

F. H. SHAW.
RIVETING MACHINE.
APPLICATION FILED FEB. 23, 1921.

1,402,901.

Patented Jan. 10, 1922.

4 SHEETS—SHEET 1.

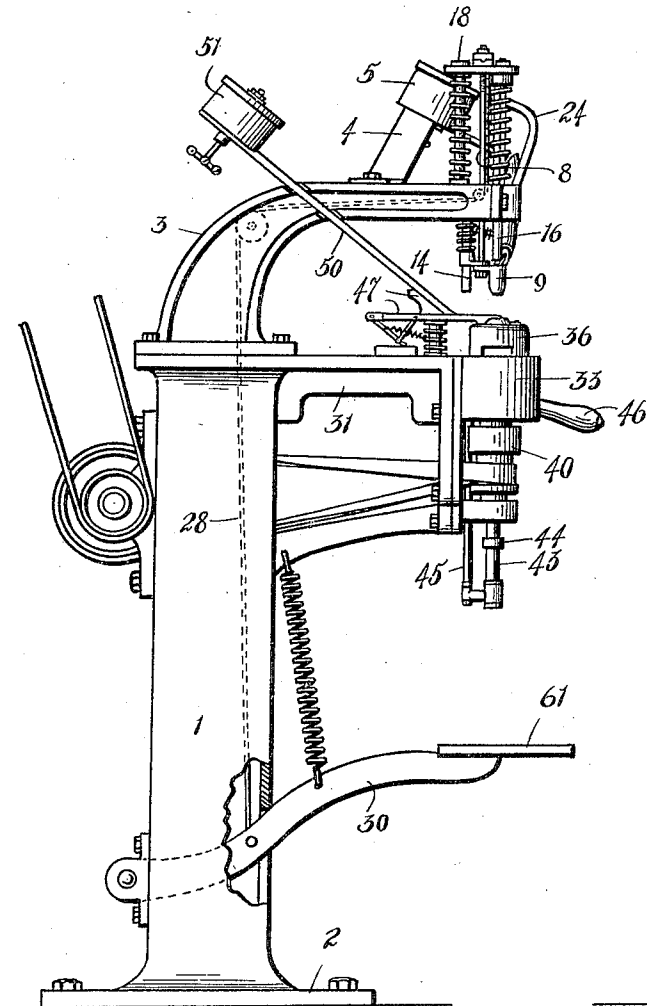


Fig. 1.

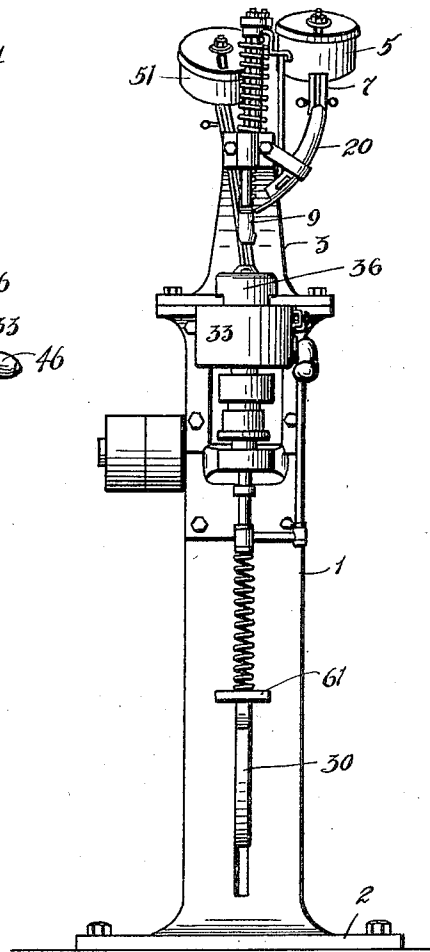


Fig. 2.

