

of the wheel *f* mounted on swinging frame *G*, magnets *H* *H*2, brush support *A* having rack *a*, and the intermediate driving mechanism between said rack and wheel *f*. 30th. The combination of support *G*, wheel *f*, gear *F* *d* *c*, horizontal shaft *C*, pinion *b* and rack *a*. 31st. The combination with the field magnet coils, in a dynamo electric machine, of means for automatically varying the number of said coils through which an exciting current flows in accordance with variations in the current supplied by the machine. 32nd. The combination with the field magnet, in a dynamo electric machine, of means for automatically including a greater or a less number of said coils in circuit in accordance with an increase or decrease in the resistance of the working circuit. 33rd. In a dynamo electric machine, the combination with the field magnet coils, of a series of loop connection as described, a circuit closer for connecting and disconnecting or otherwise controlling the passage of current through said coils in succession, and means for automatically shifting said circuit closer in one direction or the other according as the resistance in the main or working circuit increases or diminishes. 34th. The combination with a series of loop connections from the field coils, in a dynamo electric machine, of a circuit closer and breaker, a motor operating the same and automatic reversing devices for causing said circuit closer to move in one direction or the other, so as to vary the number of field coils through which the exciting current shall flow. 35th. The combination with the field magnet coils, in a dynamo electric machine, of a circuit closer and loop connections from the coils, whereby an exciting current may be caused to flow through a greater or less number of said coils, an electric motor for operating said circuit closer and means for automatically reversing said motor, in accordance with a rise or fall of the current generated by the machine. 36th. The combination with the field magnet coils of a circuit closer and connections, whereby a greater or less number of said coils may be included in circuit, a rotary electric motor for operating said circuit closer and devices whereby the direction of the current through said motor may be automatically reversed, in accordance with variations in the working resistance. 37th. The combination with the field magnet coils, of a circuit closer and connections whereby a greater or less number of coils may be included in the circuit, an actuating electric motor for said circuit closer in a bridge wire between two branches, each including a resistance, and a circuit closer for admitting the current to one or the other branch, singly or both together. 38th. The combination with the rotary electric motor, of the contact arm secured to the shaft thereof and means for automatically reversing said motor as the main current strength rises or falls above or below normal. 39th. The combination with the two field magnets, of the two intermediate series of insulated contacts forming the terminals of loops from the magnet coils, and a circuit closer for connecting said insulated contacts in succession as described.

No. 17,409. Combined Grain Scales, Bagger and Register. (*Balance à grain, empocheur et registre combiné.*)

Charles J. Leach and Allen Olds, Hartford, Mich., U. S., August 4th, 1883; 5 years.

Claim.—1st. The herein described apparatus for automatically weighing, bagging and registering grain, consisting of the platform *a* provided with the balance rod or beam blocks *c* and bag holders as described, and connected to the hopper *D* by the uprights *a*, the scale mechanism connecting with the weight *F* and registering devices by means of the rod *G* and cam *H*, all substantially as and for the purpose specified. 2nd. The hopper *D* provided with rod *h*, valve *i*, lug *k*, pawl *l* and ratchets *m* and *o*, arm *E*, carrying weight *F* and cam *H*, in combination with rod *G*, arm *B*, balance rod or beam *B*, blocks *c* and platform *A*, all substantially as and for the purpose specified. 3rd. The hopper *D* provided with rod *h*, valve *i*, arm *E*, carrying the weight *F* and registering mechanism, in combination with the scale and bag holding mechanism, substantially as and for the purpose specified.

No. 17,410. Furnace for Brazing and Welding Flue Tubes. (*Fournaise à souder les tubes.*)

Richard H. Brown, Omaha, Neb., U. S., August 4th, 1883; 15 years.

Claim.—1st. The furnace for brazing and welding consisting of the body *A* having side apertures *g* and top and bottoms *h* *h*, the fuel-reservoir *f*, blast pipe *b* and blast door *c*, constructed and arranged substantially as shown and described. 2nd. The standard *m* standing beside the furnace, the sleeve *t* sliding thereon, the support *k* on an arm projecting from said sleeve and the post *z* removably secured in support *k*, in combination with a furnace provided with a hole in its bottoms to receive said post, and a hole in the top to receive the work, as and for the purpose specified. 3rd. The hollow extension *o*, in combination with the adjustable support *k*, substantially as shown and described.

No. 17,411. Grapple. (*Grappin.*)

John W. Raymond, Lowville, Penn., U. S., August 4th, 1883; 5 years.

Claim.—1st. In a grapple or implement having arms pivoted to each other, the brace *C* attached at each end to one of the arms and extending over the adjacent arm and unting pivot, substantially as shown. 2nd. In combination with the arms *A* and *A*1, the brace *C* provided with a raised central portion *a* and ends *b* *b* bent so as to embrace one of the arms, and pivot *B* extending through each arm and the plate *a* and secured thereto, as described and for the purpose set forth.

No. 17,412. Process for Extracting Precious Metals from their Ores. (*Procédé pour extraire les métaux précieux de leurs minerais.*)

Alfred K. Huntington and Walter E. Kock, London, Eng., August 4th, 1883; 5 years.

Claim.—The described process for extracting precious metal from

ore by calcining the ore and then subjecting the calcined ore to heat and agitation in a deoxygenating atmosphere in the presence of melted metal such as lead, zinc or their equivalents.

