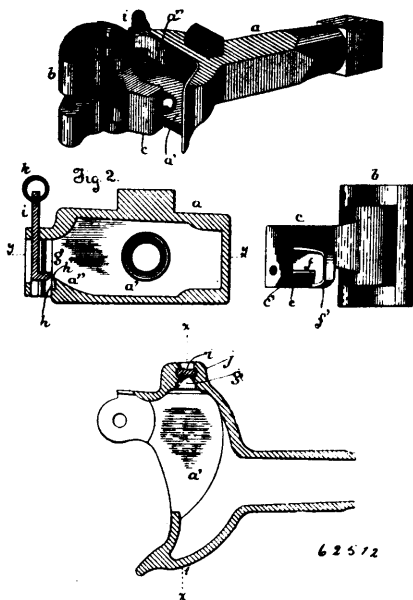


matically lift and guide said hook to said locking aperture, and means for lifting said hook to disengage the knuckle arm again.



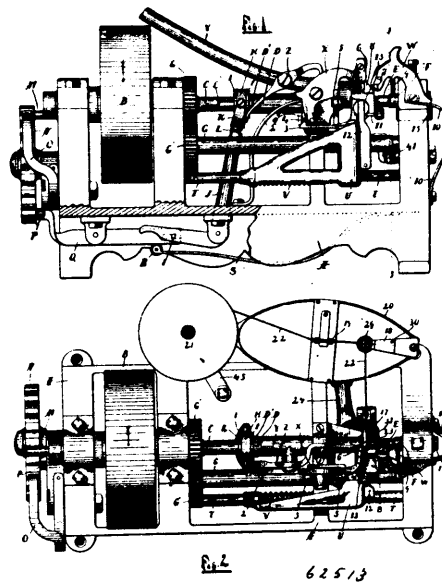
2nd. In combination, a draw-head, as *a*, provided with a recess, and a knuckle pivoted to said draw-head and having an arm entering said recess of the draw-head, a hook in the end of the arm, and a vertical aperture for the hook to drop into and lock the knuckle upon the arm thereof having entered said recess, their being an inclined approach in the floor of said recess to automatically lift and guide said hook to said locking aperture, and the surface of the said vertical aperture engaging the hook being somewhat inclined to cause the upper part thereof to protrude and the contacting surface of the nose of the hook being correspondingly formed, for the purpose specified, and means for lifting said hook to disengage the knuckle arm again. 3rd. In combination, a draw-head, as *a*, provided with a recess, and a knuckle pivoted to said draw-head and having an arm entering said recess of the draw-head, a hook in the end of the arm, and a vertical aperture for the hook to drop into and lock the knuckle upon the arm thereof having entered said recess, there being an inclined approach in the floor of the said recess to automatically lift and guide said hook to said locking aperture, a jog as *h* in the lift and right wall of such aperture for the nose of the hook to rest in, and the vertical surface *h* of such jog being slightly inclined to cause the upper part thereof to protrude and the contacting surface of the nose of the hook being correspondingly formed, for the purpose specified, and means for lifting said hook to disengage the knuckle arm again.

**No. 62,513. Machine for Applying Jackets to Projectiles.** (*Machine pour appliquer des enveloppes aux projectiles.*)

Myron Clark Lisle, Grand Rapids, Michigan, U.S.A., 2nd February, 1899; 6 years. (Filed 9th December, 1898.)

