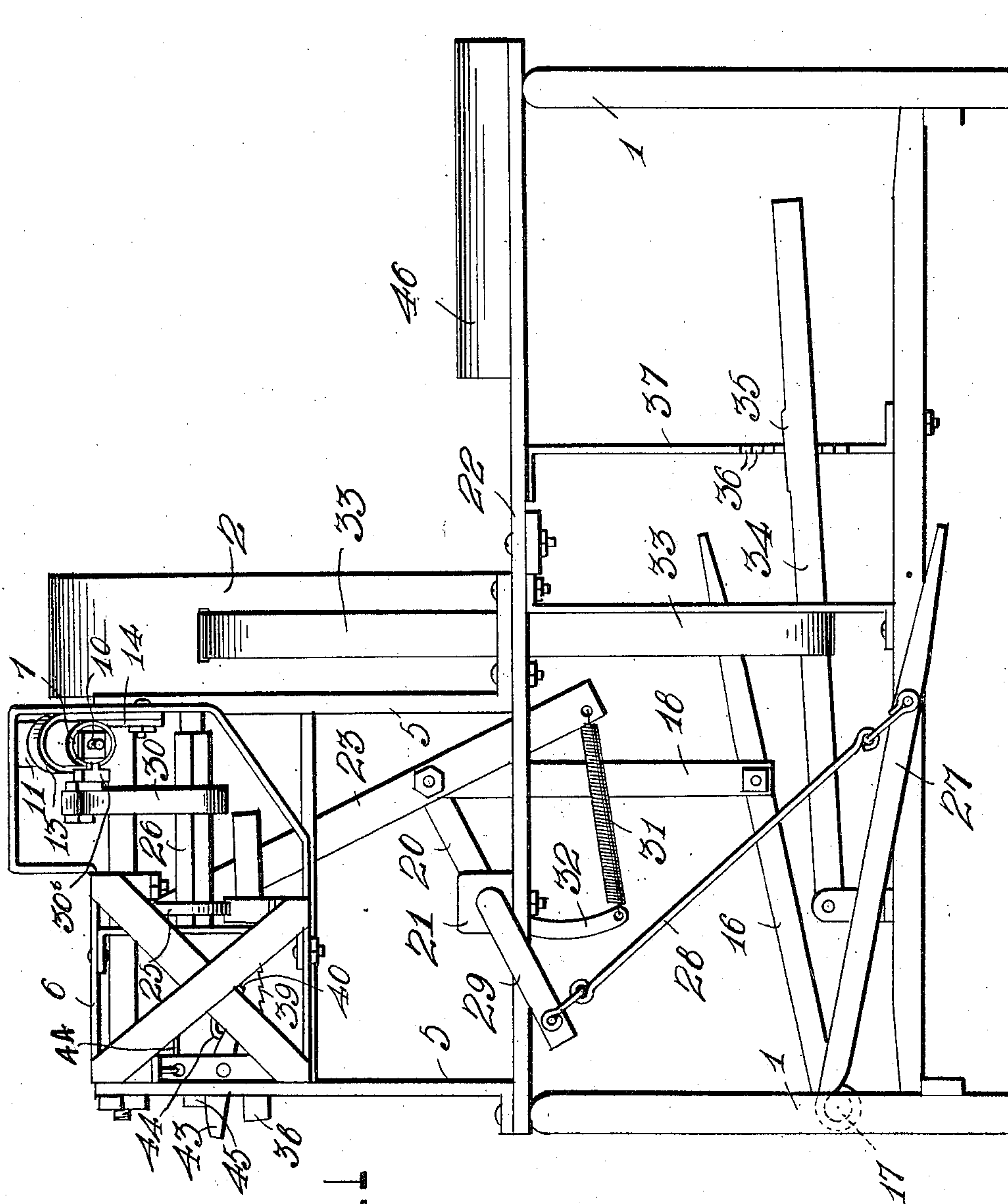


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LEATHER STITCHING HORSE.  
APPLICATION FILED APR. 18, 1910.

999,360.

Patented Aug. 1, 1911.

