

movement thereof, substantially as set forth. 11th. In a balance lock apparatus, the combination, of a head wall dividing a water way into upper and lower levels, a gated mouth or passage way formed in said head wall, a tank or casing adapted to contain a charge of compressed air, said casing floating and being vertically movable in the lower level of the water way adjacent to the head wall, a lock chamber fixed upon said casing and provided with gated mouths or end openings, one of which is fitted to make a joint with the mouth of the head wall, and vertical guides provided with end stops to prevent undue vertical movement of the casing, substantially as set forth. 12th. In a balance lock apparatus, the combination, of a head wall dividing a water way into upper and lower levels, a gated mouth or passage way formed in said head wall and provided with laterally and downwardly projecting flanges on its end, a tank or casing adapted to contain a charge of compressed air, said casing floating and being vertically movable in the lower level of the water way adjacent to the head wall, a lock chamber fixed upon said casing and provided with gated mouths or openings, lips or flanges projecting from the end of the mouth of the lock chamber adjacent to that of the head wall parallel with and adjacent to those of the head wall flanges, packing strips interposed between the head wall flanges and lock chamber flanges, and mechanism for pressing said flanges closely against said packing strips, substantially as set forth. 13th. In a balance lock apparatus, the combination, of a head wall dividing a water way into upper and lower levels, a gated mouth or passage way forced in said head wall and provided with laterally and downwardly projecting flanges on its end, a tank or casing adapted to contain a charge of compressed air, said casing floating and being vertically movable in the lower level of the water way adjacent to the head wall, a lock chamber fixed upon said casing and provided with gated mouths or openings, lips or flanges projecting from the end of the mouth of the lock chamber adjacent to that of the head wall parallel with and adjacent to those of the head wall flanges, packing strips interposed between the head wall flanges and lock chamber flanges, and fluid pressure cylinders provided with pistons by which pressure is exerted upon said flanges for pressing them closely against said packing strips, substantially as set forth. 14th. In a balance lock apparatus, the combination, of an open bottomed tank or casing, internal partitions dividing the casing into a series of air tight cells or compartments, and valve controlled air passages each leading into one of said compartments, substantially as set forth. 15th. In a balance lock apparatus, the combination, of an open bottomed tank or casing, internal partitions dividing the casing into a series of air tight cells or compartments, valve controlled air passages each leading into one of said compartments, a main air pipe, valve controlled connections coupling the air passages of the several compartments to said main air pipe, and a valve controlling said main air pipe, substantially as set forth.

No. 39,616. Repeating Mechanism for Watches.

(*Mécanisme à répétition pour montres.*)

August Wilhelm Matthaei, Berlin, German Empire, administrator of the estate of Jens Richter, late of Hong Kong, Asia, 1st August, 1892; 18 years.

Claim.—1st. In a repeating mechanism for watches, a wheel provided with a given number of teeth and adapted to revolve in a given direction from a predetermined starting point, and gearing adapted to revolve the wheel, in combination with a lock controlled by a moving element of the watch and adapted to lock said wheel against revolution, and a push pin adapted to bear on the periphery of the wheel, as and for the purpose set forth. 2nd. In a repeating mechanism for watches, a wheel provided with a given number of teeth and adapted to revolve in a given direction from a predetermined starting point, gearing adapted to revolve the wheel, the spindle of one of the gear wheels being provided with a button for revolving the same, in combination with one of the hands of the watch, a lock controlled by said hand, and adapted to lock the wheel against revolution, and a push pin adapted to bear against the periphery of the wheel, as and for the purposes set forth. 3rd. In a repeating mechanism for watches, a wheel provided with twelve ratchet teeth and adapted to revolve in a given direction from a predetermined starting point, a spring actuated pawl pivoted to said wheel, a fixed ratchet adapted to be engaged by the pawl to lock the wheel against revolution, and gearing adapted to revolve the wheel to and from its starting point, in combination with the hour hand, an arm connected therewith and adapted to engage the pawl and move it against the stress of its spring into engagement with the teeth of the fixed ratchet, and a push pin adapted to bear against the periphery of the wheel, substantially as and for the purposes specified. 4th. In a repeating mechanism for watches, the wheel R^2 , provided with twelve teeth, the pawl L , pivoted to said wheel, and having a pin l , projecting through a slot in the wheel, and the bridge B on said wheel overhanging the pin l , said bridge having wings b , and b^1 , arranged as described, and a fixed ratchet R , adapted to be engaged by the pawl L , in combination with the spring actuated pin P^2 , bevelled as described, the gear wheel R^1 , rigidly connected with wheel R^2 , and having a hole adapted to be engaged by the pin P^4 , the pinion P , in gear with wheel R^1 , the hour hand, the arm L^2 , connected therewith and adapted to engage the pin l , on the wheel L , and a push pin adapted to bear on the periphery of wheel R^2 , substantially as and for the purposes specified. 5th. In a repeating mechanism for watches, a wheel provided with