*Claim*—1st. The combination of an inclined tube having a substantially horizontal end, downward lateral extension at the lower end of said tube and having its axis parallel to the axis of said lower end, a rotative and longitudinally movable spindle in the axis of said extension and having its end traversing the same, a rotative socket in line with the axis of said spindle and mechanism to operate said spindle, substantially as described. 2nd. The combination of said inclined tube having substantially horizontal lower end and an opening in its side between said end and the inclined portion, a pivoted lever extending through said opening and within said tube, a lateral extension below the lower end of said tube and having its axis in line therewith, a rotative spindle traversing said extension and in the axis thereof, a rotative socket in line with said spindle, and means for operating said spindle and lever, substantially as described. 3rd. The combination of a driving shaft, a spindle longitudinally movable on said shaft and rotative therewith, a bell crank connected to said spindle to reciprocate the same, a spring engaging said bell crank, a crank pin on the driving shaft, a notched wheel moved by said crank pin, and a stud on said wheel to operate said bell crank, substantially as described. 4th. The combination of a driving shaft having a crank pin and longitudinal slot, a hollow spindle having a pin passing through said slot and a reduced and curved end, a rotative socket opposite spindle, collars on said spindle, a ring rotative between said collars, a yoke pivoted to said ring, a bell crank having an arm connected to said yoke, a spring and pivoted lever engaging the other arm of said bell crank a notched wheel operated by the crank pin and having a stud engaging and

operating the pivoted lever, substantially as described. 5th. The combination of an inclined tube having a lateral extension and an



opening, a pivoted lever having one end in said opening, a shaft having a crank pin and a longitudinal slot, a hollow spindle having a reduced and cupped end and collars, and a pin traversing said slot, a ring rotative between said collars, a yoke pivoted to said ring, a bell crank lever, a telescopic extension attached to said yoke a spring and pivoted lever engaging said bell crank lever, an inclined end on said pivoted lever, a notched wheel intermittently rotated by the crank pin, a stud on said wheel engaging said inclined end of the lever, a spring stop engaging said notched wheel, and a rotative socket opposite the end of the spindle, substantially as described. 6th. The combination with a rotative socket and a hollow rotative spindle having a cupped and corrugated end and a transverse pin, of a driving shaft within said spindle having a longitudinal slot terminating in opposite lateral extensions having inclined sides to engage said pin, whereby said spindle is both rotated and pressed toward the socket by the rotation of the spindle, substantially as described. 7th. In combination with means for rotating a projectile and a reciprocating carriage having a twine feeding beak, a hammer having a cupped end to strike the projectile and secure the twine in a groove in the same, and means of operating said hammer, substantially as described. 8th. In combination with means for rotating a projectile, and a reciprocating carriage having a twine feeding beak, a spring actuated hammer to strike the projectile and secure the end of the twine thereto, a lug and shoulder on said hammer, a dog engaging said shoulder, a hook on the carriage engaging said lug and a projection to engage the dog, substantially as described. 9th. In combination with means for rotating a projectile and a reciprocating carriage having a twine feeding beak, a hammer having a cupped end and striking the projectile at the rear to secure the twine, and a hammer having a cutting tool to sever the twine and a chisel face to secure the end thereof and striking the projectile near the forward end, and mechanism to operate said hammers, substantially as described. 10th. In combination with means for rotating a projectile and a reciprocating carriage having a twine feeding beak, a spring actuated hammer having a cutting tool to sever the twine and a chisel face to secure the same, a lug on said hammer, and a triangular plate on said carriage engaging said lug, substantially as described. 11th. In combination with means for rotating a projectile, a reciprocating carriage having a twine feeding beak, a trimming plate and a hook having a lateral projection, a hammer having a cupped end, a shoulder, a lug, and a dog engaging said shoulder, a hammer having a cutting tool and chisel face, and a lug engaged by the triangular plate, substantially as described. 12th. In combination with means for rotating a projectile, a reciprocating carriage, a twine feeding beak, a hammer having a shoulder and a lug, a dog engaging said shoulder, a hook on the carriage engaging the lug and having a projection engaging the dog, a second hammer having a lug, and a triangular plate on the carriage engaging said lug, substantially as described. 13th. The combination of a rotative spindle, having a corrugated and cupped end, a rotative socket, a reciprocating carriage, a twine feeding beak on said carriage, a spring-actuated hammer for securing the twine to the projectile, and a second hammer for securing and cutting said twine, and means for operating said hammers, substantially as described. 14th. In combination with means for rotating a projectile and winding and securing twine thereon, a carriage and a thread cutting tool attached to said carriage to form a spiral groove in said projectile to receive the twine, substantially as described. 15th. In