

angles to the axle, and a gear mounted on said counter shaft and engaging with the gear on the main axle. 5th. The combination, with the reel-bearer H provided with loop H⁵, of the bar I provided at its forward end with a hook ⁵ adapted to surround the journal of the reel-shaft, and provided also with the upwardly projecting pin ⁴ adapted to receive the link I⁴. 6th. The combination, with the reel shaft, of the reel-bearers H¹, loops H⁶, bars I¹, lever I³, link I⁴ engaging with pin ⁴, shaft L, pinions i and racks on the bars I¹, hooks ⁵ and pins i⁴. 7th. The removable bushing adapted for a shaft bearing, in combination with a tubular bearing or sleeve provided with a slit in one side, and means adapted to clamp the bearing upon the bushing. 8th. The bearing C⁷ provided with a slit ⁶, in combination with the bushing ⁶ slotted at ⁷, the set screw ³, the link ³ and head ⁴, mounted upon the bushing. 9th. The combination of the bearing C⁷ slitted upon one side, the clamping screw ⁵, the slotted bushing ⁶, the link ³, the head ⁴ and set screw ³. 10th. The bed plate and the tubular bearing C⁵ cast in one piece and provided with the projecting arm C⁸, in combination with the clutch, the shipping lever and the spring D⁷, secured to the projecting arm C⁸. 11th. In a harvester elevator, the combination, with the lower elevator belt, of an upper elevator belt mounted upon a roller at the upper end, and of a spring roller E² at the lower end of the rear side piece A¹⁰, of the elevator frame provided with a slot ^a extending to a point lower or nearer to the lower elevator belt than does the slot ^a. 12th. The combination, with the elevator belt and the binding platform, of the oscillating stripping devices arranged to throw the straw outward from the elevator belt after it has passed over the upper end of the same. 13th. The combination, with the elevator belt, the straw carrying arm or binding needle, and the shield P³, of the oscillating strippers arranged to throw the straw outward from said shield. 14th. The combination, with the elevator belt and the shield P³, of the oscillating strippers having curved or rounded upper peripheries. 15th. The combination, with the elevator belt and the shield P³ provided with a series of slots, of the oscillating plates E⁵ mounted in said slots in the shield, and mechanism which vibrates them through said slots. 16th. The combination, with the elevator and the shield P³, of the rock shaft mounted transversely upon said shield, and the oscillating strippers secured at their lower ends to said rock shaft. 17th. The combination, with the shield P³, of the binding platform arranged to slide relatively to said shield, of the oscillating strippers E⁵ arranged at the centre, to permit the needle to be moved forward and backward without interfering with the strippers. 18th. The combination, with the needle M M¹, of the compressor N N¹ and the friction roller ^a forced downward by a spring. 19th. The combination, with the needle M M¹, the elevator frame, the frame which swings the needle towards and from the elevator frame of the needle stripper pivoted at one end to the needle-frame in a vertical frame adjacent to that of the needle, and arranged to reciprocate longitudinally on the elevator frame. 20th. The combination, with the needle frame arranged to swing toward and from the elevator, the needle pivoted on said frame to swing vertically thereon, and the compressor N N¹ pivoted to the needle-frame independently of the needle, of the supplemental compressor R and mechanism arranged to force said compressor against the gavel after the needle and the compressor N N¹ have come to rest. 21st. In a grain binder, the combination of the following elements, namely: the vertically swinging cord carrying needle, the compressor N N¹ arranged to force the straw against said needle, the supplemental compressor R, the bell crank R¹, link r, the main shaft R², mechanism for imparting motion from said shaft to said needle and said compressor N N¹, and the crank arm r¹ situated relatively to said mechanism to move compressor R, while the needle and compressor N N¹ are at rest and the knot is being tied. 22nd. The grain receiver P¹ having the finger P² shorter than the finger P³. 23rd. In a grain binder, the combination, with the grain elevator, of a lower surface adapted to support the grain during its descent from the elevator to the table over which grain is moved to the binding mechanism, and a feeding-belt having its lower end mounted on a movable roller. 24th. In a grain binder, the combination, with a grain table over which the grain is moved to the binding mechanism, of a feeding belt mounted at its upper end upon and driven by a roller which is capable of being moved longitudinally relative to the upper end of the grain elevator. 25th. In a grain binder, the combination, with a surface adapted to support the grain during its descent from the elevator to the grain table over which the grain is moved to the binding mechanism, of a feeding-belt having its lower end mounted upon a movable roller, and arranged as described, whereby the weight of said belt and roller is caused to press the grain upon the grain support and binding table. 26th. In a grain binder, the combination, with a grain table over which grain is moved to the binding mechanism, of a feeding-belt having its lower end movable, and mechanism connecting said belt, with the devices which throw the binding mechanism into action. 27th. The combination, with the binding mechanism, the devices which throw said mechanism into and out of operation, and the endless belt K suspended above the binding-table and arranged to carry the grain downward, of the lever J¹ pivoted above the binder-frame, the link ¹ pivoted to said lever, the rock shaft J² beneath the binding-table and the toggle-levers J³ J³. 28th. The combination of the gear-wheel R³, pinion S⁴ having clutch-teeth, the shipping lever S⁴, clutch S², cam r², spur r³, toggle levers J³ J³, spring s¹ and rod s. 29th. The combination with the elevator frame, the sliding binder frame, the tension devices, and the levers J¹, of the upright J^x secured to the elevator frame, the upright J, attached to the binder frame, and the bar J^c secured to the upright J¹ at one end, and arranged to slide at the other end on upright J^x and to support the tension devices and tripping lever J¹. 30th. In a grain binder, the combination, with the binder arm and the cord supplying devices, of the described intermittent tension device constructed with the series of studs ³ of different lengths. 31st. In a grain binder, the combination, with the needle shaft m, of the clutch plate m¹ m² fast thereon, and the segment L⁸ adjustable to each other by means of bolts and slots arranged upon opposite sides of the needle shaft, whereby the segments L⁸ is secured to the clutch-plate independently of said shaft. 32nd. The combination, with the needle shaft m, of the clutch-plate m¹ m² fast thereon, and the segment L⁸ provided with the adjusting slots ³ and the clamping bolts m⁴, whereby the segment L⁸ is rigidly secured to the clutch-plate independently of said shaft.

