

No. 619,901.

Patented Feb. 21, 1899.

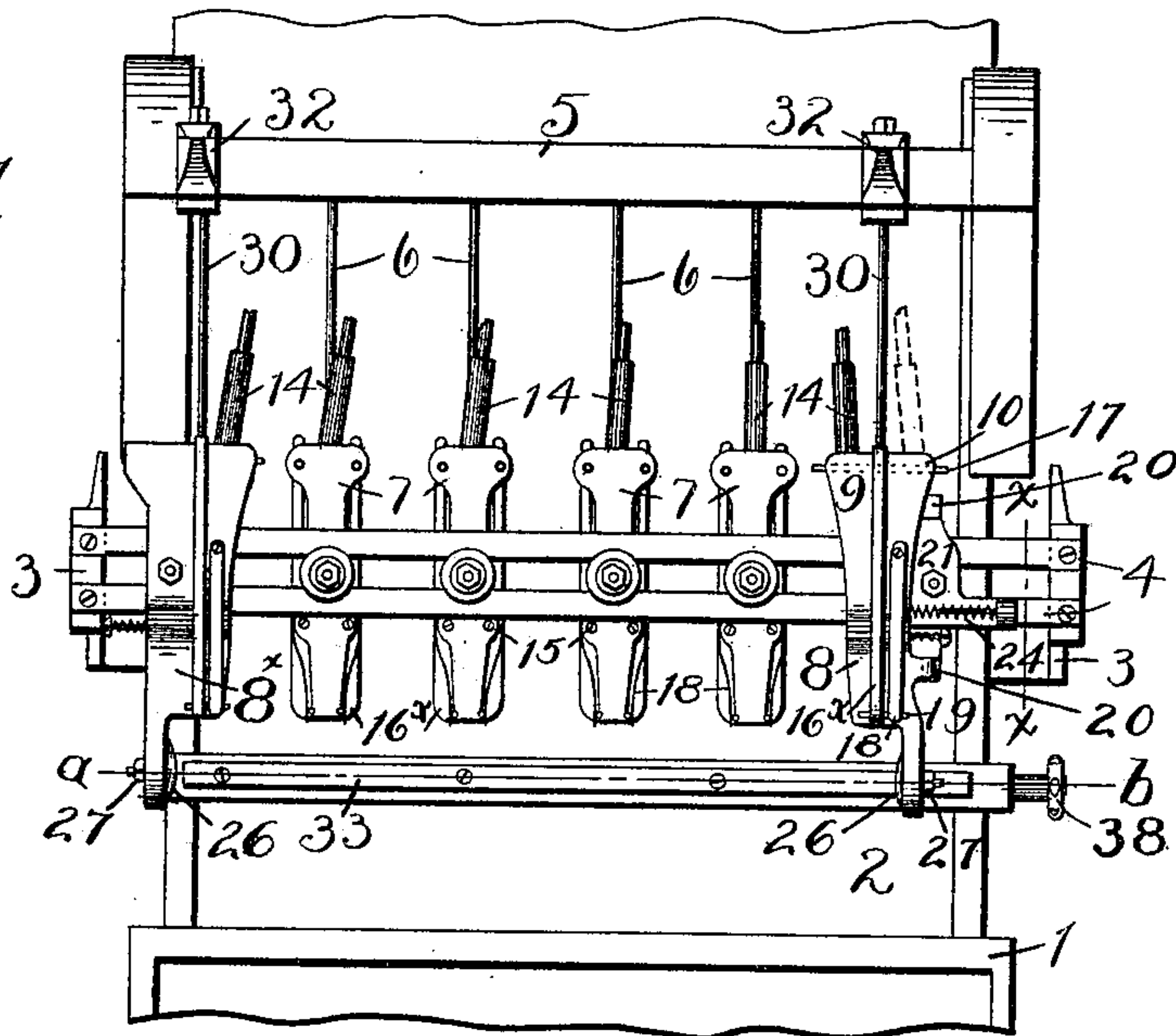
H. W. MORGAN.  
NAILING MACHINE.

