pedals, a series of rocking levers mounted on a cross piece, a connecting rod or cord between the same and the shafts, a lever having connection with said rocking lever and frets on said lever, substantially as described. 7th. The combination, with the keys and the rods connected therewith, of the bell-crank lever, a slide having an elongated slot formed therein on one side of the centre thereof, a finger on the slide and opening in the said finger, a connecting link between the bell-crank lever and the slide, a slide below said other slide, a picker on said lower slide having a connection with the upper slide and the strings or wires, substantially as described.

No. 31,477. Metallic Ladder. (*Echélle métallique.*)

Joseph R. Smith and James H. Connor, Ottawa, Ont., 1st June, 1889; 5 years.

Claim.—1st. In a flexible metallic ladder, consisting of cables A, hollow rungs B, provided with holes, as arranged and for the purpose hereinbefore set forth. 2nd. In a flexible metallic ladder, rungs B having nut or cap D, washer and collar C, in combination with pin H, as arranged and for the purpose hereinbefore set forth. 3rd. In a flexible metallic ladder, cables A, rungs B, in combination with cap C, provided with arms E and F, and eye F1 to receive arm G, the whole as arranged and for the purpose hereinbefore set forth.

No. 31,478. Device for Sharpening Razors.

(*Appareil pour aiguiser les rasoirs.*)

Peter J. Caesar, Fergus Falls, and Andrew B. Pedersen, Rothsay Minn., U.S., 1st June, 1889; 5 years.

Claim.—The combination in a razor or knife sharpener, with the handle, of a frame pivotally secured therein, and a shaft provided with a razor or knife-holder mounted in said frame, and adapted to be turned upon its axis af the frame is swung upon its pivot, substantially as described.

No. 31,479. Device for Killing Flies.

(*Appareil pour tuer les mouches.*)

John B. Kibler, Minneapolis, Minn., and Hugh Moore, Newburgh, N.Y., U.S., 1st June, 1889; 5 years.

Claim.—A device for poisoning flies, consisting of a suitable vessel containing the poison, a cover for such vessel provided with apertures, and suitable wicks therein having their ends exposed, substantially as set forth.

No. 31,480. Return-Vent Protector for Plumbers' Traps. (*Valve de protection contre la fuite des gaz des sièges d'aisance.*)

William B. Ryan and Patrick Ryan, Boston, Mass., U. S., 1st June, 1889; 5 years.

Claim.—In a plumber's trap, the combination, with the return-vent pipe, of a buoyant ball placed within a cage beneath the open mouth of the vent-pipe, and adapted to close the same when the outlet pipe becomes obstructed and the water rises within the trap, substantially as set forth. 2nd. In a plumber's trap, the combination, with the vent-pipe D and the screw-cap C through which it passes, of the cage G depending from the under side of the cap C, and the buoyant ball *b* inclosed within said cage, and supported thereby beneath the open mouth of the vent-pipe, substantially in the manner and for the purpose described. 3rd. The combination, with a plumber's trap, provided with a casing or receptacle B connected therewith, of the screw-cap C fitting within the top of the casing B, and having the cage G secured to and depending from its under side, the vent-pipe D passing through the cap C, and the ball *b* inclosed within the cage G and supported thereby beneath the open mouth of the vent pipe, substantially as and for the purpose set forth.

No. 31,481. Sewing Machine Pedal.

(*Pédale de machine à coudre.*)

Alfred A. Laviolette (assignee of Odile Feher), St. Jérome, Qué., 1st June, 1889; 5 years.

Claim—The pedals D, D, G, G, joined to the connecting rods E, E by means of the pins F, F, in combination with the double-cranked shaft H, the cross-picce C and ordinary fly wheel J, all as above described and for the purposes set forth.

No. 31,482. Machine for Assorting Broom Corn. (*Machine à assortir la houque à balai.*)

The Hand Stitch Broom Sewing Machine Company, Pittsburgh, Penn. (assignee of Charles E. Lipe, Syracuse, N.Y.), U.S., 1st June, 1889; 5 years.

Claim.—1st. The improved broom corn assorting machine consisting of the table A formed with the successively enlarged openings O, O, two shafts *b*, *b* arranged respectively at opposite ends of the table, a series of pulleys on each of said shafts, and the conveying belts C, C, C, all carried on the pulleys for the aforesaid two shafts, and unsupported between their carrying pulleys to allow the belts to vibrate vertically, substantially as and for the purpose set forth. 2nd. In combination with the assorting table A formed with the successively enlarged opening O, O, conveyors C, C, over said table, chutes D, D under the said openings, and bins B, B beneath the respective chutes, the gates *a*, *a* interposed between the chutes and bins and inclined in opposite direction from the delivery sides of the chutes, substantially as described and shown. 3rd. In combination with the assorting table A formed with the successively enlarged openings O, O, conveyors C, C over said table, chutes D, D each composed of two plates *d*, *d1* inclined toward each other, and having the bottom edge of the plate *d1* extending beneath that of the plate *d*, and bins B, B beneath the said chutes, the gates *a*, *a* hinged at one edge under the plates *d*, *d*, and their free edges adapted to swing toward the bottom edges of the plates *d*, *d1*, the rod *e* connected to the gates and the lever *l* connected to the said rod, substantially as described and shown.

