

end of such staff to engage a car, a gripper *f* supported upon a shaft, which is borne by the other end of said staff, said gripper being composed of dish halves *e*, provided with hubs to receive the shaft, and with fingers *e*, having biting edges *e* thereon, which halves are independently and detachably fixed to the shaft, and gearing for imparting rotary motion to said gripper, substantially as and for the purpose described. 2nd. A rotary gripper, composed of dish halves *e*, provided with hubs *g*, and having the fingers *e* with knives *e* fastened thereon, combined with a hollow staff having openings in its sides forming bearings for said hubs, a shaft to which said halves are independently and detachably fixed, and operating gearing for imparting rotary motion to said gripper, substantially as described.

### No. 31,005. Dust Guard for Car Axle Boxes.

(*Garde-poussière pour les boîtes à graisse des chars.*)

Peter Sweeney, New York, N.Y., U.S., 29th March, 1889; 5 years.

*Claim.*—1st. A car-axle dust-guard, having the upper and lower section hung in the same stirrup, the latter being pulled upward by a spring, and thus causing the lower section only to hug the axle-journal, as described and for the purpose specified. 2nd. The stirrup made in two parts, each having a bottom stud *b*, a rabbet *b* and a rounded top with head *b*, whereby it may be used as described. 3rd. The combination, with the two-part stirrup, having heads *b*, *b*, and the spiral springs *C*, *C* of the two-part cap *D*, *D*, having the shelf *b*, whereby the springs may be readily inserted and protected, as specified.

### No. 31,006. Portable Cooking Apparatus.

(*Appareil de cuisine portatif.*)

Alfred S. Tomkins, Holmwood Caterham, Eng., 29th March, 1889; 5 years.

*Claim.*—1st. A portable cooking apparatus, consisting of a fire-place *F*, flues *C* and *C* leading thence to the chimney *C*, ovens *F* and boilers *K*, in combination with the water casing *R*, substantially as described. 2nd. In a boiler used for portable cooking apparatus, forming the upper edge of the boiler with a corrugation and trough space, and the cover with two downwardly-projecting lips, substantially as and for the purpose set forth.

### No. 31,007. Machine to be known as a Knife, Fork and Spoon Scourer. (*Machine à nettoyer la coutellerie.*)

William Robertson, Mount Forrest, Ont., 30th March, 1889; 5 years.

*Claim.*—1st. Consisting of baseward *A*, thumb screw *C*, springs *D*, shafts *F*, cog wheels *H*, crank *K* and rollers *T*, all arranged and combined substantially as and for the purpose hereinbefore set forth. 2nd. In the scouring machine, of the kind described, rollers *I* covered with woollen cloth or similar material, and having at one end concave and convex parts, the convex parts being raised with rubber or similar material, substantially as and for the purpose hereinbefore described.

### No. 31,008. Process of Producing Relief Plates. (*Procédé de production des plaques en relief.*)

James G. Armstrong, Montréal, Qué., 30th March, 1889; 5 years.

*Claim.*—1st. The above described process of making relief plates, consisting in printing upon a sensitized zinc plate from a negative obtained in a positive camera from a ruled plate, and a transparency combined and afterwards treating said zinc plate with acids, substantially as described. 2nd. A relief plate, made by printing upon it by photography from a negative obtained in a camera from a combination of a photographic transparency, and a ruled plate, and afterwards treating said zinc plate with acids, substantially as herein described.

### No. 31,009. Scoop Shovel. (*Pelle-écope.*)

John B. McMurchy, Gananoque, Ont., 30th March, 1889; 5 years.

*Claim.*—As an article of manufacture, a scoop shovel having the upper part of the blade each side of the socket where the handle enters, corrugated, as and for the purposes herein set forth.

### No. 31,010. Spring Bed. (*Sommier élastique.*)

Joseph Bélanger, Hull, Qué., 30th March, 1889; 5 years.

*Claim.*—1st. A spring bed, made in two sections, and the two sections connected by hooks and eyes, substantially as set forth. 2nd. The combination, with the slats *A*, the cross-pieces *B*, of the hooks *D*, wires *b*, eyes *E*, wires *c* and staples *d*, substantially as set forth.

### No. 31,011. Apparatus for Marking Folded Piece Goods with Trade Marks and other Marks, and for Printing and Colouring such Marks and Devices at a single Operation, part of said Apparatus being Applicable to the Rollers used in ordinary Calico Printing. (*Appareil pour marquer les pièces de marchandises pliées de marques de commerce et autres et pour imprimer et colorer telles marques et appareils par une seule opération, partie du dit appareil applicable aux rouleaux employés dans l'impression ordinaire de l'indienne.*)

George B. Dewhurst, Manchester, Eng., 30th March, 1889; 5 years.