(Application filed Dec. 11, 1897.)

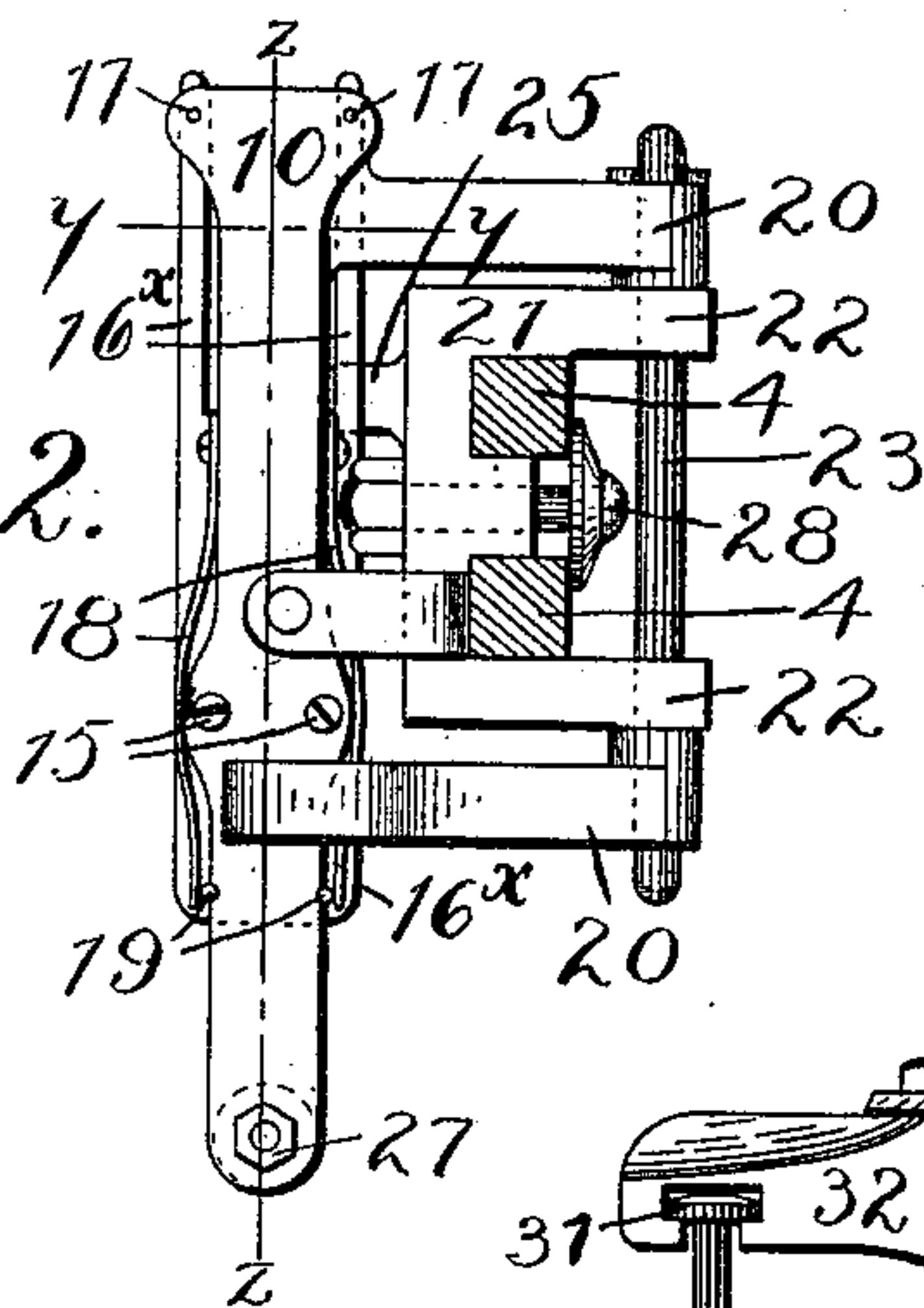
(No Model.)