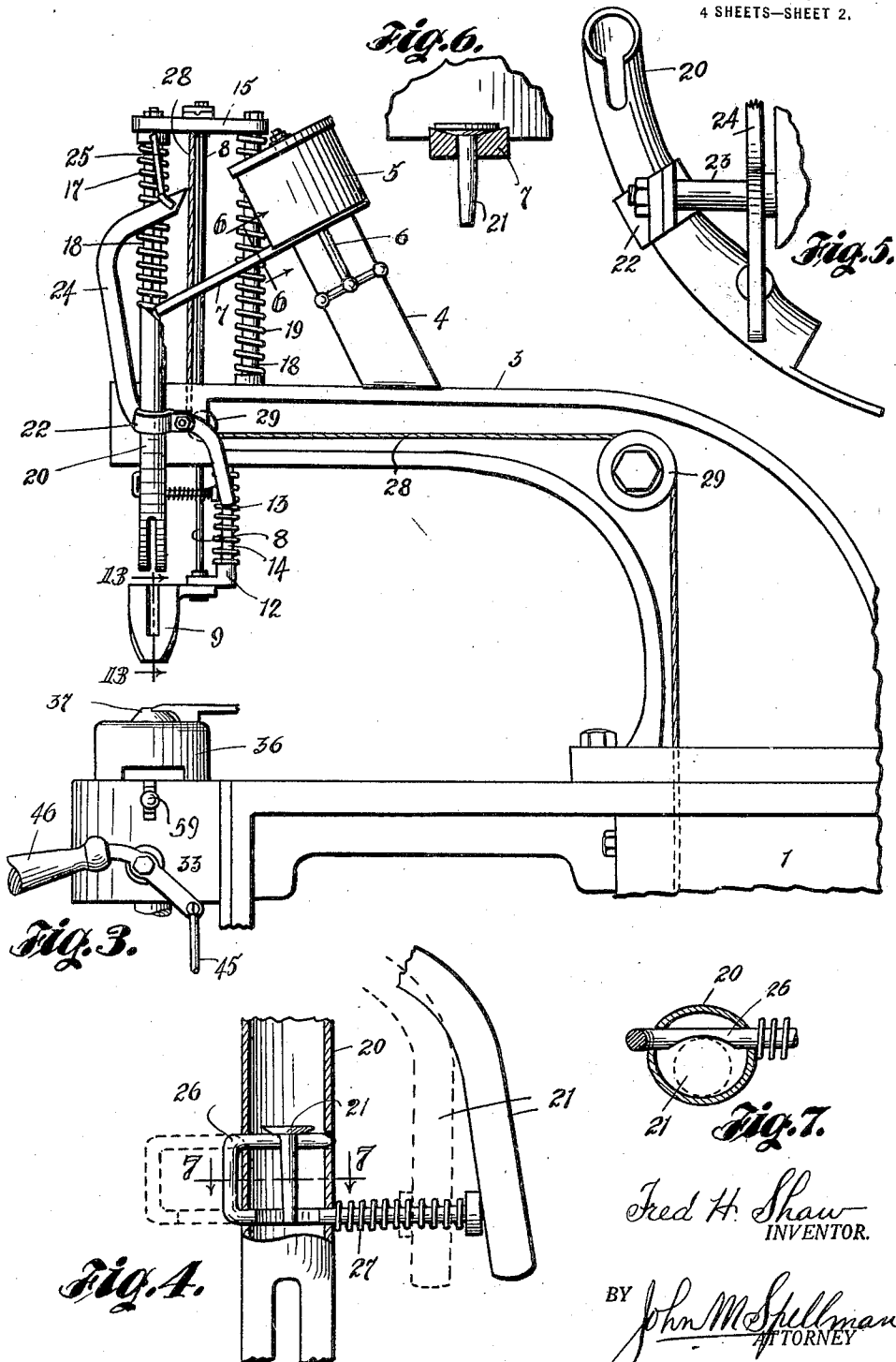
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INVENTOR.

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ATTORNEY

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4 SHEETS—SHEET 2.



