

frame A, bar *b* supported at both ends in said frame and carrying the cutters and appliances, whereby to turn the bar in the frame from the driver's seat. 15th. The combination of the main frame, tilting frame B arranged within the main frame and hung to the front bar *b*, and carrying the canvas *h*, and appliances for swinging the frame B on the front bar of the main frame from the driver's seat. 16th. The combination of the main frame, tilting frame B and grain divider C connected to the latter frame to move therewith.

### No. 16,685. Improvements on Tubular Lanterns. (*Perfectionnements aux lanternes tubulaires.*)

George A. Kennedy, Coaticook, Que., 16th April, 1883; for 5 years.

*Claim.*—1st. The tilting plate F, in combination with the cap E. 2nd. The oblong air-chamber H combined with a disk I having a central perforation and tubes D entering the ends of the said chamber. 3rd. The horizontal wire K bent semi-circularly to conform to the globe, the ends secured to tubes D in position to bear on the bead of the globe. 4th. The vertically sliding wire M passing through the air chamber H, and concave disk I, whereby the wire when thrust downwardly will be moved into contact with the inside of the globe for its retention against an external wire K.

### No. 16,866. Improvements on Steering Mechanism. (*Perfectionnements aux mécanismes des gouvernails.*)

Nathan Richardson, Gloucester, Mass., U.S., 16th April, 1883; for 5 years.

*Claim.*—The combination, with a rudder-head having arms carrying journals G, of a frame consisting of cross-heads K K and guides B B, a right and left screw C turning in the cross-heads, and L-shaped arms T slotted to receive the journals bearing with their long arms on, and sliding on the guides B B and formed into nuts receiving the screw at the ends of their inner arms.

### No. 16,687. Improvements on Nut Locks.

(*Perfectionnements aux arrête-écrous.*)

Samuel M. Churchill, State Centre, Iowa, U.S., 18th April, 1883; for 5 years.

*Claim.*—1st. The combination of the fish-plate or separate washer-plate A having shank C, tongues B standing out from the said plate and providing spaces between them and the plate A, and the key-plate D having open gap *d* to permit its edges to fit or be inserted between the tongues B and the plate A. 2nd. An ordinary fish-plate provided with a set screw or rivet S, as a substitute of the shank C and tongue B.

### No. 16,688. Secondary Regulator Battery.

(*Batterie secondaire régulateur.*)

Joseph S. Boeman, William Taylor and Frank King, London, Eng., 16th April, 1883; for 5 years.

*Claim.*—1st. The combination, with a secondary battery or batteries, of a gas chamber and plate or plates, elastic diaphragm or equivalent, or fluid joint, alone or in combination with contact breaking, or measuring, or recording devices, one or more. 2nd. The combination, with secondary batteries, of a gas-chamber and plate or plates and float device such as referred to, alone or in combination with contact breaking, measuring or recording devices, one or more. 3rd. The combination of parts consisting respectively of plate or plates, chamber and movable diaphragm or equivalent, when used in combination with contact breaking, or measuring or recording devices, one or more, combined in the various modifications. 4th. The use of a gas-chamber closed at the bottom with a liquid described joint, so that gas collecting in said chamber may cause the liquid to rise in any opening provided and arranged so as to actuate any contact breaking, measuring or recording device.

### No. 16,689. Improvements on Overalls.

(*Perfectionnements aux pardessus.*)

William Carter, Toronto, Ont., 16th April, 1883; (Extension of Patent No. 16,020.)

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William Carter, Toronto, Ont., 17th April, 1883; (Extension of Patent No. 16,020.)

### No. 16,691. Combined Hay Rake and Check-Rower. (*Râteau à foin et machine à sillon combinés.*)

Thomas Miltenberger, Bellefontaine, Ohio, U.S., 17th April 1883; for 15 years.

*Claim.*—1st. The combination, with the sulky having devices to operate a corn marker, of the revolving rake and its operating devices. 2nd. The combination, with the operating devices A B C D and O, of the row-marker and guide. 3rd. The combination, with a row-marker, of the pivoted arm and chain. 4th. The combination, with the revolving sulky hay rake, of the connecting arm A and lever O, having handle B and foot-rest C. 5th. The combination, with standard M and arm A having a pin on its end, of the trip lever I having a slot in its upper end and pivoted near its centre to the standard M. 6th. The combination, with the revolving rake, of the spring trips N, which yield laterally when lugs C press against it during revolution, and assumes its position on top of the lugs when the lug has passed. 7th. The combination, with a revolving rake having lugs C, of the standard M carrying trip lever I and spring trips N. 8th. The combination, with the revolving rake-head, of the collar made in two parts

adapted to be bolted on and having the teeth, and stops. 9th. The combination, with the rake-tooth, of the metallic sheath. 10th. The combination, with cogs X on the rake head, of the segment gear X<sub>1</sub> on lever Z. 11th. The combination, with foot and hand lever O, connecting arm A, standard M, trip lever I and spring trips N, of the revolving rake having lugs C. 12th. The combination, with the revolving rake and spring trips N, of the shield M. 13th. The combination, with arm A having eccentric slot P and pivoted to standard Y, which encircles the rake-head, of the rod S, pin Q and poles P<sub>2</sub>.