2 Sheets—Sheet 1.

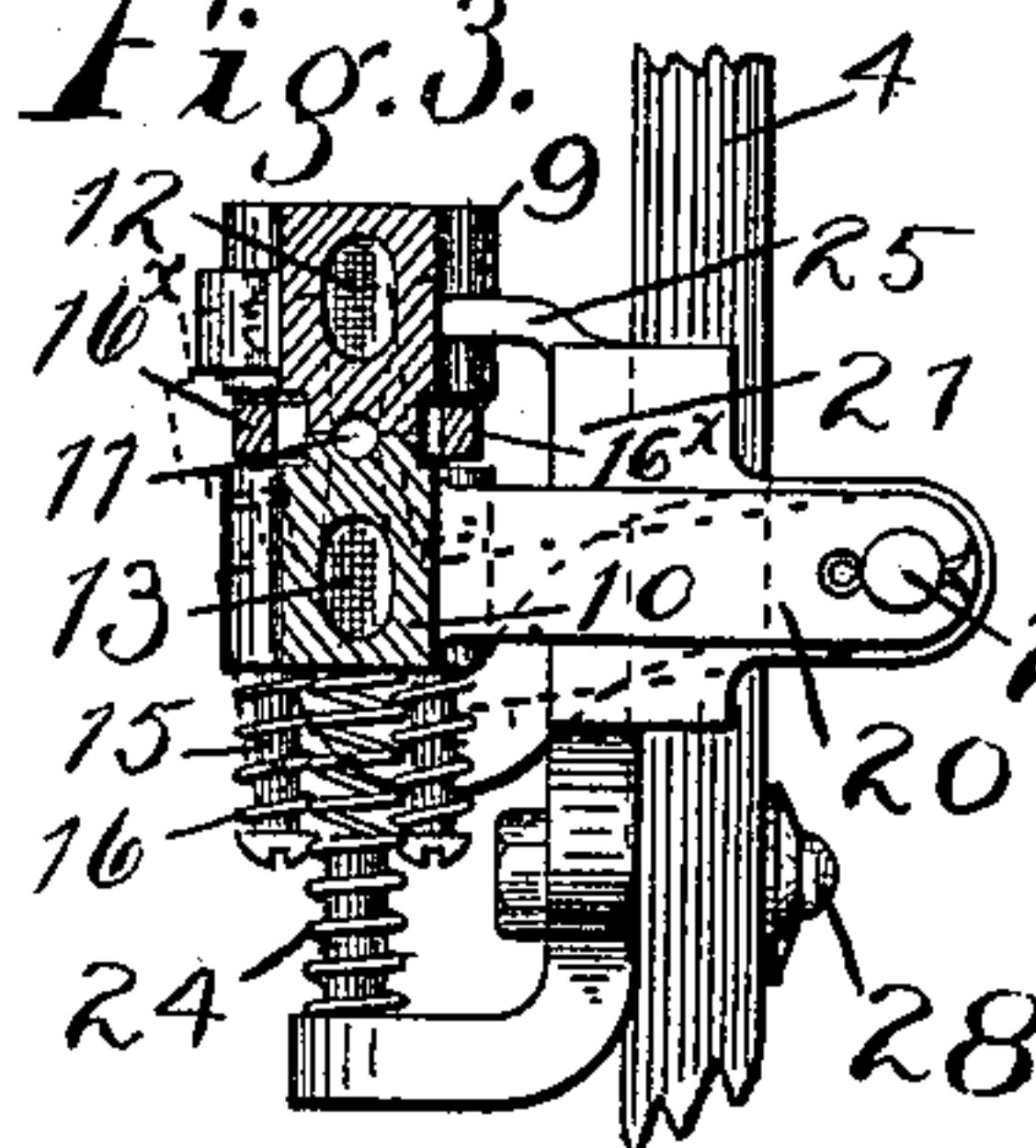
*Fig. 1.*