3 SHEETS—SHEET 1.



Witnesses  
C. P. Hardy  
L. O. Hilton

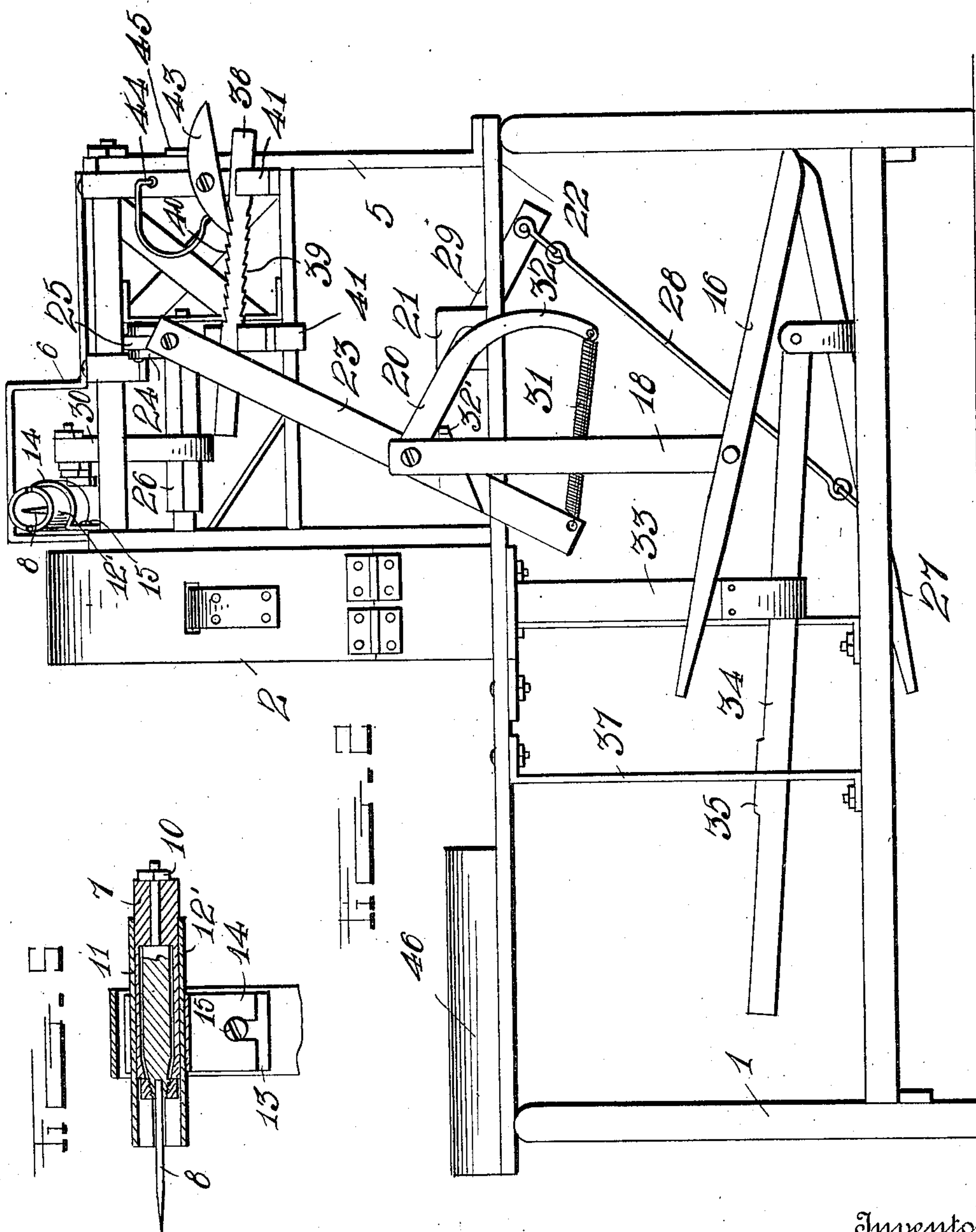
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3 SHEETS—SHEET 2.



