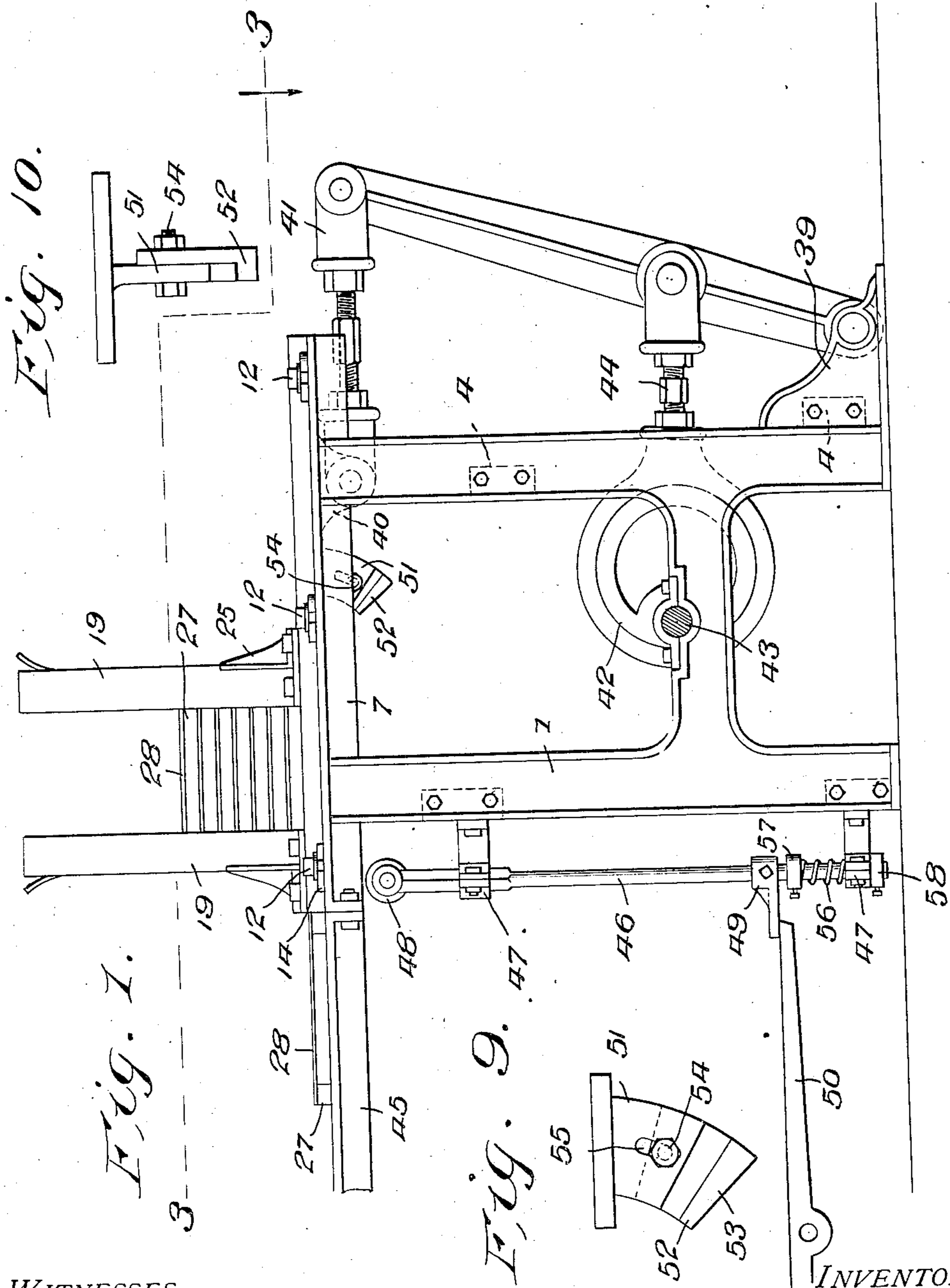


P. L. BILLINGSLEY.  
ATTACHMENT FOR NAILING MACHINES.  
APPLICATION FILED AUG. 19, 1907.

904,503.

Patented Nov. 24, 1908.

3 SHEETS—SHEET 1.



WITNESSES:

*Thomas Riley*  
*S. W. Fitzgerald*

INVENTOR  
P. L. Billingsley  
BY  
*W. J. Fitzgerald & Co*  
Attorneys

P. L. BILLINGSLEY.  
ATTACHMENT FOR NAILING MACHINES.  
APPLICATION FILED AUG. 19, 1907.

904,503.

Patented Nov. 24, 1908.

3 SHEETS—SHEET 2.

Fig. 2.