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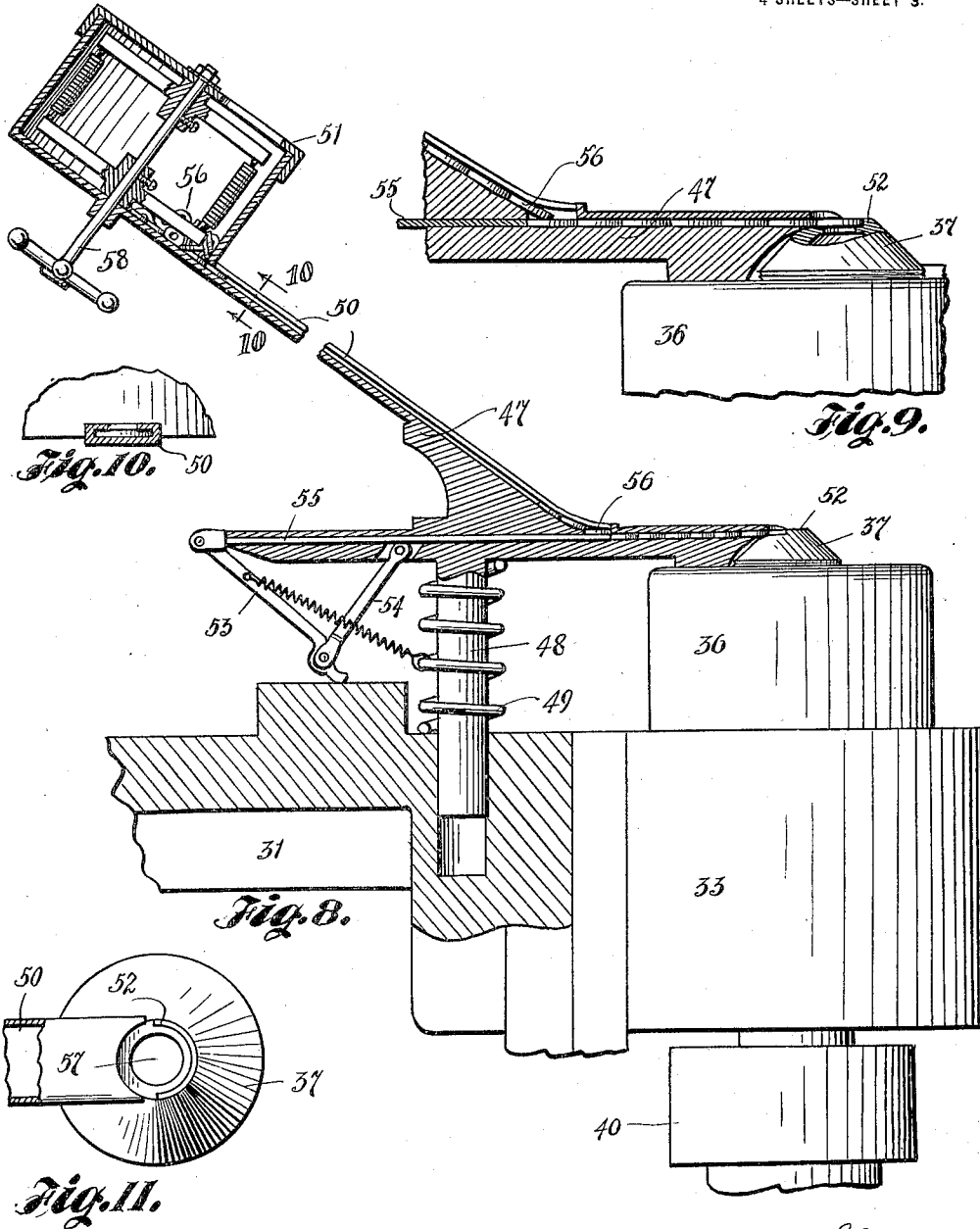
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