Witnesses

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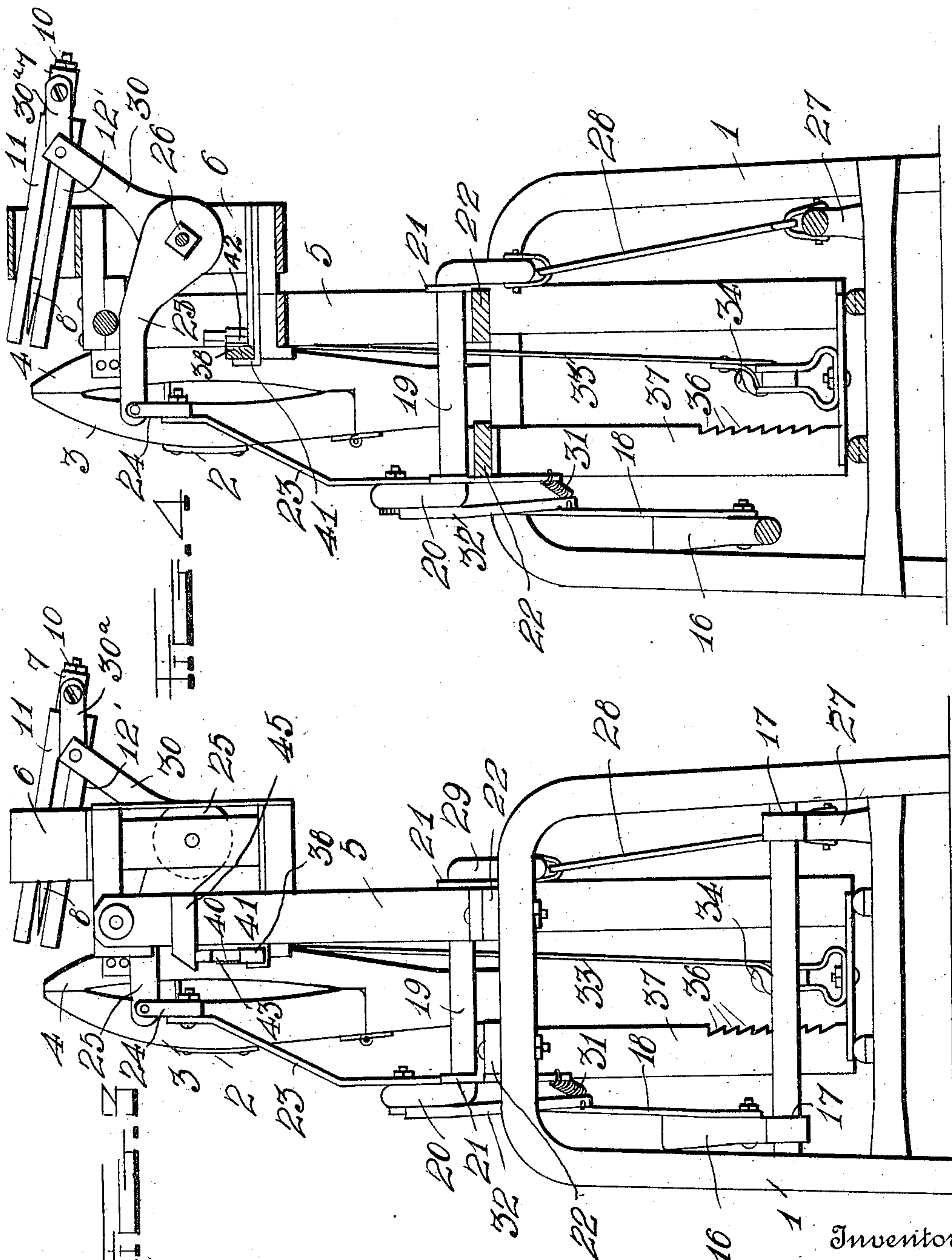
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

HULLBERT J. BOWMAN, OF NODAWAY, IOWA.

LEATHER-STITCHING HORSE.

999,360.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed April 18, 1910. Serial No. 556,258.

