

with the springs *i*, of the wires *g*, the arm *j* pivoted on cross bar *G* and the bar *K* having slot *h*, whereby the wires *g* may be placed over the ends of the spring and under the arms, while the arms are placed in slot *h* to hold the springs back. 7th. A series of barrels to contain ammunition, a clock mechanism and a spindle *b* moved in unison with and by the hour post of the clock, combined with a hammer releasing or controlling device, connected with, and actuated by the said spindle to control the intervals of time between firing the said barrels.

No. 16,697. Improvement in the Distillation of Coal. (*Perfectionnement dans la distillation du charbon.*)

William J. Cooper, Westminster, Eng., 17th April, 1883; for 5 years.

Claim.—The improvements on the distillation of coal in and for the manufacture and production of coal gas or of illuminating gas, by the admixture and use of lime (in any of the forms or compounds mentioned) with coal.

No. 16,698. Improvements on Gates. (*Perfectionnements aux barrières.*)

William R. White, Neoga, Ill., U. S., 17th April, 1883; for 5 years.

Claim.—1st. The combination, with a guided and sliding gate *D*, of a vertically guided rod *G*, levers *E* connected thereto, and a pitman *I* joined to the lower end of the rod and to the gate centrally near the lower part. 2nd. The combination of sliding gate levers, rod and pitman, constructed to lock the gate in either position.

No. 16,699. Improvements on Car-Couplers. (*Perfectionnements aux accouplages des chars.*)

George Mitchell, Newcastle, N.B., 17th April, 1883; for 5 years.

Claim.—1st. The latch *L* pivoted at the forward end of the top of the draw-head and having a nose *h* sloping downward and backward, and terminating in a square shoulder projecting in the throat of the mouth of the draw-head, and fitting loosely between the shanks of the coupling link *c*. 2nd. The combination of the spring *S* having its ends socketed in a suitable recess at the top of the latch *L* and in a bridge *h₂*, and holding the latch down. 3rd. The combination of the angular lever *A* pivoted across the draw-head to a lug *h₃* and connected by means of the link *a* to the latch *L*. 4th. The combination of the draw-bar *B* and the draw-head *H* pivotally connected, by means of a hinge joint, with projected and recessed tongue *t*, and sloping shoulders *h* limiting the extent of the deflection and facilitating the adjustment of the head to different heights. 5th. The combination of the draw-bar *B* hinged to the draw-head *H*, latch *L* pivoted to the draw-head and projecting its nose *h* into the throat *h₁* of the flaring mouth spring *S*, acting against the latch and a bridge *h₂*, and angular lever *A* pivoted to lug *h₃* and connected to the latch *L* by means of a link *a*.

No. 16,700. Improvements on Harvesters. (*Perfectionnements aux moissonneuses.*)

Samuel D. Maddin, St. Paul, Minn., U. S., 17th April, 1883; for 5 years.

Claim.—1st. The combination of an axle supported by the wheels and a cutter-bar frame, one side bar of which rocks in bearings on a frame swinging on the axle, while the other side bar is attached to a link or yoke through which the axle extends. 2nd. The combination with the axle *A* of a rigid frame *E* having side front and back bars and connections, whereby said frame may be swung on said axle, or rocked in its bearings at one side while raised or lowered at the other upon the axle. 3rd. The combination of an axle *A* and frame *E* rocking at one side in bearings supported by the axle, and provided at the other with a link through which the axle extends, a platform supported by the axle and elevating appliances, whereby the frame *E* may be raised, lowered and tilted. 4th. The combination of the axle frame *E*, the frame *G* swinging on the axle and supporting the bearings of one side of the frame *E*, and the crank shaft *c* supported by said frame, pitman *h* parallel to the wheel, crank lever *j* pivoted adjacent to the cutter-bar, and cutter-bar. 5th. The combination of the axle, platform frame *G*, frame *E* provided with a link *a* and turning in bearings on the frame *G*, and shafts *H* *I* provided with levers *m* *n*.

No. 16,701. Apparatus for the Manufacture of Starch. (*Appareil pour la fabrication de l'empois.*)

Anthony Atkinson, New York, N. Y., U. S., 17th April, 1883; for 5 years.

Claim.—1st. The eccentric on the driving shaft *B* and the yoke *A*, which is on the head of the separator or sieve and goes over the eccentric.

No. 16,702. Improvements on Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

Peter Patterson, (assignee of John C. McLachlan), Patterson, Ont., 17th April 1883; for 5 years.

