fractory blocks lying on the tops of such webs, substantially as described. 3rd. In a steam boiler furnace, the combination, with the bridge-wall, of the passages for supplying air to the top of the same, formed by the plates having the upwardly extending webs with flanged tops, and the refractory blocks resting on such tops, substantially as described. 4th. In a steam-boiler furnace, the combination, with the grate-bar, end bar and bridge-wall, of the plates having the upwardly extending webs, with the refractory blocks on such webs forming air-passages for supplying air to the top of the bridge-wall, and supported in position by the end bar, substantially as described. 5th. In a steam boiler furnace, the combination, with the grate end bar and bridge-wall, of the bottom plates having the upwardly extending webs, with the flanged tops and the refractory blocks resting on such tops, the bottom plates and refractory blocks resting upon and supported by the end bar, substantially as described. 6th. In a steam-boiler furnace, the combination, with the grate-bars, bridge-wall and plates forming air passages, of an end bar having the two rails for supporting the grate-bars, and plates forming the air passages respectively, the connecting webs and the apertures through which the air passes to the top of the bridge-wall, substantially as described. 7th. In a steam-boiler setting, the combination, with the boiler, the setting walls, and the supplemental walls or ledges on each side at the bottom of the removable flame-bed, underlying and in proximity to the boiler, formed of the girders lying loosely on said supplemental walls or ledges, and the refractory blocks removably supported on said girders, substantially as described. 8th. In a steam-boiler furnace, the combination, with the grate, rear air-supply, and setting walls having the projections or ledges, of a flame-bed overlying said air passage for heating the air therein, formed of the T-shaped girders removably supported on the projections or ledges with the flanges down, and exposed to the air beneath, and the refractary blocks removable supported on said flanges, substantially as described.

## No. 30,732. Duplex Telegraphy.

*(Télégraphie duplexe.)*

Siemens Brothers and Company, (assignees of Frank Jacobs), Westminster, Eng., 7th February, 1889; 5 years.

*Claim.*—1st. In combination with the actual and artificial cables, and appliances emplied for duplex telegraphy, an artificial line or cable similar in all its electrical qualities to the earth cable, or conductor connecting the operating station to the sheathing of the actual cable or to other earth connection, applied and connected as and for the purpose herein set forth. 2nd. In combination with the actual and artificial cables, and appliances employed for duplex telegraphy, an artificial line or cable similar in all its electrical qualities to the earth cable or conductor connecting the operating station to the sheathing of the actual cable or to other earth connection, and a condenser interposed in the connection of the bridge arm to the earth armature, of the artificial cable applied and connected, as and for the purpose set forth.

## No. 30,733. Ejector Condenser.

*(Condensateur-éjecteur.)*

Louis Schutte, Philadelphia, Penn., U.S., 8th February, 1889; 5 years.

*Claim.*—1st. In an ejector condenser, having the nozzle combining tube and discharge tube as usual, the sliding sleeve O arranged to close the steam inlets at the upper or receiving end of the combining tube distinguished from a sleeve at the delivery end of said tube, whereby the aggregate area of the steam admission openings may be varied to maintain the required velocity of the inflowing steam without causing the leakage of water from the combining tube into the condenser body. 2nd. In an ejector condenser, the combination of the discharge tube, the combining tube with variable steam inlets, and the water nozzle with the variable throat, whereby the admission of steam and water may be established, and maintained with proper relations under varying conditions of supply and pressure. 3rd. In an ejector condenser or the type herein shown, the water nozzle, the combining tube with its series of forwardly directed steam inlets, the discharge tube, and the central ram to regulate the water passage as heretofore, in combination with a sliding sleeve to control the steam inlets through the combining tube. 4th. In an ejector condenser, of the type herein described, the combining tube with variable steam inlets, the water tube with the variable throat, and an adjusting mechanism common to the two, whereby the admission of steam and water is controlled simultaneously and in proper relations to each other.

## No. 30,734. Weighing Bridge and Weighing Machine. *(Balance à bascule.)*

Pierre Guillaumin, Voiron, France, 8th February, 1889; 5 years.

*Claim.*—1st. In a scale, the combination of the platform P1 mounted upon the levers L, *l*, the connecting lever C, the connecting rod O, the standard H, with the beams K, K1, and I, I1, the counterpoise S attached to the said beam K, K1, the link A, A11 connecting the beam K, K1 to the connecting rod O, the jointed link B1 connecting the said two beams and supporting the receptacle B, the pes Q, *q* and Q1, the graduations T, *t* and T1 upon said beams, and upon which the said pes are adapted to move, the frame or stand M supporting said beams and their accompanying mechanism, and the weights V, all substantially as and for the purpose set forth.

## No. 30,735. Egg Beater. *(Vergette de cuisine.)*

David T. Winter, Peabody, Mass., U.S., 8th February, 1889: 5 years.

