

cuit therewith and a torch, or torches suspended thereon whereby the circuit connections are kept apart by the weight of the torch. 2nd. The combination of a circuit, a rheostat, a circuit breaking lever, an incandescing substance and a torch suspended by the lever and acting to break the circuit when not in use.

No. 16,306. Improvements on Circular Sawing Machines. (*Perfectionnements aux scieries à lames circulaires*)

William McDonald, Calais, Me., U. S., 16th February, 1883; (Extension of Patent No. 8465.)

No. 16,307. Improvements on Combined Envelopes and Letter Sheets. (*Perfectionnements aux enveloppes et aux feuilles à lettre combinées.*)

Richard W. Stevens, Alton, Ill., and George R. Moore, St. Louis, Mo., U.S., 16th February, 1883; for 5 years.

Claim.—1st. An envelope letter sheet having a single gummed sealing flap and two ungummed sealing flaps. 2nd. An envelope letter sheet having a sealing flap formed from the body of the sheet by a line of perforations, or a slit therein. 3rd. An envelope letter sheet having two sealing flaps projecting from the body of the sheet and one sealing flap formed from the body of the sheet.

No. 16,308. Improvements on Buggy Tops. (*Perfectionnements aux soufflets des voitures.*)

Robert McLaughlin, Oshawa, Ont., 16th February, 1883; for 5 years.

Claim.—1st. The combination of a rod extending across the back of the buggy and connecting the bottom end of the back joint on one side of the top with the bottom end of the back joint on the opposite side, the said rod being journaled in sockets formed upon or attached to the side rails and provided with a lever extending into the buggy at about right angles to the rod and within easy reach of the occupant of the buggy. 2nd. A socket or sleeve piece B set into a hole in the back end of each side rail and forming journals for the rod D, in combination with a plate C, extending from the inner end of each socket B and provided with buttons for fastening the bottom of the back curtain and quarters. 3rd. The plates C extending inwardly from each side rail, their inner ends being secured to the seat by the journals G, for the purpose of forming a rigid connection for the bottom of the back curtain and quarters, in combination with a rod D held in the journals B and G and connecting the bottom ends of the two back joints E, the said rod being provided with a lever. 4th. A spring fixed to the back, or side rail, in such a position that the back bow of the top will rest upon it when the top is thrown back.

No. 16,309. Improvements on Cattle Ties.

(*Perfectionnements aux attaches des bœufs.*)

August Bynell, Grantsburg, Wis., U. S., 16th February, 1882; for 5 years.

Claim.—1st. A cattle tie comprising the yoke A having hooks B provided with cross heads C and the inverted yoke D having eyes E, chains F and swivelled bolts G provided with chain I. 2nd. A cattle tie composed of the yoke A U-shaped in cross section and having a series of slots, detachable and adjustable hooks B having cross heads C, and inverted yoke or cross bar D provided with end chains F and swivelled chains I. 3rd. The combination of a yoke approximately U-shaped in cross section and having end hooks with a bottom yoke, or cross bar having end chains adapted to be adjusted upon said hooks.

No. 16,310. Improvements on Car Trucks.

(*Perfectionnements aux châssis des chars.*)

Alanson A. Blackman, Elhanan Blackman and Hyreanno Blackman, Snowhomish, W. T., 16th February, 1883; for 5 years.

Claim.—1st. The combination, with a series of independent truck frames and bolsters to which the truck frames are swivelled, of reaches hinged to the bolsters so as to allow vertical oscillation to the bolsters and truck frames, whereby the car truck shall be adapted to an uneven, or undulating track. 2nd. The combination of four independent truck frames swivelled to the end of the bolsters in pairs and provided each with two double flanged wheels arranged one in front of the other, and a suitable gear for connecting the parts, whereby an uneven track composed of two rails without ties may be employed.

No. 16,311. Improvements on Cultivators.

(*Perfectionnements aux cultivateurs.*)

John Mooney, West Missouri, Ont., 16th February, 1882; for 5 years.

Claim.—1st. The spiral steel teeth I. 2nd. In combination, with wooden frames A B, the steel or wrought iron bars C and teeth I, chains D and lever and arc E F.

No. 16,312. Improvements on Water Filters.

(*Perfectionnements aux filtres à eau.*)

The American Filter Company, Portland, Me., (assignee of James S. Smart, Salem, Mass.,) U. S., 16th February, 1883; for 5 years.

Claim.—The filter composed of the shell a having the internal bearing surfaces f f, the plug e having the bearings g g, and the strainers or nettings h h.

No. 16,313. Improvements on Calculators.

(*Perfectionnements aux tables d'arithmétique.*)

Robert T. Martin, Toronto, Ont., 16th February, 1883; (Re-issue of Patent No. 14,981.)

