

nation with the above, the cover J and roller K, substantially as and for the purpose set forth. 7th. The combination of the pulley R, having an oblique groove R₁ therein, shaft A₃, lever S, anti-friction collar T, bearings S₄, frame C, collar S₁, stops S₂, shaft A₂, sand papering drum N formed of the disks n₁, bars n₅ having recesses n₃ therein, screw bolt n₂ and sand paper n₁, casing P, tube P₁, adjustable bearings B₂, bolts and nuts d, slots d₁, adjustable bearings B₁, formed with fins or tenons b₃, guides B formed with grooves b₄, shaft A₁, frictional feeding drum I, brackets L, screws C₁, collars C₂, operating hand wheel C₃, chain wheels G₁, G₂, G₃, G₄, chain belts G and G₅, pivotal arm F, weight E and tightener chain wheel G₆, substantially as and for the purpose set forth. 8th. In combination with the above, the pulley D, toothed pinions E₁, E₂ and toothed wheels F₁, F₂, substantially as and for the purpose set forth.

No. 31,707. Coffee Mill. (*Moulin à café.*)

John M. Waddel, Greenfield, Ohio, U.S., 2nd July, 1889; 5 years.

Claim.—In a hand coffee mill, the combination, with the mill-bow A and its grinding shaft 4 and hopper cover B, of the handle 9, formed and arranged substantially as shown and described for the purposes set forth.

No. 31,708. Saw Swaging Machine.

(*Machine à étamper les scies.*)

James B. Rhodes, Grand Rapids, Mich., U.S., 2nd July, 1889; 5 years.

Claim.—1st. In a saw swaging machine, the combination, with the bed plate A and cap A₁, each provided with a longitudinal shoulder P, of the anvil supporting bar K, having the inclined groove M, the anvil K₁ and the bolts B, substantially as and for the purpose hereinbefore set forth. 2nd. In a saw swaging machine, the combination, with the anvil K₁ and bar K, of the pivoted die F provided with the adjusting screw I, having the spring H, shaft C, cam D and block E, substantially as and for the purpose hereinbefore set forth. 3rd. In a saw swaging machine, the combination, with the die F and the bar K, of the lifting spring L and adjusting spring X, substantially as and for the purpose set forth. 4th. In a saw swaging machine, the combination, with the plates A, cap A₁, spring L, anvil K₁ and bar K, having groove M, of the guide Q, clamping jaws O, O₁ and spring S, substantially as and for the purpose hereinbefore set forth.

No. 31,709. Corner Iron and Tightening Device for Mattresses. (*Cornière et serre-joint de sommier.*)

Charles H. Triphagen, Portland, Me., U.S., 2nd July, 1889; 5 years.

Claim.—1st. The combination, with the side and cross bars of a mattress frame, of brackets C provided with means for adjusting the strain upon the fabric at one or both ends thereof, substantially as described. 2nd. The combination, with the side and cross bars of a mattress frame, of brackets C adapted to adjustably support one cross bar, and the bracket F adapted to fixedly support the other cross-bar, substantially as described.

No. 31,710. Elastic Folding Display Envelope. (*Enveloppe-montre élastique.*)

Henry P. Eysenbach, Delphos, Ohio, U.S., 4th July, 1889; 5 years.

Claim.—1st. An envelope, provided with the usual flap and creased from side to side, and combined with a string or strip secured at the flap end of the envelope, and a retaining device for the string or strip upon the body of the envelope, whereby, when said envelope is folded of the crease it can be retained in that bent shape, substantially as described. 2nd. The envelope A, creased at one end and provided with a cord for opening the end, and extending forward and attached to the body of the envelope so that the envelope may be opened out at any angle for displaying, the whole arranged as and for the purpose substantially as herein set forth and described.

No. 31,711. Mocassin Boot Fastening.

(*Ligature de mocassin.*)

Olivier Durocher, Ottawa, Ont., 4th July, 1889; 5 years.

Claim.—In a mocassin boot, the laces F secured to loops C in the upper, brought through the holes G in the front part D, and thence crossed behind the leg, brought through holes in the edges of the front part, and thence rearward and tied, substantially as herein set forth.

No. 31,712. Bustle. (*Tournure.*)

Christy Campbell, Ottawa, Ont., 4th July, 1889; 5 years.

Claim.—1st. A bustle or dress extender constructed substantially as herein shown and described, and consisting of a body or form made up of elastic loops, as a base, having a cross-piece to hold them together at their ends a suitable distance apart, and stays to exert with them an outward and upward buoyancy to the rear, and above the waist line of the wearer, and a waist-band, as set forth. 2nd. In a bustle or dress extender, the combination of the loops A, B, C, D and E, F, having the cross-piece G, H, whereby with the stays I, J, K, they are held in position and made more elastic with the said stays, and a waist-band, as set forth. 3rd. In a bustle or dress extender, the combination, with the stays I, J, K, of the loops A, B, C, D and E, F, substantially as hereinbefore shown and described and as and for the purposes set forth.

No. 31,713. Clock. (*Horloge.*)

Albert L. Parcellle, Boston, Mass., U.S., 6th July, 1889; 15 years.

