suitable support, and arranged in circles, one set of pins being of conducting material and electrically disconnected from the other set except by the conductor forming the electric resistance, and a set of contacts connected with the conducting pins or studs. 5th. The combination, with a base plate, of a disk-plate or annulus supported thereon, and having a series of pins or studs projecting from its under surface toward the base plate, a second plate of insulating material carrying a series of conducting pins or studs also projecting toward the base plate, a series of contacts mounted on the insulating plate and electrically connected with the conducting pins or studs, and an electric resistance supported between the pins of the two series, as and for the purpose described. 6th. An electric resistance-frame consisting essentially of a base-plate, a superposed supporting table or plate separated from the first by a free air space, two sets of pins projecting into said space at right angles to the base, one set being of conducting material, a series of contacts mounted on the face of the table or outer plate and severally connected with the pins of conducting material, and an electric resistance supported by the two sets of pins, and bridging the space between the two sets. 7th. In an electric resistance frame,

a series of contact blocks C mounted on an insulating board or plate B, and having pins or studs L formed integral with them, and projecting through said board into the space between the latter and the base plate, as and for the purpose described. 8th. In an electric resistance-frame, the combination of a base plate, a superposed disk or plate I having a series of pins projecting inward from it and cast integral with it, a board or plate of insulating material B carrying contact blocks, and studs L of conducting material, projecting inward toward the base board, and a continuous electric conductor wound to and fro upon the two sets of pins and across the space between the sets, as and for the purpose described. 9th. The combination, with a suitable base board, of a disk or annulus I of iron, having a series of pins P projecting downward from the same, a plate of insulating material supported over an opening in the centre of the plate I, and carrying a series of conducting pins or studs projecting inward from it, and electrically connected with blocks or studs mounted on the base of the plate, and an electric conductor strung across the space between the two sets of pins, as and for the purpose described.

No. 30,678. Hand Fence Machine.

(Machine à clôture à bras.)

The Gilchrist Manufacturing Company, Chicago, (assignee of Matthew F. Connett, Jr., Peoria), Ill., U.S., 31st January, 1889; 5 years.

Claim.—1st In fence-machines, a wire-carrier mounted within and upon a guide-ring, and adapted to travel along said ring when the latter, without rotation on its centre, is moved bodily in the proper direction, whereby the wires borne by the carrier are intertwisted to any desired extent. 2nd. A fence-machine, comprising one or more annular guide-frames, and a wire-carrier mounted and revoluble in each of said frames respectively, whereby the curvilinear bodily motion of the fames may cause each carrier to travel around the corresponding frame twisting the wires. 3rd. In a fence-machine, an annular guide-frame and a wire-carrier mounted upon and rotating in said frame to twist the wires, said frame being discontinuous to permit the wires to pass laterally into the space enclosed by the frame. 4th. In fence-machines, a wire-carrier, a broken annular guide-frame encircling and forming a track for said carrier, and means whereby a segment of said frame or track may at will be removed or be fixed in position to form a part of said frame, substantially as set forth. 5th. In fence-machines, a guide-frame of annular form, and a wire-carrier mounted therein and revoluble in the plane thereof, said carrier being provided with anti-friction rollers bearing against the surface of the frame and maintaining the position of the carrier, substantially as set forth. 6th. The broken ring D, and the carrier mounted therein at a fixed distance from said ring's inner surface, said carrier being adapted to move along the inner surface of the ring, and thus twist the wires when the ring is given proper bodily curvilinear motion in its own plane. 7th. In a fence-machine, a guide-ring from which a small segment is removed, and a wire-carrier mounted in said ring and using it as a track in rotation therein, said carrier forming three sides, and the ring itself the fourth side, of a space for confining the wires, whereby, when the carrier is opposite the space of the removed segment, the wires may pass into or out of the carrier, substantially as set forth.

No. 30,679. Automatic Friction Coupling.

(Embrayage à friction automatique.)

Stanslaus Lentner and Co., (assignees of Emil Boehme), Breslau, Germany, 31st January, 1889; 5 years.

Claim.—1st. A friction clutch having the parts thereof engaged and disengaged by screws, operated substantially as hereinbefore described. 2nd. In clutches of the kind referred to, the combination, with the screws, of conical clutches, or of friction-wheels for actuating the screws, substantially as hereinbefore described. 3rd. In friction clutches, the combination, with the parts, of the clutch screws with hook-shaped heads carried by the one part which engage with projections on the other part, so that the said heads either run free of the projections or grip them when the screws are tightened by the rotation of the screw nuts, substantially as hereinbefore described. 4th. The combination of parts constituting the friction clutch operated to engage and disengage the parts, substantially as hereinbefore described.

No. 30,680. Dust Guard for Car Axle Boxes.

(Garde-poussière pour boîtes à graisse de chars.)

The Union Bearing and Lubricator Co., Portland, Me., U.S., (assignee of Louis Goullioud, Montreal, Que.), 31st January, 1889; 5 years.

Claim—1st. The combination, with the back-plate A, of an axle box trued upon its rear face, of a supplementary plate B, with projection B1 trued upon its inner face and secured to A, and a cork plate or disk mounted on axle and finished smooth, both sides interposed between the plates, as and for the purposes set forth. 2nd. The combination, with the back-plate A of an axle box, of the plate B secured to same, cork disk D mounted on axle between plate strap E encircling such disc, and means for tightening same, all substantially as herein described.

No. 30,681. Burglar Alarm.

(Avertisseur de voleur.)

Stephen S. Kimball, Montreal, Que., 31st January, 1889; 5 years.

Claim—1st. A percussion burglar alarm consisting of a base plate, an alarm sounder, a sliding hammer with projecting arm, upper and lower tranverse bearings for said hammer, a spring coiled about said hammer between said upper bearing and the projecting arm, and detents with which this latter may engage, substantially as shown and described. 2nd. In a burglar alarm, as above described, the base plate A, and detents D, D, of the shape shown, cast on same. 3rd. In a burglar alarm, as above described, the combination, with the base plate, of a projecting claw adapted to attach the alarm to the fixture desired, as shown and described

No. 30,682. Toilet Paper. *(Papier de garde-robe.)*

Charles D. Chase, Northumberland, N.H., U.S., 31st January, 1889; 5 years.

Claim.—As an improved article of manufacture, a tissue or toilet paper formed with indentations or impressions, substantially as shown and described and for the purpose specified.

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

1315. J. B. PIKE and S. T. MARTIN, 2nd 5 years of No. 18,507, from the 22nd day of January, 1889. Improvements on Dash Wheels, 7th January, 1889.

1316. THE STEAM HEAT EVAPORATING CO. (assignee), 2nd 5 years of No. 18,424, from the 15th day of January, 1889. Improvement on Fruit Driers, 9th January, 1889.

1317. J. and G. BRAKE, 2nd 5 years of No. 18,413, from the 14th day of January, 1889. Combined Condenser and Separator for Condensing and Separating the Vapor Eleminated from Petroleum Oils, 12th January 1889.

1318. J. Q.C. SEARLE, 2nd and 3rd 5 years of No. 18,467, from the 16th day of January, 1889. Improvements on Apparatus for Warming Railway Cars and Buildings, 14th January, 1889.

1319. R. L. HITCHCOCK, 2nd 5 years of No. 18,439, from the 15th day of January, 1889. Improvements in Farm Gates, 14th January, 1889.

1320. J. B. ARMSTRONG, 2nd and 3rd 5 years of No. 18,611, from the 4th day of February, 1889. Improvements on Road Vehicles, 15th January, 1889.

1321. T. WALKER and J. F. CARTER, 2nd 5 years of No. 18,430, from the 15th day of January, 1889. Improvements in Ore Roasting Furnaces, 15th January, 1889.

1322. T. WALKER, 2nd 5 years of No. 18,468, from the 16th day of January, 1889. Improvements in Gold and Silver Amalgamators, 15th January, 1889.

1323. N. D. FAIRCHILD, 2nd 5 years of No. 29,215, from the 28th day of May, 1893. Improvements in Washing Machines, 16th January, 1889.

1324. U. K. MAYO, 2nd 5 years of No. 22,106, from the 18th day of July, 1889. Improvement in Anasthetics, 16th January, 1889.

1325. J. PENNMAN, 2nd 5 years of No. 18,630, from the 7th day of February, 1889. Improvements in the art of Manufacturing Machine Knitted Stockings, 18th January, 1889.

1326. J. H. and C. F. PARKER and C. E. TINGLEY, 2nd 5 years of No. 18,528, from the 24th day of January, 1889. Improvements in Boots and Shoes, 19th January, 1889.

1327. L. H. WATSON, 2nd 5 years of No. 18,515, from the 23rd day of January, 1889. Improvements in Preservatives for Organic Substances, and Process of Making the Same, 21st January, 1889.

1328. D. R. CLYMER, 2nd 5 years of No. 18,678, from the 16th day of February, 1889. Improvements in Fire Escapes, 21st January, 1889.

1329. THE REND ROCK POWDER CO. (assignee), 2nd 5 years of No. 18,497, from the 21st day of January, 1889. Improvements in Explosive Compounds, 21st January, 1889.

1330. T. GINGRAS, 2nd 5 years of No. 18,525, from the 23rd day of January, 1889. Improvements in Leather Washers and Machinery for Manufacturing the Same, 21st January, 1889.

1331. W. J. HENLEY and S. T. AXTELL, 2nd 5 years of No. 18,539, from the 24th day of January, 1889. Improvements in Ice Boat Oars, 24th January, 1889.

1332. S. PARISEAULT, 2nd 5 years of No. 18,557, from the 25th day of January, 1889. Improvements in Washing Machines, 25th January, 1889.

1333. G. W. MILLER and H. G. HAINES, 2nd 5 years of No. 18,652, from the 8th day of January, 1889. Improvements in Railway Velocipedes, 28th January, 1889.

1334. W. L. and H. L. and A. O. BEATTY, 2nd 5 years of No. 18,860, from the 30th day of March, 1889. Improvements in Hoisting Machines, 30th January, 1889.

1335. F. B. HERZOG, 2nd 5 years of No. 18,706, from the 18th day of February, 1889. Improvements in Telephone Signalling Apparatus, 30th January, 1889.

JANUARY LIST OF TRADE MARKS.

Registered at the Department of Agriculture—Copyright and Trade Mark Branch.

3341. WILLIAM GODFREY LUMSDEN, of Hamilton, Ont., A certain medicine, 4th January, 1889.

3342. EDWIN HARRY PLUMMER, of Detroit, Michigan, U.S.A. A medical compound, 4th January, 1889.

3343. THE ST. HYACINTHE OIL AND PAINT CO., de St. Hyacinthe, Que. Peinture de toutes sortes, 5 Janvier, 1889.

3344. PIERRE PELLETIER, de Montreal, Que. Cigars, 10 Janvier, 1889.

3345. CHAPUT ET COMPAGNIE, de Montreal, Que. Cigares, 10 Janvier, 1889.

3346. CHAPUT ET COMPAGNIE, de Montreal, Que. Cigares, 10 Janvier, 1889.

3347. GEORGE JOHNSON, of Ottawa, Ont. Publication, 11th January, 1889.

3348. THE SMOKELESS POWDER COMPANY. (Limited), of 3 Great Winchester Street, London, England. Explosives, 11th January. 1889.

3349. DE GRUCHY & RAPHAEL, of Montreal, Que. Kid Gloves, 14th January, 1889.

3350. S. DAVIS & SONS, of Montreal, Que. Cigarettes, Cigars and Tobaccos, 16th January, 1889.

3351. D. RITCHIE & CO., of Montreal, Que, Cigarettes, Cigars and Tobacco, 16th January, 1889.

3352. D. RITCHIE & CO., of Montreal, Que. Cigarettes, Cigars and Tobacco, 16th January, 1889.

3353. D. RITCHIE & CO., of Montreal, Que. Cigarettes, Cigars and Tobacco, 16th January, 1889.

3354. D. RITCHIE & CO., of Montreal, Que. Cigarettes, Cigars and Tobacco, 16th January. 1889.

3355. SAMUEL PERRIN, of Lindsay, County of Victoria, Ont. Certain preparations for toilet purposes, for removing pimples, freckles, tan, eczema and all roughness from the skin, 18th January 1889.

3356. SAMUEL BRANN, of New York, U.S.A. A medicinal remedy, 21st January, 1889.

3357. VACUUM OIL COMPANY, of Rochester, New York, U.S.A. Lubricating Oils, 23rd January, 1889.

3358. CALVIN POMEROY REID, of Toronto, Ont. Tobacco, Cigarettes and Cigars, 24th January, 1889.

3359. WILLIAM DEAN, of Toronto, Ont. Medicine for the Cure of Rheumatic Sciatica, 28th January, 1889.

3360. WILLIAM JOHNSON, of Montreal, Que. Paints and colors, dry, ground in oil, or any other liquid, 29th January, 1889.

3361. VEUVE POMMERY, FILS ET CO., de Reims, France. Vins de Champagne, 29 Janvier, 1889.

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4636. VIEWS OF PETERBOROUGH AND VICINITY, (as per application). Geo. B. Sproule, Peterborough, Ont., 3rd January, 1889.