Claim.—1st. A harvesting machine in which the main wheel revolves upon the axle supported in bearings on either side of the said wheel, the lifting lever rigidly secured to the axle, in combination with a sheaf also secured to the axle and connected by a chain to the inner side of grain table for the purpose of raising and lowering it. 2nd. In a harvesting machine in which the grain table and cutter-bar move independently of the main frame, the combination of a solid piece of metal bolted to the cutter-bar and forming a cross head arranged to connect and move vertically within the main frame, forming at the same time a double bearing for carrying the spindle of the rake driving pinion. 3rd. A harvesting machine in which the movement of the rake wheel is derived through a sprocket wheel and pinion, rigidly securing together or forming in one piece the said sprocket

wheel and pinion, for the purpose of preventing any twisting strain being exerted on the spindle supporting the same. 4th. A harvesting machine in which the grain table and cutter-bar move independently of the main frame and is provided with a casting bolted to the inside of the grain table, arranged to form a sliding cross-head connecting the table and main-frame, a lifting lever pivoted on the said casting, in combination with a chain or rod connected to the said lever and passing through a hole made longitudinally in the cross-head to the bottom of the grain table along which it passes over suitable friction rollers to the grain wheel for adjusting the same. 5th. In a harvesting machine in which the table and cutter bar move independently of the main frame, an arm rigidly fastened at one end to the cross-head, in combination with double tightening rollers pivoted to the outer end of the arm and extending one above and one below the sprocket chain, for the purpose of keeping the same taut during the adjustment of the grain table. 6th. In a harvesting machine in which the trip is operated by pins or projections arranged on the surface of the rake wheel, an arm extending over the surface of the wheel and supported in such a manner that its distance from the surface can be adjusted. 7th. A harvesting machine having a rolling rake head, a friction roller secured to the rake head by a bolt passing through an elongated hole or slot made through the internally projecting end of the rake head. 8th. A harvesting machine having a rear rake built on the grain delivery side of the table, the casting in one piece of the inclined guide forming one side of the throat, and the horizontal piece forming the other side.

No. 16,703. Machinery for Opening and Preparing Cotton. (*Machine pour éplucher et préparer le coton.*)

The Whitehead and Atherton Machine Company, (assignee of William E. Whitehead), Lowell, Mass., U. S., 17th April, 1883; for 5 years.

Claim.—The combination, with the drop lever, the exhaust fan and the dust flue or trunk, of an automatic damper placed in said trunk at, or near the discharge or delivery end of the exhaust pan and connected with, and operated by the drop lever.

No. 16,704. Improvements on Ink-Stands. (*Perfectionnements aux écritoirs.*)

Isaac Brooke, Royersford, Pa., U. S., 17th April, 1883; for 5 years.

Claim.—1st. The binder *G* in combination with the removable side pieces, which said binder straddles, the cover journaled in said side pieces and the lever *C* which engages with the arms, the binder *G* serving as a stop to prevent the cover from being turned backward too far. 2nd. The inkstand and the base, in combination with curved lever *C* pivoted on lugs on said base and arranged below the top of said inkstand and the cover *D*, said lever and cover returning automatically to their normal positions by gravity. 3rd. The rising and falling cover having lateral motions and provided with means for locking it in elevated position. 4th. The inkstand and cover and operating lever of the latter, in combination with lugs overhanging said lever. 5th. The base and removable side pieces, in combination with a binder having an eye at bottom and a securing wedge or key. 6th. The rising and falling cover provided with a pad adapted to strike the binder which stops the rearward motion of the cover of the inkstand. 7th. In an inkstand consisting of a rising, falling and laterally moving cover and an operating lever therefor, a base and side pieces, said cover having a lug *F* and the side pieces, one or both, formed with a notch *F₁*.

No. 16,705. Machine for Operating Semaphore Signals. (*Mécanisme des signaux sémaphoriques.*)

William W. McLellan, Newcastle, N.B., 17th April, 1883; for 5 years.

Claim.—The combination of the several parts, quadrant *D*, levers *A* and *B*, rubber buffer *C*, foot pull *E*.

No. 16,706. Combined Spool and Thimble Holder and Thread-Cutter. (*Porte-bobine, porte-dé et coupe-fil combinés.*)

Antonio M. Barrett, Ione, Cal., U. S., 17th April, 1883; for 5 years.

Claim.—1st. A spool and thimble holder constructed of a piece of wire bent to form a vertical centre *A*, upon top of which the thimble is sustained, and an open base *C*, in one corner of which one end of the wire is formed into a hook *a* and receives the other end forming the spindle *c* upon which the spool is fitted, and a hook or pin *E* upon the back of the device to secure it to the top of said pin, being separated from the centre *A* to receive the rim or edge of the thimble. 2nd. A combined spool and thimble holder and thread cutter constructed of a piece of wire bent to form a vertical centre *A*, upon top of which the thimble is sustained, cross-arms *B* and wide open base *C*, in one corner of which one end of the wire is formed into a hook *a* and receives the other end forming the spindle *c* upon which the spool is fitted, the cutting blade *D* supported from the front of the device by a strip or piece *b*, and the pin or hook *E* secured to the back of the centre *A*, and having its upper portion free to receive, between it and the centre *A*, the rim or edge of the thimble. 3rd. In a combined spool and thimble holder and thread-cutter consisting of a central piece *A*, cross-arms *B*, open lower portion *C* having a hook *a* at one corner, and a spindle or base *c* adapted to rest in said hook or to be removed therefrom, a cutting blade *D* in front, and a pin or hook *E* behind.

No. 16,707. Improvements on Gate Hinges. (*Perfectionnements aux pentures des barrières.*)

Charles Jobson, (assignee of Miller B. Hudson), Canandaigua, N. Y., U. S., 17th April, 1883; for 5 years.

Claim.—1st. The combination of the case consisting of the U-shaped plates *A* fitting the corner of a post provided with the cross slots