*To all whom it may concern:*

Be it known that I, HULLBERT J. BOWMAN, a citizen of the United States, residing at Nodaway, in the county of Adams and State of Iowa, have invented certain new and useful Improvements in Leather-Stitching Horses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in harness or leather stitching horses and is designed as an improvement over my former Patents No. 912,795, February 16, 1909, and No. 926,975, July 6, 1909 for a leather stitching horse, the present improvements being more particularly directed to the operating mechanism for the awl.

An important object of this invention is also to provide a construction in which the minimum simplicity resides while the same results can be accomplished to as great or even a better degree. Attention is also called to the fact that the operating mechanism in my present construction is much simpler than heretofore, the advantage of which, both in cheapness of manufacture and in ease of operation, will be apparent.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, in which like parts are indicated by like characters throughout the several views, Figure 1 is a front or side elevation thereof. Fig. 2 is a rear or opposite side elevation of the same. Fig. 3 is an end elevation thereof. Fig. 4 is a sectional view partly in elevation of the machine. Fig. 5 is a detail longitudinal section through the awl and its chuck.

Referring to the drawings for a more particular description of the invention and which are for illustrative purposes only and therefore not drawn to scale, the numeral 1 indicates the supporting frame which may be of any ordinary or desired construction, and 2 the stitching horse composed of the usual clamping members 3 and 4. A fixed supplemental frame 5 is erected on the main frame and a carriage 6 is slidably mounted on said supplemental frame, a transverse chuck 7 being arranged at the front end

of the carriage in an inclined position as shown. An awl 8 reciprocates or moves in a plane at right angles to the movement of the carriage and is suitably secured in the chuck by a nut 10 mounted on the rear end of the awl and bearing against the end of the chuck. This construction permits the awl to be readily inserted in or removed from the chuck.

The chuck guide consists of a split tube or cylinder, the upper member 11 of which is fixed in position by the bracket 13 secured to said member and screwed or otherwise attached to the carriage 6. The lower removable member 12' of the chuck guide has fixed to its under side an annular bracket 14 which is vertically slotted to receive the adjusting screw 15 which is threaded into the bracket 13, whereby the lower removable member of the chuck guide is held in engaging relation with the chuck.

The carriage may be shifted toward the operator by depressing the foot treadle 16 pivoted to the cross rod 17 of the main frame. The treadle 16 is connected, intermediate of its ends, by the link 18 with a crank 20 at one end of a rock shaft 19, mounted between its ends in suitable bearings 21, superimposed upon the top bars 22 of the main frame. The crank arm 20 is connected with the carriage shifting bar 23 which in turn is connected by the bifurcated link 24 with the outer end of an arm 25 projecting transversely of the carriage from a rock shaft 26 mounted in suitable bearings on the carriage. A second arm 30 projects upwardly from the rock shaft 26 in advance of the arm 25 and is connected with the chuck through a link 30<sup>a</sup> having its outer end pivoted to a T-shaped rib 30<sup>b</sup> formed on the side of the chuck and engaging the adjacent edges of the chuck guide members 11 and 12', as shown in Fig. 1. The link 18 and the shifting bar 23 have a common pivotal connection with the end of the crank arm 20 and a bracket 32 is formed on or secured to said crank arm and depends therefrom, a spring 31 being secured to and extending between said bracket and the lower end of the bar 23 which extends below the crank arm 20 as shown. A stop lug 32' is provided on the rear edge of the shifting bar to engage the under edge of the crank arm 20 and thereby limit the upward movement of the parts. The rock shaft 19 is provided with a crank arm 29 at the end opposite the



crank arm 20, which extends in the opposite direction to said crank arm 20. This crank arm 29 is actuated from a treadle 27 through a flexible connection 28, the treadle 27 being fulcrumed on the cross bar 17 as shown. It will be readily understood and appreciated that the treadles 16 and 27 will move the rock shaft 19 in opposite directions and are alternately depressed in order to move the carriage back and forth.