4637. BELLS THAT ARE PEALING. Vocal Duet. English version by Nella. Music by Ch. Gounod. The Anglo-Canadian Music Publishers' Association. (L'd.), London, England, 5th January, 1889.

4638. THE MERCANTILE TEST AND LEGAL RECORD. Vol. XIX., No. 1., January 3rd, 1889. (periodical). Dun, Wiman & Co., Toronto, Ont., 5th January, 1889.

4639. IDYLWYLDE. Waltz. By J. B. Hutchins. Sydney Ashdown, Toronto, Ont., 5th January, 1889.

4640. HEROINE WALTZ. By Mrs. W. H. Ashley. Strange & Co., Toronto, Ont., 7th January, 1888.

4641. TRAITÉ ELEMENTAIRE D'HYGIÉNE PRIVÉE. Par le Dr. J. I. Durocher. Joseph Israël Desroches, Montreal, Que., 7 Janvier, 1889.

4642. UN PELERINAGE AU PAYS D'EVANGÉLINE. Par l'Abbé H. R. Casgrain, (livre). L. J. Demeres & Frère, Quebec, Que., 8 Janvier, 1888.

4643. COMMODORE JUNK. By G. Manville Fenn, (book). Wm. Bryce, Toronto, Ont., 9th January, 1889.

4644. AMOUR TROMPEUR. Romance pour Soprano ou Tenor. Paroles du Dr J. N. Legault. Music de A. Contant. Alexis Contant, Montreal, Que., 9 Janvier, 1889.

4645. TE DEUM. In Chant Form by Fred. W. Saffery. A. & S. Nordheimer, Toronto, Ont., 9th January, 1888.

4646. JOHNSON'S ALPHABET OF FIRST THINGS IN CANADA. George Johnson, Ottawa, Ont., 10th January, 1889.

4647. PLAN OF THE SIXTH WARD OF THE TOWN OF WINDSOR. George McPhillips, Windsor, Ont., 11th January, 1889.

4648. MUNICIPAL FINANCES AND ACCOUNTS AND RELATIVE LEGISLATION. By Wm. Powis, F.C.A., (book). William Powis, Toronto, Ont., 11th January, 1889.

4649. THE MERCANTILE TEST AND LEGAL RECORD. Vol. XIX. No. 2, January 10th, 1889. (periodical). Dun, Wiman & Co., Toronto, Ont., 11th January, 1889.

4650. CANADIANA. Vol. I., No. January, 1889. (magazine) Wm. John White, Montreal, Que., 11th January, 1889.

4651. MANUAL OF EVIDENCE IN CIVIL CASES. By R. E. Kingsford, M.A., LL.B., assisted by J. E. Hansford. Jeffrey Ellery Hansford, Toronto, Ont., 12th January, 1889.

4652. TRADE MARK CARD. John Harvie, Toronto, Ont., 14th January, 1889.

4653. THE STORM OF '92. A Grandfather's Tale told in 1932. By W. H. C. Lawrence, The Sheppard Publishing Co., (L'd.), Toronto, Ont., 14th January, 1889.

4654. FORT GARRY IN THE YEAR 1872. (picture), Washington Frank Lynn, Winnipeg, Man., 14th January, 1889.

4655. COUPON DE CREDIT. (carte). Louis Ed. Morin. Montreal, Que., 15 Janvier, 1889.

4656. COUPON BOND OF THE CITIZENS INSURANCE COMPANY OF CANADA. (Policy Form). Gerald E. Hart, Montreal, Que., 15th January, 1889.

4657. THE ACCOUNTANTS' COMPANION FOR 1889. (Calendar and Time Table). Robert Terroux, Jr., Montreal. Que., 16th January, 1889.

4658. AFTER SUNDOWN. Song. Words by H. L. D'Arcy Jaxone. Music by Theo. Bonheur. I. Suckling & Sons, Toronto, Ont., 16th January, 1889.

4659. COME TO ME O YE CHILDREN. Contralto Song. Words by Henry W. Longfellow. Music by Charles A. E. Harriss. I. Suckling & Sons, Toronto, Ont., 16th January, 1889.

4660. LOVE LIVES FOREVER. Song. Composed by Charles A. E. Harriss. I. Suckling & Sons, Toronto, Ont., 16th January, 1889.

4661. O SALUTARIS. (Praise for Ever). Solo for Soprano or Tenor arranged on a Spanish melody by J. A. Fowler. I. Suckling & Sons, Toronto, Ont., 16th January, 1889.

4662. McKILLOP'S COMMERCIAL AND LEGAL RECORD. January 10th, 1889. (periodical). James Jack, St. John, N.B., 16th January, 1889.

4663. SYSTEMATIC GIVING BY HEIRS OF GOD AND JOINT HEIRS OF CHRIST. By "Jarvis." Miss J. Flora Maclean, Guelph, Ont., 18th January, 1889.

4664. THE MERCANTILE TEST AND LEGAL RECORD. Vol. XIX. No. 3, January 17th, (periodical). Dun Wiman & Co., Toronto, Ont., 18th January, 1889.

4665. THE CRIME OF THE GOLDEN GULLY. By Gilbert Rock, (book). Wm. Bryce, Toronto, Ont., 18th January, 1889.

4666. UNDER FALSE PRETENCES. By Adeline Sergeant, (book). Wm. Bryce, Toronto, Ont., 18th January. 1889.

4667. THE PIONEERS OF BEVERLY, which is now being preliminarily published in separate articles in the respective newspapers, "The Galt Reporter" and "The Dundas Standard" (Temporary Copyright). John A. Cornell, Township of Beverly, County of Wentworth. Ont., 18th January, 1889.

4668. McKILLOP'S COMMERCIAL AND LEGAL RECORD. January 17th, 1889. (periodical). James Jack, St John, N.B., 22nd January, 1889.

4669. TRAVELLERS' GUIDE—EASTERN PROVINCES, Routes, Distances, and Fares to all the principal points in New Brunswick and Nova Scotia, and Business Directory of St. John. N.B., 1889. (Chart). John R. Hamilton, St. John, N.B., 22nd January, 1889.

4670. THE MADDOXES. By Jean Middlemass, (book). The National Publishing Co., Toronto, Ont., 25th January, 1889.

4671. THE MERCANTILE TEST AND LEGAL RECORD. Vol. XIX., No. 4, January 24th, 1889. (periodical). Dun, Wiman & Co., Toronto, Ont., 25th January, 1889.

4672. McKILLOP'S COMMERCIAL AND LEGAL RECORD. January 24th, 1889, (period ical). James Jack, St. John, N.B., 29th January, 1889.

4673. HENDERSON'S BRITISH COLUMBIA GAZETTEER AND DIRECTORY. The Henderson Directory Co., Winnipeg, Man., 29th January, 1889.

4674. SONGS OF CALVARY. By The Whyte Brothers: D. A. Whyte.—J. M. Whyte (as per application). John Marchant Whyte, Toronto, Ont., 29th January, 1889.

4675. RÉVÈREND MESSIRE GIBAND, Prêtre du Seminaire de St. Sulpice de la Cité de Montreal, (Photographie). L. E. Desmarais et Cie., Montreal, Que., 29 Janvier, 1889.

4676. MORSE'S DIARY 1889. Hazen Morse, International Bridge, Ont., 31st January, 1889.

4677. FAME THE FIDDLER. Song. Words by F. E. Weatherly. Music by J. L. Molloy, The Anglo-Canadian Music Publishers' Association, (L'd.), London, England, 31st January, 1889.

4678. A LITTLE BIRD ON WEARY WING, from the Opera "Paul Jones" by Planquette and Farnie. Hopwood and Crew, London, England, 31st January, 1889.

4679. THE PRACTICE OF THE PARLIAMENT OF CANADA UPON BILLS OF DIVORCE, INCLUDING AN HISTORICAL SKETCH OF PARLIAMENTARY DIVORCE AND SUMMARIES OF ALL THE BILLS OF DIVORCE PRESENTED TO PARLIAMENT FROM 1867 TO 1888, ALSO NOTES IN THE PROVINCIAL DIVORCE COURTS, ETC. John Alexander Gemmill, Ottawa, Ont., 31st January, 1889.

4680. THE QUEEN'S TOKEN. By Mrs. Cashel Hoey, (book). Wm. Bryce, Toronto, Ont., 31st January, 1889.

4681. ASSOCIATION LETTER. The Montreal Merchants and Traders Protective Association, Montreal, Que., 31st January, 1889.

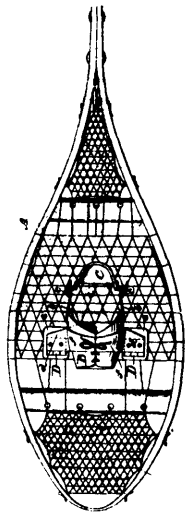
4682. SUBSCRIBERS LETTER. The Montreal Merchants and Traders Protective Association, Montreal, Que., 31st January. 1889.

THE

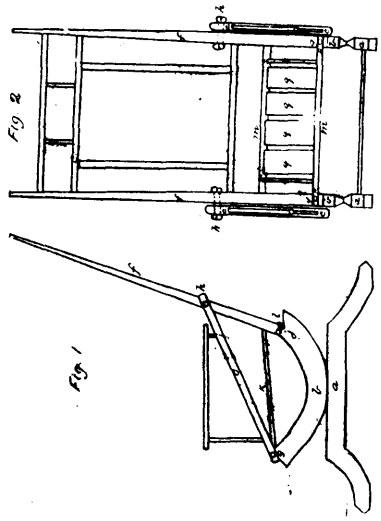
CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

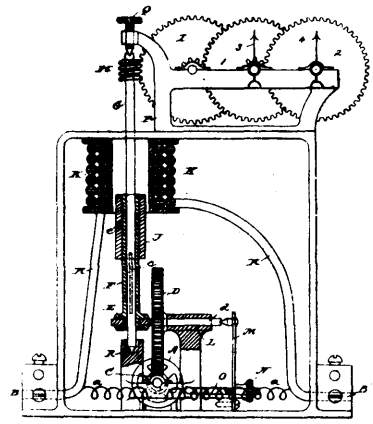
Vol. XVII. JANUARY, 1889. No. 1.



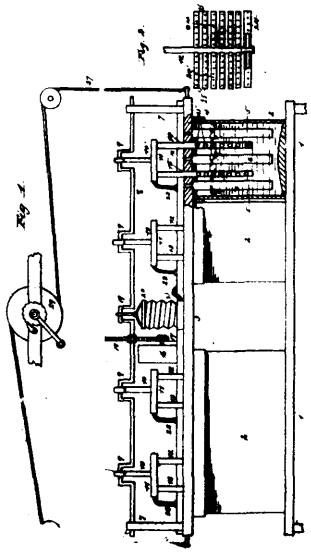
30528 **Woodbury's Snow Shoe Attachment.**



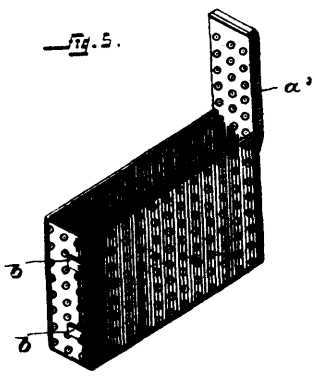
30530 **Hibner & Doolittle's Chair.**



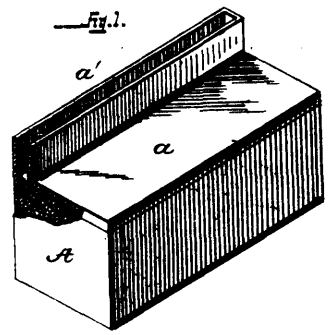
30531 **Reckenzaun & Pentz's Electric Meter.**



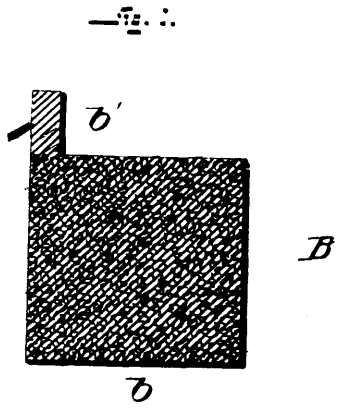
30532 **Humphreys' Galvanic Battery.**



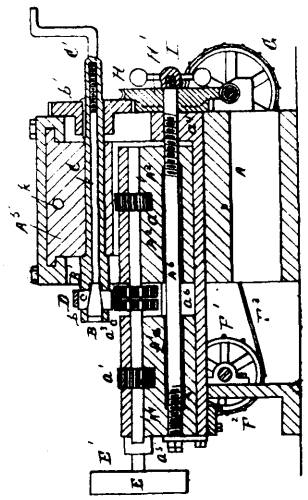
30533 **Thompson's Electrode for Secondary Batteries.**



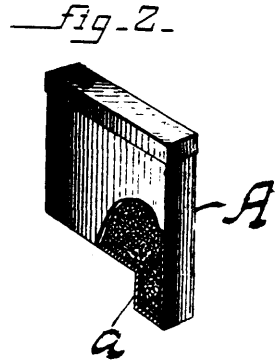
30534 **Thompson's Electrode for Secondary Batteries.**



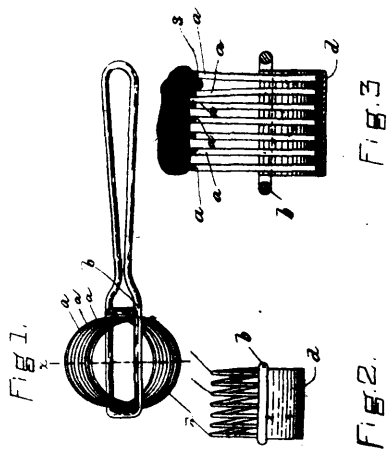
30535 Thompson's Electrode for Secondary Batteries.