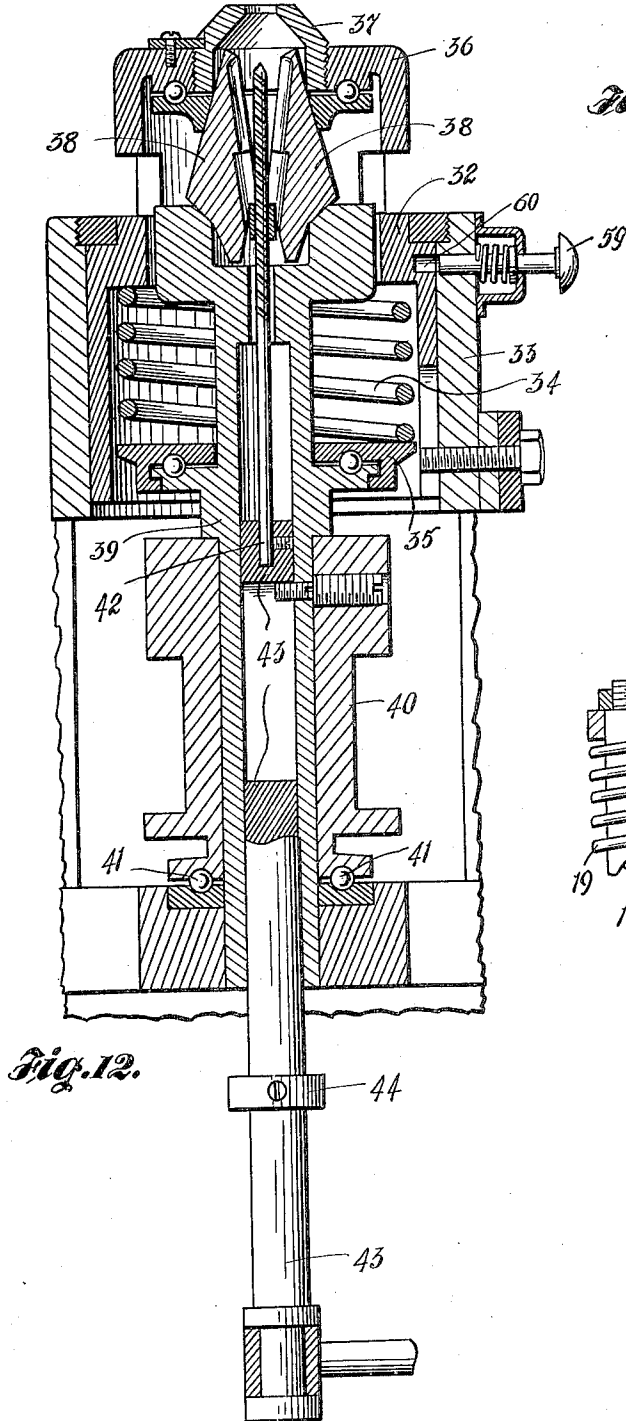


Fig. 12.

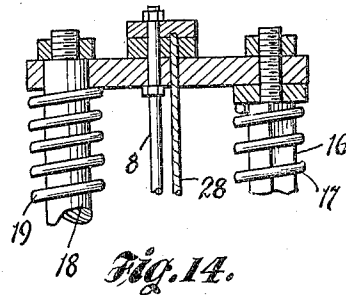
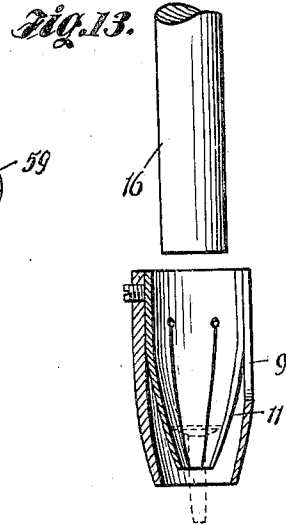


Fig. 14.

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UNITED STATES PATENT OFFICE.

FRED H. SHAW, OF DALLAS, TEXAS.

RIVETING MACHINE.

1,402,901.

Specification of Letters Patent.

Patented Jan. 10, 1922.

Application filed February 23, 1921. Serial No. 446,999.

To all whom it may concern:

Be it known that I, FRED H. SHAW, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Riveting Machines, of which the following is a specification.

This invention relates to riveting machines, particularly to that class of type used in the manufacture of leather and similar goods, and pertains more particularly to certain improvements over Letters Patent No. 1,355,363 granted to me on October 12, 1920.