Claim.—1st. The combination of a frame having one horizontal groove made in it to receive a series of blocks, each block having imprinted on its outer surface a particular digit and being independently adjustable, so that the series of blocks may be manipulated for the purpose of producing the various combinations of figures employed in teaching the simple rules of arithmetic. 2nd. A frame having one horizontal groove made in it to receive the series of blocks, each block having imprinted on its outer surface a particular digit and being independently adjustable, so that the series of blocks may be manipulated for the purpose of producing the various combinations of figures employed in teaching the simple rule of arithmetic, in combination with a series of balls strung on a wire attached to the frame, and manipulated for the purpose of assisting the teacher to convey to the mind of the pupil the results obtained by the various combinations of the digits.

No. 16,314. Improvements in Attrition Mills. (*Perfectionnements aux moulins à attrition.*)

Thomas L. Sturtevant, Framingham, Mass., U. S., 16th February, 1883; for 5 years.

Claim.—1st. The combination, with the rotary head carrying the moving portion of the underground material and the receiver containing the comparatively stationary underground portion thereof, of a movable part to such receiver for removing the ground portions of the material. 2nd. The combination, with the rotary head and housings, of the rotary receiver provided upon its inner periphery with cells, to receive the ground portions of the material. 3rd. The combination, with the receiver rotary head and the adjacent housing or wall of the receiver, of the adjustable tubular lining closely fitting the bore of the rotary head, and the opening in the housing opposite such head. 4th. The rotary recessed head supported and driven by a suitable shaft, in combination with said shaft and the receiver composed of the housings and the rotary ring plate. 5th. The combination, with the rotary recessed head, the housings and ring plate, of the anti-friction rolls constituting the support of the said elevator. 6th. The combination of the rotary head, the receiver and a device for stirring or agitating the bulk of underground material in such receiver. 7th. The combination of the receiver D with head A having removable bushing C, whereby the edge of the head nearest said receiver may be removed and replaced as fast as worn.

No. 16,315. Improvements in Hoisting and Conveying Apparatus. (*Perfectionnements aux appareils à hisser et transporter.*)

Jedediah Ladd, Plattsburg, (assignee of Francis A. Clarkson, Black Brook, N. Y., U. S., 16th February, 1883; for 5 years.

Claim.—1st. The combination of the carriage B provided with grooved rollers C, the pivoted loop latches D and the suspended pivoted bale E, the sheaved hook H provided with double sheaves F and its pivoted arm, and the rope I with each other, with the cable C and with the stopping blocks L and P provided with the dumping block N. 2nd. The combination of the hook H provided with the pulley F, bail E, rope G, pulleys F, braces c united by the clevis f with the carriage B. 3rd. The combination of the catch q and the pivoted lever catch r with the block P provided with a clamp that is operated by the levers U, to retain the carriage at any desired point in the cable C, for the purpose of manipulating the bucket by means of the ropes G. 4th. The stopping block L provided with a hook catch K, clamps h i, and loop m, in combination with the cable C. 5th. The combination of the movable dumping block M provided with arms o and plate p, with the block P, clamp U, catch q and pivoted lever catch r.

No. 16,316. Medicinal Compound.

(*Composition médicinale.*)

Daniel W. Edwards, Beloit, Wis., U. S., 16th February, 1883; for 5 years.

Claim.—1st. A compound composed of the following ingredients and in the proportions specified, to wit: fluid extract of hops, one pound, fluid extract of red cinchona, eight ounces, fluid extract of sarsaparilla, six ounces, fluid extract of dandelion, six ounces, fluid extract of burdock, six ounces, fluid extract of yellow dock, six ounces, fluid extract of golden seal, six ounces, fluid extract of mandrake, four ounces, oil of winter green, three-fourths of an ounce, oil of sassafras, three-eighths of an ounce, oil of lemons, three-eighths of an ounce, oil of horsemint, one-fourth of an ounce, granulated loaf or other fine clarified sugar, six pounds, alcohol, (about ninety-four per cent) two gallons, with pure water sufficient to make in all twelve gallons.

No. 16,317. Improvements on Drying Apparatus. (*Perfectionnements aux appareils de séchage.*)

The St. Albans Manufacturing Company, St. Albans, Vt., U. S., and Henry W. Atwater, Montreal, Que., (assignees of Levi K. Fuller, Brattleborough, Vt., U. S.,) 16th February, 1883; (extension of Patent No. 8464.)

No. 16,318. Improvements on Combined Fluting and Sad Irons. (*Perfectionnements aux fers à tuyauter et repasser.*)

Charles B. Judd, (assignee of Hiram R. Ellis,) Grand Rapids, Mich., U. S., 16th February, 1883; for 5 years.

Claim.—1st. The combined fluting and sad iron composed of a hollow triangular body A having a polished bottom B, a corrugated side C and a smooth side F, the sides C F converging to form the top ridge or apex of the triangular body and the side F having a pair of rigid curved arms or brackets E, for supporting the handles D vertically above or in line with the top ridge or apex of the iron. 2nd. The combination, with a combined fluting and sad iron having a non-detachable handle, of a stand I having groove or recess K.