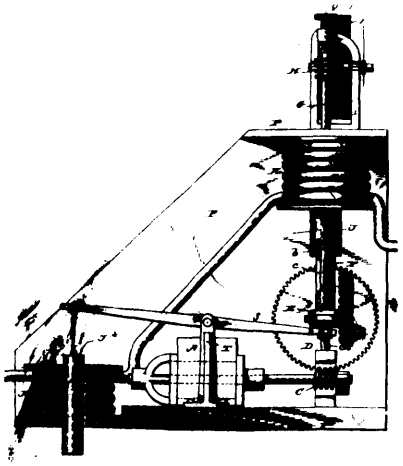
30536 Taylor's Screw Threading Machine.



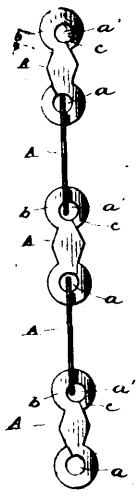
30538 Thompson's Mould for Casting Cellular Electrodes



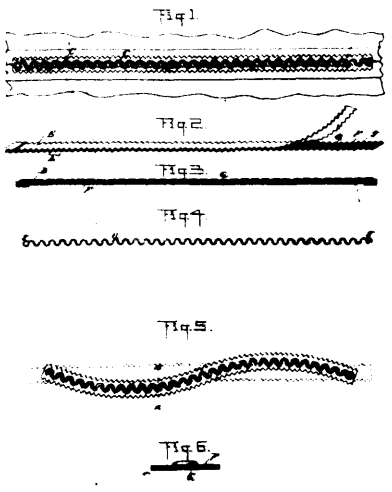
30539 Calef's Raisin Seeder.



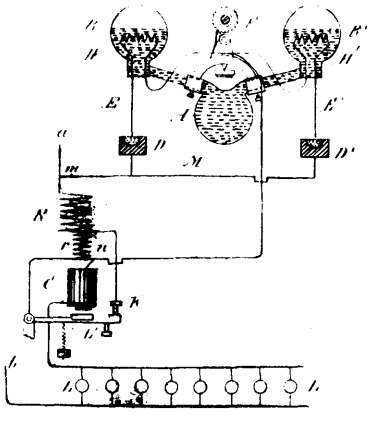
30540 Reckenzaun's Electric Meter.



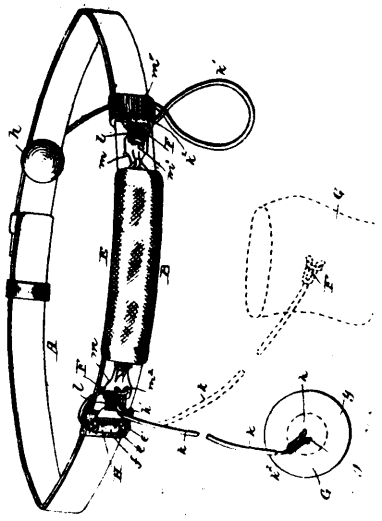
30541 Kelley's Chain Link.



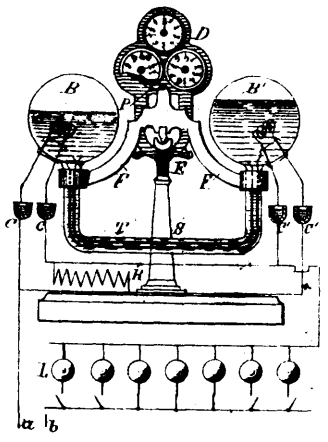
30542 Wheeler's Garment Stays.



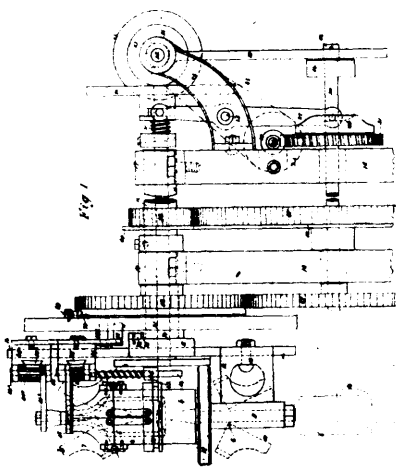
30543 Thomson's Electric Meter.



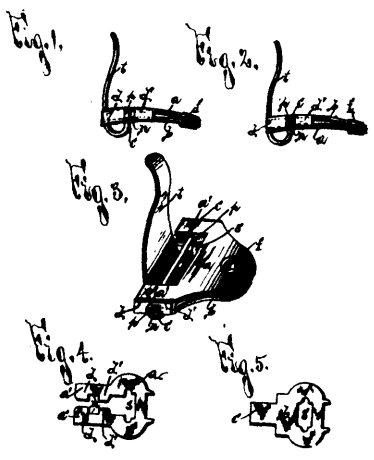
30544 Pratt's Electric Belt.



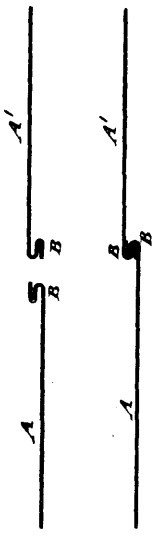
30545 Thomson's Electric Meter.



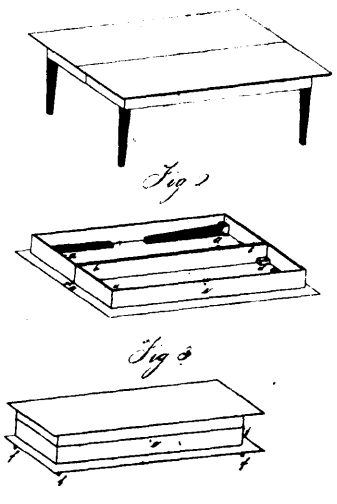
30546 Ambler's Apparatus for Manufacturing Glass Bottles.



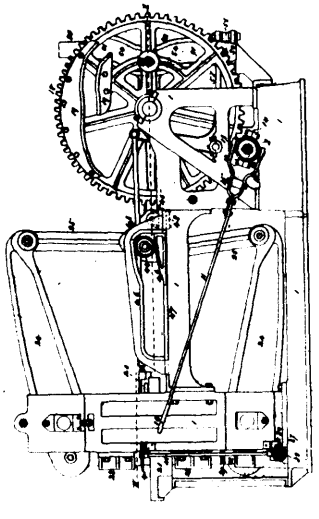
30547 Unbehend's Shoe Clasp.



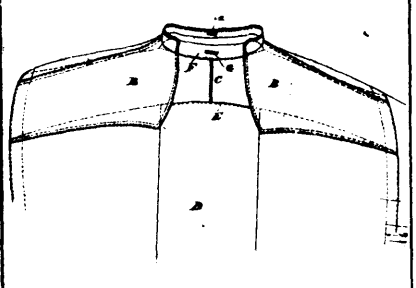
30549 Dolan's Seam for Sheet Metal.



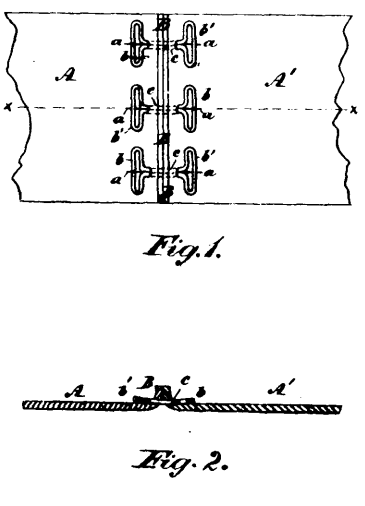
30550 Selman's Furniture.



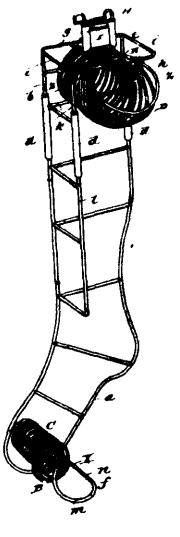
30551 Krutzsch's Brick Machine.



30552 Messer's Shirt.



30553 Phillip & Cotè's Belt Fastener.



30554 Laudick's Display Rack.

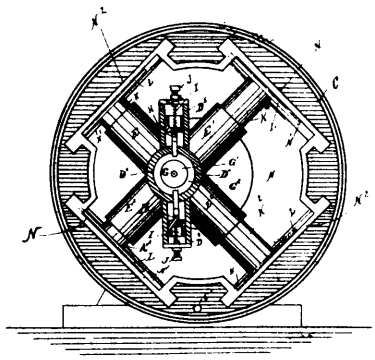


Fig. 1.

30556 Beauchemin's Rotary Engine.

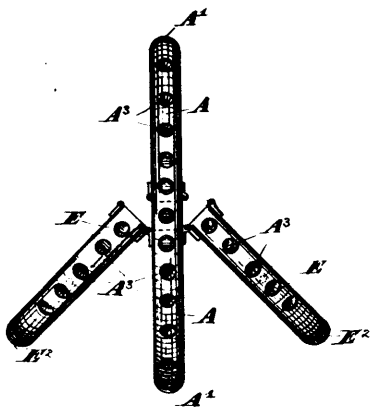
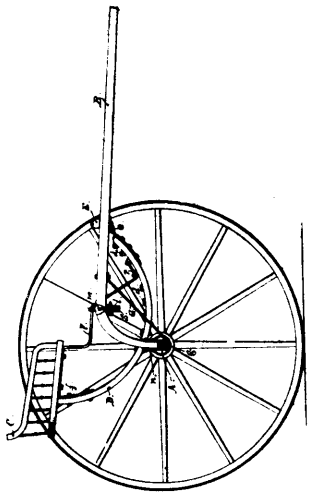
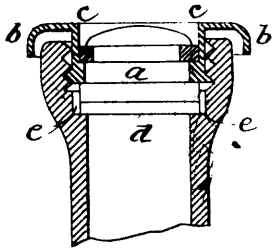


Fig. 19.

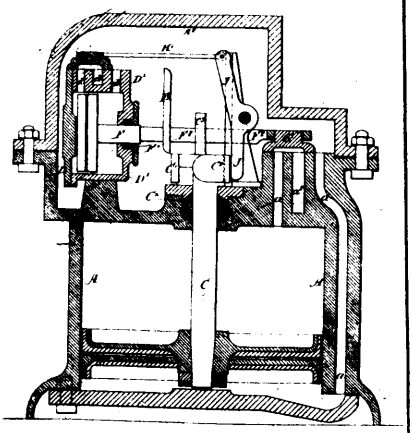
30557 Goodwin's Umbrella Stand.



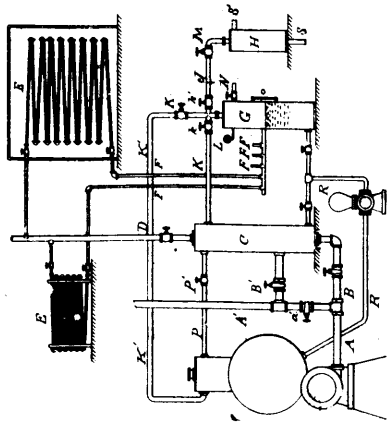
30558 Altick's Two-Wheeled Vehicle.



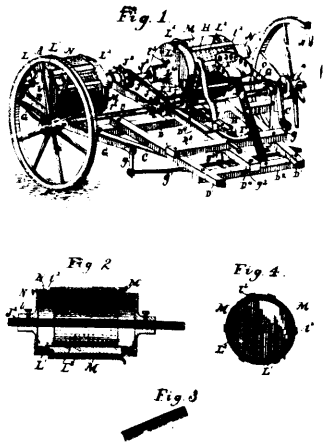
30559 Shepherd's Stoppering Bottles, etc.