*Claim.*—1st. An egg-beater frame supporting two toothed gears B, D, engaging directly with each other, the driven gear carrying the beater, and being journalled on one side or face of the frame, and the driving gear being journalled on the opposite side of the frame, substantially as set forth. 2nd. In an egg-beater, the toothed gear D, combined with and operating a vibratory beater G, whose upper end is adjustably attached to such gear to regulate its extent of throw, and with a guiding eye I on the frame through which the lower free vibrating end of the beater works. 3rd. In an egg-beater in which the beater describes a vertical path substantially circular, the described means for removing the beater or dasher from its frame or support, consisting of the removable crank pin E on the driven gear, and the open eye fulcrum guide pin I on the frame, and through which the dasher rod vibrates and slides when in action. 4th. An egg-beater frame supporting two toothed gears B, D, engaging each other, in combination with the vibrating beater adjustably attached to one of the gears to regulate its extent of throw, and with a guiding eye I on the frame through which the lower free end of the beater works, the beater having a coil H at its extremity, substantially as shown and described. 5th. I claim in an egg-beater, in combination with the driving gears B, D, a wire beater terminating at its lower end in a horizontal coil, and its other end driven in a circular path by a pin E on one of the gears, and an intermediate guide eye, or hole I through which the wire has a lengthwise and also a lateral play, substantially as shown and described.

## No. 30,736. Ore Separator and Amalgamator. *(Séparateur et amalgamateur de minerai.)*

Levi Newcomb, Boston, Mass., U.S., 8th February, 1889; 5 years.

*Claim.*—1st. A tank or receptacle A having an inclining bottom in two portions B, C meeting at D, and a water-tank J having perforations or jet-holes *a* near the lower portion of the bottom part C, in combination with finger rods or agitators Q, and a reciprocating-shaft N, substantially as described and for the purpose specified. 2nd. A tank or receptacle A having an inclining bottom in two portions B, C meeting at D, and a water-tank J having perforations or jet-holes *a* near the lower portion of the bottom part C, and ore-agitating or stirring mechanism, in combination with an amalgamating-plate or guard located at and dipping below the level at which the water discharges from the tank, substantially as described for the purpose specified. 3rd. A tank or receptacle A having an inclining bottom in two portions B, C meeting at D, a water-tank J having perforations or jet-holes *a* near the lower portion of the bottom part C, and an amalgamating-plate X on the inclining portion B, in combination with an ore-agitating or stirring mechanism, all as and for the purpose specified.

## No. 30,737. Cabinet for Sewing Machines.

*(Buffet pour machines à coudre.)*

Charles Raymond, Guelph, Ont., 8th February, 1889; 5 years.

*Claim.*—1st. The pivoted top A supporting the machine B, in combination with the cord E, connected at one end to the top A, and at its other end to the hinged cover D, arranged substantially as and for the purpose specified. 2nd. The top A supporting the machine B, and provided with a downwardly-projecting bracket C pivoted at *a* to the side of the cabinet, in combination with the cord E connected at one end to the top A, and at the other end to the hinged cover B, substantially as and for the purpose specified. 3rd. The top A supported on one side by the pivoted bracket C, and on the other side by the cord E, in combination with the sliding panel G connected to the top A by a cord or rod H, substantially as and for the purpose specified.

## No. 30,738. Composition of Matter to be used for Cleaning and Removing Dandruff from the Scalp and Restoring the Hair to its original Colour and Lustre. *(Composition de matières pour servir à nettoyer le scalpe et en enlever les pellicules, restaurer à la chevelure sa couleur et son lustre)*

A. Félix Pratte, Montpelier, Vt., U.S., 8th February, 1889; 5 years.

*Claim.*—The herein described composition of matter to be used as a hair-restorative, consisting of water, eggs, glycerine, sulphur and alcohol, in the proportions specified.

## No. 30,739. Bed Spring. *(Ressort de lit.)*

Frederick G. Wolfhard, Waterloo, Ont., 8th February, 1889; 5 years.

*Claim*—The combination of the coil spring D, in connection with movable standards E, and rack F forming a pivot on frame B, which gives the required elasticity also the attachment of sliding bars I and L, with iron screws N, and coil springs O, and the wooden roller P with ratchet R, all required to give canvas H proper tension, substantially as and for the purpose hereinbefore set forth.

## No. 30,740. Portable Drilling Machine.

*(Machine à percer portative.)*

James T. Halsey, Paterson, N.J., U.S., 8th February, 1889: 5 years.

*Claim.*—1st. In a drilling machine, the combination, with a base-piece, as D, and a driver for the drill-holder mounted rotatively thereon, of the said holder, as A, mounted in the driver, as described, and provided with a feed-screw, a feed-nut embracing said screw, and gears, substantially as described, driven from a common source for rotating said driver and nut simultaneously in the same direction, but at different rates of speed. 2nd. In a portable drilling machine, the combination, with the base-piece, as D, having a cylindrical neck, as *d*, of the bearing bracket, as E, for the driving-shaft, provided with a band, as *e*, which embraces the said neck on the base-piece, and with a securing screw, as *e1*, substantially as set forth. 3rd. In a drilling machine, the combination, with a base-piece, as D, and a driver for the drill-holder rotatively mounted therein, of the said holder, as A, provided with a feed-screw, the feed-nut embracing said screw, the toothed wheel B forming a part of said nut, the