No. 14,905. Improvements on Telephone Signal Apparatus. (*Perfectionnements aux appareils à signaux téléphoniques.*)

James F. Kettell, Worcester, Mass., U. S., 5th June, 1882; for 5 years.

Claim.—1st. The combination of the clock mechanism with an electro-magnet and its armature in the main line circuit for controlling the said clock mechanism, a branch or grounding circuit, and circuit closer therein controlled by the said clock mechanism, an alarm mechanism consisting of a mechanically actuated train of gears, and the controlling magnet therefor located in the said branch or grounding circuit, whereby the operation of the said alarm mechanism is governed by the circuit closer controlled by the clock mechanism. 2nd. A series of apparatus in a single circuit, each apparatus consisting of a clock mechanism, an electro-magnet and its armature in the said circuit, for controlling the said clock mechanism, a branch or grounding circuit and circuit closer therein controlled by the said clock mechanism, an alarm mechanism consisting of a mechanically actuated train of gears and the electro-magnet and armature in the said branch or grounding circuit for controlling the said alarm mechanism, the circuit closers in the said branch circuit controlled by the different clock mechanisms, being arranged to operate at different periods in the synchronous movement of their controlling clock mechanism, when all started in unison by a common impulse in their controlling electro-magnets. 3rd. A uniformly moving train or clock mechanism at the central station, and circuit closer operated thereby, one electrode of the said closer being moved by the said train from a definite starting point, and the other being adjustable by the operator to any position in the path of the said moving electrode, a stopping device for the said clockwork and circuit closer operated by it in the action of releasing the said clock mechanism, whereby an impulse is sent over the line at the moment the clock work is started, and a second impulse at a different moment in its movement thereafter, in combination with a series of stations each containing a clock work controlled by an electro-magnet in circuit with the said circuit closer, a circuit closer operated by the said clock work at a different moment at each station, and an alarm controlled by the said circuit closer, whereby the first operation of the said central station instrument effects the electro-magnets by which the station clock works are all started in unison with the said central clock work, and the second closure of the circuit at the central station causes the desired one of the alarms, the circuit of which is at the same moment closed by the clock controlled circuit closer. 4th. A clock mechanism stopping device therefor, and circuit closer operated by the said device in releasing the said clock work, combined with a circuit closer operated by the said clock work, one of the electrodes of which is adjustable to cause it to be operated at any desired time in the movement of the said clock work, and a second circuit closer operated by the said clock work during a fixed definite period of its movement, whereby an individual signalling apparatus and top belt signalling apparatus may be operated upon the same line. 5th. The combination of a clock mechanism and stopping device therefor, adapted to arrest its movement at two different fixed points, with a visual signal operated by the said clock mechanism, and adapted to show different signals when the said clock mechanism is arrested at different points, to indicate whether the line is in use or not. 6th. The signalling apparatus controlled or operated by a mechanically actuated train or clock work combined with a visual signal-operated by the said train in its movements to indicate when it is necessary to wind up the said clock movement. 7th. A clock mechanism, a stopping device therefor operated by hand to release the said clock mechanism, a circuit closer operated by said stopping device in releasing the said clock mechanism, and a circuit closer operated by the said clock mechanism in its movement, whereby an electric impulse is transmitted when the said clock mechanism is released or started, followed by another impulse at a different moment during the movement of the said clock mechanism. 8th. The combination of a clock mechanism and circuit controller operated thereby, to produce electric impulses at definite intervals, for the purpose of operating individual receiving instruments of a hand operated circuit closer, and means operated by the said clock mechanism to retain it in circuit for a definite period, and then automatically remove it from circuit, whereby signals may be sent by the said hand operated key without danger of interfering with the individual signalling apparatus.

No. 14,906. Improvements on devices for jointing saws. (*Perfectionnements aux machines à affûter les scies.*)

Edward Preston, Winona, Min., U. S., 5th June, 1882; for 5 years.

Claim.—1st. The combination, with the file holder, of the inclined files, supported by pivoted adjustable bearings, and the intermediate file arranged to be adjustable vertically between the inclined files. 2nd. The combination, with the file holder A having spring-jaws for embracing the sawblade, of the inclined file plates B secured in brackets that are pivoted to set screws passing through the sides of the holder, the intermediate file-plate supported between the inclined file-plates by set screws, and the springs arranged to act against the inclined file-plates.

No. 14,907. Improvements on Fruit Evaporators. (*Perfectionnements aux séchées à fruits.*)

James M. Teasdale, Howell, Mich., U. S., 5th June, 1882; for 5 years.

Claim.—1st. In a fruit evaporator, the horizontal flues thereof all inclined in one and the same direction, in combination with proper inlet and outlet flues. 2nd. In a fruit dryer, a series of rectangular steam flues A, one above the other and all inclining from back to front in the same direction, in combination with the steam inlet and exhaust H, and separate connections between each flue and the inlet and exhaust pipes, said exhaust pipe connections being made at the lowest end of the flues.