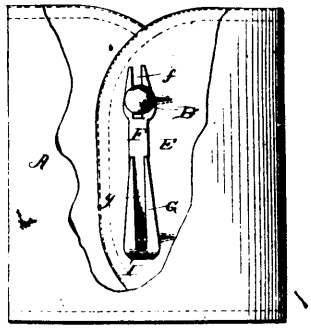
30560 Teideman's Liquid Meter.



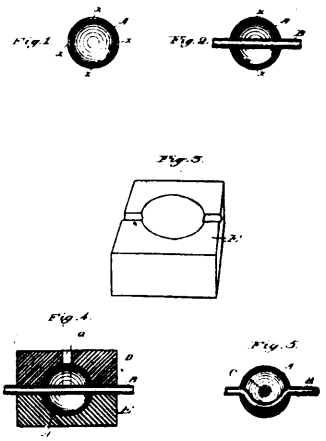
30561 Barnard's Heating Apparatus.



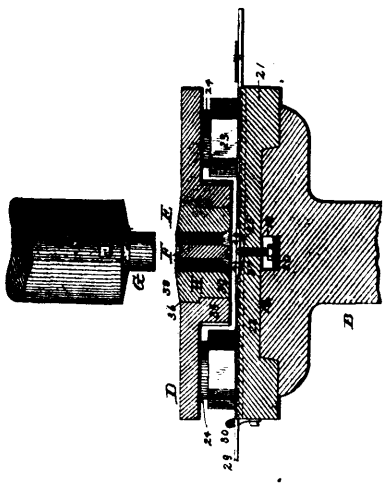
30562 Dodgson's Powder Dusting Machine.



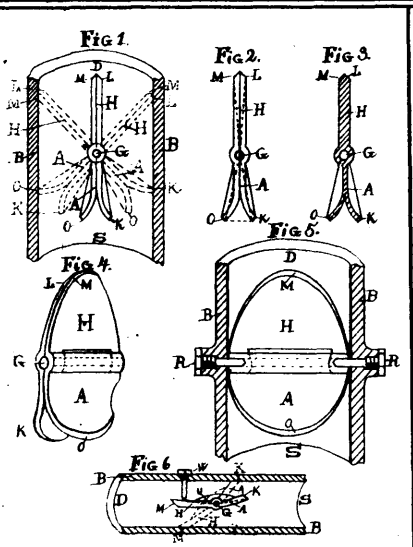
30563 Newman's Cuff-Holder.



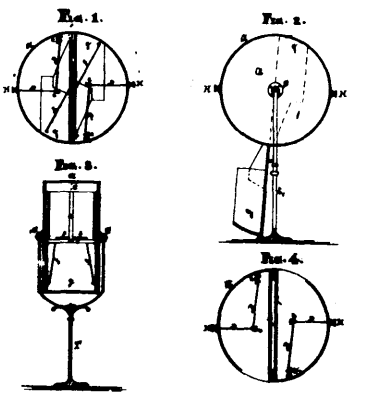
30564 Burkhardt's Wire Screen.



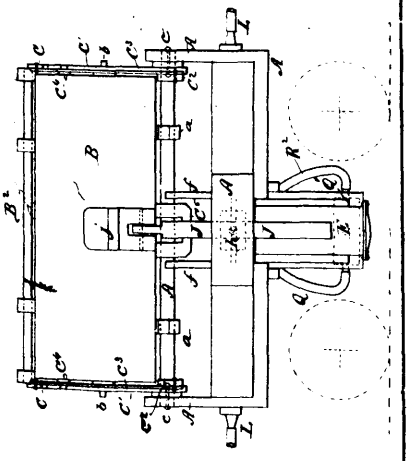
30565 Shimer s Machine for Making Metal Washers.



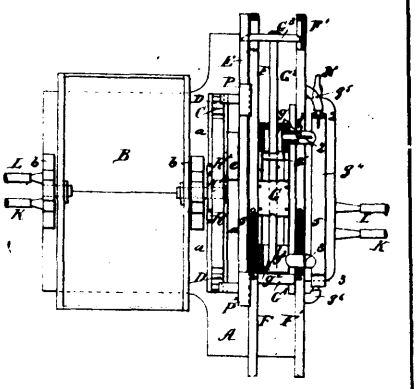
30566 Goll's Valve.



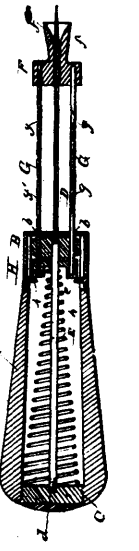
30567 Young's Letter and Document File.



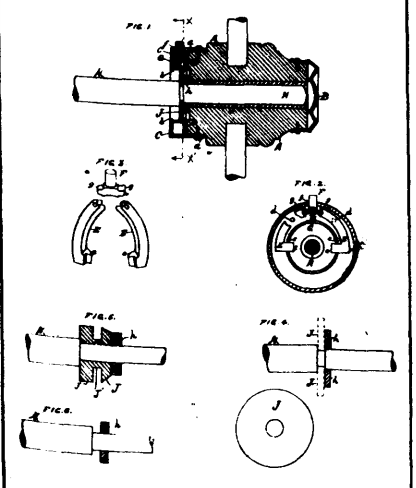
30568 Duff's Dumping Car.



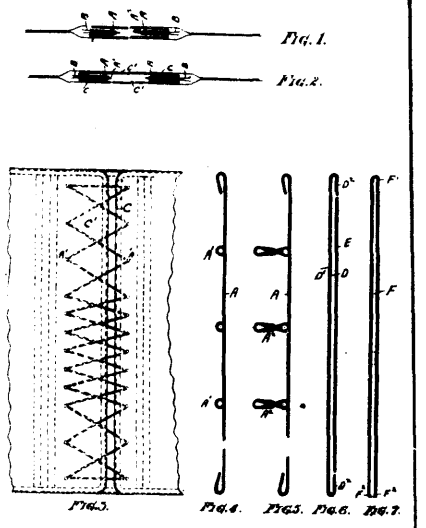
30569 Duff's Dumping Car.



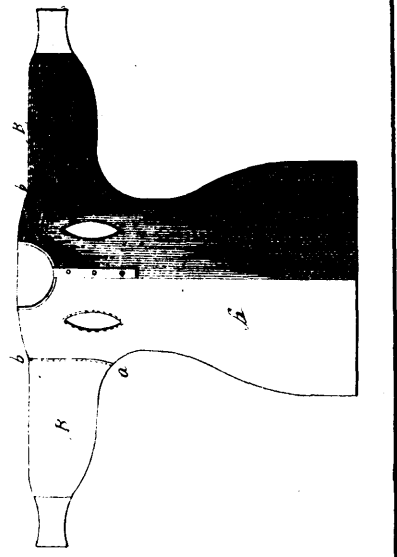
30571 DeLamarre's Oyster Knife.



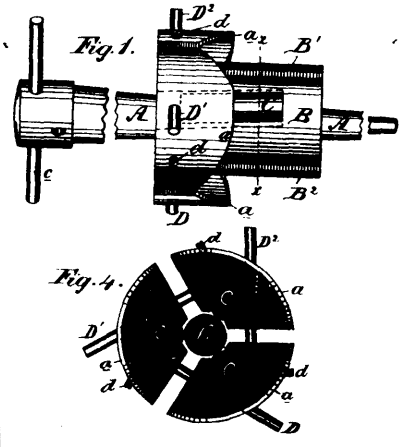
30572 Garben's Mechanism for Dotachably Connecting Wheel Hubs and Axles.



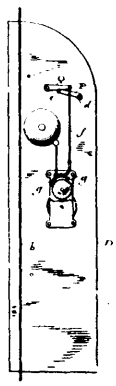
30573 Gunning's Manufacture of Corsets.



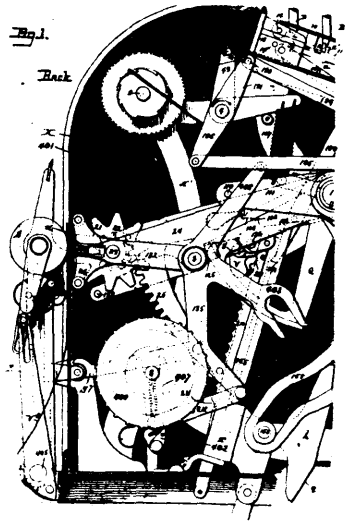
30574 Wilcomb's Knitted Undervest.



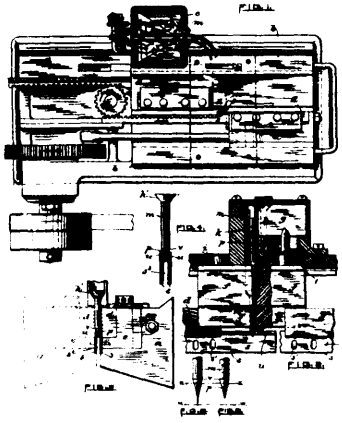
30575 Jardine's Tube Expander.



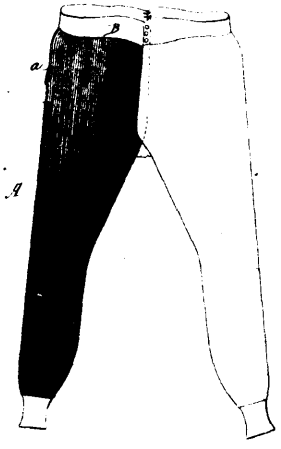
30576 Beynon's Alarm for Grain Elevators, etc.



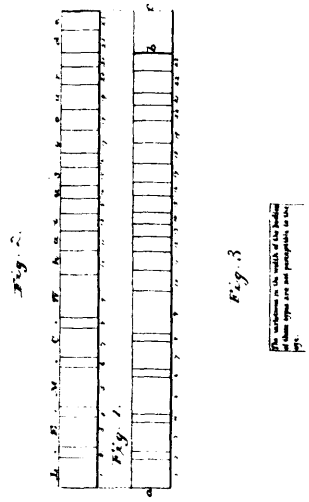
30577 Burroughs' Mechanical Accountant.



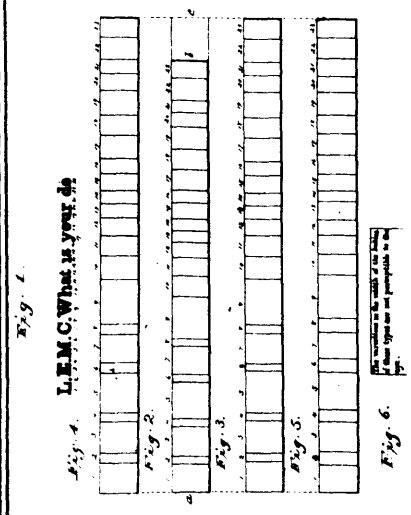
30578 Rogers' Blank Supporting Device for Screw-threading Machines.



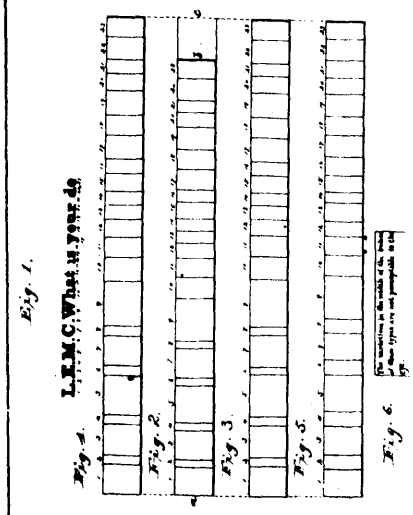
30580 Wilcomb's Knitted Drawers.



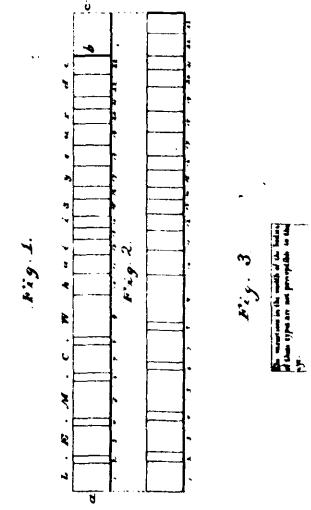
30581 Lanston's Art of forming justified lines of Types.



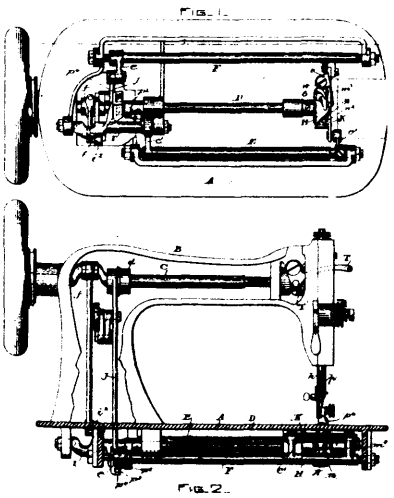
30582 Lanston's Art of forming justified lines of Types.