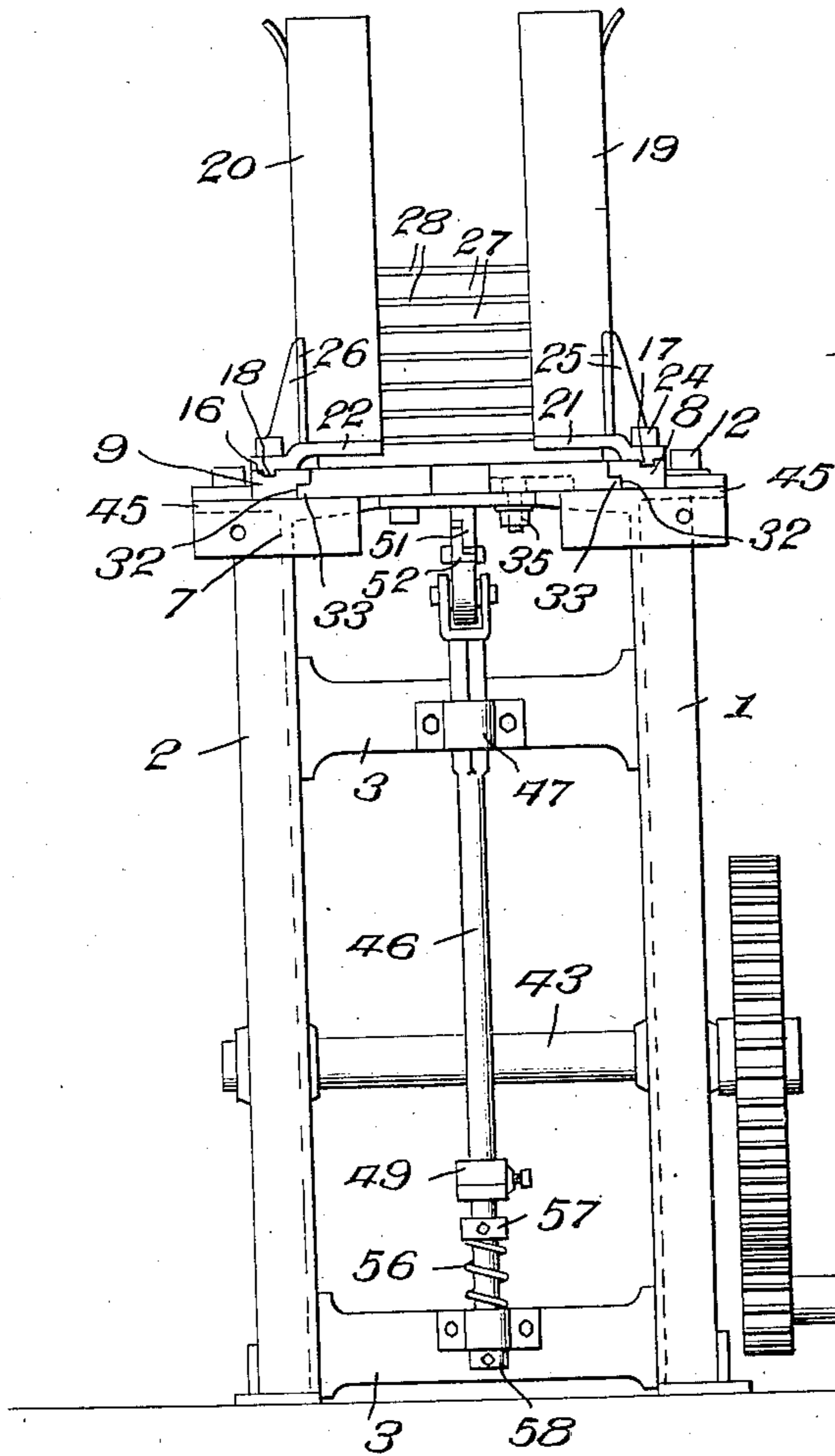


Fig. 8.

