

oven, the swivelling or swinging gas supply tube or tubes, provided with suitable burners, and arranged outside of the oven, substantially as and for the purposes specified. 2nd. The oven of the stove, perforated for the entry and escape of the products of combustion of the gas, as described, in combination with the separated outer casing of the stove, and a boiler or water vessel arranged above and free of the oven for utilization of the escaping products of combustion of the gas after they leave the oven, essentially as described. 3rd. In a gas cooking stove having a roasting or baking oven or chamber, the combination, with the separated outer casing of the stove, of a removable sliding oven or oven-lining, substantially as specified. 4th. The combination, in a gas cooking stove, of a movable oven lining one or more externally arranged swivelling or swing gas supply tubes, provided with burners, the flames of which are mainly confined to the space between said lining and the stove casing, and a boiler for utilizing the waste heat of the oven, arranged substantially as shown and described and for the purposes herein set forth.

No. 21,410. Thrashing Machine.

(Machine à Battre.)

Riley H. Coon, Canastota, N.Y., U.S., 13th April, 1885; 5 years.

Claim.—1st. In combination with the racks R, R₁, grain tables O, O₁, sieve-shoe L, and rock-arms T and U, the rock-arm V, rod M and the rock-arm N and N₁, connected respectively with the grain table and sieve-shoe, substantially as described and shown. 2nd. The combination, with the fan-wheel, of the diaphragms f, f₁, arranged equidistant from the centre of the length of the wheel, and formed with central apertures, substantially as described and shown.

No. 21,411. Bed Bottom. (Sommier de Lit.)

Oscar J. Mitchell, Ingersoll, Ont., 13th April, 1885; 5 years.

Claim.—The combination of the web A, A, and the springs F, F, substantially as and for the purpose hereinbefore set forth.

No. 21,412. Reed Organ, etc. (Orgue, etc.)

James B. Hamilton, London, Eng., 13th April, 1885; 5 years.

Claim.—1st. The combination of the pallets, sound board and reeds, with cavity-boards, one above the other, the lower one containing the nostrils and the upper one the mouths and an intermediate controlling slide, substantially as set forth. 2nd. The combination of the pallets, sound-board and reeds, with cavity boards, one above the other, the lower one containing the nostrils and the upper one the mouths, substantially as described.

No. 21,413. Type Writing and Printing Machine. (Machine à Ecrire en Types et à Imprimer.)

Merritt H. Dement, Chicago, Ill., U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination of the lever P, and a revolving holder, with a series of rods, by means of which the lever is pressed upon the material operated upon, substantially as shown and described. 2nd. The printing lever P, provided with a wheel P₁, in combination with a series of rods in rotary holder, and the type ring, substantially as and for the purposes shown and described. 3rd. The combination of a rotary holder and its series of rods of different widths, with the printing lever P and type ring, substantially as shown and described. 4th. A type wheel having two or more rows of type, in combination with the printing lever P, adapted to be shifted so as to operate upon any desired row of type, substantially as shown and described. 5th. A rotary holder and a series of bars, each provided with two or more operating surfaces, and the lever P adapted to be shifted so as to be operated upon by any desired one of the operating surfaces, substantially as shown and described. 6th. The combination of the type ring A, provided with two or more rows of type, the cylinder B, and rods K, with the shifting lever P, substantially as shown and described. 7th. The combination of the shifting lever P, the rocking bar V, and the operating key, substantially as shown and described. 8th. The combination of the manuals R, guard springs b b, and the main cylinder c, substantially as shown and described. 9th. The guard springs b, b, the cylinder c provided with a curved longitudinal cam and the keys, substantially as and for the purpose shown and described. 10th. The combination of a type wheel containing two or more circumferential rows of type, with a paper guide adapted to shift to any desired row, and mechanism, substantially such as described, by means of which the paper and the types are brought in contact. 11th. The combination of a rotary holder, and series of rods or cams of different widths, with the milled rings and lever, substantially as shown and described.

No. 21,414. Spark Arrester, Conductor and Consumer. (Appareil pour Arrêter, Renvoyer et Consommer les Flammeèches.)

Michael L. Flynn and Albert F. Bull, St Thomas, Ont., 13th April, 1885; 5 years.

Claim.—1st. In a locomotive, the combination, with a smoke-box, of an injector opening into said box at its base, a tube extending from said injector to the fire-box, said smoke-box provided with a screen, the construction being such that the cinders may be taken from the base of the smoke box by the open injector and delivered to the fire-box, substantially as described. 2nd. In a locomotive, the combination, with a smoke-box, of an injector opening into said box at its base, a tube extending from said injector into the fire-box, said smoke box provided with a screen and a beater arranged to clear said screen, substantially as described. 3rd. In a locomotive, the combination, with a smoke-box, of an injector opening into said box at its base, a tube extending from said injector into the fire-box, and a beater to clear said screen, said beater connected with the hand-rail and arranged to be operated thereby, substantially as described. 4th. The combination of the fire-box A, the brick arch or diaphragm B therein, the smoke-box C, the injector opening into the

smoke-box, and the tube F extending from the injector and having its rear discharge end F₁ curved forward and downward through the brick arch or diaphragm, to spread or distribute the cinders over the surface of the fuel, substantially as described. 5th. The combination of the fire-box A, the brick arch or diaphragm B therein, the smoke-box C, the diaphragm D arranged in the latter, the injector located at the base of the smoke-box and opening thereunto, and a tube F, extending from the injector and having its discharge end F₁ turned forward and downward through the brick arch or diaphragm, to spread or distribute the cinders uniformly over the surface of the fuel, substantially as described.

