To all whom it may concern:

Be it known that I, ROY DODSON, a citizen of the United States, residing at Dallas, in the county of Dallas, in the State of Texas, have invented and useful Improvements in Horse-Collar-Blocking Machines, of which the following is a specification, reference being had to the accompanying drawings and the letters of reference marked thereon, which form a part of this specification.

My invention relates to machines for use in the manufacture of horse-collars, wherein the collars after being stuffed or filled are placed and by means of the combined action of "binding and pressing" are properly shaped, or, in other words, blocked; and the objects of my improvements are to provide means whereby a horse-collar may be held during the process of blocking, which holder conforms to the finished outlines of the collar; to further provide means whereby a binder may be brought firmly about the rim of the collar and there held while pressure is brought upon the body of the collar to properly shape it, and, further, to provide mechanism whereby the degree of strain of the binder about the collar and degree of pressure upon it are independently under the control of the operator. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the machine; Fig. 2, a front elevation of the same; Fig. 3, a detailed plan of the head-block of the machine; Fig. 4, a detailed plan of the drive-pulley and adjacent parts of the machine; Fig. 5, a plan of the forming or blocking table of the machine; Fig. 6, a vertical cross-sectional view of the blocking portion of the machine; Fig. 7, a detailed perspective of one of the opening nuts of the machine, and Fig. 8 a detailed side view of the controlling-lever of the machine.

Referring to the said drawings, A is the bed-plate of the machine, supported on a frame and standards B and made with a forward-extending portion C, which has the shaft-bearings C' and C'' and fixed to the bottom of the plate the shaft-bearings D and D.

Fixed upon plate A is the collar-forming block E, made with the central upright portion E', shaped to the inner form of a horse-collar and shaped about said upright portion to the form of the face of the collar. Said block is further made with a two-part neck 55 portion E'', which extends between upright flanges of part C, where it is secured, and thereof forms a guide-way, upon which a nut-head block is placed and arranged to slide, as will be hereinafter described. Said part E'' terminates with a shaft-bearing F, and fixed across the part E'' adjacent block E is a box F', and journaled in said bearings is a shaft G, made screw-threaded throughout its length between the said bearings, which screw portion thus arranged passes through a nut-head block H, which is placed to slide on said guide-way, and through an openable nut H', which is housed within said head. Journaled in the bearings C' and D D, respectively, are two sections of shafting I and J, the section I having fixed thereon a bevel-gear J and a friction-disk L, and section I a bevel-gear K and friction-disk L', and between said disks, sleeved on the adjoining end portions of said shafts, is a belt-pulley M, made with end flanges of like diameter as disks L, L' and adapted to be brought to frictionally engage said disks, and thus independently drive either shaft-section. One section of said pulley is made with a reduced neck having an annular groove M', wherein the fork of a lever N engages to throw the pulley in either direction, and thus bring the pulley-flanges to frictionally contact the said shaft-disks.

An upright shaft O is journaled in bearing C' and has thereon a gear J', in mesh with gear J, and a gear P, arranged in mesh with a corresponding gear P' of screw-shaft G, which shaft and gears connect said screw-shaft G and shaft-section I, so that movement of shaft J will be imparted to screw-shaft G. Lever N is bracketed to frame B, as shown in Figs. 4 and 5, and is through the agency of rod N' connected with the machine-controlling lever Q, which is fulcrumed to plate A, as shown in Figs. 5 and 8, and said lever Q is provided with a hand-latch-piece Q', which operates in conjunction with a segment Q'' and latches in a single notch of the segment, and thus holds the said levers so that pulley M or its flanges will be held in a normal po-
sition between disks \(L\) and \(L'\). The nut-head block \(H\) has fulcrumed thereto a lever \(R\), which at its upper end is pivoted to a sliding plate \(R'\), arranged as a cover to block \(H\), and which within eccentric slots, which register over upright pins \(H''\) of the two-part nut \(H'\) and by the action of the plate cause the parts of the nut to move from or toward each other by reason of said pins working in said plate-slots. Connecting the lower end of said lever \(R\) is a rod \(R''\), which through the medium of an intermediate lever \(S\), which is bracketed to frame \(B\), is connected with a "push" and "pull" rod \(S'\), which when actuated works plate \(R'\) and the parts of nut \(H'\) so said nut will engage and mesh screw \(G\) or open from such engagement. The free end of said rod \(S'\) rests upon a grooved roll \(S'\), which permits free travel of the rod and terminates with a handpiece suitable for grasping by the hand.