No. 31,483. Compound for Coating Coffee.

(*Composition pour lustrer le café.*)

John T. Barnes (assignee of Frederick W. Moore), Philadelphia, Penn., U.S., 1st June, 1889; 5 years.

Claim.—1st. A compound for coating or glazing coffee, composed of milk, glue, glycerine, and lard, substantially as herein set forth. 2nd. A compound for coating or glazing coffee, consisting of milk, glue, glycerine and lard, with the addition of one or more other ingredients, substantially as set forth.

No. 31,484. Holdback for Vehicles.

(*Ragot de limonière.*)

George T. Wilson (co-inventor with John D. Hough), Lowville, N.Y., U.S., 1st June, 1889; 5 years.

Claim.—The combination, with the chambered body formed with hollow standard, and the spring secured at one end within said body, of the hook having a vertical position in said hollow standard, and a heel pivoted within said body, and formed with the flat sides *l* and *m* bearing on said spring, substantially as shown and described and for the purposes specified.

No. 31,485. Armature for Dynamos.

(*Armature de dynamo.*)

The Thomson Houston International Electric Company, Boston (assignee of Elihu Thomson, Lynn), Mass., U.S., 1st June, 1889; 5 years.

Claim.—1st. In a ring-armature for dynamo-electric machines or motors, a laminated core having a notch or gap at one side for the insertion of the coils, closed magnetically by a laminated plug or bundle fitted tightly into the notch or gap, to complete or restore the magnetic circuit after application of the coils, in combination with suitable fastening devices for holding said plug against displacement by revolution of the armature. 2nd. In a ring-armature, a laminated ring-core having a notch or gap at one side, filled by a laminated plug fitted tightly therein, with the ends of its laminae abutting against and closing the magnetic circuits for the laminae of the body of the core in combination with coils applied over said plug and binding-rings of wire for holding the coils and plug in place. 3rd. In a ring-armature a laminated ring-core having a gap or notch at one side closed by a tightly fitting plug or bundle of plates abutting against the ends of the plates of the body of the core so as to close the magnetic circuits of the latter, and form practically a uniform continuous laminated ring-armature, as and for the purposes described.

No. 31,486. Railway Rail Joint Fastener.

(*Arrête-écrou de joint de rail de chemin de fer.*)

Nelson Rowen and Robert Savage, Rockvale, Col., U.S., 1st June, 1889; 5 years.

Claim.—In a bolt and nut lock, the use of a cam lever for tightening the bolt, and adapted to have its end bent, whereby it is held from turning back, substantially as hereinbefore specified.

No. 31,487. Playing Card. (*Carte à jouer.*)

Robert F. Foster, Baltimore, Md., and Alexander J. Leith, New York, N.Y., U.S., 4th June, 1889; 5 years.

Claim.—1st. A pack of cards in which each card used in the game is provided with an indicator designating the order in which the cards for each player should be arranged, substantially as described. 2nd. A pack of cards in which each card used in the game is provided with an indicator designating the order of playing in a pre-arranged game, substantially as described. 3rd. A pack of cards in which each card used in the game is provided with two indicators, one distinguishing the card from those of other players, and the other designating the order in which the card should be played in a pre-arranged game, substantially as set forth. 4th. A pack of cards in which each card used in the game is provided with two series of indicators designating the cards of different players and the order of playing, in a series of pre-arranged games, substantially as set forth. 5th. A pack of cards in which each card used in the game is provided with an indicator designating the cards of the different players and the order of playing in pre-arranged games and with a third designating the order of the games, substantially as set forth.

No. 31,488. Tubular Lantern.

(*Lanterne tubulaire.*)

James Lind, Liverpool, Eng., 4th June, 1889; 5 years.

Claim.—1st. In a tubular lantern, forming the bottom of the globe with a flange fitting or its equivalent in order to hinge the same for the purpose of lighting or trimming the lantern, substantially as described. 2nd. In a tubular lantern, securing the globe to the globe rest by means of set screws, or set screw and clip operating in the flange moulded in the glass globe with corresponding provision in the globe rest, as set forth and as shown. 3rd. In a tubular lantern, the use of a band of spring metal or wire for the purpose of clasping and hinging back the glass globe, as set forth. 4th. In a tubular lantern, the combination of the spring globe holders C, C operating in the flange or groove A, the globe guards D, F, the hinge J and the spring X, substantially as described. 5th. In a tubular lantern, the attaching of a suitable hinge to the upper half or dome of the burner, as set forth. 7th. In a tubular lantern, the combina-