

having an opening through which the balls may be shot, as and for the purpose described. 10th. An attachment for billiard and pool tables, comprising a fixed support and a target swivelled to the support and suspended thereby above and out of contact with the table, so as to be capable of turning freely on its pivot, said target having an opening through which the balls may be shot, as and for the purpose described. 11th. An attachment for billiard and pool tables, comprising a suitable fixed support and an arched target swivelled on the support and having a yielding cushion fixed thereon to thereby prevent injury to the missile when the latter strikes the target, as and for the purpose described. 12th. The combination of the support, having the fixed depending rods, and two or more arms pivotally connected to the rods and each carrying a swivelled target, as and for the purpose described. 13th. The combination of a fixed support depending from the ceiling, and having the rods, two or more arms connected to the rods and carrying swivelled targets, which are capable of turning freely on their pivots, and devices on the rods for holding the arms in an elevated or depressed position, substantially as described for the purpose set forth. 14th. The combination of a bracket fixed to the ceiling, the fixed rods depending from the bracket, the horizontal bar fixed to the rods and having a guide slot or opening, a vertically-adjustable arm H connected to the depending rods and fitted in the guide slot, and a swivelled target carried by the arm at its lower end, substantially as described.

No. 27,177. Tile Ditcher.

(Machine à canneler la tuile.)

Herman I. Potter, Leonardsburgh, Ohio, U. S., 18th July, 1887; 5 years.

Claim.—1st. In a tile ditcher, the combination, with the frame A carrying the channeled wheel D, the plough P, Q, and the chain-wheels E, G, H, K, S, O, of the endless chain N formed of plates *pi*, provided with extensions at one side bent over upon the body of said plates and upon themselves, and embracing the links *z*, substantially as shown and described for the purpose herein set forth. 2nd. In a tile-ditcher, the combination, with the frame A, the wheel D having channeled rim, and the plough P, Q, of the rods V, X, the cranks T and the levers W, *a*, substantially as herein shown and described, whereby the pitch of the said plough can be readily regulated, as set forth. 3rd. In a tile ditcher, the combination, with the frame A, the wheel D having channeled rim and the plough P, Q, of the bar *d* having rack-teeth *e*, the pinion-wheels *f* engaging the said teeth and the foot cranks *g*, substantially as herein shown and described, whereby the said plough can be readily raised and lowered, as set forth. 4th. In a tile ditcher, the combination, with the curved and flanged bar *l*, the curved bars *j*, having rollers *k* and the frame A carrying the channeled wheel D and the plough P, Q, of the wheels and axle *n*, *M*, the braces *o* and the tongue *p, q*, substantially as herein shown and described, whereby the draft can be readily applied to the machine, as set forth. 5th. In a tile-ditcher, the combination, with the frame A carrying the channeled wheel D, and the plough P, Q, of the curved bars *j* provided with rollers *k*, the curved and flanged bar *l* interposed between the said bars *j*, and provided with rack teeth *r* upon its concave side; the pinion wheel *s* engaging with the said rack-teeth, the bevelled gear wheels *t, u* and the shaft *v* and crank *z*, substantially as herein shown and described, whereby the frame and its attachments can be readily lowered and raised, as set forth.

No. 27,178. Stamp Pocket for Purses, Card Cases, Pocket Books, etc. (Etui à timbres-poste pour bourses, étui à cartes, porte-feuilles, etc.)

William J. Downes, London, Eng., 18th July, 1887; 5 years.

Claim.—An improvement in stamp pockets for card cases, pocket-books, purses and other like articles, by forming a suitable opening or aperture in the front of each stamp pocket, so as to enable a person to at once select and withdraw the required stamp or coin therefrom, in the manner above specified.

No. 27,179. Exercising Device for Musicians. (Appareil d'exercice pour les Musiciens.)

Almon K. Virgil, New York, N.Y., U.S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with a series of keys, of a series of sound-producing devices adapted to produce a short, quick sound, not a musical tone, arranged in position to be operated by the depression of the keys, substantially as described, whereby each excursion of each key produces two distinct sounds occurring at the same points in the travel of the respective keys, and one sound occurring in the travel of the key where in a musical instrument the musical tone would commence, and the other sound where the musical sound would cease. 2nd. The combination, with a series of keys, of a series of springs G, each of which springs has the motion of its free end limited by a flexible suspender *g*, substantially as described. 3rd. The combination, with a series of keys, of a series of speaking-springs arranged in position to be operated on the depression of the keys, and a series of other springs G having the extent of motion of their free ends limited by flexible suspenders, substantially as described. 4th. The combination, with a series of keys, each of which possesses a counterbalancing extension *At*, of a series of springs G in contact with said extensions *At*, and arranged upon a bar extending transversely through the instrument, said bar being connected by means of its extension H with the lever I, so formed as to be held stationary at different points, whereby the spring-sustaining bar may be rocked and held in any desired position. 5th. The combination, with a series of keys having counterbalance extensions *At*, of a series of speaking springs arranged above such counterbalance extensions, the free ends of said speaking-springs resting on said counterbalance extensions, and tending by their elasticity to press the said keys down upon their respective fulcrums as the keys are depressed, whereby the touch afforded by said keys is assimilated to that of a piano.

No. 27,180. Apparatus for Testing Electric Circuits. (Appareil pour essayer les circuits électriques.)

Alden D. Wheeler, Hyde Park, Mass., U.S., 18th July, 1887; 5 years.