Fixed upon opposite sides of bed-plate \(A\) are two upright hollow standards \(T\), preferably gas-pipe, which bear at the upper end each a sheave-wheel \(T'\). Sleeved on said uprights is a head-block \(U\), which is, through the agency of a pair of attached cables, counterbalanced by means of a weight \(W\). Pivotally fixed upon said head-block is a two-part-0penable nut \(V\), having upright pins \(V'\), arranged operating in eccentric slots of a lever \(V''\), which is fulcrumed between said pins and actuated to open said nut parts from or close them in mesh upon a screw-shaft \(X\), which extends vertically in the central portion of the machine, being boxed in block \(E\) and bed \(A\), having fixed thereon a bevel-gear \(K\), in mesh with gear \(K\), whereby motion is imparted from shaft-section \(I\) to said screw, and block \(U\) is made with a vertical opening, through which said screw is arranged. In service nut \(V\) is opened and head-block raised by grasping and lifting on the side handpiece thereof to a position as shown in Fig. 3. A collar is then placed on block \(E\) above the upright portion thereof, and a cable \(Z\) (shown in Fig. 3) is then placed about the rim of the collar, crossed at the top end of the collar, and the ends thereof placed on hooks \(Y\), which are integral with and extend sidewise from nut-head block \(H\). After said cable is placed head-block \(U\) is brought down to rest upon the body of the collar, as shown in section, when its nut \(Y\) is closed to mesh with screw \(X\). At such stage of operation nut \(H'\) is also closed upon screw \(G\). Lever \(Q\) is then grasped and unlatched from segment \(Q'\) and moved to throw pulley so one of its flanges will bear against disk \(L\) and by friction during the holding of the lever drive screw \(G\), and thereby move nut-head block out, and hence draw on cable \(Z\). When tension is given the cable to properly bind the collar, the lever \(Q\) is reversed, causing the opposite pulley-flange to likewise engage disk \(I'\), and thereby drive screw \(X\), which will force head-block \(U\) down upon the collar, and thus press the collar. When sufficient pressure is thus applied, lever \(Q\) is set in its normal position. Lever \(V\) and rod \(S'\) are then worked to open the nuts when releasing the pressure of binding-cable \(Z\) and head-block \(U\), when said head-block is again raised, the collar removed and a succeeding collar placed, and another like operation had.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is as follows:

1. In a horse-collars-block machine, the combination with the forming-block having a two-part neck portion and a central upright portion, the neck portion being mounted and secured between flanges to form a guideway, of a nut-head block sliding on said guideway, an openable or separable nut housed within said nut-head block, and a screw-threaded shaft mounted in suitable bearings and passing through said head-block and through the openable or separable nut, and means for connecting the said head-block and separable nut, substantially as specified.

2. In a horse-collars-block machine, the combination with the forming-block having a two-part neck portion and a central upright portion, the neck portion being mounted and secured between flanges to form a guideway, of a nut-head block sliding on said guideway, an openable or separable nut housed within said nut-head block, hooks formed with the \(100\) head-block, and a screw-threaded shaft mounted in suitable bearings and passing through said head-block and through said openable or separable nut, substantially as specified.

3. In a horse-collars-block machine, the combination with the forming-block having a two-part neck portion and a central upright portion, the neck portion being mounted and secured between flanges to form a guideway, of a nut-head block sliding on said guideway, an openable or separable nut housed within said nut-head block, having pins therewith, with an eccentrically-slotted sliding plate to connect with said pins, and a screw-threaded shaft passing through said nut-head block and through said openable or separable nut, substantially as specified.

4. In a horse-collars-block machine, the combination with the forming-block, having a two-part neck portion, and a central upright portion, the neck portion being mounted and secured between flanges to form a guideway, of a nut-head block sliding on said guideway, an openable or separable nut housed within said nut-head block, having pins therewith, with an eccentrically-slotted sliding plate to connect with said pins, a screw-threaded shaft passing through said nut-head block and through said openable or separable nut, and a lever whereby the parts of the separable nut are moved to or from each other by means of the said pins and slots of said plate, substantially as specified.
5. In a horse-collar-blocking machine, the combination with the bed-plate or forming-block provided with an upright portion, of a head-block mounted above said forming-block having pivotally fixed thereon a two-part openable nut provided with pins, a lever fulcrumed between said pins and having eccentric slots which coact with said pins, a screw-threaded shaft passing through said two-part openable nut, head-block, forming-block and bed-plate, a bevel-gear on said shaft, and means connected to said gear whereby to operate said screw-shaft, thereby operating the two-part nut, substantially as specified.

6. In a horse-collar-blocking machine, the combination with the forming-block having a two-part neck portion and a central upright portion, the neck portion being mounted and secured between flanges to form a guideway, of a nut-head block sliding on said guideway, an openable or two-part nut provided with pins housed within said nut-head block, an eccentrically-slotted sliding plate coacting with said pins, a screw-threaded shaft passing through said nut, head-block and through said openable or separable nut, a lever whereby the parts of the separable nut are moved to or from each other, and a bevel gear-wheel on said screw-shaft, and means connected to said gear-wheel whereby to operate the said screw-shaft, substantially as specified.

7. In the herein-described collar-blocking machine, in combination with the bed-plate and standards, bearing the hollow uprights having sheave-wheels journaled at their upper end; the head-block arranged to move vertically and be guided by said uprights; the cables arranged connecting the said block and over said sheave-wheels; and the counterweight attached to said cables, substantially as and for the purpose specified.

Signed at St. Louis, State of Missouri, this 9th day of April, 1901.

ROY DODSON.

In presence of—

WM. J. HUTCHINS,

ANNA G. CARR.