

other and containing a heating agent, and the other conveying the waste or expended heating agent away, of a yielding or flexible pipe or pipes extending beyond the ear, and a cock for controlling communication between the pipes within, and the pipe or pipes extending beyond the ear. 3rd. The combination with two pipes extending around or through a ear, of a receptacle for the outer pipe containing acetate of potash, or a mixture of about two parts by weight of caustic soda, and about eleven parts by weight of acetic acid, or the equivalent thereof, with or without the addition of water. 4th. The combination of pipes for conveying a heating agent around or through a ear, or other pipes for conveying the waste or expended heating agent back again, and flexible pipes, one within the other, extending beyond the ear. 5th. The combination, with pipes for conveying a heating agent around a ear, pipes arranged within the first mentioned pipes for conducting the waste or expended heating agent from the ear, two pipes outside the ear, arranged one within the other, for respectively conveying the heating agent to and the waste heating agent from the ear, and a cock adapted to establish communication between the outer of the pipes within the ear, and the inner of the pipes outside the ear, as also between the inner of the pipes within the ear, and the outer of the pipes outside the ear, or to connect the two pipes within the ear. 6th. The combination of a pipe for containing a heating agent, a receptacle surrounding the said pipe and containing acetate of potash, or a mixture of caustic soda and acetic acid, or the equivalent thereof, with or without the addition of water and an external wrapping of a material which is a non-conductor of heat. 7th. The combination, with the pipes A C or A' C', of the couplings Q rigid hooks *q*, the hooks *f* formed upon the levers *g*, of the springs *h* and guards extending outside the levers and springs. 8th. The combination of the pipes A C and the cylinder B, the coupling piece *d* and the head *d*.

No. 16,199. Improvement on Car Couplers.

(*Perfectionnement des accouplements des chars.*)

John H. Ward, Lowell, Mass., U. S., 25th January, 1883; for 5 years.

Claim.—1st. The link B provided with the serrated hooks L, the draw-bar heads A provided with the chambers C *d* and pins L, the levers provided with arms G and teeth *i*, and the shafts D provided with the levers J, springs K and wheels H. 2nd. The links B provided with the hooks L, in combination with means for causing the hooks to engage the draw-bar heads, keep the same from being accidentally disengaged, and disengage the same therefrom when required. 3rd. The pin L arranged to serve as a staple for the hook *i*, a stop for the lever J and a stud for the spring K. 4th. The draw-bar head A provided with the backwardly projecting part *i*, acting to re-inforce, or strengthen the pin L in the chamber C. 5th. The link B provided with the hooks L, in combination with the curved yielding arm G adapted to receive the end thrust of the link, turn its free end down into engagement with the pin L and hold it in contact therewith. 6th. The levers J provided with the chains M mounted on the shaft D provided with the spring K. 7th. A link having two downwardly projecting hooks for engaging the draw-bar heads, and provided with serrations or means whereby they may be lifted out of engagement therewith.

No. 16,200. Improvements on Mechanical Musical Instruments. (*Perfectionnements aux instruments de musique mécaniques.*)

Robert W. Pain, New York, N. Y., U. S., 25th January, 1883; for 5 years.

Claim.—1st. A mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips or sheets, and in which air under pressure is used to produce the necessary notes of sound, bellows which forces the wind to the reeds or other sounding devices of the instrument arranged within a box cover over the tubes, said cover being hinged on the top of the action board. 2nd. In a mechanical musical instrument in which the operation of the sound-producing devices controlled by one or more travelling perforated strips or sheets, the combination with the air bellows, or reservoir of an attachment key or push-pin, whereby the tones of the reeds or other sounding devices may be changed in expression and crescendo, diminuendo and tremolo effects produced. 3rd. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips or sheets, the combination with the feeders or pumps G, of the rotating toggle shaft I provided with toggles I¹, whereby said pumps are alternately moved to give a continuous supply of air to the bellows, or air reservoir. 4th. In a mechanical musical instrument in which the operation of the sound-producing devices is controlled by one or more travelling perforated strips or sheets, the combination, with a removable box cover placed on top of the tube or action board, of bellows or air reservoir contained therein for forcing the wind to the reeds or other sounding devices. 5th. A hinged cover inclosing the air reservoir or bellows which fits over the tubes D and is adapted to be removed, or opened for inserting the sheet of music. 6th. An air reservoir or cover, provided with interior flexible strips arranged to bear upon the perforated music sheet and prevent the escape of air from said reservoir or cover, excepting through the perforations of said sheet. 7th. An air reservoir or cover, provided with interior flexible strips arranged to prevent the escape of air from its sides, and adapted to permit the free passage of a music sheet beneath the said sides and over the action board of the instrument. 8th. An air reservoir or chest adapted to be set over the perforated music sheet upon the action board and provided with interior flexible air-tight strips and with a weighted, or spring actuated bellows like platform, to increase the pressure of air from said reservoir. 9th. The combination, with a movable air reservoir, a chest adapted to be set over the perforated music sheet upon the action board, of attached arms whereby said chest may be held to and lifted from its position. 10th. The combination, with a movable air reservoir or chest adapted to be set over the perforated music sheet, of latches or springs whereby said chest is held to the instrument.