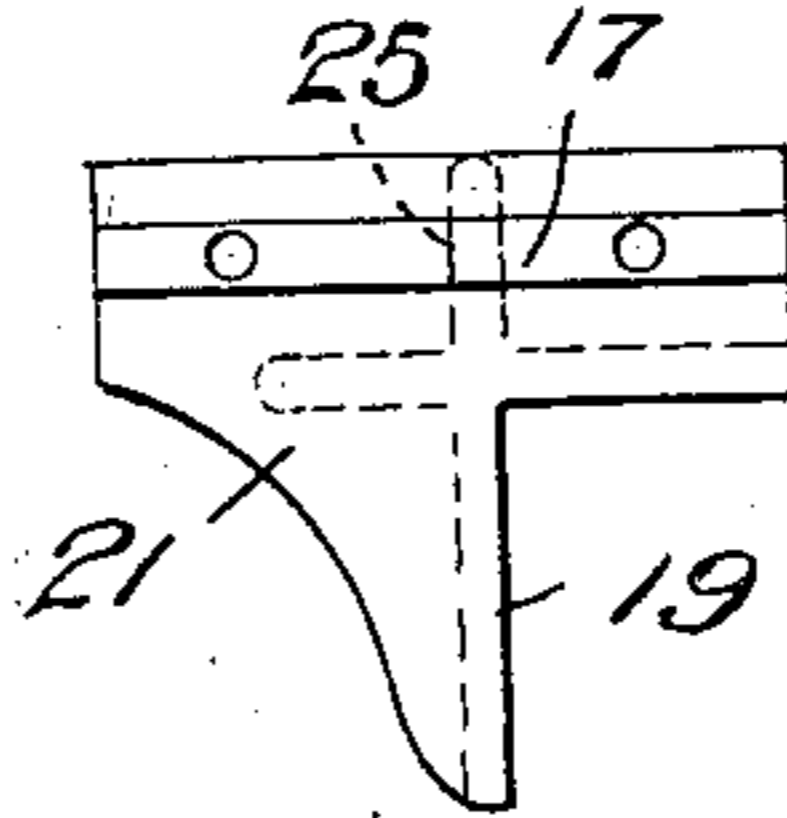


Fig. 6.

