

bules of the cream. 2nd. The combination, with the body of churn A and the roller frame C D, of the thumb screw F whereby the said roller frame can be tightened in place and readily detached. 3rd. The dasher roller frame C D, and rollers B journaled to said frame.

No. 13,650. Improvements on Harrows. (Perfectionnements aux herses.)

George H. Johnson, Saltpetre Cave, Va., U. S., 9th November, 1881; for 5 years.

Claim.—1st. The combination, with the harrow tooth, consisting of a flat regular triangular plate, of a forked vertically adjustable tang, shank or holder. 2nd. The combination, with the harrow-beams having vertical openings, of the forked shanks or holders having pivoted regular triangular plates or teeth, and means for so adjusting the said shanks as to force the upper edges of said teeth against the under sides of the harrow beams. 3rd. The combination of the harrow beams, vertical shanks or holders P having triangular teeth L and the slotted longitudinally adjustable plates U having studs X. 4th. The combination, with the vertical shanks or holders having triangular teeth L, of the longitudinally adjustable slotted plates U having studs X, and the bearing plates Y secured upon the under side of the harrow beams.

No. 13,651. Improvements on Broom Machines. (Perfectionnements aux machines à balais.)

Alphonso Walrath, Adelaide C Bronson, Amsterdam, N. Y. U. S., and Valencey E. Fuller, Hamilton, Ont., 9th November (Extension of Patent No. 6,742.)

No. 13,652. Buggy Spring Coupling and Support. (Ajustage et support des ressorts de bogheis.)

John McBride, Strathroy, Ont., 9th November, 1881; (Extension of Patent No. 6,752.)

No. 13,653. Improvements on Machines for Grooving Rolls. (Perfectionnements aux machines à canneler les rouleaux.)

Edwin Reynolds, Milwaukee, Wis., U. S., 9th November, 1881, for 5 years.

Claim.—1st. In combination with a cutting tool, a bed or carrier provided with means for supporting a roll, a positive acting mechanism, arranged to impart a rotary motion to the roll as it is carried beneath the cutter by the movement of the bed or table. 2nd. In combination with a cutting tool and a movable bed or carrier, provided with means to sustain a roll and impart a positive rotation thereto, as it is carried lengthwise beneath the cutter, an automatic disconnecting device operating in connection with the driving train, to momentarily disconnect one portion of the train from the other during the time that the cutter is out of action, whereby the relation of the roll to the driving gear is changed in such manner as to present a new surface of the roll to the action of the cutter, each time that the latter comes into play. 3rd. In a machine for cutting spiral grooves in grinding rolls, a reciprocating bed or carrier, provided with bearings to sustain the roll, gearing upon the bed to revolve the roll upon its axis, a stationary rack to drive said gearing, and an automatic disconnecting or uncoupling device, whereby one portion of the driving gear is disconnected from, and permitted to turn ahead of the remaining gear momentarily, during the time that the cutter is out of action. 4th. In combination with the stationary cutter E, the reciprocating bed B with supports for the roller Z, the gear train located upon the bed for turning the roller upon its axis, the stationary rack F, an uncoupling or disconnecting device in the driving train, and a dog Q arranged to operate the disconnecting device, as the bed moves in one direction only. 5th. In a machine for spirally grooving grinding rolls, the combination of the positively driven dial plate K, disk L, coupling pin M, spindle O and dog Q. 6th. The combination, in a train for rotating the roll, of the dial plate K, having several circular series of holes, the disk L, and the radially adjustable coupling device. 7th. The combination of a stationary cutter, a bed provided with means for sustaining the roll and carrying the same lengthwise past the cutter, and positively acting mechanism for imparting a rotary motion to the roll, as it is carried endwise beneath the cutter. 8th. In combination with the reciprocating bed and the devices thereon, for sustaining and rotating a roll, a stationary rack arranged to operate the roll turning devices as the bed is moved endwise. 9th. The combination of a driving disk provided with a circular series of holes or teeth, a driven shaft provided with a device which engages with the disk and an intermittently acting dog, whereby the shaft and disk are momentarily disconnected in order that one may change its relation to the other. 10th. In combination with the reciprocating bed provided with means for supporting a roll, and gearing for turning the same, a disconnecting device connected with said gearing, and a yielding device located upon a stationary support and arranged to operate the disconnecting device, as the bed moves in one direction. 11th. In a roller grooving machine, the combination of the reciprocating bed and roller turning devices, with the stationary operating rack adapted to be reversed, whereby the machine is adapted to cut either right or left hand spirals at will. 12th. The reciprocating bed provided with the roller supports or boxes, and with a gear train having a coupling adapted for connection to the roll, for the purpose of turning the same upon its axis, while under the action of the cutting tool. 13th. The combination of the reciprocating bed, the stationary rack F, pinion H, shaft G, wheels B I, disk K L, coupling pin M, spindle O and dog Q. 14th. The combination of the stationary cutter, the bed adapted to sustain the roll, and carrying the same endwise beneath the cutter, gearing mounted upon the bed to turn the roll, and a stationary device for imparting motion to the gear train, as the latter is moved with the bed. 15th. The combination of a stationary cutting tool, a carrier to support the roll, and positive acting mechanism arranged to impart a positive rotary motion to the roll, as the latter passes endwise beneath the cutter.

No. 13,654. Improvements in Registering Apparatus. (Perfectionnements aux appareils à compter.)

