

E. and T. Fairbanks & Co., (Assignees of Henry Fairbanks and Harolin Padlock,) St. Johnsbury, Vt., U.S., 12th October 1881: for 15 years.

*Claim.*—1st. The straight reciprocating carriage B and means for holding thereon the article to be impressed, in combination with the small roll *d* and stout roll K. 2nd. The rolls *d* K, carriage B and clamping means *J*, in combination with each other and with the means C D for imparting an equal surface motion, and with spring G and adjusting means F. 3rd. In combination with the roll *d*, carriage B and operating means C D, a series of separately moving punches or dies S adapted to be separately depressed by the roll *d*. 4th. The bearers T, in combination with the separately moving dies S, carriage B, roll *d*, boxes E and springs G. 5th. The hinged die-holder *m m*, in combination with the dies S, and bearers T, and means for depressing the dies separately. 6th. The combination of the hinged die-holders *M m*, separately moving dies S and bearers T, with the carriage B having an offset B', clamping piece J, with the operating means P, and with the roll *b*, spring G and adjusting means E. 7th. The notched surface *b* on the carriage B, in combination with the opposing surface J, and with means for imprinting the several figures.

**No. 13,526. Improvements in Metal Fence Posts.** (*Perfectionnements aux pieux des clôtures métalliques.*)

Jonathan Hugill and Absalom G. Smith, Hamilton, Ont., 12th October 1881: for 5 years.

*Claim.*—1st. In a metal fence post, the cylinder B, in combination with the spiral projecting rib E, when the latter is placed upon the outside of the cylinder. 2nd. The cutting edge *d*, in combination with the cylinder B and projecting rib E. 3rd. The strip *r*, opening *b*, hole S, and shoulders *p p*. 4th. The combination of the cylinder B, projecting rib E, the U-shaped portion cutting edge *d*, strip *r*, opening *b* and hole S.

**No. 13,527. Improvements in Electrical Regulators.** (*Perfectionnements aux régulateurs électriques.*)

John W. Langley, Ann Arbor, Mich., U. S., 12th October, 1881: for 5 years.

*Claim.*—1st. The combination, with the poles of a dynamo magneto-electric machine, of a magnetic metal piece and mechanism sustaining the same in such relation to the poles of the electro-magnet that an excess of current will cause the poles to attract the magnetic metal piece, and tend to establish magnetic communication between the poles through said magnetic metal piece. 2nd. The combination, with the poles of the electro-magnet of a dynamo or magneto-electric machine, of a magnetic metal piece connected at one end with one of the poles, and mechanism for sustaining the other end of the magnetic metal piece at a distance from the other pole, in such relation thereto that an excess of a current will cause the pole to attract and swing the magnetic metal piece and tend to establish magnetic communication between the poles. 3rd. The combination of the poles P of the electro-magnet of a dynamo or magneto-electric machine, with the movable magnetic piece C, or pieces C C', and dia-magnetic springs E E', or their equivalent. 4th. The combination, with the poles of the electro-magnet of a dynamo or magneto-electric machine, of a magnetic metal piece, connected at one end with one of the poles, and a spring sustaining said magnetic metal piece in such relation to the other pole that an excess of current will cause the pole to attract the same and tend to establish magnetic communication between the poles, through the magnetic metal piece.

**No. 13,528. System of Transmission of Movement.** (*Système de transmission du mouvement.*)

Antonio Samper, Paris, France, 12th October, 1881: for 5 years.

*Claim.*—1st. The tension of the ropes by means of the small pulley, the said pulley being provided or not with a weight. 2nd. The arrangement of the rollers, that is to say, the placing of said rollers quite close to the pulleys so as to produce tension. 3rd. The roller of the pulley A applied to each end of the driven rope, so as to maintain the slack of said rope. 4th. The application, as a stretcher for the transmission ropes, of the conductor or guide at D D, which allows of said ropes being slack. 5th. The application of special pulleys for giving to the transmission ropes the required degree of tension. 6th. The application of special pieces to existing pulleys, in order to adapt them to this new system. 7th. The combination of the pulleys which serve to transmit movement, to invert it and to tighten the rope. 8th. The arrangement and application of cones *a*, for stopping the coils and preventing them being unwound. 9th. The application and arrangement of the pieces in the pulleys, in order to stop the slipping and unwinding of the ropes. 10th. The arrangement of the rollers which serve to prevent the ropes from leaving the pulleys and also to give them tension, and transmit movement by means of slack ropes. 11th. The arrangement of the conducting pulleys for transmitting movement in rounding angles D D, or for tightening the ropes by placing them close to the driving or motor pulleys. 12th. The arrangement for changing the speed with which movement is transmitted. 13th. The mode of transmission by means of a rope having free ends. 14th. The application of the different forms of cones according to the different cases in which transmission of movement is to be effected, and the nature of the ropes, cables, cords, etc., employed.

**No. 13,529. Improvements on Horse Powers.** (*Perfectionnements aux manèges.*)

Charles Sandford and Arthur W. Coe, Madoc, Ont., 12th October, 1881: for 5 years.

*Claim.*—The combination of the wheels G G' I' I' J and L with the wheels F and M.

**No. 13,530. Improvements in Hay Rakes.** (*Perfectionnements aux râteliers de foin.*)

William J. Lane, Milbrook, N. Y., U.S., 12th October, 1881: for 5 years.