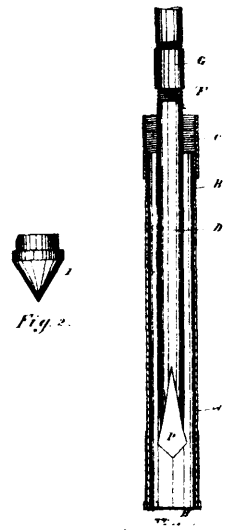
30583 Lanston's Art of forming justified lines of Types.



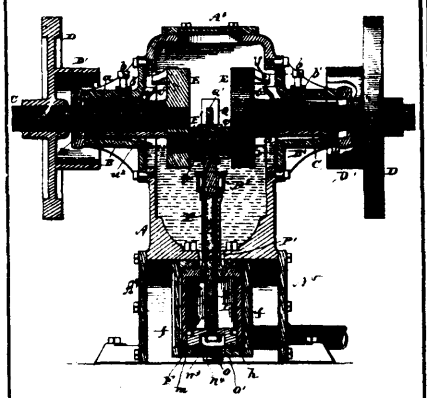
30584 Lanston's Art of forming justified lines of Types.



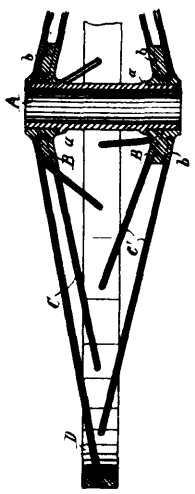
30585 Diehl's Sewing Machine.



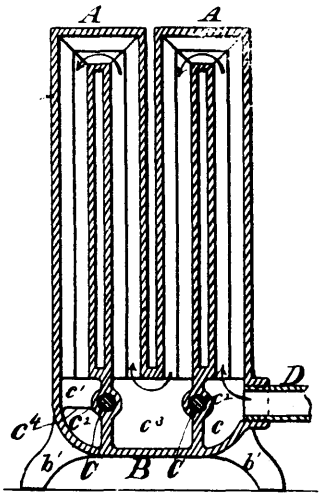
30586 Fontaine's Device for Boring Artesian Wells.



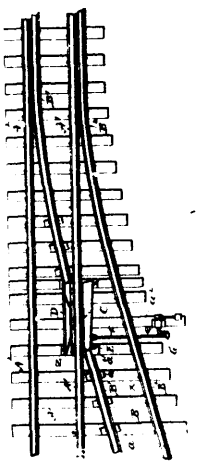
30587 Case's Steam Engine.



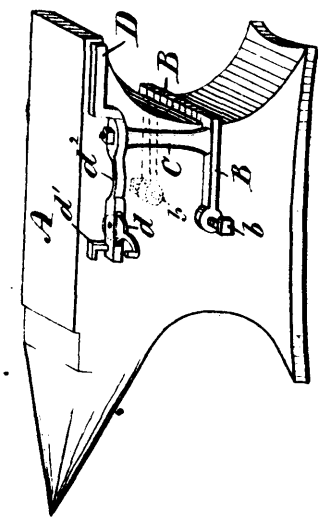
30588 Ricard's Vehicle Wheel.



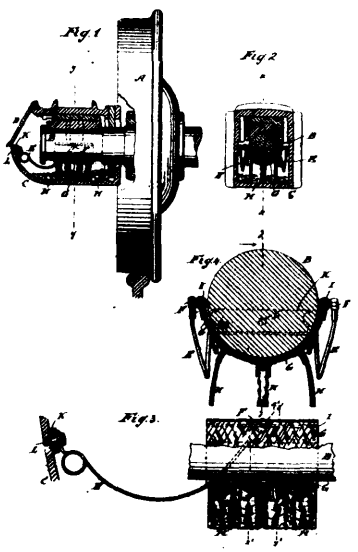
30589 Kelly's Radiator.



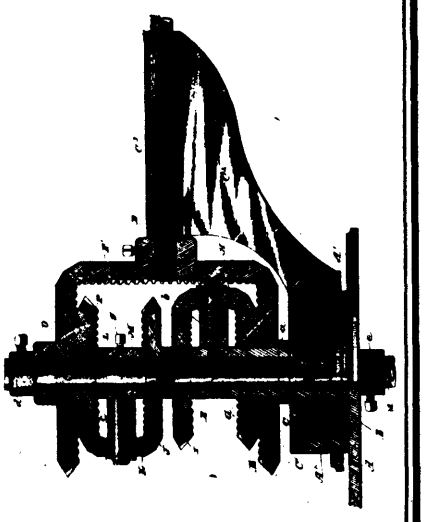
30590 Hart & Hendry's Railroad Frog.



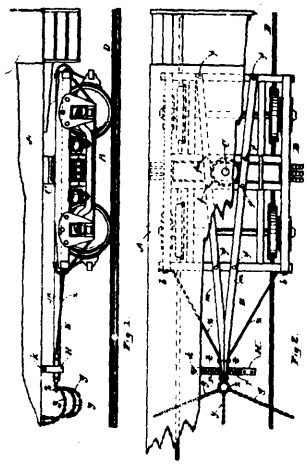
30591 Robinson's Attachment to Blacksmiths' Anvils.



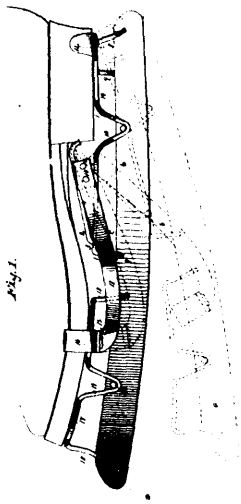
30592 Landau & Scharfberg's Apparatus for Raising or Lifting Heavy Weights.



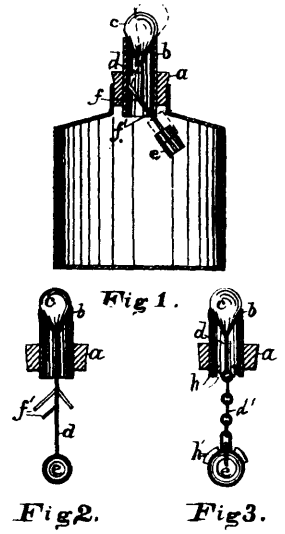
30593 Tuckwood's Balanced Gearing for Windmills.



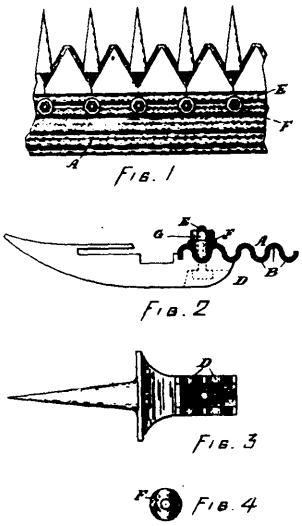
30594 Currier's Car Truck.



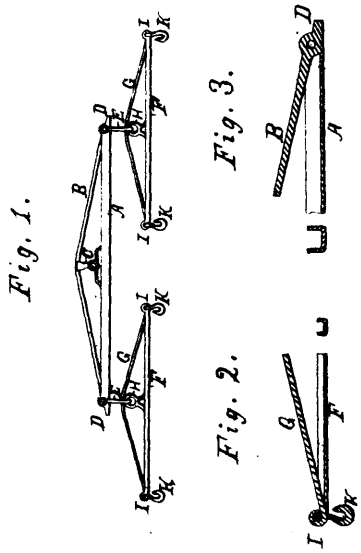
30595 Forbes' Skate.



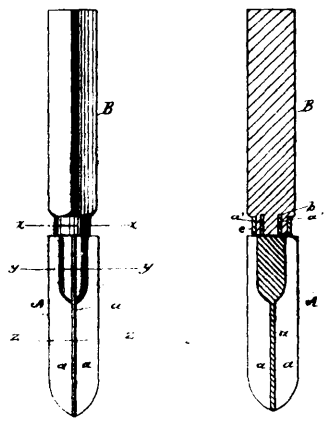
30596 Poole's Closing Can and Bottle.



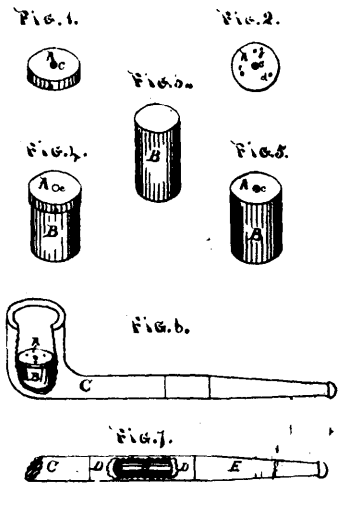
30597 Jackson's Mowing and Reaping Machine.



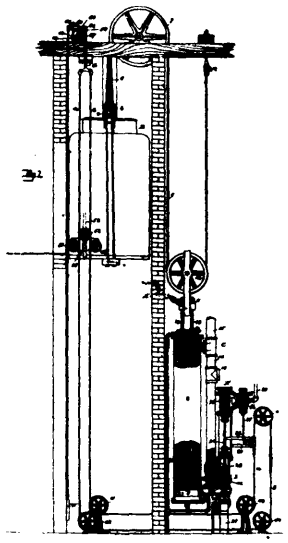
30598 Bear's Double and Whiffletree.



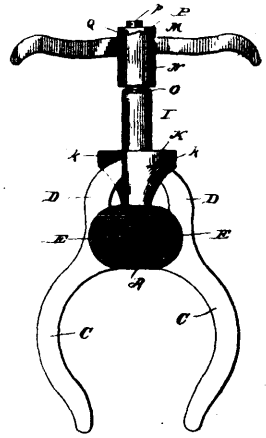
30599 Saxon & James' Fence Post.



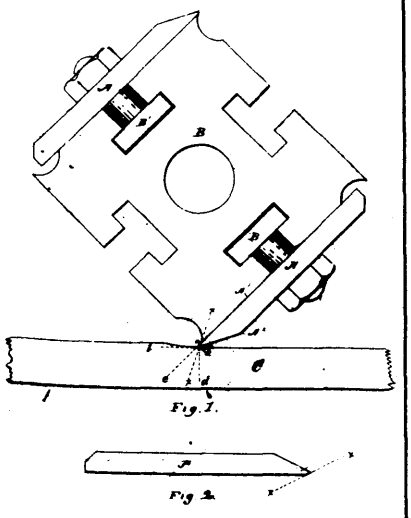
30600 Backus' Pipe for Smoking Tobacco, etc.



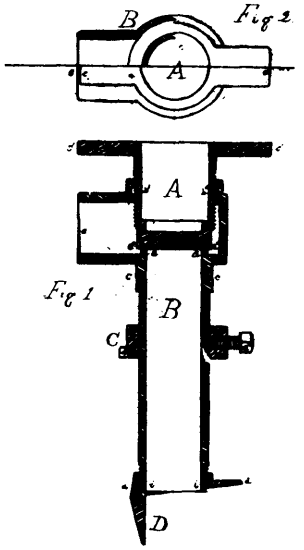
30601 Smith's Elevator.



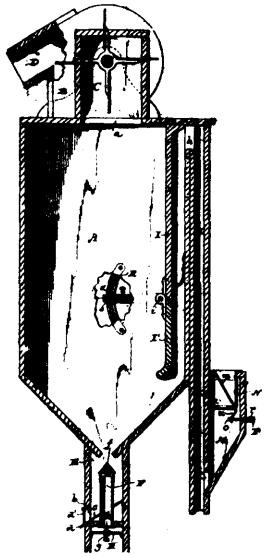
30602 Eisaman & Rome's Police Nippers.



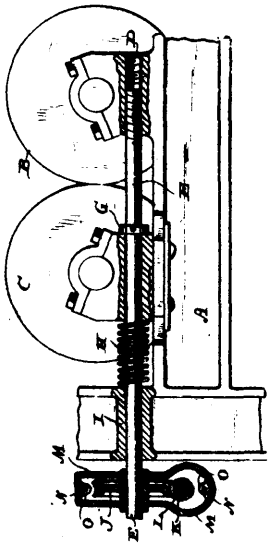
30603 Butters' Rotary Cutting Knife.



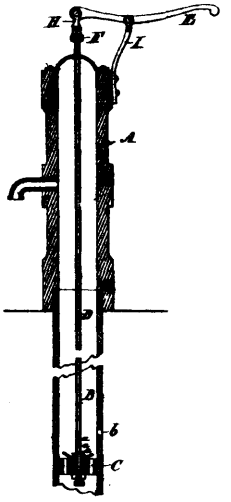
30603 Stafford's Faucet.