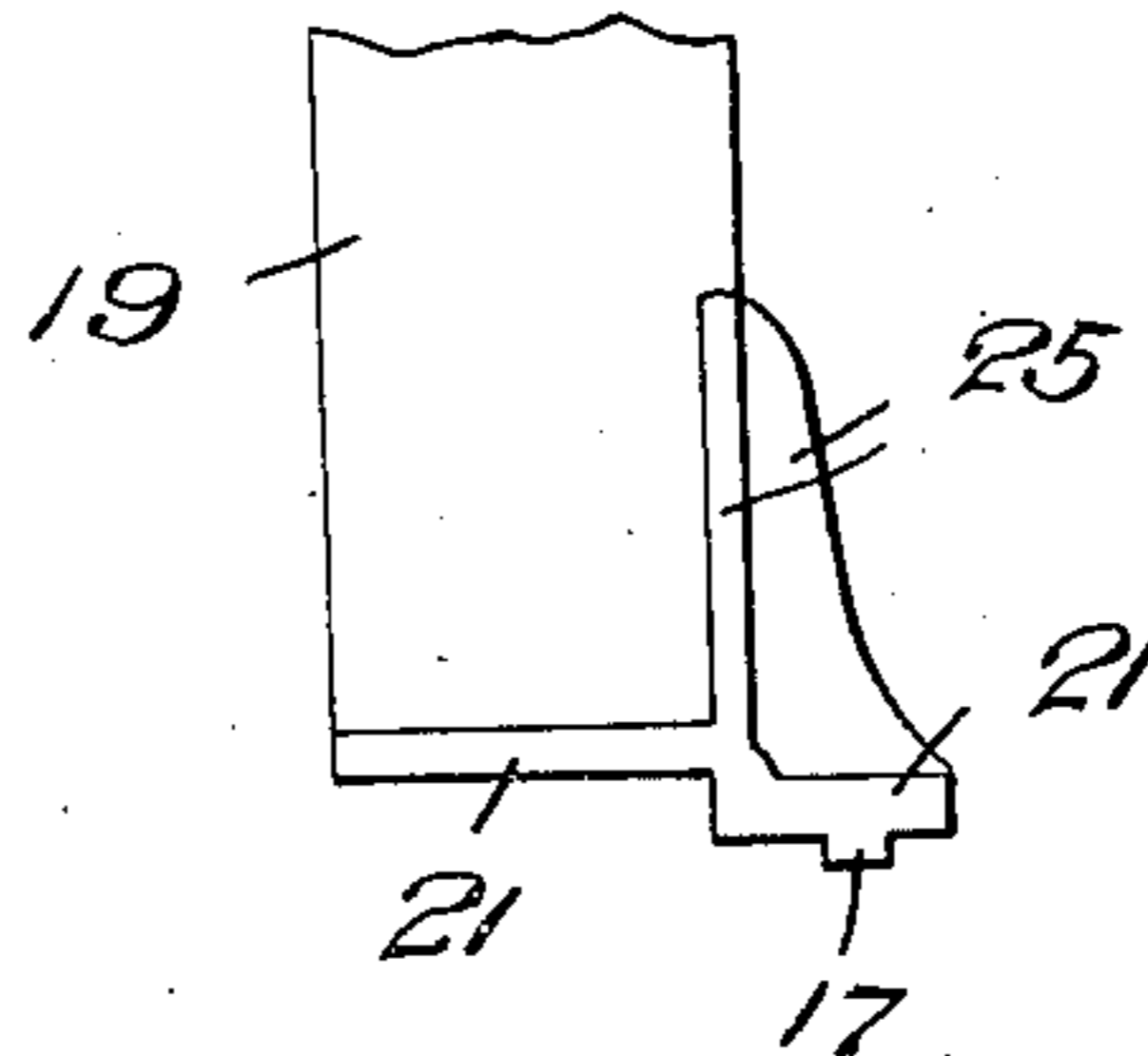
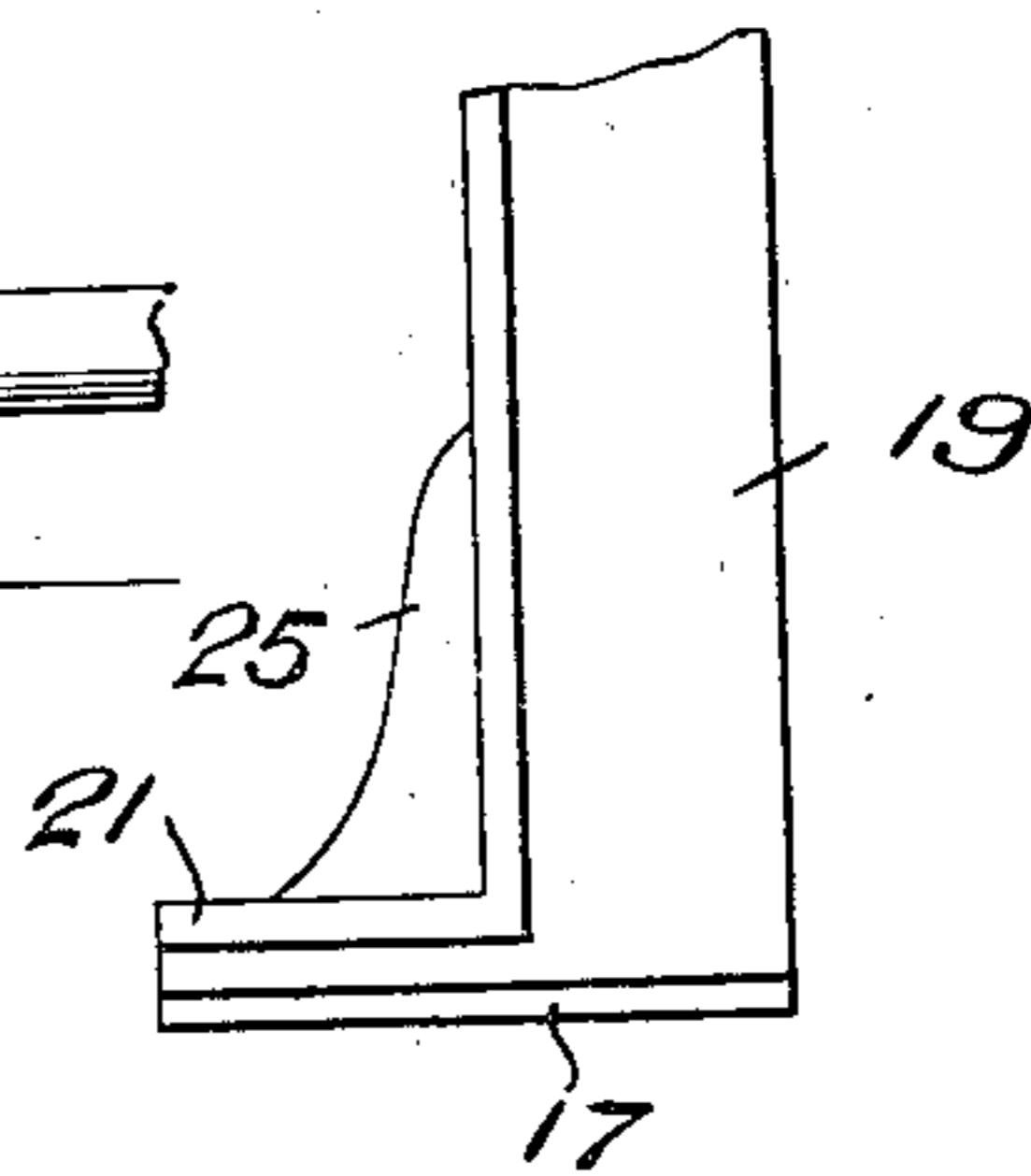


Fig. 7.



WITNESSES:

*Thomas Wiley*  
*W. J. Fitzgerald*

INVENTOR  
P. L. Billingsley

BY  
*W. J. Fitzgerald*  
Attorneys

P. L. BILLINGSLEY.  
ATTACHMENT FOR NAILING MACHINES.  
APPLICATION FILED AUG. 19, 1907.

904,503.