thirty-six teeth arranged in sets of three teeth, and a recess or notch between each set, said wheel being adapted to revolve in a given direction from a starting point, in combination with a push pin adapted to be brought into engagement with the teeth and notches of said wheel, substantially as and for the purposes specified. 6th. In a repeating mechanism for watches, a quarter hour repeating wheel provided with thirty-six teeth, and a notch or recess between each set of three teeth, an hour repeating wheel provided with twelve teeth, the teeth on said wheels pointing in opposite directions, a pawl pivoted to the quarter hour repeating wheel, a gear wheel connected with the quarter hour and hour repeating wheels, a driving pinion in gear with the gear wheel, and a fixed ratchet adapted to be engaged by the pawl on the quarter hour repeating wheel, in combination with a lock adapted to lock the gear and repeating wheels against revolution in one direction, the hour hand of the watch, an arm controlled thereby and adapted to control the pawl to move the same into engagement with the fixed ratchet, and two push pins adapted to be moved in contact with the teeth on the quarter hour and hour repeating wheels respectively, substantially as and for the purpose specified. 7th. The combination, with the ratchet wheel R , the push pins P^2 and P^3 , and the hour hand carrying the arm L^2 , of the gear wheel R^1 , its pinion P , the superposed toothed wheels R^2 , R^3 , rigidly connected with the gear wheel and arranged to revolve about the fixed ratchet R , the spring actuated pawl L , provided with the pin l , projecting through a slot in wheel R^3 , to which said pawl is pivoted and adapted to engage the teeth of the fixed ratchet, and the bridge B , on wheel R^2 , having the wings b and b^1 , and overhanging the pin l , said parts being arranged and operating, substantially as and for the purposes specified.

No. 39,617. Heater. (*Calorifère.*)

Richard Bigley, Toronty, Ontario, Canada, 1st August, 1892; 6 years.

Claim.—1st. In a heater, a combination chamber A , having at the top an enlarged outwardly projecting dome B , which is connected by the pipes G , to the base chamber E , which has two partitions O , extending from the back of the chamber E , to a short distance from the front, a smoke pipe being connected to the top of the chamber E , at the back between the partitions, substantially as and for the purpose specified. 2nd. The combustion chamber A , dome B , pipes G , base chamber E , with partitions O , and smoke pipe J , in combination with the chamber H , pipes I , extending through the chamber E , into the hot air space, as specified. 3rd. The combustion chamber A , dome B , pipes G , base chamber E , with partitions O , and smoke pipe J , in combination with the ash pit D , having an opening M , connecting with the smoke pipe J , and provided with a damper N , as specified. 4th. The combustion chamber A , dome B , pipes G , base chamber E , with partitions O , and smoke pipe J , in combination with the supplemental pipe K , having damper L , as specified. 5th. The combustion chamber A , dome B , pipes G , base chamber E , with partitions O , and smoke pipe J , in combination with the cleaning chutes P , as specified.

No. 39,518. Device for Producing Voltaic Effects.

(*Appareil pour produire des effets voltaïques.*)

Peter Heskier, Copenhagen, Denmark, 1st August, 1892; 6 years.

Claim.—The construction of a device (in the form of a cross), composed of layers of copper and zinc or other metals, between which voltaic action can be set up, with an intervening layer of sponge, or like substance, substantially as shown and described and for the purpose set forth.

No. 39,616. Means for Preventing the Alteration of Amounts of Negotiable Papers. (*Moyen d'empêcher l'altération des papiers négociables.*)

George Donald Edwards, Denver, Colorado, U.S.A., 1st August, 1892; 6 years.

Claim.—1st. As a means of preventing the alteration of instruments representing sums of money a series of digits arranged under appropriate headings, and the cancellation of the unused headings and of the used digits to indicate the sum covered by the instrument, substantially as described. 2nd. The combination of a series of headings and a series of numbers by the cancellation of a part of which the sum which the instrument is intended to cover, or which it is not to exceed, may be indicated, substantially as described, and for the purposes set forth.

No. 39,620. Tea Kettle. (*Bouilloire à thé.*)

John Black and Fred C. A. Natus, both of South Chicago, Illinois, U. S. A., 1st August, 1892; 6 years.

Claim.—1st. In a tea kettle, the ears which carry the swinging bail or handle of said vessel, provided with shoulders or projections on their inner faces adapted to support the bail when thrown to either side, said projections being tapering or wedge shape at their lower ends, substantially as and for the purpose herein set forth. 2nd. The cover of the kettle provided with a swiveling band on its top, and rubber or soft packing ring beneath its rim, essentially as and for the purpose herein described. 3rd. The combination, with the kettle body, of the ears on opposite sides of the filling opening of said body, having bail supporting and cover closing projections