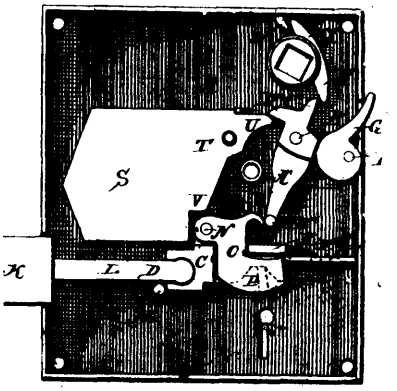
30605 Beynon's Elevator and Separator for Mills.



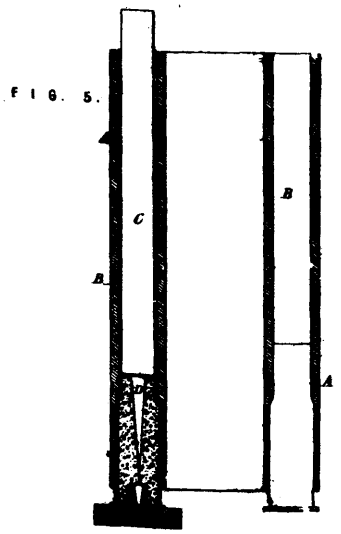
30606 Beynon's Roller Mill.



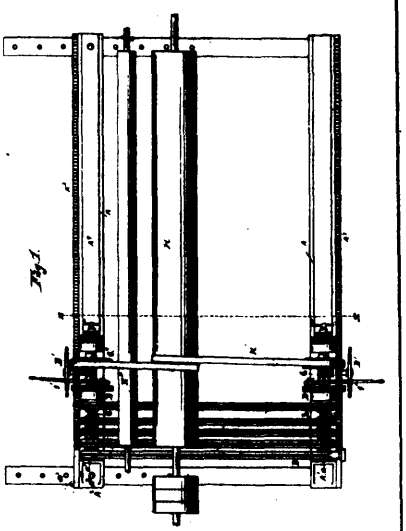
30607 McIntyre's Pump.



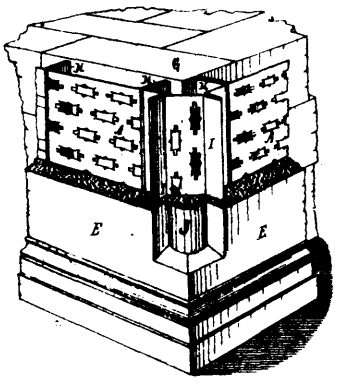
30608 Maynard's Latch and Lock.



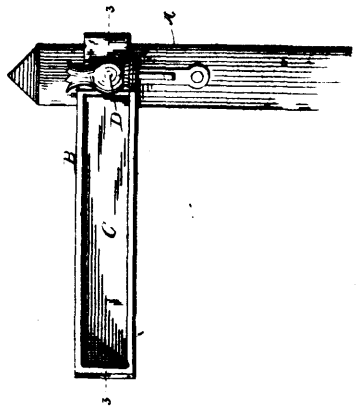
30609 Johnson & Borland's Ammunition, etc.



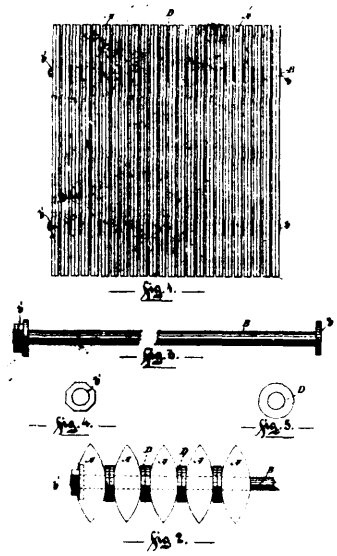
30610 Taylor's Machine for Assembling Radiator Loops.



30611 Haye's Fireproofing of Buildings.

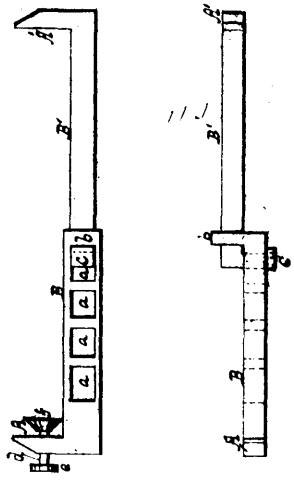


30614 Koyl's Signal for Railways, etc.

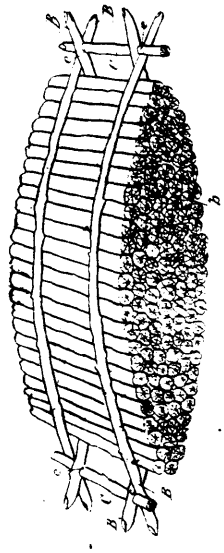


30615 Turnbull's Lime Tray.

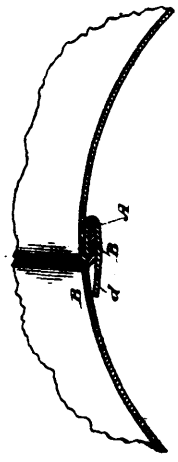
30616 Howitt's Laced Rubber Boot and Shoe.



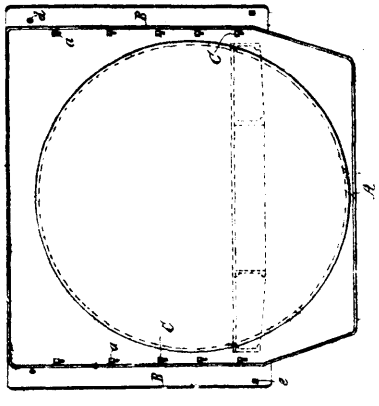
30618 Hawley's Clamp.



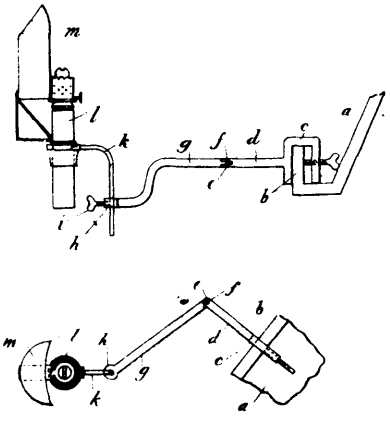
30619 Wheeler's Packing and Binding Wood.



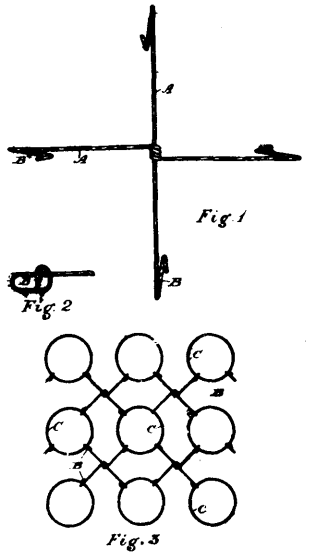
30620 Montross' Stovepipe.



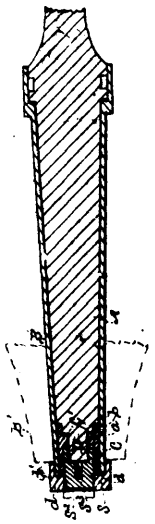
30621 Brown's Attachment to Rotary Snow Ploughs.



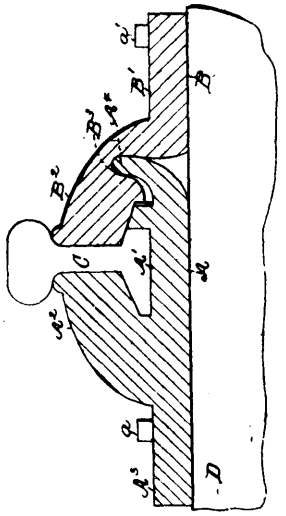
30622 Liebich's Lamp Holder.



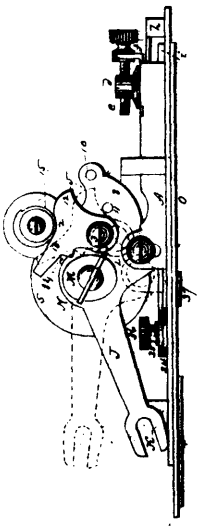
30623 Butterfield's Spring Stay.



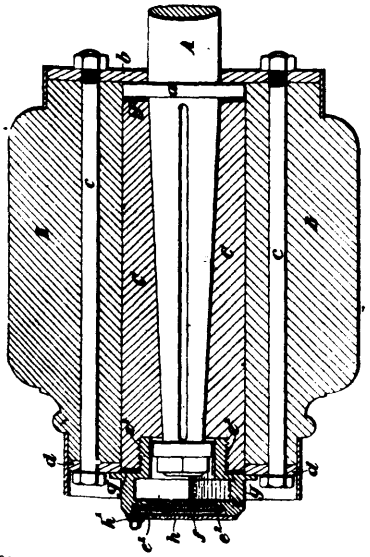
30624 Olmstead's Hub Attaching Device.



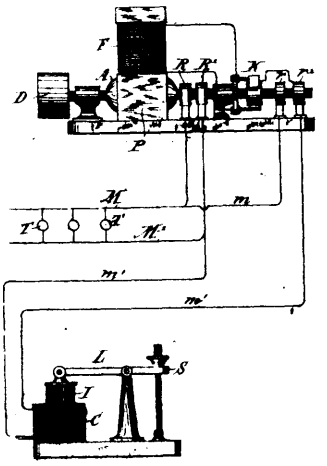
30625 Lowe's Rail Joint Union.



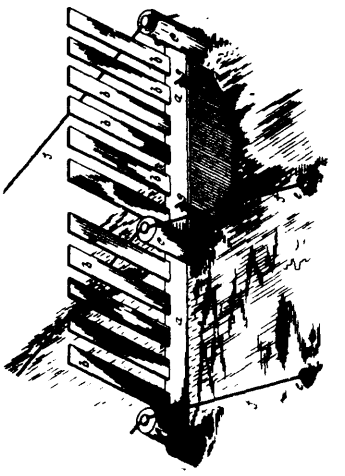
30626 Johnson's Button Hole Attachment.



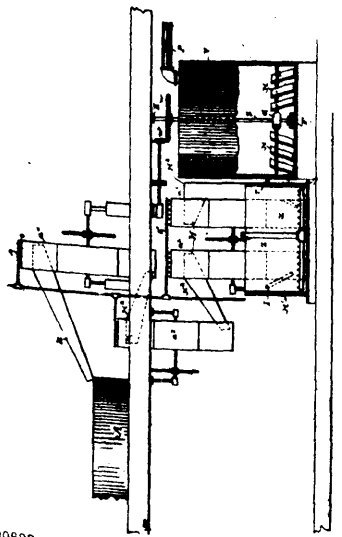
30627 Wilson's Axle Box.



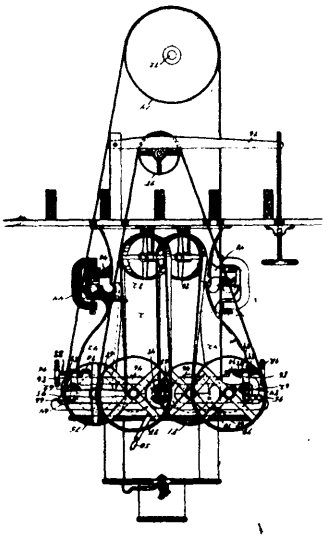
30628 Thomson's Current Dynamo.



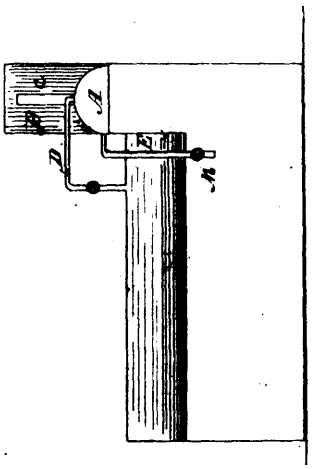
30629 Mace's Flood Fence.



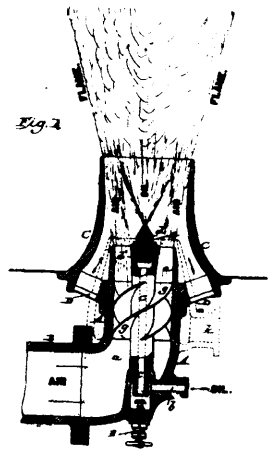
30630 Casamajor's Apparatus for Cleansing and Recovering Sawdust, etc.



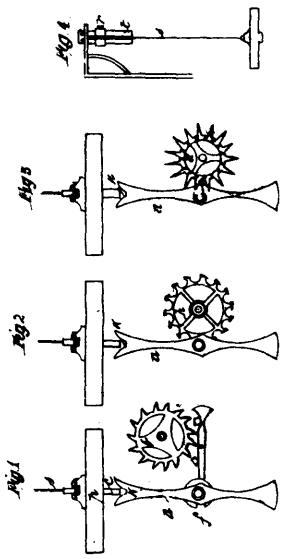
30631 McAnulty's Roller Mill.