Patented Nov. 24, 1908.

3 SHEETS—SHEET 3.

Fig. 3.

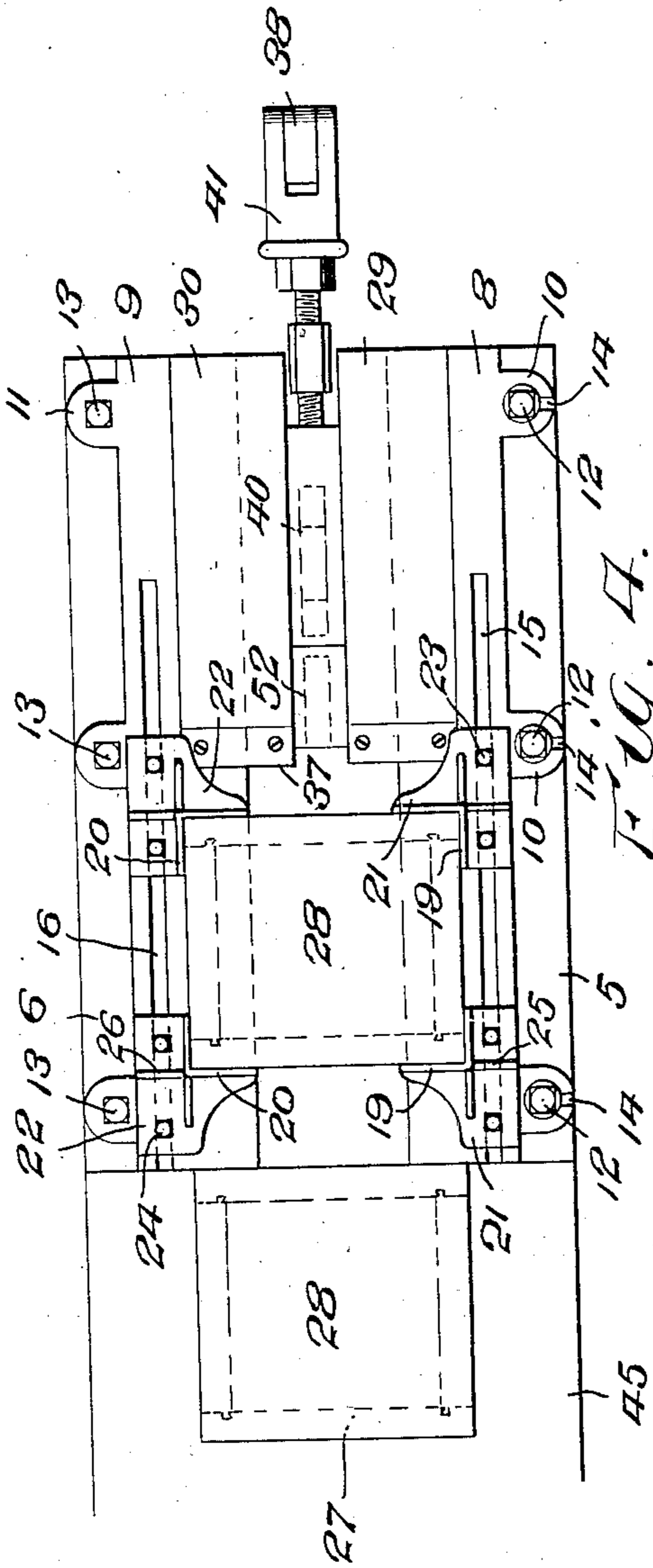


Fig. 4.