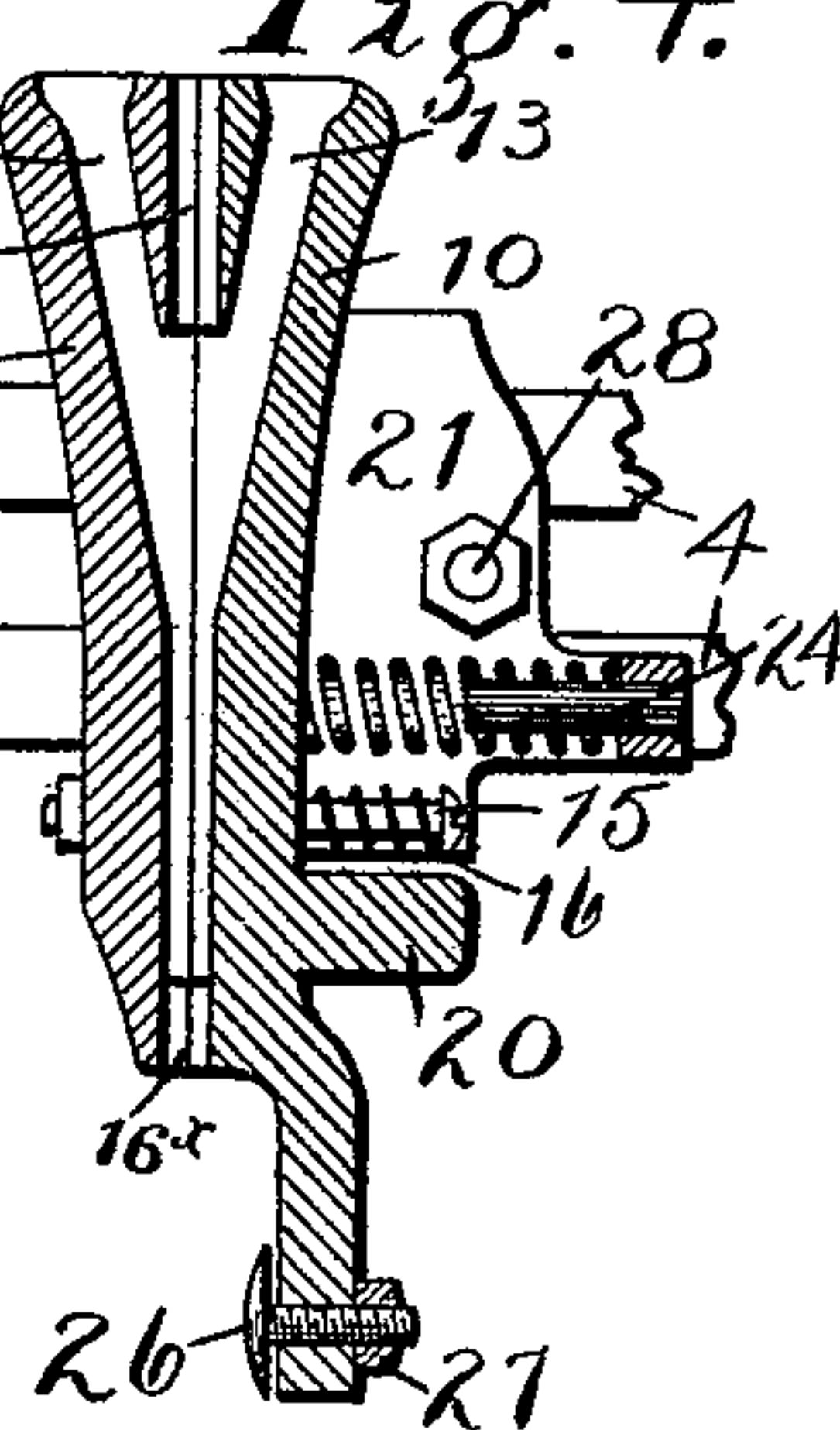
*Fig. 2.*



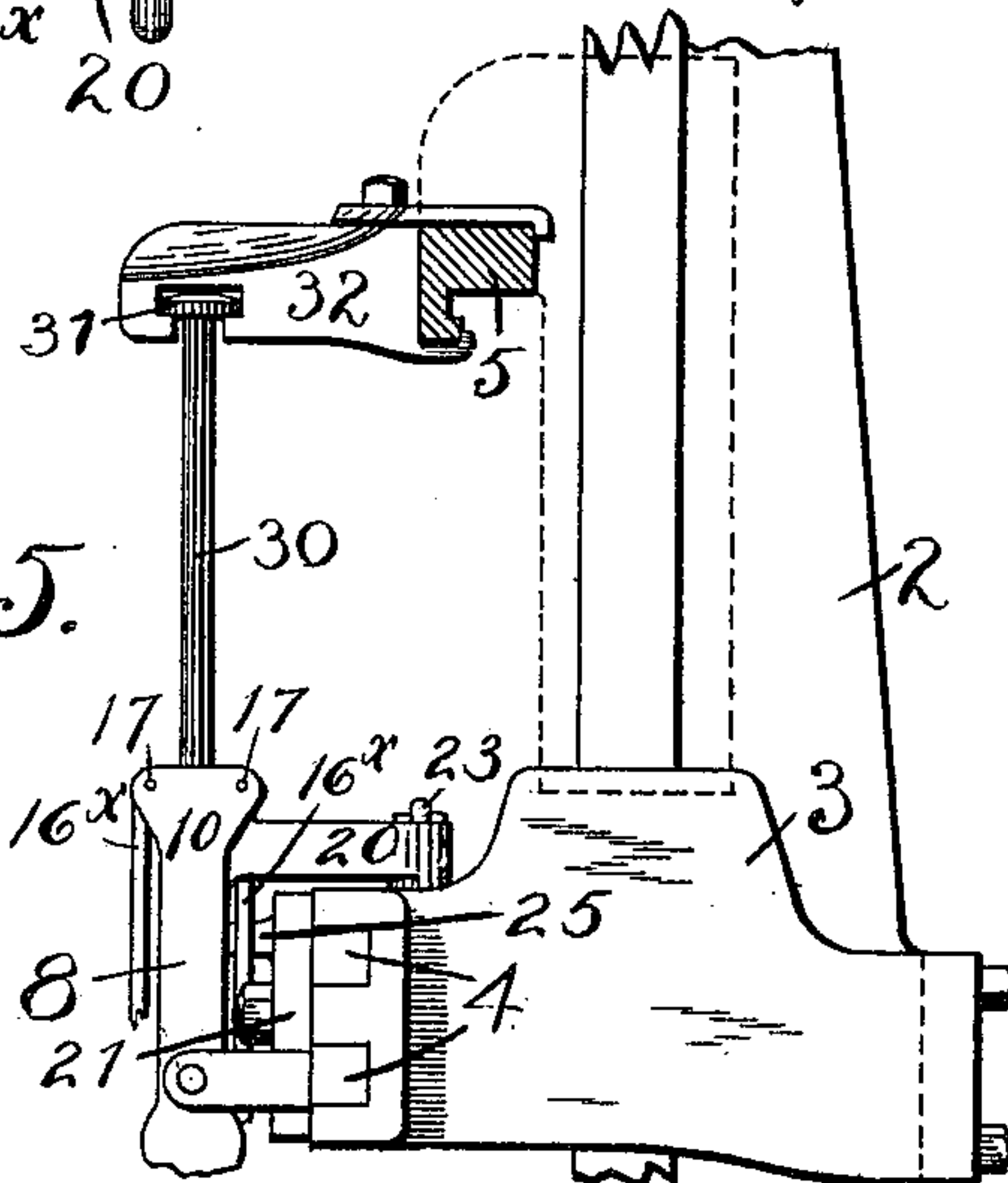
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses.