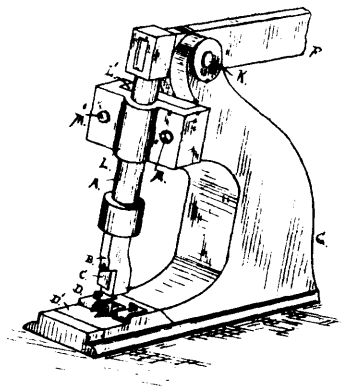
30632 Gosselin's Boiler Feeder.



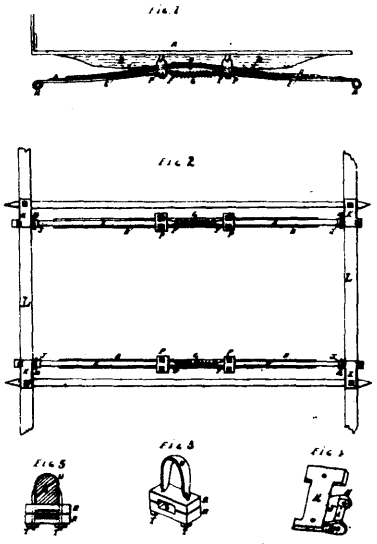
30633 Schutte's Oil Burner.



30634 Douglas' Clock Escapement.

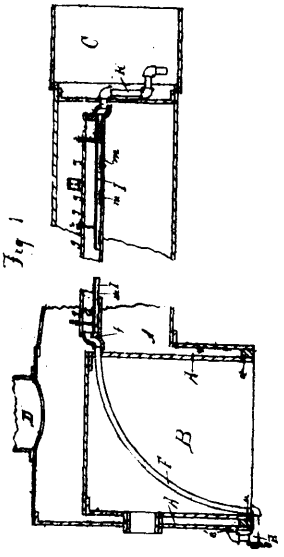


30635 England's Device for Sharpening Stone Cutting Tools, etc.



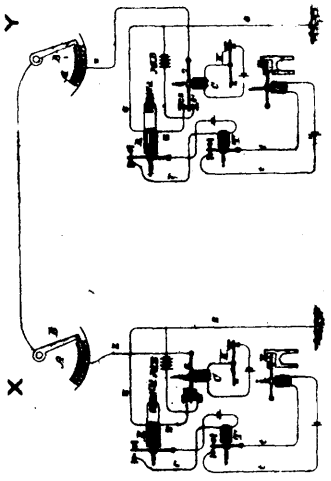
30638 Cook's Vehicle Spring.

30639 Amet's Scale.

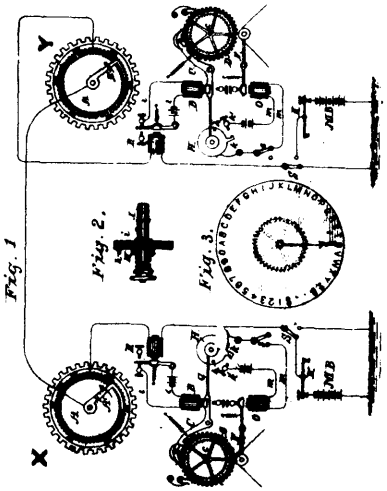


30640 Hackney's Steam Boiler.

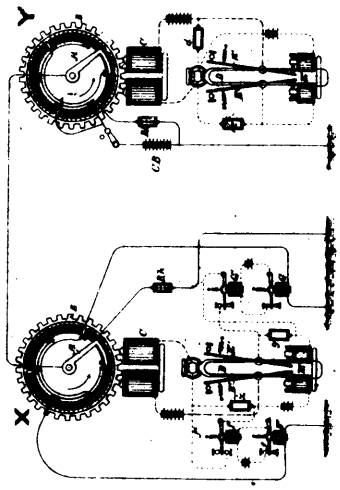
30642 Phillips' Grape Harvester.



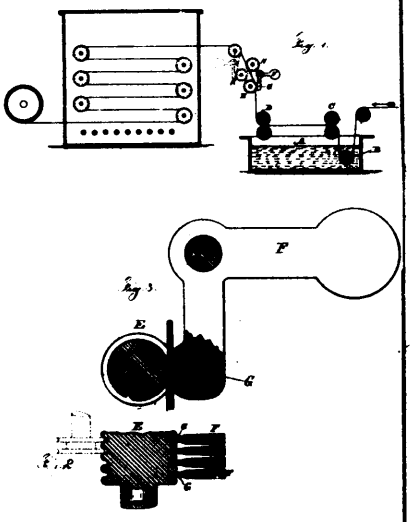
30643 Delany's Telegraphic Relay.



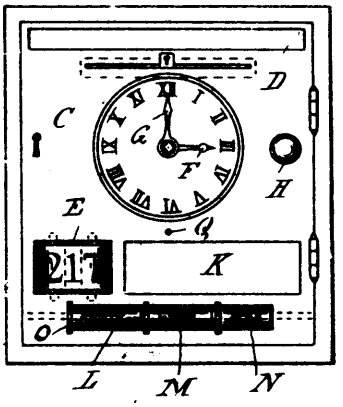
30644 Delany's Printing Telegraphy.



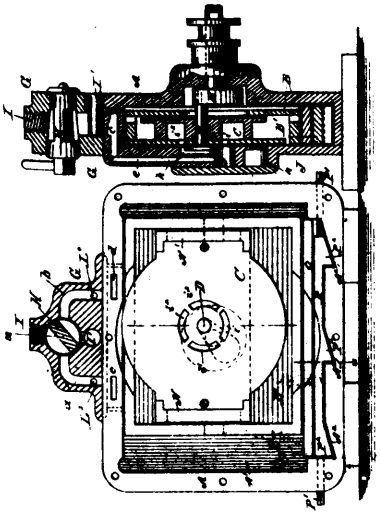
30645 Delany's Synchronous Movement, etc.



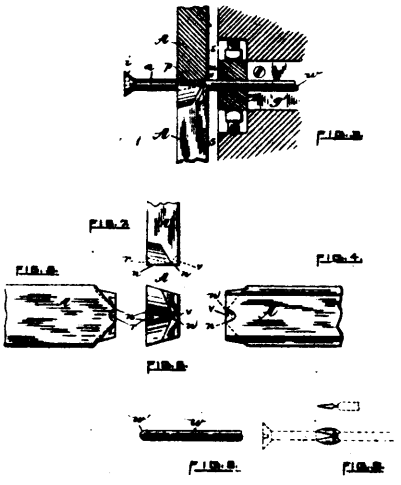
30646 Lyall's Twine, etc.



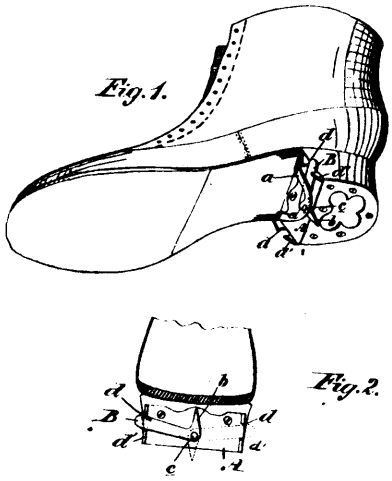
30647 Gareau's Indicator for Hotels.



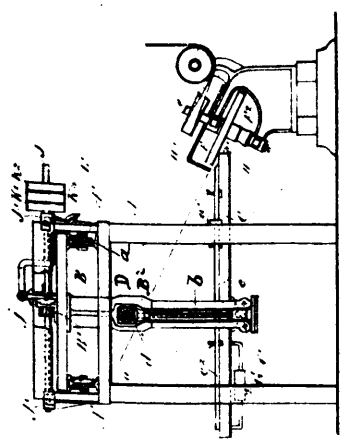
30648 Dake's Engine.



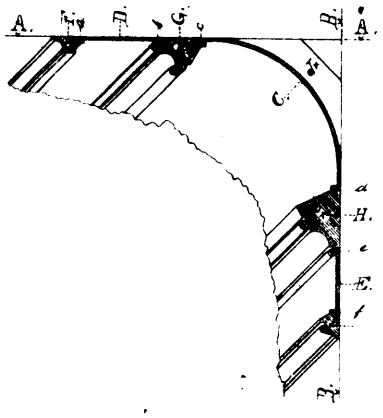
30649 Rogers' Die.



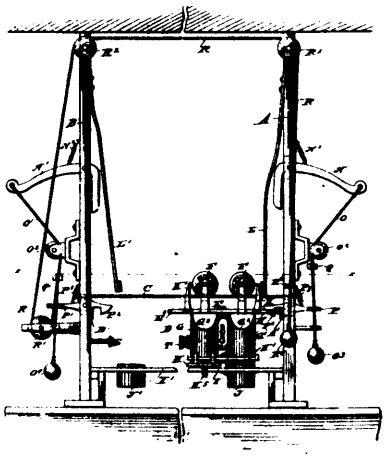
30650 Munro's Ice Creeper.



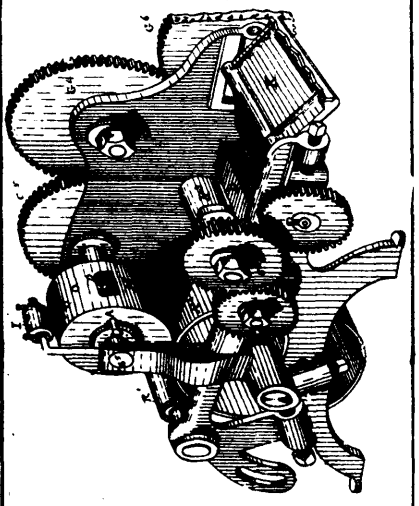
30651 Langlais' Glass Bevelling Machine.



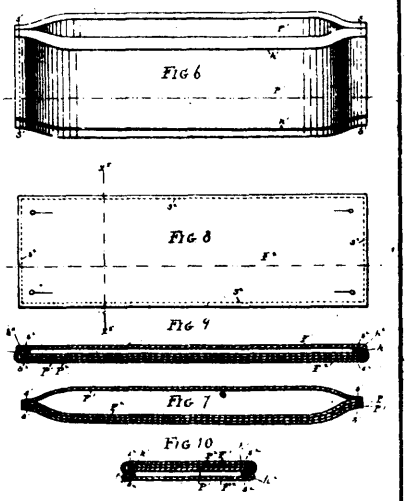
30652 Black's Cornice.



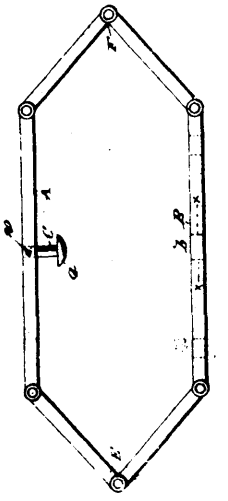
30653 Herbert's Store Service Apparatus.



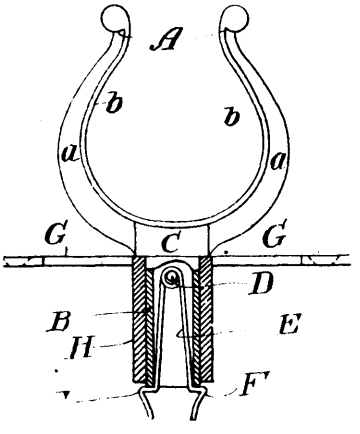
30654 Ide's Stamping Device.



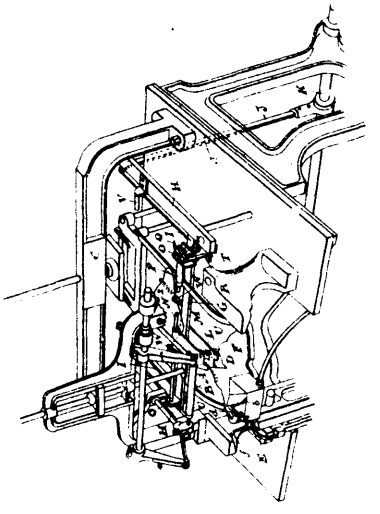
30655. Ide's Method of Making Cuffs.



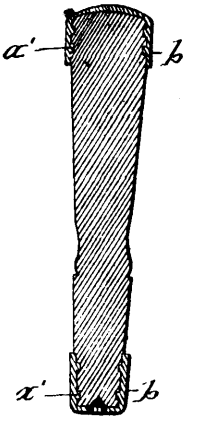
30656 Harrison's Bag Lock.