*Claim.*—1st. In a horse hay rake, the bands *d d* having their free ends drawn together by means of levers D D mounted thereon, when applied in the relation specified to the head A, in combination with the hubs *c c* and mechanism which will, when brought into use, cause the levers D D to tighten the bands *d d* about the hubs *c c*. 2nd. The pulleys *a a* when applied to the head, in combination with the chain F for conveying power from the foot of the operator to the levers D D. 3rd. The discharge lever H so formed as to be connected from one side of its fulcrum with the discharging mechanism for locking the wheels and teeth together, and at the opposite side of said fulcrum formed so as to receive when the teeth are elevated, the trust of the foot lever I for the purpose of wholly or partially releasing the connection between the discharging mechanism and the wheels. 4th. The adjustable lever bracket J in combination with the foot lever I and lever connection *o*, for the purpose of adjusting and limiting the downward movement of the teeth.

**No. 13,531. Improvements on Effecting the Protection of Iron and Steel Surfaces, and in Furnaces Therefor.** (*Perfectionnements dans la manière d'effectuer la protection des surfaces de fer et d'acier, et dans les fourneaux pour cet objet.*)

George Bower and Anthony S. Bower, Saint Neots, Eng., 12th October, 1881: for 5 years.

*Claim.*—1st. The general arrangement and combination of parts constituting a furnace for performing the operations set forth, the furnace being so constructed that combustion is perfected before the products therefrom are admitted to the chamber containing the articles to be coated and that a continuous regeneration takes place. 2nd. The production of a protective coating upon iron and steel surfaces by passing, over and among the articles to be coated, the products obtained by the combustion of solid or liquid hydro-carbons, such products of combustion being rendered oxidizing or deoxidizing at will, according to the quantity of air allowed to mingle with the said gases.

**No. 13,532. Improvements on Stools or Chairs.** (*Perfectionnements aux bancs ou chaises.*)

John M. J. Wernert, Paw Paw, Mich., U. S., 12th October, 1881: for 5 years.

*Claim.*—1st. In a revolving stool or chair, the slotted cylinder E, vertical rod F provided with eccentric lugs, grooved socket G, annular plate H, bent rod I and spring K. 2nd. The slotted cylinder E, vertical rod F provided with eccentric lugs *c d* and socket G provided with annular grooves *b*. 3rd. In combination with the legs A, standard B and seat C of the stool or chair, the slotted cylinder E, vertical rod F provided with lugs, grooved socket G, angular plate H, rod I and spring K.

**No. 13,533. Improvements on Stove Pipe Cleaners.** (*Perfectionnements aux appareils pour nettoyer les tuyaux de poêles.*)

Edgar H. Chadwick, Louisville, Ky., U. S., 12th October, 1881: for 5 years.

*Claim.*—The combination in a stove pipe, of a horizontal section of pipe provided outside of the chimney with an aperture *a* provided for the insertion and withdrawal of a brush or scraper, and with means for closing said aperture, an elbow provided with a hole *c* and an inclosed wire or its equivalent extending through said hole *c* for drawing said brush or scraper through said horizontal section of pipe, to clean the latter.

**No. 13,534. Improvements on Car-Couplings.** (*Perfectionnements aux accouplages des chars.*)

Edward W. Grant, Ipsilanti, Mich., U.S., 13th October, 1881: for 15 years.

*Claim.*—1st. The combination, in a car-coupler, of a draw-head with a pivoted latch bifurcated at its front end and pivoted to the link pin and provided, at its rear end, with a projection for engagement with a catch. 2nd. The combination, in a car coupler, of a drawhead with a pivoted weighted catch, a pivotal latch for engagement therewith, and the link pin pivoted to the latch. 3rd. The combination of the pivoted latch B having the link pin pivoted at its front end, and its rear end provided with a projection, the weighted catch C with its head adapted to rest under the projection on the latch, when the pin is down. 4th. The combination of draw-head A, pivoted latch B, pivoted and weighted catch C, pin *b* and link.

**No. 13,535. Low Pressure Steam Heating Apparatus.** (*Calorifère à vapeur à basse pression.*)

Enoch B. Butterworth, Ottawa, Ont., 12th October, 1881: for 5 years.

*Claim.*—1st. In combination with the case or ash chamber *a*, the steam drum and the vertical tubes B B', and the return couplings provided with downwardly extending necks secured to the flange *a*. 2nd. In combination with the exterior body having the door in its side, the steam drum, the pairs of short connected tubes above the door, the series of short connected tubes below the door, the transverse connection between said short tubes, and the vertical tubes extending from said connection to the steam drum. 3rd. In combination with the exterior body or shell D and the pipes B B' sustaining the steam drum, the base or ash pit A provided with internal flanges or ears *a* adapted and arranged to sustain both the outside body and the vertical tubes. 4th. In a steam boiler, the combination of the steam drum and the series of depending water tubes B B' coupled together at their ends in pairs by return bends, the upper ends of the tubes B' extending above the tubes B. 5th. In a steam boiler, the combination of a base frame, a grate therein, an inclosing body or shell mounted, upon the base, a steam drum in the upper part of said body, and water tubes coupled together in pairs at their lower ends, arranged in a circular series around the grate and extending from the steam drum to a support upon