No. 21,415. Skylight. (Lanterne.)

George Hayes, New York, N.Y., U.S., 13th April, 1885; 5 years.

Claim.—1st. A new article of manufacture, the base-frame of a metallic skylight, formed with an extended adjustable flange attached to or a part thereof, adapted to be bent to curbs of varying widths and lengths, substantially as shown and described. 2nd. In combination, with the base-frame of a skylight, a plate or flange b, formed into several rabbets d adjusting the frame to suit openings of varying dimensions, substantially as shown and described. 3rd. In combination with the base-frame of a skylight and adjustable plate b, the necking flange e or lip e, substantially as and for the purpose described and shown. 4th. In combination with the base-frame A, provided with an extended adjustable plate or flange b, as herein set forth, Bars provided with rabbets to support glass plates and gutters beneath to collect leakage and condensation, essentially as shown and described. 5th. In combination with the base-frame A provided with adjustable plate b, and necking e, the bars B, substantially as shown and described. 6th. In combination with the adjustable base-frame A formed with flange b, the bars C, substantially as shown and described. 7th. In a metallic skylight the combination of base-frame A Bars B and Bridge-bars C, each formed as herein set forth for the purpose mentioned.

No. 21,416. Rock Drill. (Foret de Mine.)

Frederick W. Coe, George A. Hoffnagle, Vergennes, Vt., U.S., George A. Miller, Charles H. Miller, and James Mitchell, Montreal, Que., 14th April, 1885; 5 years.

Claim.—1st. The combination, in a rock-drilling machine, of the frame D carrying the hammer and pivoted, as described, a shaft F suitably journaled, and having keyed thereon, cams G, H and I, a pivoted latch i, adapted to be intermittently lifted by the cam H, A, jam-wrench K connected with the latch i to be lifted therewith, and bite the drill-rod, and a lever N arranged as an operating, as specified, to rotate the jam-wrench, substantially as set forth. 2nd. The combination, in a rock-drill, of the frame D carrying the hammer, and pivoted, as described, a shaft F, actuating means for reciprocating the drill-rod, and hammer, the waved wheel L, lever N having spring attached thereto, so as to keep the upper end of said lever in contact with the waved wheel, and a connecting-rod n attached to the lever n and to devices for rotating the drill-rod, substantially as set forth.

No. 21,417. Automatic Responding Instrument for Electric Circuits. (Appareil Servant à Répondre Automatiquement pour Circuits Electriques.)

The Equitable Electric Company, (Assignee of Alfred G. Holcomb,) New York, N.Y., U.S., 14th April, 1885; 5 years.

Claim.—1st. The combination, with an electro-magnetic call bell having a movable armature, an electric circuit, and means for operating the call bell, of a responding instrument in a local circuit, the signaling mechanism of which is released free to act by the nature of the call bell, when the call bell is actuated, substantially as and for the purpose set forth. 2nd. The improvement in electrical communication, consisting of the application of an automatically operated instrument in a local circuit, constructed to return signals to a calling station, by causing induced currents or definite impulses in the line circuit, when said instrument is released or set in motion by a current sent from a calling station to actuate a call apparatus in the line circuit, which is adapted to lock the responding instrument, substantially as set forth. 3rd. The combination, with the secondary coil, of an inductorium, an electric circuit and a call apparatus of an automatic return signal instrument, the primary coil of the inductorium, a battery and a local circuit, substantially as and for the purpose set forth. 4th. In combination, an inductorium, a battery and an automatic responding instrument provided with a signaling device and connected motor included in a local circuit, a call apparatus or bell constructed when at rest to lock the signaling device of the responding instrument, and means for operating the call-bell and the secondary coil of the inductorium included in the line circuit, substantially as and for the purpose set forth. 5th. In a telephonic system, a microphonic transmitter, a switch, the primary coil of an inductorium and a battery in an independent circuit, in combination with the signaling device or contact spring and disc of an automatic responding instrument, connected to said circuit between the microphonic transmitter and the battery, and between the switch and the primary coil of the inductorium, substantially as and for the purpose set forth. 6th. In an automatic responding instrument, in combination, a fixed disc or plate having a series of teeth or notches representing different signals, and an insulated block on its periphery, a contact brush carried by a rotating shaft concentric with the disc, a motor for imparting motion to said brush, and a locking device for holding the brush stationary on the insulated block, and actuated by an electric current to allow the brush to be rotated by the motor, substantially as and for the purpose set forth. 7th. In an automatic responding instrument, in combination a fixed disc or plate having a series of notches or teeth, a shield plate connected to and operated by an index pointer, a dial plate having marked thereon the signals the instrument is adapted to give, and a contact brush and motor for causing the