G. Willard Rich.  
Chas. Logan

Inventor.

Henry W. Morgan  
by Church & Church  
his  
Attorneys

No. 619,901.

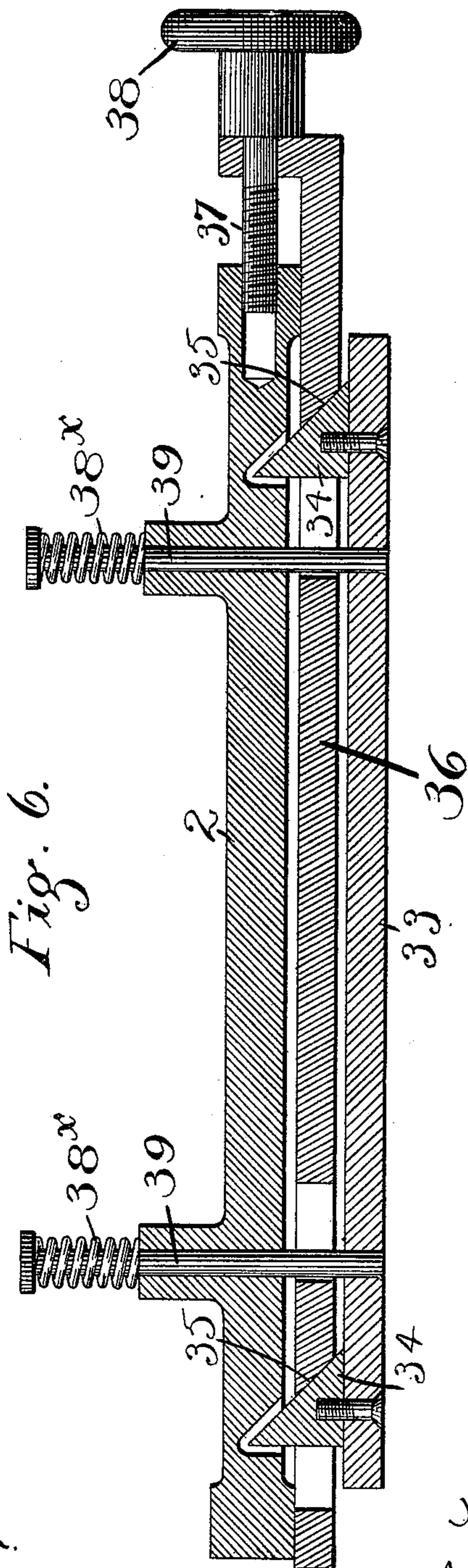
Patented Feb. 21, 1899.

H. W. MORGAN.  
NAILING MACHINE.

(Application filed Dec. 11, 1897.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.

G. Willard Rich.  
Chas. Logan

Inventor.

Henry W. Morgan  
by Churchill  
his Attorneys



# UNITED STATES PATENT OFFICE.

HENRY W. MORGAN, OF ROCHESTER, NEW YORK.

## NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 619,901, dated February 21, 1899.

Application filed December 11, 1897. Serial No. 661,521. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. MORGAN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Nailing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to that class of nailing-machines in which a row of nails is driven along one side or end of a box and one or more nails are driven at the ends and forward of the main row to secure the horizontal board to other parts of the box than the vertical board directly beneath the main row of driving devices; and it has for its object to provide a nail-driving device for properly positioning and driving said forwardly-located nails, and, further, to provide an improved nail-holding chuck that is capable of other uses, and also a work-adjusting device.