No. 16,201. Improvements on Magazine Drum Stoves. (*Perfectionnements aux poêles circulaires à charbon.*)

George M. Barboar and Merrill B. Mills, Detroit, Mich., U. S., 25th January, 1883; for 5 years.

Claim.—1st. A stove shell having an exterior surface shell of spun or rolled metal, which has its exterior surface plated with a different metal. 2nd. A stove body having a surrounding shell separated therefrom by an air space, and provided with an exterior surface shell of spun or rolled metal plated on the outside with a different metal. 3rd. A stove shell having an exterior surface shell composed of two or more bands of spun or rolled metal, the exterior faces of which are plated with a different metal. 4th. The combination, with a stove body, of the two removable projecting rings or flanges and a separate shell supported between said rings or flanges and provided with an exterior surface shell of spun or rolled metal plated on its outside with a different metal. 5th. The combination, with a stove body, of two projecting rings or flanges perforated for the passage of air, and a separate shell supported by said rings or flanges and separated from the stove body by an air space, which is in communication with the perforations of said rings or flanges, said separate shell being provided with an exterior surface shell of spun or rolled metal.

No. 16,202. Improvements on Harrows.

(*Perfectionnements aux herse.*)

Edward W. Herendeen, Geneva, N. Y., U. S., 25th January, 1883; for 5 years.

Claim.—1st. A harrow tooth having a flat cutting edge and rounded rear edge, and wide bevelled lower portion. 2nd. A harrow tooth having a flat cutting edge and rounded rear edge, and wide bevelled lower portion, and provided with a flat head set at an angle to the line of cutting edge. 3rd. A harrow having teeth provided with a front cutting edge and set in the frame to incline downwardly and rearwardly in line with the draft, whereby the teeth will pass through the harrow frame in a straight and inclined direction. 4th. The harrow tooth C in combination with the frame provided with inclined apertures, for the reception of said tooth, and corresponding in cross section to the shape thereof.

No. 16,203. Worm Powder. (*Poudre à vers.*)

Thomas McCarroll and William A. Ellis, Menford, Ont., 25th January, 1882; for 5 years.

Claim.—1st. A compound of matter composed of santonine, mercury and chalk, sage and white sugar. 2nd. A compound of matter composed of calomel, ialap, santonine, rhubarb and white sugar.

No. 16,204. Improvement on Gaiter Boots and Shoes. (*Perfectionnement des chaussures à élastiques.*)

Edwin B. Stimpson, Brooklyn, N. Y., U. S., 25th January, 1883; for 5 years.

Claim.—A boot or shoe having the upper quarter on the inside of the ankle from the front to the back seam, and the outside quarter from the back seam to or near the front seam, both of elastic material, and having a button fit attached to the inside ankle quarter at the front seam and adapted to lap over the outside quarter.

No. 16,205. Improvements on Water Motors. (*Perfectionnements aux moteurs hydrauliques.*)

Frederick W. Tuerk, Berlin, Ont., 25th January, 1883; (Extension of Patent No. 8363).

No. 15,206. Improvements on Wagon Springs. (*Perfectionnements aux ressorts des wagons.*)

William Welber, Jr., Rockton, Ill., U. S., 25th January, 1883; for 5 years.

Claim.—1st. In a vehicle spring, the rocking crank shafts DEH and single connecting rod I encircled by the spring K. 2nd. In a vehicle spring, the rocking crank shafts DEH, connecting rod I, spring K and collar P provided with the set screw R.

No. 16,207. Improvements on Machinery for Weaving Sacks, Bags, Pillow Cases, &c. (*Perfectionnements aux machines pour tisser les sacs, toiles d'oreillers, etc.*)

Walter Briggs, Abraham Briggs, Asa Briggs, Arthur Briggs, Elijah Briggs and Joseph Briggs, Whitworth, Eng., 25th January, 1883; for 15 years.

Claim.—1st. The combination of an endless pattern surface and a tappet or tappets put by the action of the said pattern surface in and out of gear, with one or more of the jack rods to cause the top and bottom warps to be woven together at the proper places, to form the closure of the tubular article. 2nd. The combination of an endless pattern surface, a sliding rod acted on by said pattern surface, a tappet or tappets adapted to weave the closure of the tubular article, and a hooked connecting rod put in and out of engagement with said tappet or tappets by the action of said pattern surface at the proper time, to weave the closure of the tubular article. 3rd. The combination of the wheel C with snug D, snug E, tappets O S, treadle levers L R, hooked connecting rod I and spring *d*. 4th. The combination, with the mechanism that operates the heads during the weaving of the closure of the tubular article, of means for increasing the friction on the warp beam. 5th. The combination of the rod I, spring *d* and strap *c*. 6th. The combination of the wheel C, snug D, snug E, rod F, lever G, bar H, guide J, connecting rod I, spring *d* and strap *c*.