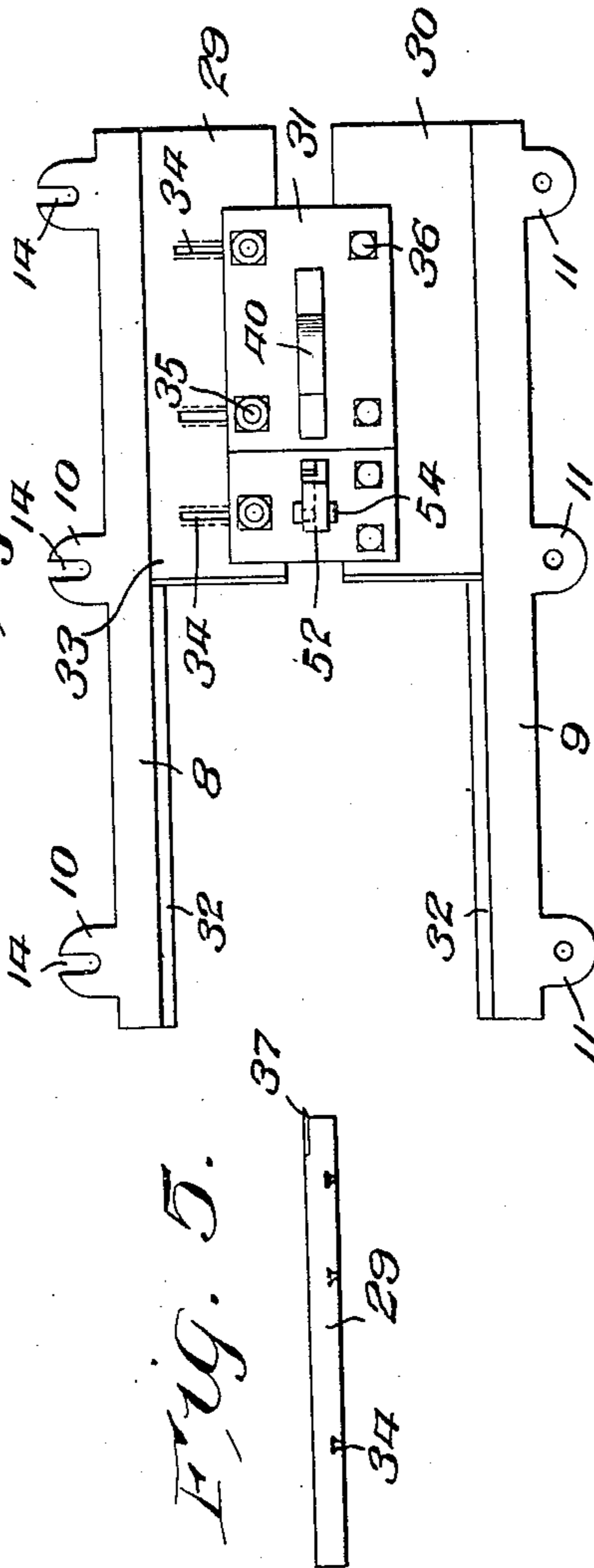
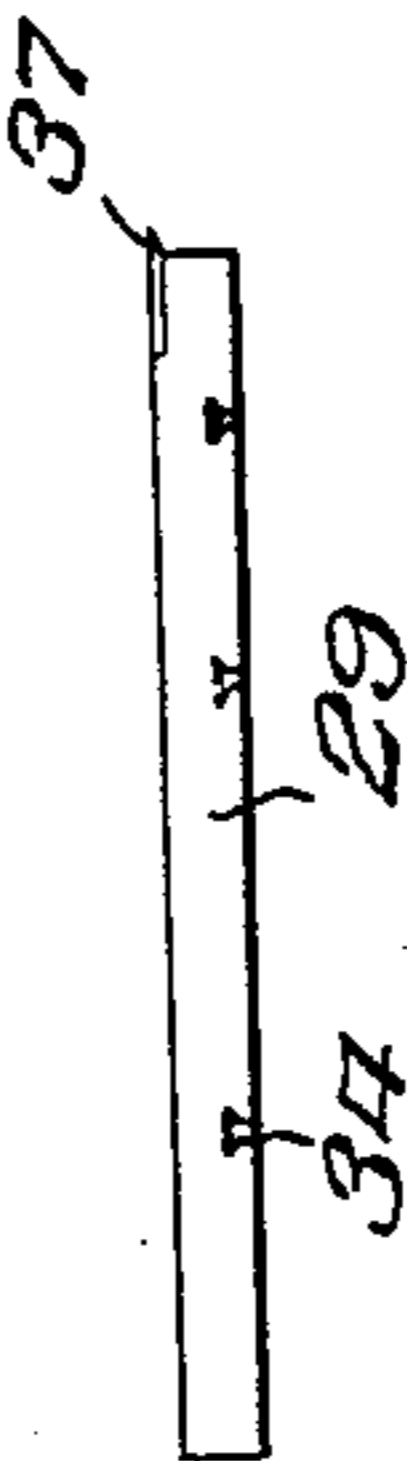


Fig. 5.



WITNESSES:

*Thos. W. Wiley*  
*Sw. FitzGerald*

INVENTOR  
P. L. Billingsley

BY  
*W. J. FitzGerald*  
Attorney

# UNITED STATES PATENT OFFICE.

PERCY L. BILLINGSLEY, OF OAK, FLORIDA.

## ATTACHMENT FOR NAILING-MACHINES.

No. 904,503.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed August 19, 1907. Serial No. 389,222.

*To all whom it may concern:*

Be it known that I, PERCY L. BILLINGSLEY, a citizen of the United States, residing at Oak, in the county of Marion and State of Florida, have invented certain new and useful Improvements in Attachments for Nailing-Machines; and I do hereby 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.