Claim.—1st. In a circuit-testing apparatus, a rotary disk provided with a record dial and circuit-closers, in combination with the insulated terminals of a series of circuits successively wiped by said closers, the electromagnets common to each circuit, and the marker operated intermittently at each successive test, one of said circuit-closers co-operating with all the terminals *a1, a2*, etc. of one set, and the other circuit-closer co-operating with all the terminals *b1, b2*, etc. of the other set, substantially as herein described. 2nd. In combination with a fixed plate D, containing the individually-insulated terminals *a1, a2, a3, b1, b2, b3*, terminal ring *e* and circuit wires connected therewith, the circuit-closers *a, b, c* attached to and carried by the disk A, the two closers *b, c* being electrically united but insulated from the said disk, as herein set forth. 3rd. The combination, with the metallic plate D provided with the separately insulated terminals *a1, a2, a3, b1, b2, b3*, and ring *e*, of the rotary disk carrying the circuit-closers *a, b, c*, the peripheral stud *g*, catch-lever *h* and operating lever *E*, substantially for purposes stated. 4th. The disk A, its operating clock mechanism B, rotary circuit-closers *a, b, c*, stud *g* and catch-lever *h*, in combination with a fixed insulating plate D, containing the terminals of the several circuits, and the marker F and electromagnet G, operated successively by each and every circuit, substantially as described.

No. 27,181. Dental Apparatus.

(Appareil dentaire.)

Horace W. Parsons, Wamego, Ks., U.S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with an air pump, of a saliva-receptacle and an air-receiver, connected respectively with the suction portion of the pump and the air-discharge outlet thereof, the said receptacle and receiver being provided with tubes adapted to lead to the mouth of the patient, substantially as herein shown and described. 2nd. The combination, with a dental engine and an air-pump operated therefrom, of a saliva-receptacle connected with the pump, and provided with a tube adapted to lead to the mouth of the patient, and an air-receiver also connected to the pump and provided with a pipe adapted to lead to the mouth of the patient, substantially as herein shown and described. 3rd. The combination, with the dental engine, of an air-pump, an air-receiver holding the air discharged by the pump under pressure, a valve for controlling the discharge of air from said receiver, a tube or duct adapted to convey such discharged air from the receiver to the outer or tool-carrying end of the working-arm of the engine, and to the mouth of the patient, and means, substantially as described, for heating the air prior to its discharge from said tube, essentially as specified. 4th. The combination, with the working-arm *c* of a dental engine, and an air-pump, of an air tube having an insulated mouth-piece *G*, and a push-pin *s*, and attached to the said working-arm *c*, and an electric battery and its connections with the mouth-piece, substantially as herein shown and described. 5th. The mouth-piece *G* composed of the metal tube *l*, the non-conducting and indestructible material *n* and the shield *o*, and provided with the push-pin *s*, substantially as herein shown and described. 6th. In apparatus for treating patients during dental operations, the air compressing vessel *E* adapted to receive a forced current of air, and to discharge the same as required, in combination with the piston or plunger *a1* within said vessel, the spring *b1* operating to actuate said plunger against the incoming current of air, and means, substantially as described, for determining the pressure of the air within the vessel *E*, essentially as and for the purposes herein set forth.

No. 27,182. Combined Mangle and Wringer.

(Calandre-essoreuse.)

Thomas Collier, Racine, Wis., U.S., 18th July, 1887; 5 years.

Claim.—1st. The upright upper section *a11* of the mangling-frame, in combination with the sleeves *g1* fitted thereon and provided with guides *g*, and the removable supplemental table *G* supported by said guides, substantially as set forth. 2nd. The rolls frame, saddle-pieces and springs *e3*, in combination with pinion *c2* carried by the upper roller, a pinion meshing therewith and carried by a wheel or disk on the shaft of the lower roll, another pinion *D1* arranged eccentrically on the outer face of said disk, a fixed circular rack meshing with said gear *D1*, and a pinion on the hub of the power-wheel which also meshes with said pinion *D1*, substantially as set forth.

No. 27,183. Car Brake. (Frein de char.)

John W. Stark, Toledo, Ohio, U.S., 18th July, 1887; 5 years.

Claim.—1st. The combination, with the lever K pivoted to the hanger L, and engaging with the chain H connected to the brake-rod G, of the bolt N pivoted to the lever K and passing through the slotted lug *h11* on the hanger L, said bolt being provided with a spring exerting a downward pressure to release the brakes, substantially as shown and described. 2nd. The combination, with the lever K pivoted to the hanger L, and engaging with chain H connected to the brake lever *l1*, of the bell-crank lever M, pivoted to the hanger L and connected to the lever K by the rod R, substantially as described. 3rd. The combination of the lever K pivoted to the hanger L, and engaging with the chain H connected to the brake-rod G, the bolt N pivoted to the lever K and passing through the slotted lug *h11* on the hanger L, said bolt being provided with a spring exerting a downward pressure on the lever K, and the bell-crank lever M pivoted to the hanger L and connected to the lever K by the rod R, all arranged and operating substantially as shown and described. 4th. The combination of the lever K, pivoted to the hanger L and engaging with the chain H, passing around the pulley I secured to the bottom of the car and connected to the brake-rod G, the bolt N pivoted to the lever K and passing through the slotted lug *h11* on the hanger L, said bolt being provided with a spring exerting a downward pressure