To these ends the invention consists in certain improvements hereinafter described, the novel features being pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a front elevation of a portion of a nailing-machine embodying my improvements; Fig. 2, a sectional view on the line *x x*; Fig. 3, a sectional view on the line *y y* of Fig. 2, looking downwardly; Fig. 4, a vertical sectional view on the line *z z* of Fig. 2; Fig. 5, a side view of a portion of a nailing-machine, showing the driving-bar in section; Fig. 6, a horizontal sectional view on the line *a b*, Fig. 1.

Similar reference-numerals in the different figures indicate similar parts.

I have shown my invention applied to a nailing-machine of a well-known type, 1 indicating the work support or bed, 2 the frame on which it is mounted, having the brackets 3 at the sides in which the chuck-supporting bars 4 are secured, and 5 the vertically-movable driver-bar, carrying the drivers 6, operating in the nail-chucks 7, secured to bars 4 and of any suitable construction—such, for

instance, as contained in my prior patent, No. 587,321, dated August 3, 1897.

The chucks 7 are arranged in a row to drive a single line of nails into the box top or bottom, as usual, and at one (or both) ends of the row and forward of the plane thereof I provide an additional nail-holding chuck 8, of suitable construction, mounted upon a vertical pivot to swing toward and from the center of the machine, normally pressed toward the center by a spring having an arm or projection below the nail-holding jaws of the chuck, adapted to be engaged by the end of the box or other article being nailed, so that the end nail or nails held by the chucks will be driven the same distance from the edge of the board.

The end nail-chuck that I have shown and prefer to employ is composed of two sections 9 and 10, having their proximate faces grooved to form the central channel 11 between them, communicating with the two channels 12 and 13, open at the top and adapted to receive a nail-conduit 14, extending from suitable nail-feeding devices. The sections 9 and 10 are alined by pins or screws 15, connected to the former, passing through apertures in the latter and having springs 16 encircling said screws and holding the sections together, but permitting them to yield if a nail should become caught therein. The nail-holding jaws 16<sup>x</sup> are pivoted on pins 17, extending at right angles to the line of separation, and their lower ends are held pressed together by spring 18 operating on the pins 19 near their lower ends, this general construction being shown in my prior patent, No. 587,321.

The section 10 of the chuck is provided with the rearwardly-extending arms 20, extending above and below a chuck-holding bracket 21, having the arms 22, through which and the arms on the chuck the pivot-pin 23 extends, so that the chuck is permitted a swinging motion on the frame in a plane substantially parallel with that of the row of chucks 7, a spring 24 pressing the chuck 8 toward the center of the work-support and holding it against a stop-arm 25, arranged on the opposite side of the frame 21. At the



lower end of the chuck 8 and at one side of and below the nail-holding jaws is an arm carrying an adjustable gage 26, having the rounded face and provided with the threaded portion screwing into the chuck and secured by a set-nut 27. The holding-bracket 21 is adjustably secured to the chuck-holding bars by a bolt 28 and may be moved back and forth along the bars for various-sized boxes. The drivers 30 for the adjustable chucks 8 are provided with the heads 31, loosely arranged in T-shaped slots in the under side of brackets 32, adjustably secured to the driver-bar and moving therewith.

In the present embodiment I have shown only one of the chucks 8 at the end of the chuck-support, forming an elastic stop for the end of the box being nailed, the chuck 8<sup>x</sup> at the opposite end being similar to the yielding chuck, excepting that it is stationary, and the stops 26 of both end chucks are adjusted a little closer than the length (or width) of the box to be nailed, so that when the box is moved backward against the rear stop-bar 33 and beneath the line of chucks 7 the chucks 8 will yield slightly and the springs will hold them tightly against the edges of the box, thereby allowing for any slight variations in the length of the box, properly positioning the nails with relation to the edge and holding the box in proper position. The gage 26 may be adjusted so as to cause the nail to be driven nearer to or farther from the edge of the box, as desired.