In this my present invention I have improved the means for reciprocation of the plunger, added to the machine a means for automatically and positively feeding both the rivet and the bur to the work, and made further minor but important improvements, all of which will be more fully understood by reference to the following description, taken in connection with the accompanying drawings, forming part hereof in which—

Figure 1 is a side elevational view of a riveting machine embodying the main features of my invention.

Figure 2 is a front elevational view.

Figure 3 is an enlarged side elevational view of the upper part of the machine, the view being taken from the side opposite to that shown in Figure 1.

Figure 4 is a detail sectional view of the lower end of the rivet feeding mechanism.

Figure 5 is a top view in detail of the rivet feeding mechanism.

Figure 6 is a cross-sectional view, taken on line 6—6 of Figure 3.

Figure 7 is a cross-sectional view taken on line 7—7 of Figure 4.

Figures 8, 9, 10 and 11 are detail sectional views of the bur feeding mechanism, Figure 10 taken on line 10—10 of Figure 8.

Figure 12 is a vertical sectional view of the rivet cutting and heading parts, the resilient work-supporting plate or platform, drill, etc., and

Figures 13 and 14 are detail views, respectively, of the plunger and rivet holding fingers and the extreme upper part of the machine showing the cable and springs.

Referring more in detail to the drawings,

the machine has a standard 1 supported upon the base 2 to which standard is secured an overhanging arm 3 to which is fastened by means of a support 4 a magazine 5 containing rivets provided with an agitator 6 and an inclined chute 7 whereby rivets are fed automatically to the work. On the arm 3 is also placed a T-shaped frame comprising a stem or central rod 8 on the lower end of which is supported a sleeve 9 carrying the rivet fingers 11, see Figure 13, also a sleeve 12 adapted to ride up and down on a rod 14 against spring tension 13 to retract the sleeves 9 and 12 when the sleeve 9 is pressed upon the work. Thus when the work is placed upon the platform 36 and the sleeve 9 is brought downward to hold the work in place, the lower end of the rod 14 will project beyond the sleeve 12, see Figure 1.

To the upper end of rod 8 is a cross-head 15 on the ends of which are a plunger 16 under tension of a spring 17 and a rod 18 seated upon the arm 3 with its spring 19, the springs serving to retract to normal position the plunger after it has passed through the fingers 11 to bear against a rivet. The fingers 11, preferably 6 in number, bear upon all sides of the rivet to centralize its axis to the bur and work.

The lower end of the rivet chute 7 overhangs the upper end of a tubular chute 20 affixed to the arm 3 into which the rivets pass to the work. The tubular chute 20 is secured in place by a collar 22 and rod 23. On the rod 23 a lever 24 is located, see Figure 3, which in conjunction with a forked member 25 on the cross-head 15 automatically feeds the rivets one by one through the end of the tubular chute 20. In Figure 4 is shown in detail the operation of the lever 24. A hook-shaped member 26 is arranged in slots in the chute 20. Its lower side is concaved as depicted in Figure 7 and on its shank is a spring 27. The lever 24 bears against the shank of the member 26 and when the member 25 is pulled downward by a cable 28, it slides across the upper end of lever 24 and pushes the member 26 across the interior of the tubular chute 20. When the member 26 moves outward it releases the head of the rivet 21, allowing it to fall upon the shank of this member which has

now entered the chute. On its return stroke the head of the rivet is allowed to pass the concavity in member 26 and drops into the fingers 11. The cable 28 passes over rollers 29—29, its lower end being connected to a foot lever 30.

A horizontal arm 31 is secured to the standard 1 and supports the mechanism for drilling necessary holes in the leather, holding the bur and shearing off the rivet. A plate 32 is seated in the bottom of a housing 33 and a spring 34, supported upon a ball bearing plate 35 gives resiliency to the plate 32. A platform 36 for supporting the work is provided with a cup-shaped member 37 in which the bur rests while a head is being spun on the rivet. This operation is performed by means of the spinning or cutting tool 38 in two parts which is supported to revolve with the stem 39 carrying a spindle 40 for connection with a drive belt rotating on ball bearings 41—41. A drill 42 is fixed in a shaft 43 for perforating the leather and is provided with a small collar 44 to act as a check to regulate the upward movement of the drill. A rod 45 connects the shaft 43 to a handle 46 for operating the drill.