My invention relates to attachments for nailing machines and my object is to provide means for automatically feeding the parts to be nailed, below the nailing head.

A further object is to provide means for supporting the objects to be nailed in position on the feeding device and a still further object is to provide means for adjusting the several parts of the device, whereby objects of various sizes may be placed on the feeding device.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1 is a side elevation of my improved feeding device in its operative position. Fig. 2 is an end elevation thereof. Fig. 3 is a view as seen on line 3—3, Fig. 1. Fig. 4 is a bottom plan view of a feeding plunger, showing the supporting frame therefor. Fig. 5 is an edge elevation of one section of the feeding plunger. Fig. 6 is an elevation of the lower end of one section of the magazine employed in holding the articles on the feeding device. Fig. 7 is a similar view of the opposite side thereof. Fig. 8 is a bottom plan view thereof. Fig. 9 is a side elevation of an arm employed for automatically operating the nailing device, and, Fig. 10 is an edge view thereof.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 and 2 indicate standards which are employed for forming the frame of my improved feeding device, said standards being secured together in any preferred manner, as by means of beams 3 and 4, said beams being extended transversely between the standards 1 and 2. Preferably formed integral with the upper ends of the standards 1 and 2 are plates 5 and 6, respectively, said plates extending inwardly from the inner faces of the stand-

ards to form a bed plate and are reinforced on their lower faces by means of webs 7. Mounted upon the plates 5 and 6, are guide rails 8 and 9, respectively, which rails are provided with a plurality of ears 10 and 11, respectively, through which extend clamping bolts 12 and 13, respectively, the ears 10 being provided with slots 14, so that the guide rail 8 may be adjusted towards or from the rail 9 to accommodate objects of various sizes. The upper faces of the guide rails 8 and 9 are provided with grooves 15, and 16, respectively, in which are adapted to extend tongues 17 and 18 of magazine forming sections 19 and 20, said sections being preferably formed of angle iron and mounted on base plates 21 and 22, respectively, to which the tongues 17 and 18 are fixed and in order to adjustably secure the magazine forming sections to the rails 8 and 9, bolts 23 and 24 are introduced, respectively, through the base plates 21 and guide rail 8 and the plates 22 and rail 9. The magazine sections 19 and 20 extend vertically from the base plates 21 and 22 and in order to reinforce the sections 19 and 20, brace members 25 and 26 are formed integral with the base plates and magazine sections and extend upwardly on the magazine sections a sufficient distance to thoroughly brace said magazine sections and two of the brace members are provided for each magazine section and extend at right angles to each other, thereby thoroughly bracing the magazine sections in both directions.

This device is adapted more particularly for feeding box ends below a nailing machine, said box ends consisting of a frame 27, to which is secured a strip of veneer or the like 28, said frame and veneer, when secured together, forming the end of a box, such as is employed for shipping fruits and by providing the magazine, a large number of the frames and strips of veneer may be placed in position to be fed below a suitable nailing head, (not shown), automatically and to accomplish this result, a plunger is reciprocatingly mounted below the magazine, said plunger being preferably formed in two sections 29 and 30, respectively, which sections are secured together by means of a connecting plate 31. The plunger sections 29 and 30 are adapted to travel on the plates 5 and 6, respectively, while the inner edges of the guide rails 8 and 9 are provided with channels 32, at their lower edges, in which extend tongues 33 on the meeting edges of

the plunger sections 29 and 30, portions of the guide rails extending over the tongues 33, so that upward movement of the plunger sections will be prevented. The lower surface of the plunger section 29 is provided with a plurality of substantially dove tail recesses 34, which are adapted to receive similarly constructed heads of adjusting bolts 35, which extend through one edge of the connecting plate 31 and by which means the connecting plate is adjustably secured to the plunger section 29, while the opposite edge of the plate 31 is fixed to the section 30 by means of stud bolts 36. The forward edges of the plunger sections 29 and 30 are provided with feeding plates 37, one edge of which extends beyond the ends of the sections 29 and 30 of said projecting edges are beveled on their lower faces to cause the feeding plates to positively engage the section of veneer placed above its respective frame 27 and cause the veneer to move with the frame.

