beam C pivoted to the head of the plough to allow of vertical adjustment, of the slotted adjustable bracket E and slotted bridge F; 6th. The combination, with the drag beam C having vertical and horizontal pivotal points on the head of the plough, of the slotted adjustable bracket E and slotted bridge F; 7th. The combination of the drag beam clasp H with the adjustable drag beam and the jointer bracket provided with the laterally extending arm h; 8th. The slotted bracket D_1 having the laterally extending arm h and the rearwardly extending brace D_2, in combination with the clasp H and horizontal pin G_1.

No. 10,971. Improvements on Fire-Engines.

(*Perfectionnements aux pompes à incendie.*)

Nedrick Jarvie and William Miller, Glasgow, Scotland, 28th February 1880; for 5 years.

Claim.—1st. The combination of a vessel A, for containing a solution of an alkaline carbonate, with a bottle E for containing acid, such bottle being furnished with a loose ball or stopper G, which does not prevent the acid from running out when the bottle is turned down.

No. 10,972. Improvements in Wood-Turning Tools. (*Perfectionnements aux outils à tourner le bois.*)

Freeman Hanson, Hollis, and Daniel H. Bacon, Portland, Me., U. S., 28th February, 1880; for 15 years.

Claim.—1st. A wood cutting tool provided with devices for sawing, cutting and smoothing wood into oval or other shapes; 2nd. The groove d, cutting lip a and cutting plates b c of different lengths, provided with the knife edge g, notch i, teeth e e h, and ridges n.

No. 10,973. Stand Pipe for Railway Water Stations. (*Tuyau de distribution d'eau pour les stations des chemins de fer.*)

Gardiner B. Van Vorst and James A. Pratt, West Albany, N. Y., U. S., 28th February, 1880; for 5 years.

Claim.—1st. The base piece A, divided by one or more partitions a to form the valve chamber a_1 and column chamber or chambers a_2, in combination with one or more water controlling valves contained in said valve chamber and stationary pipe or pipes D secured to the base piece A, over the said column chamber or chambers; 2nd. The combination with a base piece containing separate chambers for the water controlling valves and standing pipes, of the detachable valve seat and valve and the standing pipe D, arranged in relation to each other, so that either can be removed without disturbing the other; 3rd. The combination, with the standing pipe D and crane pipe F, of the joint ring E and the binding collar G; 4th. The hollow shaft I and seat i_1, provided with corresponding ports i_3 and arranged to operate as a rockshaft and a waste water cock; 5th. The combination, with a standing pipe D, and crane pipe F, of the water controlling valve B and hollow shaft or waste water cock I, said valve and cock being arranged in relation to each other, and adapted to operate so that as one is opened the other is reciprocally closed; 6th. The combination, with the crane pipe F, of the spring O, provided with the bow piece o, arranged in relation to said crane pipe; 7th. The combination of the hand lever H, rod h and the shaft I provided with the arms i i_2, with the link j, lever J and valve B; 8th. The crane pipe F provided with a counter weight f_3 attached to said crane pipe, and arranged at an angle of about forty-five degrees from the horizontal centre line of said crane pipe, for the purpose of avoiding the danger of passing trains colliding therewith; 9th. The reversible joint ring E, consisting of an annular flange provided with a convex projection e, on each face at its smaller diameter, and having a flat annular seat of a uniform thickness extending beyond the outer diameter of the convex projections.

No. 10,974. Improvements on Electrical Conductors for Telegraphic, Telephonic and other purposes. (*Perfectionnements aux conducteurs électriques pour des fins télégraphiques, téléphoniques et autres.*)

Charles E. Chinnock, Brooklyn, N. Y., U. S.; 28th February, 1880; for 15 years.

Claim.—1st. The combination, with an electric line wire or conductor provided with an insulating covering, and an external electric conductor, of an uninsulated conducting wire independent of said line wire or conductor but in electrical communication with its external electric conductor, and in communication with the ground; 2nd. The combination in an aerial cable with a group or series of electric line wires or conductors, severally provided with insulating coverings and external electric conductors in contact with each other, of conductors extending from said external electric conductors to the ground; 3rd. The combination with a group or series of line wires or conductors provided with uninsulating coverings and with external electric conductors, of a centrally arranged wire for bracing the cable, comprising the line wires or conductors and insulated from the external electric conductors of the said line wires or conductors; 4th. The combination of a group or series of line wires or conductors, arranged circularly around a central line wire or conductor, all of said line wires having coverings of insulating material and external electric conductors; 5th. The combination, with a group or series of electric line wires or conductors, provided with insulating coverings and some or all provided with external electric conductors, of an uninsulated conducting wire independent of them, and in communication with them and the ground.

No. 10,975. Method for Curing Foot-Rot in Sheep. (*Méthode pour guérir le fourchet des moutons.*)

John Myers, Adams, Ohio, U. S., 28th February, 1880; for 5 years.

Claim.—Subjecting the feet of the sheep to a bath composed of concentrated lye, and afterwards subjecting them to a bath composed of a mixture of blue vitriol and vinegar.