No. 17,413. Candles for giving Light. (*Candles à lumière.*)

George H. Kirk, Philadelphia, Pa., U. S., August 4th, 1883; 5 years.

Claim.—As a new article of manufacture, a candle provided at the end with a combustible material which will kindle by friction and ignite the wick of said candle.

No. 17,414. Art of Constructing Sheet Metal Cans. (*Art de construire les boîtes métalliques.*)

Francis A. Walsh, Chicago, Ill., U. S., 4th August, 1883; 5 years.

Claim.—1st. A sheet-metal can body *a* provided at its end or ends with a seamless collar, substantially as specified. 2nd. In a sheet-metal can, the combination of the body *a*, thin or soft fixed cover *b* provided with countersink *c*, the wall of which is parallel to and fits within the body of the can, sheet-metal annular ring *K* having its inner opening *m* smaller than the opening of the countersink wall *l*, and the slip covers *l* *j*, substantially as specified. 3rd. The art of forming a seam for sheet-metal cans which consists in forming a head with a wall *c* and flange *d* and placing said head within a flangeless can-body, turning said flange *d* down against the body of the can and then turning the wall *c* and can body down against the can body, which when thus completed forms the usual double seam, substantially as specified. 4th. A sheet-metal can provided with a head or end consisting of a ring or band *c* provided with flanges *f* and *g* and a disk *h* united to the flange *g* and the flange *f* to the can body as specified. 5th. A sheet-metal can provided with a cover *b* of which the countersink *c* fits within the body of the can *a*, and a ring *K* formed of the parts *l* *m* *d* fitting upon the cover *b* and within the countersink *c*, and whereof the said parts are united, substantially as specified. 6th. The art of forming a seam for joining the ends and body of sheet-metal vessels which consists in placing within the body an end provided with a wall *c*, so that either the wall *c* or can body *a* shall project so as to form a part *C*2 and then turning said part *C*2 down over the other in one or more turns substantially as specified. 7th. A can body *a* and end *b* with wall *c* united by forming a part *C*2, which shall turn over and reach to about the centre of the wall *C* and is then turned from the lower edge of *C*2 with the can body, so as to form an angle with the can body substantially as specified.

No. 17,415. Cant Hook Levers.

(*Léviers de renards.*)

Albert Sanford, Oshkosh, Wis., U. S., 4th August 1883; 5 years.

Claim.—1st. In a hand lever the hinged arm *f*, substantially as specified. 2nd. In a cant hook lever, the combination of the arm *f* with the curved and chisel-ended spike *n*, substantially as shown and described. 3rd. In a cant hook lever, the combination of the arm *f* with the hook *d* and the horns *e*, substantially as shown and for the purpose set forth. 4th. In a lever, the combination of the curved and chisel-ended spike *n* with the socket *b*, as shown and described. 5th. In a lever, the combination of the socket *b* with the horns *e*, substantially as shown and described. 6th. In a lever, the combination of the retaining ribs *o* with the clasp ring *g* or the socket *b* and the arm *b*, substantially as set forth.

No. 17,416. Button Setting Instrument.

(*Instrument à poser les boutons.*)

George H. Alton, Lynn, Mass., U. S., 4th August, 1883; 5 years.

Claim.—1st. A button setting implement composed of two members, one of the said members being provided with a tack holding device and the other with a pivoted anvil piece having at its upper side or face an opening or passage to receive the point of the tack without bending it, and a clinching surface to operate upon the point of the tack and clinch it about a button shank, the said opening or passage and the said clinching surface being at opposite sides of the centre of rotation or pivot of the said anvil piece, and the latter being arranged to rotate in the plane of the face of the jaw supporting it, all substantially as described. 2nd. In a button setting implement, the combination of one member or jaw provided with a tack holding device, of the co-operating member provided with a pivoted anvil piece having a tack-receiving opening *n* and a clinching surface *p* at its upper side and a holding device *o*, whereby the said anvil piece is retained in proper position with relation to the tack held by the other member of the implement, substantially as described. 3rd. In a button setting implement, the combination of one member or jaw provided with a tack holding device, of the co-operating member provided with a pivoted anvil piece having a tack receiving opening *n* and a clinching surface *p* at its upper side, and having a post provided with a thumb nut by which the said anvil piece may be turned, and a locking device to hold the said anvil piece in place, all substantially as shown and described.

No. 17,417. Two Wheeled Vehicle.

(*Voiture à deux roues.*)

Frederick J. H. Axford, Cornwallis, N. S., 4th August, 1883; 5 years.

Claim.—1st. In a two-wheeled vehicle, the body and seats balanced or in equipoise on the spring *X* (or openings) supported on the axle *A* parallel with the axle (or with the wheels) and independently of the shafts *H* by boxes *G*, substantially as described and for the purpose hereinbefore set forth. 2nd. In a two-wheeled vehicle, the body and seat balanced on the spring *X* (or springs) supported on the axle parallel with said axle (or wheels) and independently of the shafts by boxes *G*, and the front of the body supported on an arm *C* (or arms) projecting from the axle *A* and being independent of the shafts, substantially as described and for the purpose set forth. 3rd. In a two-wheeled vehicle having the body supported in the axle independently