The stitching horse has its movable or hinged member connected by a flexible or strap connection 33 to the pivoted foot treadle 34 provided near its free end with a tapering or beveled projection 35 adapted to engage any one of the recesses or notches 36 on the bar 37. A stop bar 38 is mounted for endwise adjustment with the carriage and is provided on its lower and upper edges with teeth or notches 39 and 40 pointing toward its rear end. This bar slides in guides or keepers 41 on the carriage and is held in frictional engagement therewith by a spring 42 secured to the carriage and bearing against the side of the bar as shown in Fig. 4. The teeth on the opposite sides of the stop bar are differently spaced so that by placing one or the other side of the bar uppermost, the perforations made by the awl may be located at the desired distance apart. A dog or pawl 43 is pivoted on the side of the carriage at the rear end of the same in position to engage the notches or teeth on the stop bar and a spring 44 is secured to the carriage and bears upon the forward end of the pawl to hold it to the teeth as shown in Fig. 2. A fixed projection or trip 45 is provided on the rear end of the supplemental frame in the path of movement of the dog so that when the carriage is moved to the rear limit of its stroke, the dog will be brought against said trip and released from the stop bar.

The operator sits astride the saddle 46 with his feet upon the treadles 16 and 27, the leather having been placed in and clamped by the horse 2. The treadle 16 being depressed, the rock shaft 19 will be actuated so that the shifting bar 23 will be swung down and forward, and, consequently, the carriage will be caused to slide forward until the front end of the stop bar 38 impinges against the front end of the supplemental frame 5. The continued depression of the pedal will exert a downward pull on the arm 25 so that the shaft 26 will be rocked and the arm 30 at the front end thereof caused to draw upon the link 30<sup>a</sup> and thereby slide the chuck and awl longitudinally of the chuck guide to drive the awl through the leather. During this movement of the awl the end of the bracket 32 and the lower end of the bar 23 describe different arcs so that the spring 31 will be expanded and, consequently, when the awl has reached the limit

of its stroke (determined by the arm 25 coming into contact with the forward guide bracket 41), the tension of the spring will come into play to automatically move the bar 23 and rock the shaft 26 in the opposite direction and withdraw the awl from the work. The operator then depresses the pedal 27 to rock the shaft 19 and return the carriage to its initial position at the rear end of the frame. As the carriage moves rearwardly, the end of the dog 43 will engage the trip 45 and be released from the stop bar 38 just before the carriage reaches the rearward limit of its movement and the stop bar, therefore, moves rearwardly a sufficient distance to carry the point of the tooth released by the dog beyond the front end of the dog. On the next forward stroke of the carriage, therefore the several parts will advance with the dog resting on the tooth next in advance of the tooth from which it has just been released and, consequently when the movement of the carriage brings the front end of the stop bar against the stationary frame, the force of its impact against the frame causes the stop bar to slip backward through the guide bracket 41, against the pressure of the spring 42, until the base of the said tooth strikes the dog. As a result of this action, the carriage will obviously be moved one degree farther forward on each successive stroke. The different arcs described by the bracket 32 and the stop 32' will bring the same into binding engagement at the proper instant to limit the rearward movement of the carriage and this same action will put the spring 31 under tension which will relieve the initial strain of moving the carriage. It will be understood that after the stop bar 38 has reached its complete movement in one direction the same is manually restored to its normal position for subsequent operation of the machine for the purpose previously described.

What I claim as new is:

1. The combination of a supporting frame, a supplemental frame mounted thereon, an awl carrier mounted for reciprocation on said supplemental frame, means to limit the advance or forward movement of the carrier, said means comprising a stop bar having a series of teeth in its edge, a pawl pivoted on the carrier to engage said teeth, and a spring to hold the pawl to the teeth, and a stationary trip on the frame in the path of the pawl to release the pawl from the teeth on the rearward movement of the carrier.

2. A device of the class described comprising a supporting frame, a supplemental frame mounted thereon, a carriage mounted on said supplemental frame, an awl mounted to reciprocate transverse to the movement of the carriage, a pivoted foot treadle, a crank shaft connected with the treadle, a