The nail-drivers are of course operated in the usual manner by the depression of the driver-bar, and the nails may be fed by any suitable mechanism—such, for instance, as shown in my prior patent. The loose connection between the driver-bar and the drivers in the chucks 8 permits the slight lateral movements of the latter, and the employment of the two nail-channels enables nails to be supplied from a nail-chute on either side of the driver, as desired.

The object in pivoting the chuck 8 in rear of the bars 4 is to allow them to move in a plane approximately parallel with the row of chucks on the bars.

For the purpose of readily and quickly adjusting the box with relation to the line of chucks 7 the rear stop-bar 33 is laterally adjustable and provided with wedge-surfaces 34, cooperating with wedges or inclines 35 on a plate 36, actuated longitudinally by a screw 37, having an operating-handle 38 at one side, said bar 33 being moved toward the rear and the wedge-surfaces being held in contact by springs 30<sup>x</sup>, encircling bolts 39 operating through the frame, as shown in Fig. 6.

I claim as my invention—

1. In a nailing-machine, the combination with the chuck-supporting bar, of the chuck-holding bracket thereon, and the nail-chuck movable on the bracket and in a plane sub-

stantially parallel with that of the bar and adapted to engage the side of the box, and a spring for operating the chuck in one direction.

2. In a nailing-machine, the combination with the chuck-supporting bar, of the chuck-holding bracket thereon, the nail-chuck pivoted on said bracket, to swing in a plane substantially parallel with that of the bar and adapted to engage the side of a box, and a spring for operating the chuck in one direction.

3. An attachment for nailing-machines embodying in combination, a supporting-bracket adapted to be attached to the machine-frame, the nail-chuck pivoted on the bracket and embodying the nail-holding jaws, and having an arm extending below the jaws for engaging the side of a box operated upon, a stop on the bracket for limiting the movement of the chuck in one direction, and a spring for holding the chuck against the stop.

4. In a nailing-machine, the combination with a row of nail-holding chucks, and drivers therefor, of a nail-holding chuck arranged at one end of the row, a spring for moving said chuck in a plane substantially parallel with that of the row, and an arm at the lower end of the chuck adapted to engage a box.

5. In a nailing-machine, the combination with a row of nail-chucks and drivers therefor, of a nail-chuck at each end of the row, each having an arm extending below the chuck to engage a box, and springs for moving said end chucks toward each other.

6. The combination with the bracket having the rearwardly-extending arms, of the nail-chuck having the arms pivoted on the arms of the bracket, the nail-holding jaws, and the arm extending below the jaws adapted to engage the work, the spring arranged between the chuck and bracket and the stop for limiting the movement of the chuck.

7. The combination with the bracket, of the nail-chuck divided longitudinally into two parts, springs and pins for holding the parts together, a pair of nail-holding jaws and pivots therefor extending at right angles to the plane of the division-line of the chuck, springs for operating the jaws, one of the chuck-sections having the arms pivotally connected to the bracket and an arm extending below and at one side of the nail-holding jaws, to engage the side of the box operated upon and a spring arranged between the chuck and bracket, substantially as described.

8. The combination with the chuck-supporting bracket, of the nail-chuck pivoted thereon embodying nail-holding jaws, an arm extending below the jaws, an adjustable abutment thereon, and a spring for operating the chuck on its pivot.

9. In a nailing-machine, the combination with the work-support, of the rear stop-bar

having the wedges thereon, and springs for operating the bar in one direction, of the plate having inclined surfaces coöperating with the wedges, and means for operating said plate  
5 longitudinally, substantially as described.

10. In a nailing-machine, the combination with the main frame having the apertures and the work-support, the rear stop-bar having the bolts, the retracting-springs encircling

the bolts, and the wedges, of the longitudi- 10  
nally-movable plate engaging the wedges, and the screw for operating it longitudinally, substantially as described.

HENRY W. MORGAN.

Witnesses:

G. W. RICH,  
F. F. CHURCH.