*Claim.*—1st. The general arrangement and combination of parts, composing an apparatus for marking folded piece goods with trade marks and other marks and devices, and consisting primarily of the travelling apron *A*, printing roller *B* with colour trough and doctor, lower bed roller *C*, travelling apron *F*, auxiliary printing roller *D*, with colour transferring rollers and lower bed roller *E*, all arranged mounted and acting substantially as described and shown. 2nd. In apparatus for marking folded piece goods with trade marks and other marks and devices, a travelling apron or travelling aprons for advancing the goods towards, or carrying them between and from printing, and led rollers or other suitable marking or stamping apparatus, and for delivering the goods from the machine, substantially as described and shown. 3rd. In apparatus for marking folded piece goods with trade marks and other marks, and devices, the printing roller *B*, in combination with the colour trough and doctor, and working in unison with the lower presser collar *C*, substantially as described and shown. 4th. In apparatus of the indicated description, the auxiliary marking roller *D* for carrying interchangeable plates, blocks, stamps, or other means for printing interchangeable marks, numerals, or devices upon folded piece goods, in combination with the colour transferring rollers and the lower presser or led roller, the said roller *D* working in unison with the printing roller *B*, for the purpose and substantially as described and shown. 5th. The sectional printing roller for printing trade marks and other marks, and devices upon piece goods, or for printing on fabrics generally, the said roller being composed of a series of removable and interchangeable rings or segments, strung or placed upon a mandrel and bound in position by means of jamb nuts, substantially as described and shown.

### No. 31,012. Jack Screw. (*Cric à vis.*)

Charles H. Hopkins, Lyndonville, Verm., U. S., 30th March, 1889; 5 years.

*Claim.*—In a jack screw, the combination, with the standard cap and base rest *A*, *B*, *C*, of a cylindrical nut *E* working on a screw *F* therein, the bevel gear *K* rigidly attached thereto, the bevel gears *H* and *L* on the stub shafts *I* and *M* at right angles to said gear *K* and engaging therewith, a ratchet wheel *e* that may be rigidly attached to said stub shafts *I* and *M*, an operating handle *b* that may be loosely mounted on said stub shafts, and a double pawl *g* pivoted between the lugs of said handle and forced into engagement with the ratchet wheel *e* by the action of the bevelled edge on the lower end of the bar *a* in forcing the spring *f* to one side or the other, as and for the purpose set forth.

### No. 31,013. Water Wheel. (*Roue hydraulique.*)

Léandre M. Morin and Olivier N. Morin, St. Pie., Qué., 30th March, 1889; 5 years.

*Claim.*—The combination in a turbine water wheel, of one series of blades or buckets arranged to receive the water horizontally and inclined over and toward the water supply, with a second series of blades attached to their bottom edges and set at right angle with them, substantially as herein shown and described.

### No. 31,014. Boot and Shoe. (*Chaussures.*)

William Howard, Ipswich, Eng., 30th March, 1889; 5 years.

*Claim.*—1st. The hereinbefore described process of making uppers by stretching, first, the lining, secondly, the stiffener, and, thirdly, the upper upon a last, substantially as described. 2nd. The combination of two soles and air-cushion, as set forth. 3rd. The combination of air cushion and foot ball boot, as set forth.

### No. 31,015. Card or Ticket Box.

(*Etui à cartes ou billets.*)

Joseph Stovel and John W. Corley, Toronto, Ont., 30th March, 1889; 5 years.

*Claim.*—1st. A box *A*, designed to contain a given number of tickets or cards, and having slots *a* and *d* made through its ends, a plate *B* having a flange *b* formed on one end of it, a button or projection *C* butting against the bottom of the box, and connected with the plate *B* by a suitable shank passing through the slot *a*, in combination with the top *G*, false top *D* and spring or springs *E*, substantially as and for the purpose specified. 2nd. A box *A*, designed to contain a given number of tickets or cards, and having slots *a* and *d* made through its ends, a plate *B* having a flange *b* formed on one end of it, a button or projection *C* butting against the bottom of the box and connected with the plate *B* by a suitable shank passing through the slot *a*, in combination with the false top *D* provided with a pin *g* to project through the slot *h*, the spring or springs *E* and the top *G*, substantially as and for the purpose specified.

### No. 31,016. Water Wheel. (*Roue hydraulique.*)

Jackson F. Evans, Mansfield, Mass., U.S., 30th March, 1889; 5 years.

*Claim.*—1st. The combination of the shaft *A*, the horizontally revolving water wheel *C* mounted on said shaft, and having a central drum *p* fitting into said drum *f*, as shown, and connected by the pin *q* passing through said drums *f*, *p*, and each wheel having radially arranged buckets, and a circumferential rim which is equal in width to the thickness of the wheel, and a deflector *E* located between said water wheels and having a central aperture, a circumferential rim equal in width to the thickness of said deflector, and deflecting plates arranged radially and set at an angle with the buckets of said water wheels, substantially as specified. 2nd. In combination with a horizontally revolving water wheel and its case, a suction chamber located beneath the same, and concentric therewith, said chamber having an opening above to receive the water from the wheel, and its lower end opening into a basin of larger diameter, so as to form a water-trap therewith, substantially as described. 3rd. The combination of the basin *G*, the suction chamber *F* resting on blocks