No. 10,976. Improvements on Clothes Washers. (*Perfectionnements aux laveuses à linge.*)

William N. Wylie, Black River Falls, Wis., U. S., 28th February, 1880; for 5 years.

Claim.—1st. The combination of the funnel-shaped body A, provided with the bottom plate B, rims C D, tube F and extension H having openings I I, with handle E, valve K mounted upon a coil L, of a rod M, secured to diametrically opposite sides of rims C, and the rod N secured to rim C at right angles to rod M, and passing through the coil L, upon the latter.

No. 10,977. Improvements in Cream Collectors. (*Perfectionnements aux écremoirs.*)

Peter G. Peltret, San Francisco, Cal., U. S., 1st March, 1880; for 5 years.

Claim.—1st. A milk pan or receptacle in which milk is set for cream, a faucet placed on its bottom, the opening into which is protected by a screen or wire gauge, whereby the milk may be drawn from under the cream and the cream retained; 2nd. The arrangement, for the collection of cream, consisting of the series of pans A, provided with the faucets B and screens a, said faucets connecting with the common drain pipe D and the hot and cold water pipes E F, whereby the cream may be collected and the pans cleaned without handling.

No. 10,978. Improvements on Electrical Conductors for Telegraphic and Telephonic Purposes. (*Perfectionnements aux conducteurs électriques pour des fins télégraphiques et téléphoniques.*)

Charles E. Chinnock, Brooklyn, N. Y., U. S., 1st March, 1880; for 15 years.

Claim.—1st. The combination of insulators, sustaining line wire or conductors and supports therefor, in electrical communication with each other through a guard or other wire or wires common to said supports, and in communication at suitable points with the ground; 2nd. The combination, with insulators sustaining line wires and supported on shanks or fingers of wood or other suitable material, of conductors applied to the shanks or fingers, a wire connecting the conductors of these shanks or fingers, and a wire connecting the last said wire with a guard or other wire, in communication with the ground.

No. 10,979. Improvements in Candlesticks.

(*Perfectionnements aux chandeliers.*)

Richard H. E. Siebert, Washington, D.C., U.S., 1st March, 1880; for 5 years

Claim.—1st. The combination of the two jaws D E, thumb lever F, spring H and plate G; 2nd. The combination of the rods B B, ring C, plate A, jaws D E connected by the hinge k, lever F, spring H and weighted bottom G; 3rd. The combination of the parts D E connected by the hinge k; 4th. In the use of a reflector, as a base plate, and the means of adjusting candle to the same by means of the aperture in plate G, in combination with other parts; 5th. Making the jaws D E, thumb lever F and spring H in one piece

No. 10,980. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

William H. McNary, Brooklyn, N. Y., U. S., 1st March, 1880; for 5 years.

Claim.—1st. The use of segment pieces for varying the width of the gate according to the requirements of the work in hand; 2nd. The arrangement of mechanism for operating the gate and thereby increasing the speed of production of the machine, such mechanism consisting substantially of a rock lever actuated by a crank pin, which is fitted in the radial groove of a rotating plate, the position of such pin being controlled by a fixed cam plate; 3rd. The arrangement of mechanism for operating the wiper and thereby increasing the speed of production of the machine, such arrangement consisting in mounting the rock lever which carries the wiper on the movable fulcrum pin and giving a positive but adjustable motion thereto from the grooved rotating cam Y Z_1; 4th. The means for thickening the fabric at any desired point, such thickening being produced by drawing back the presser L, by means of a rotating cam actuating a reciprocating bar that carries pins that connect the bar through inclined slots with the presser plate, and by the use of an additional forked lever N_3 for shifting the thread guide slide; 5th. The means for producing the compound knitted fabric, such means consisting of an additional guide slide M, which receives its motion from the rock lever R, actuated from the cam S, the thread guide slides being connected together when required by the locking pin m_2, which is actuated by the swinging lever T from the pattern plate.

No. 10,981. Improvements on Mechanical Musical Instruments. (*Perfectionnements aux instruments de musique mécaniques.*)

Elias P. Needham, New York, N. Y., U. S., 1st March, 1880; for 15 years.

Claim.—1st. A mechanical musical instrument in which the required musical effect is produced or controlled by one or more travelling perforated strips or sheets, and in which air under pressure is used to produce the necessary notes or sounds, the arrangement within the wind chest of the instrument, of a board or other equivalent structure provided with air ducts or passages forming a rest over, or in contact with which the perforated strips or sheets are made to travel, for the purpose of opening and closing the mouths or receiving ends of the ducts or passages, to admit the wind from the chest to the pipes, reeds or other sounding devices of the instrument; 2nd. In a mechanical musical instrument, in which the required musical effect is produced or controlled by one or more travelling perforated strips or sheets, the combination, with a wind chest having air under pressure supplied to it, of a board or other equivalent structure provided with air ducts or passages, arranged with said wind chest and having the mouths or receiving ends of its ducts or passages opening into said chest, and one or more travelling perforated playing strips or sheets, and means for carrying the same, also arranged within said wind chest