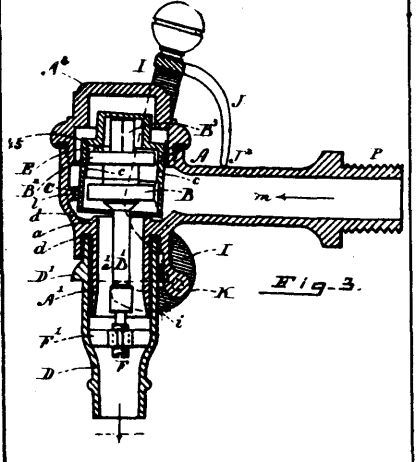
30657 Briggs & Lyon's Oar Lock.



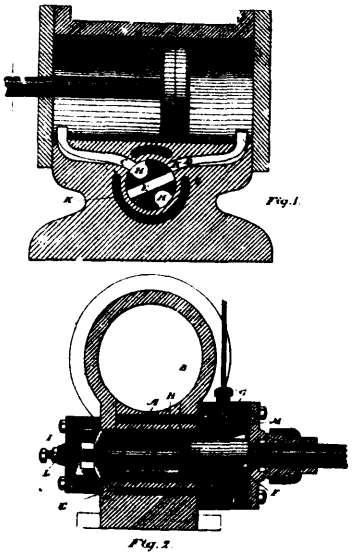
30660 Bouvier's Envelope Machine.



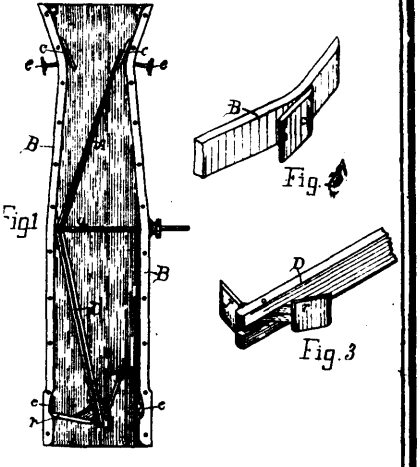
30661 Latulip's Tool Head and Handle.



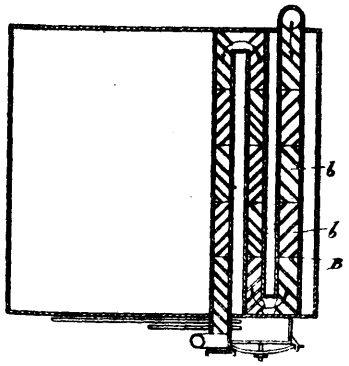
30662 Howes' Faucet.



30663 Tolton's Steam Valve.



30664 Trumble's Water Motor



30665 Sutherland's Gas Apparatus.

Fig. 1

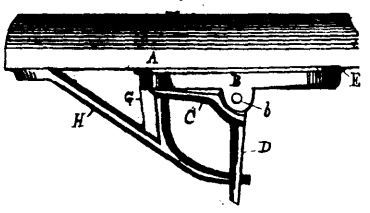
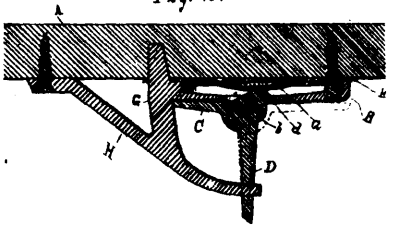
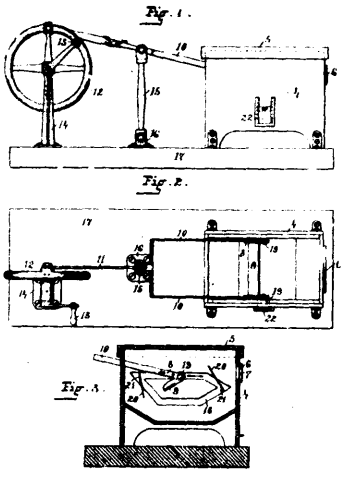


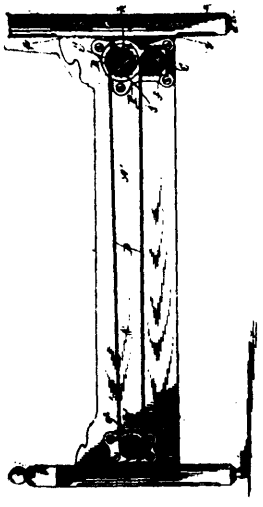
Fig. 2.



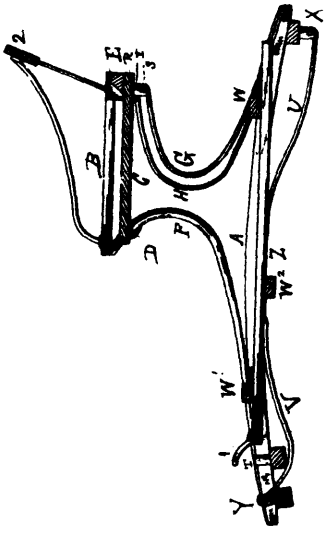
30666 Camp's Holdback.



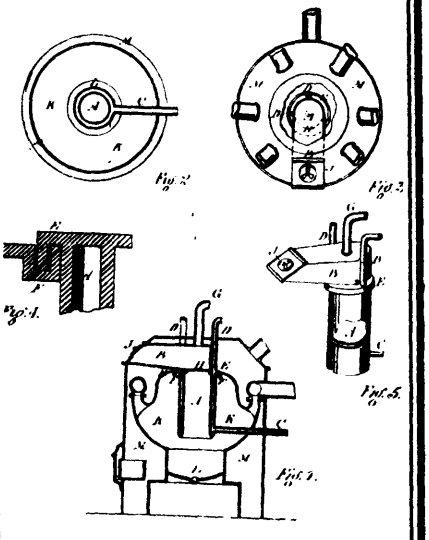
30667 Stowe's Cake or Bread Beater.



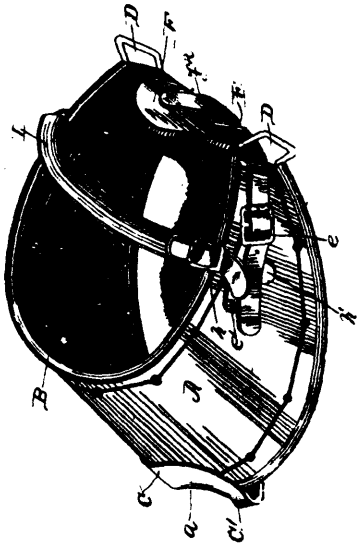
30668 Dickson's Bed Bottom.



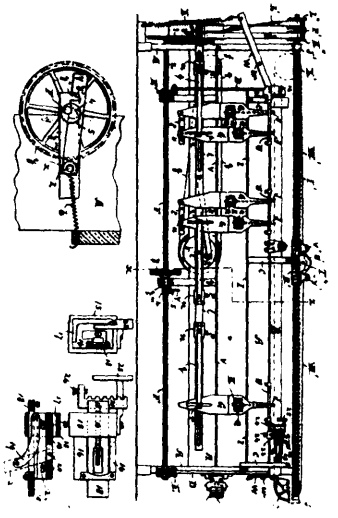
30669 Warren's Spring Seat, etc.



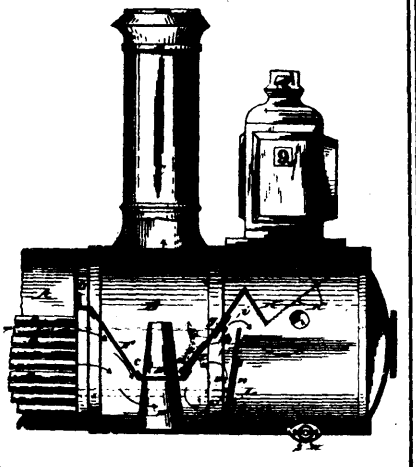
30670 St. Croix's Heating Furnace.



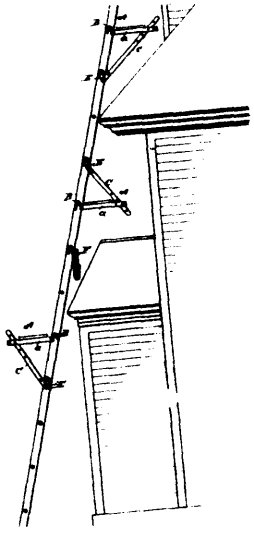
30671 Schild's Horse Boot.



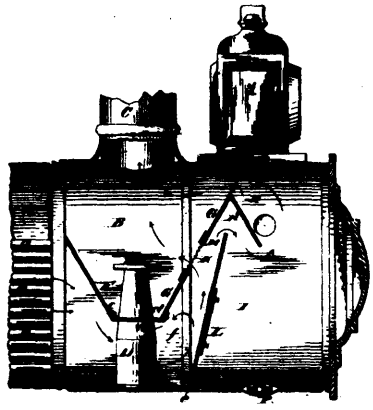
30672 Tibbetts' Wood Working Machine.



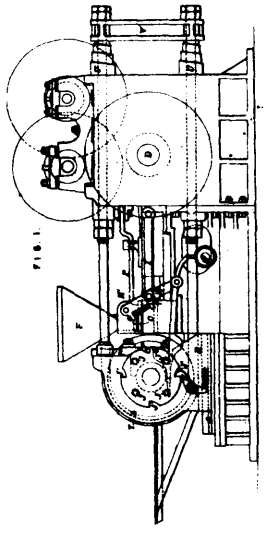
30673 Coleman's Spark Arrester.



30674 Long's Scaffold Bracket.



30675 Coleman's Spark Arrester.



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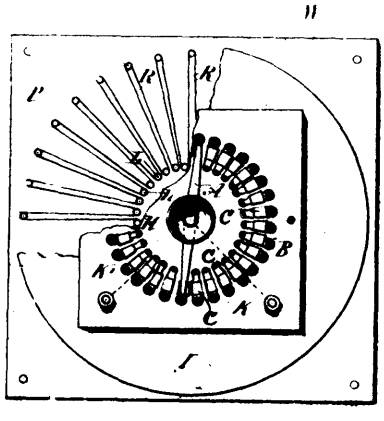

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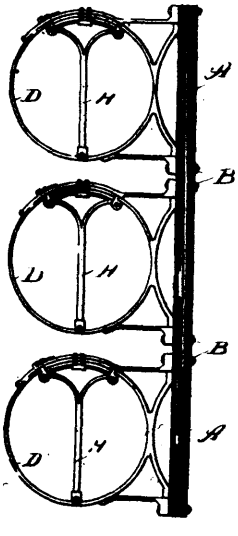

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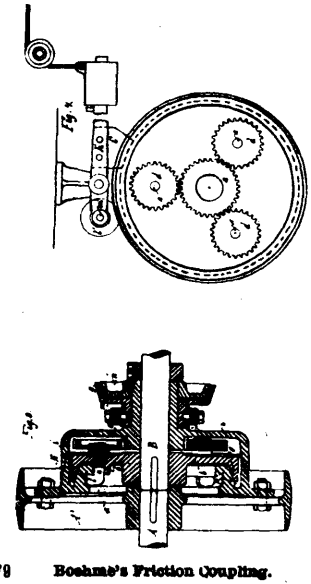

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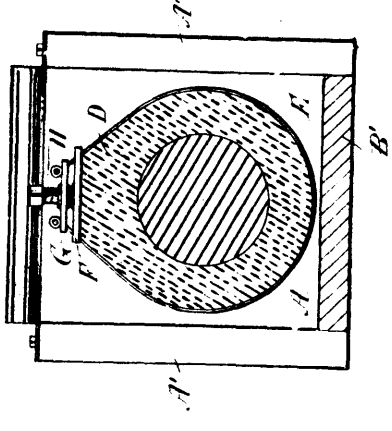

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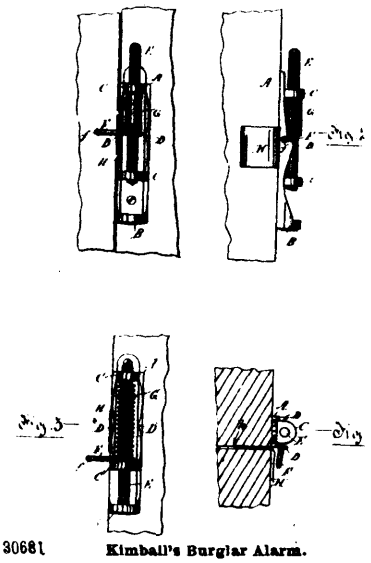

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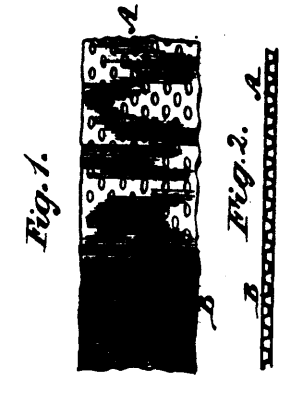

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