John W. Fowler and Daniel F. Lewis, Brooklyn, N. Y., U. S., 9th November, 1881, for 5 years.

Claim.—1st. A combination of parts for registering units, and subsequently ringing a bell, to attest or give audible notice of each registration, comprising a distinct bell lever having the bell hammer and striking spring attached thereto. 2nd. The combination of a distinct bell lever with a working pawl, a main ratchet wheel and a detent pawl. 3rd. The combination of a distinct bell lever, means for actuating said lever, and a swinging catch. 4th. The combination of a main slide or its equivalent, a distinct bell lever, a single check detent pawl and their springs, with a working pawl, a main ratchet wheel and a unit registering mechanism. 5th. The combination of a main slide, or its equivalent, a distinct bell lever, a single check detent pawl and their springs, with a working pawl, a main ratchet wheel and its shaft, the unit shaft of a trip register, the unit shaft of a continuous register, and connecting gearing. 6th. The combination of a trip hand or any equivalent thereof adapted to be reset at will, and mechanism for resetting the same step by step comprising a reciprocating setting slide within the register case, an exposed pull knob, or its equivalent so connected with said slide as to remain attached to the register, and a retracting spring or springs. 7th. The combination of a reciprocating setting slide arranged vertically within the lower part of the register case, an exposed pull knob, or its equivalent, having a vertical shank rod and a connecting pinion, and racks. 8th. A visual signal or indicator, arranged behind the dial plate of a register and adapted to rotate on an axis parallel to said dial plate, to display different indications successively through an orifice in said dial plate, in combination with means for transmitting motion thereto from a reciprocating setting slide or its equivalent. 9th. An adjustable arm, in combination with a spring and a stop pin, as means for regulating the presentation of the other arms of a rock shaft, through which motion is transmitted to said visual signal. 10th. The combination of an arm having a laterally yielding spring finger and a part actuated by the main slide, or its equivalent, and adapted to engage with said spring finger, for locking said rock shaft at the end of each forward movement thereof. 11th. The combination of a trip register, a reciprocating device in resetting said register at the end of each trip, and an indicator mechanism adapted to be fully actuated to change the reading or indication of the indicator at the first stroke of said setting device. 12th. The combination of a trip register, a reciprocating device for resetting said register at the end of each trip, an indicator mechanism adapted to be actuated by said setting device, and a locking device, for preventing repeated actuations of the indicator by said setting device during the individual setting operation. 13th. The combination of a trip register, a reciprocating device for resetting said register at the end of each trip, an indicator mechanism adapted to be actuated by said setting device, a bell mechanism adapted to interlock with said indicator mechanism during the setting operation, and a main actuating device as means for unlocking the indicator mechanism.

No. 13,655. Improvements on Saw Swages. (Perfectionnements aux clampes à scies.)

Simon Kinney and Chauncey Spearin, Chicago, Ill., U. S., 10th November, 1881, for 5 years.

Claim.—1st. The combination, with the base A having clamp plate H, and cap B having standard C, of the cam arm J, post F, roller K, link E and lever D to operate the clamp I, the swage block Q and anvil M. 2nd. The combination of the vertically adjustable anvil M, guide block N, spring O, screw J, swage block Q and clamps H I.

No. 13,656. Improvements in Grinding Mills. (Perfectionnements aux moulins à moulin.)

William N. Cosgrave, Faribault, Min., and Robert Mcrell, Passaic, N. J., U. S., 10th November, 1881, for 5 years.

Claim.—1st. The combination of two or more pairs of grinding rolls, the rolls of each pair of which run at differential speed with a revolving separating fan between each pair of rolls and the next succeeding pair of rolls, and a concave screen or sieve co-operating with each fan, whereby the ground product is delivered directly onto the fans which operate to force the fine flour and middlings out through the screens and to deliver the remaining material to the next pair of rolls for further reduction. 2nd. The combination, with two or more pairs of grinding rolls, the rolls of each pair of which run at differential speed with a revolving fan between each pair of rolls and the rolls of the next succeeding pair of rolls having both blades and brushes and a concave screen or sieve co-operating with each fan. 3rd. The combination of two or more pairs of grinding rolls, the rolls of each pair of which run at differential speed with a revolving fan between each pair of rolls and the rolls of the next succeeding pair, onto which the ground product is directly delivered, concave screens or sieves co-operating with the fans, an air trunk into which fine flour and middlings forced through the screens are delivered, and an exhaust for drawing off the fine dust from said air trunk. 4th. The combination of the two or more pairs of grinding rolls, the rolls of each pair of which run at differential speed, the revolving fan and screen arranged between each pair of rolls, the air trunk into which the separated flour and middlings are delivered, perforated inclined deflectors for directing the material into said trunk, and an exhaust at the top of the trunk, whereby a current of air is made to pass through the coarse material as it falls from each fan to the next pair of rolls to cool it, and whereby also the fine dust is drawn out of the trunk and delivered to a suitable dust receiver for further treatment. 5th. The combination of the several pairs of grinding rolls, the rolls of each pair of which move at differential speed, the concave screens between each pair of rolls and the rolls of the next succeeding pair, the rotary separating fan, onto which the ground material is directly delivered and by which the fine flour and middlings are forced out through the screens, and the remaining material delivered directly to the next pair of rolls, with the trunk into which the fine flour and middlings are delivered by the exhaust and the conveyor at the bottom of the machine. 6th. The combination, with the revolving