In operating the plunger to cause the same to travel below the magazine and move one of the frames and section of veneer in position to be nailed together, power is applied to the plunger through the medium of a lever 38, one end of which is pivotally secured between brackets 39, at the lower ends of the standards 1 and 2, while the upper end of said lever is pivotally secured to an ear 40, depending from the central portion of the connecting plate 31, through the medium of a pitman 41, said pitman being adjustable longitudinally, to adjust the position of the plunger. The lever 38 is rocked in its bearing by means of an eccentric 42, carried by a driving shaft 43, said eccentric being secured to the lever 38 at a point between its lower end and longitudinal center by means of an adjustable eccentric rod 44, and by this construction it will be readily seen that as the driving shaft 43 is rotated, the lever 38 will be swung back and forth, which will move the plunger below the magazine and automatically feed the frames, and veneer contained therein, to the nailing device, the frame and veneer moving onto a platform 45 of the nailing machine, said platform being secured in any preferred manner to one end of the plates 5 and 6 and in alignment therewith.

The veneer is secured to the frame by placing nails through the veneer and into the frame and to complete the nailing at one stroke, a head, carrying the requisite number of nails to secure the veneer in position, is suspended above the frame and the veneer and lowered into engagement therewith, the force of the head being sufficient to drive the nails into the veneer and frame, but, as the nailing machine forms no part of my invention, I deem it unnecessary to show more of the nailing machine than is required to demonstrate the full operation of my im-

proved feeding device and, with this end in view, I have provided means for automatically operating the nailing machine, so that the veneer will be secured to the frame, as soon as the same has been deposited on the platform, which consists of a bar 46, mounted adjacent its upper and lower ends in bearings 47, carried by the beams 3, said bar being vertically disposed and bifurcated at its upper end to receive a roller 48, that portion of the bar extending through the upper bearing 47 being preferably square, so that the bar will be prevented from rotating in its bearings, at the same time allowing the bar to freely move longitudinally through the bearings.

A bracket 49 is adjustably secured to the bar 47, adjacent its lower end, said bracket being adapted to engage the free end of a rocking lever 50, which is in turn secured in any preferred manner to the nailing head, so that when the rocking lever 50 is depressed, the nailing head will be likewise lowered into engagement with the frame and veneer thereon and in order to operate the rocking lever, co-incident to depositing the frame and veneer on the platform 45, an arm 51 is secured to the plunger sections 29 and 30 and depends therefrom, to the lower end of which is adjustably secured a head 52, which is adapted to engage the roller 48 and depress the lever 50, through the medium of the bar 46 and bracket 49, the engaging end 53 of the head 52 being disposed substantially at an angle of 45° from the horizontal. The arm 51 and head 52 are slightly curved and are secured together by means of a bolt 54, carried by the head 52 and extended through an elongated slot 55 in the arm 51, thereby allowing the head 52 to be readily adjusted on the arm 51, to give a longer or shorter stroke to the bar 46 and it will be readily seen that as the plunger moves forwardly to deliver the frame and veneer onto the platform 45, the inclined portion of the head 52 will engage the roller 49 and cause the bar 46 to descend, thereby rocking the lever 50 and operating the nailing head. As soon as the plunger is returned to its initial position, the bar 46 is elevated to its initial position by means of a spring 56, which is interposed between the lower bearing 47 and a collar 57 on the bar 46, the tension of the spring 56, together with the action of the rocking lever 50 on the bracket 49, being sufficient to readily elevate the bar 46, until the collar 58 on the extreme lower end of the rod 46 engages the lower edge of the lower bearing 47, thereby limiting the upward movement of the bar. When the magazines are filled with the frames and veneer, the lowermost frame will rest in the path of the plunger and the magazine sections are elevated to such an extent that substantially one-half the thick-

ness of the second frame is below the lower ends of the magazine sections, so that when the plunger sections move below the magazine, those frames above the frame resting on the plates 5 and 6, will be held in their elevated position until the plunger is returned to its initial position, when all of the frames and veneer will descend until the next succeeding frame rests upon the plates 5 and 6, the parts of the nailing device and the feeder being so timed that the veneer will be nailed to the frame by the time the plunger reaches its initial position and ready to deliver another frame.

It will thus be seen that I have provided a very cheap and economical means for automatically feeding the parts of a box head in position to be nailed together and it will further be seen that the operation of the feeding device may be employed to operate the nailing machine, so that the two devices will operate in conjunction and it will further be seen that by employing the automatic means of feeding the parts to be nailed together, the output of the nailing

machine may be greatly increased and the box produced at a greatly reduced cost and, still further, it will be seen that the several parts of the feeding device may be adjusted to accommodate frames of various sizes. 30

What I claim is:

In a feeding device, the combination of plates and guide rails on said plates adjustable one with relation to the other, said guide rails having their upper surfaces grooved, of a two-section laterally adjustable plunger adapted to reciprocate between said guides, and a hopper arranged between the guide rails for containing box ends and discharging the box ends in the path of travel of the plunger, said hopper having tongues extending within the grooves of the rails. 35 40

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 45

PERCY L. BILLINGSLEY.

Witnesses:

JAS. L. PERRY,

GEO. STUART.