Referring now to Figures 8, 9, 10 and 11 which illustrate the means employed for automatically feeding the burs. To the rear of and connected to the platform 36 is a projecting platform 47 which has a depending leg 48 under spring tension 49. This platform has an inclined trackway or slot 50 within which the burs travel from the magazine 51 to the cup-shaped member 37. This member is provided with an upwardly projecting semi-circular flange or lip 52 to hold the rivet in place when received on the platform 36, supporting the member 37. Thus when the platform 36 is brought downward to cut and shape the head of the rivet, the triggers 53 and 54 pivoted together will cause a horizontal bar 55 to be pulled outward allowing a bur 56 to fall into horizontal line, and the return movement of the inner end of the bar 55 will advance the foremost bur on to the platform and against the flange or lip 52 to register with the aperture 57. The magazine 51 is also provided with an agitator 58.

In Figure 12 is shown a stop arrangement for the downward movement of the plate 32 and platform 36, as it is not always desirable to depress the platform and plate. This arrangement consists of a pin 59 under spring tension which pin is receivable into a recess 60 in plate 32. Pressure on the pin will prevent the plate and platform from descending when the treadle is depressed.

In the operation of the machine, the work is placed upon the platform 36, the treadle 61 is depressed to bring the sleeve 9 upon the work to hold it in place. The handle 46

is then pushed downward causing the drill 42 to advance upward and perforate the work. The treadle 61 is now further depressed which movement will, through the cable 28, cross-head 15, member 25 and a lever 24, cause a rivet to be fed into the fingers 11, and also cause the plunger 16 to descend between the fingers 11. A further downward movement of the plunger forces the rivet past the fingers and through the bur, and a still further movement will force down the platform 36 and allow the cutting tool 38 to shear away the end of the rivet and form a head thereon. The movement of the platform also automatically causes a bur to be fed onto the platform 37 by means of the triggers 53 and 54 and the bar 55.

Having thus described the nature and objects of the invention, what I claim as new and desire to secure by Letters Patent, is—

1. In a riveting machine, a rivet inserting plunger, a rivet carrying member, a resilient platform, a spinning tool therein, means for feeding rivets to the rivet carrying member, means for forcing the rivet inserting plunger down to insert a rivet, said downward movement of the rivet inserting plunger also causing a downward movement of the resilient platform, and means actuated by the raising and lowering of said resilient platform for feeding burs into position beneath the rivet inserting plunger.

2. In a riveting machine, a rivet inserting plunger, a rivet carrying member, a resilient platform, a spinning tool therein, means for feeding rivets to the rivet carrying member, means for forcing the rivet inserting plunger down to insert a rivet, said downward movement of the rivet inserting plunger also causing a downward movement of the resilient platform, means actuated by the raising and lowering of said resilient platform for feeding burs into position beneath the rivet inserting plunger, and means to prevent movement of the table when desired.

3. In a riveting machine, a rivet inserting plunger, a rivet-carrying member, a resilient platform, a spinning tool carried in the platform, means for lowering and raising the rivet-carrying member toward and from the platform and feeding rivets to the rivet-carrying member, a sliding bar, said platform having a projection supporting an inclined trackway and bur magazine and provided with triggers coacting with said sliding bar to feed the burs to the resilient platform, means on the resilient platform to conformably receive and hold the burs from the trackway, and a sleeve and spring arrangement on the rivet-carrying member for holding the work in position.

4. In a riveting machine, a rivet inserting plunger, a rivet-carrying member, a resilient platform, a spinning tool carried in the platform, means for lowering and raising

the rivet-carrying member toward and from the platform, a magazine with a trackway and a tubular chute, means on the tubular chute coacting with said raising and lowering means for feeding rivets to the work, means for feeding burs to said platform, means to prevent movement of the table when desired, and a sleeve and spring arrangement on the rivet-carrying member for holding the work in position. 10

In testimony whereof I have signed my name to this specification.

FRED H. SHAW.