### No. 16,692. Improvements on Churn Motors.

(*Perfectionnements aux moteurs des barattes.*)

Benjamin C. May, May, Texas, U.S., 17th April, 1883; for 5 years.

*Claim.*—1st. The combination, with a wheel or disk having a toothed periphery and provided with a friction flange, of a disc at right angles to the former, bearing against its friction flange and having studs engaging its teeth. 2nd. The combination, with the box or body of the churn, of a cover having the uprights C, shaft D having crank E, disk F having teeth G and flange H, and vertical shaft I having disk J provided with studs K.

### No. 16,693. Improvements on Switch Stands

(*Perfectionnements aux bâtis des aiguilles.*)

Oliver J. True, Port Clinton, and Henry H. Houghton, Elyria, Ohio, U.S., 17th April, 1883; for 5 years.

*Claim.*—1st. The combination, with a vertical switch operating shaft, of a weight or block and adapted to be locked thereto. 2nd. The combination, with the vertical switch operating shaft, of a weighted sleeve surrounding the same, a roller on the said sleeve and a V-shaped fixed track or guide on which the said roller is adapted to run. 3rd. The combination, with the stand G, of the vertical shaft F, the weighted sleeve H I, the secured guide sleeve or track P, and devices for locking the sleeve H I on the shaft F. 4th. The combination, with the stand G, of the vertical shaft F, the weighted sleeve H I, the recessed guide sleeve P, the forked plate J keyed on the shaft F, and the lever K pivoted to the plate J and adapted to pass into notches in the upper edge of the sleeve H I. 5th. The combination, with the stand G, of the switch operating shaft F, the weighted sleeve H I, the roller M and the sleeve P provided with a series of V-shaped recesses.

### No. 16,694. Improvement on Fire-Escapes.

(*Perfectionnement des sauveteurs d'incendie.*)

William S. Pugsley, London, Ont., 17th April 1883; for 5 years.

*Claim.*—The combination of the frame A provided with grooves I I, pin B, grooved pulley C provided with projections L L, and teeth J J, slide H and rope K.

### No. 16,695. Improvements on Grain Binders.

(*Perfectionnements aux lieuses à grain.*)

Christopher W. Levalley, St. Paul, Minn., U.S., 17th April, 1883; for 5 years.

*Claim.*—1st. The method of supplying band cord to the binding mechanism of grain binders, by arranging a series of wound balls of cord within an enclosing case, which holds them from disarrangement, and connecting the outer end of the cord of one ball to the inner end of the cord of the adjacent ball, and unwinding them successively by the operation of the machine. 2nd. The cord box or holder having a diameter equal to that of the cord balls, and a length equal to, or exceeding twice the length of one of cord balls and having an aperture through its feed end, for the purpose of receiving and holding two or more balls and permitting the cord to feed from them through said apertures. 3rd. The method of supplying band-cord to the binding mechanism of grain binders, by arranging a series of wound balls of cord within an enclosing case which holds them from disarrangement and end to end, connecting the outer end of the cord of one ball to the inner end of the adjacent ball and unwinding them successively by the operation of the machine.

### No. 16,696. Improvements on Alarms or Signals. (*Perfectionnements aux appareils d'alarmes ou signaux.*)

Hiram A. Eaton, Manchester, Me., U.S., 17th April 1883; for 5 years.

*Claim.*—1st. In an alarm signal, a series of barrels to contain ammunition, a series of hammers or projections co-operating therewith, and means to hold the said hammers or projections ready, when released, to fire the barrels, an extended plate or guide and travelling block or releasing device therein to effect the release of the hammers, to fire the barrels, combined with a clock, a spindle actuated thereby and connected with the said block releasing device, whereby the first barrel of the series of barrels may be fired automatically at any desired hour after setting or cocking the hammers, and the remaining barrels be thereafter fired at predetermined intervals. 2nd. The series of barrels and series of hammers, means to hold them retracted, and a plate or guide of greater length than the length of the space occupied by the said hammers, combined with a travelling block or releasing device, and a clock mechanism to move the same, whereby a clock mechanism is enabled to automatically determine the hour of the day at which the first barrel of the series of barrels will be fired, and also the interval of time between the firing of each successive barrel of the series of barrels. 3rd. The hammer actuating springs, wires *g* and rods to hold the latter, combined with the plate or guide and travelling block or releasing device, adapted to move the said rods one after the other, to effect the release of the said springs. 4th. The combination, with the alarm mechanism, the wires and the pivoted rods *j*, and the bar *k* having slot *h* and the slide *b*. 5th. The combination, with the barrels, nipples and box having board C on its bottom, of a breech block B formed with right angled apertures and bolted to a bar hinged to said board C. 6th. The combination,