Claim.—1st. The combination, substantially as set forth, of a driven train, a pendulum formed of a bar or strip of resilient material clamped at its upper end, and a scapement interposed between the pendulum and the clock train. 2nd. A pendulum, substantially such as herein described, consisting of a bar or strip of resilient material, clamped at one end in its support. 3rd. A pendulum, substantially such as herein described, formed of a flat elongated strip of resilient material, adapted to be clamped at one end in its support. 4th. A pendulum, substantially such as herein illustrated, consisting of a bar or strip of resilient material, of uniform, or substantially uniform, cross section, held at one end in its support. 5th. A pendulum, substantially such as herein described, consisting of a bar or strip of resilient material clamped in its support at one end, and having a suitable bob. 6th. The combination, substantially as set forth, of a driven train, a pendulum formed of a bar or strip of resilient material capable of bending throughout its entire length as it vibrates, and a scapement interposed between the pendulum and train.

No. 31,714. Electric Clock. (*Horloge électrique.*)

Albert L. Parcellle, Boston, Mass., U.S., 6th July, 1889; 15 years.

Claim.—1st. The combination, substantially as set forth, of a bar of resilient material forming an elastic vibrating pendulum capable of bending from end to end, a clock-train driven thereby, an armature on the pendulum and a magnetic pole or poles for driving the pendulum having their faces located outside of the line or path of vibration. 2nd. The combination, substantially as set forth, of a pendulum formed of a thin bar of yielding elastic metal rigidly clamped at one end and capable of bending from end to end as it vibrates, a clock-train driven by said pendulum, an armature on the pendulum, an electro magnet or magnets having their poles located outside of the path of vibration and switch devices. 3rd. The combination of the elastic or resilient arm clamped at one end constituting a spring-pendulum capable of bending from end to end, a clock-train driven thereby, an armature on the end of the pendulum, an adjustable bob on the pendulum, whereby its rate of vibration may be modified, an electric circuit, motor-magnets and switch devices. 4th. The combination of the electrically-driven vibrator, the electric circuit and switch devices, a clock-train actuated by the vibrator, and an actuating mechanism interposed between the clock-train and the vibrator, whereby the train is driven a definite distance at each vibration of the vibrator, irrespective of the amplitude of vibration. 5th. The combination of an electrically-driven spring-bar pendulum clamped at one end, and consisting of a bar of elastic material capable of bending in its entire length, and a clock-train actuated thereby, substantially as and for the purpose set forth. 6th. The combination of the electrically-driven spring-bar pendulum consisting of a flat resilient bar of uniform thickness and resilience throughout its length, and the clock-train actuated thereby, substantially as and for the purpose set forth. 7th. The combination of the electrically-driven spring-bar pendulum consisting of a rod or bar of elastic material clamped at its upper end, and a clock-train actuated thereby, substantially as set forth. 8th. The combination in an electric clock, of an electrically-driven pendulum, the driving magnet which operates said pendulum, its battery and circuit, the moving switch actuated by the driven pendulum, and the electrical contacts thereon, and electrical connection, whereby the driving magnet is intermittently energized to vibrate the pendulum without breaking the battery circuit. 9th. The combination of the electrically-driven pendulum, the driving magnet, its battery and circuit, switch devices actuated by the pendulum in its vibration, a brush, and contacts on the switch, and a branch or short-circuit through which the battery is short-circuited when the pendulum is at and near the limit of its swing, substantially as set forth. 10th. The combination of the electrically-driven pendulum, the driving magnet, its battery, and circuit switch devices actuated by the pendulum, three switch contacts, the middle one being connected through the magnet with one pole of the battery, and the other two connected with the same pole of the battery outside of the magnet, and the switch brush connected with the opposite pole of the battery. 11th. The combination of the electrically-driven pendulum, switch devices intermittently operated by the pendulum, the driving magnet, and its battery and circuit, and a weighted or gravity brush which bears on the switch. 12th. The combination of the electrically-driven pendulum, electric switch devices actuated thereby, electric contacts on the under or bottom face of the switch, and a brush which bears on the contacts. 13th. The combination of the electrically-driven pendulum, the pendulum pivoted sector-switch, the contact or contacts on its curved bottom face, and a brush bearing thereon. 14th. The combination, with the notched driving or anchor lever D, of the endwise adjustable arm or rod c₃. 15th. The combination of the notch driving or anchor lever D, the rock-shaft actuated by the pendulum, the arm or lever c₃, and the set-screw or similar device for clamping the arm b₁ in or on the rock-shaft. 16th. The combination of the notched driving or anchor lever D, the rock-shaft and the arm or intermediate lever carried by the rock-shaft.

No. 31,715. Flexible Hose or Tubing.

(*Boyaux ou tuyaux élastiques.*)

James E. Emerson and Thomas Midgley, Beaver Falls, Penn., U.S., 7th July, 1889; 5 years.

Claim.—1st. Flexible hose composed of a tubular metallic body formed of interwoven sections of coiled wire, and covering of rubber or its equivalent, substantially as described. 2nd. Flexible hose composed of a tubular metallic body formed of interwoven sections of coiled wire, embedded in and covered with rubber or other flexible plastic material, substantially as described. 3rd. Flexible hose composed of a continuous tubular metallic body formed of interwoven