

No. 719,939.

PATENTED FEB. 3, 1903.

G. W. GWINN & H. C. SMITH.  
BUTTON SETTING MACHINE.

APPLICATION FILED NOV. 7, 1901.

NO MODEL.

3 SHEETS—SHEET 1.

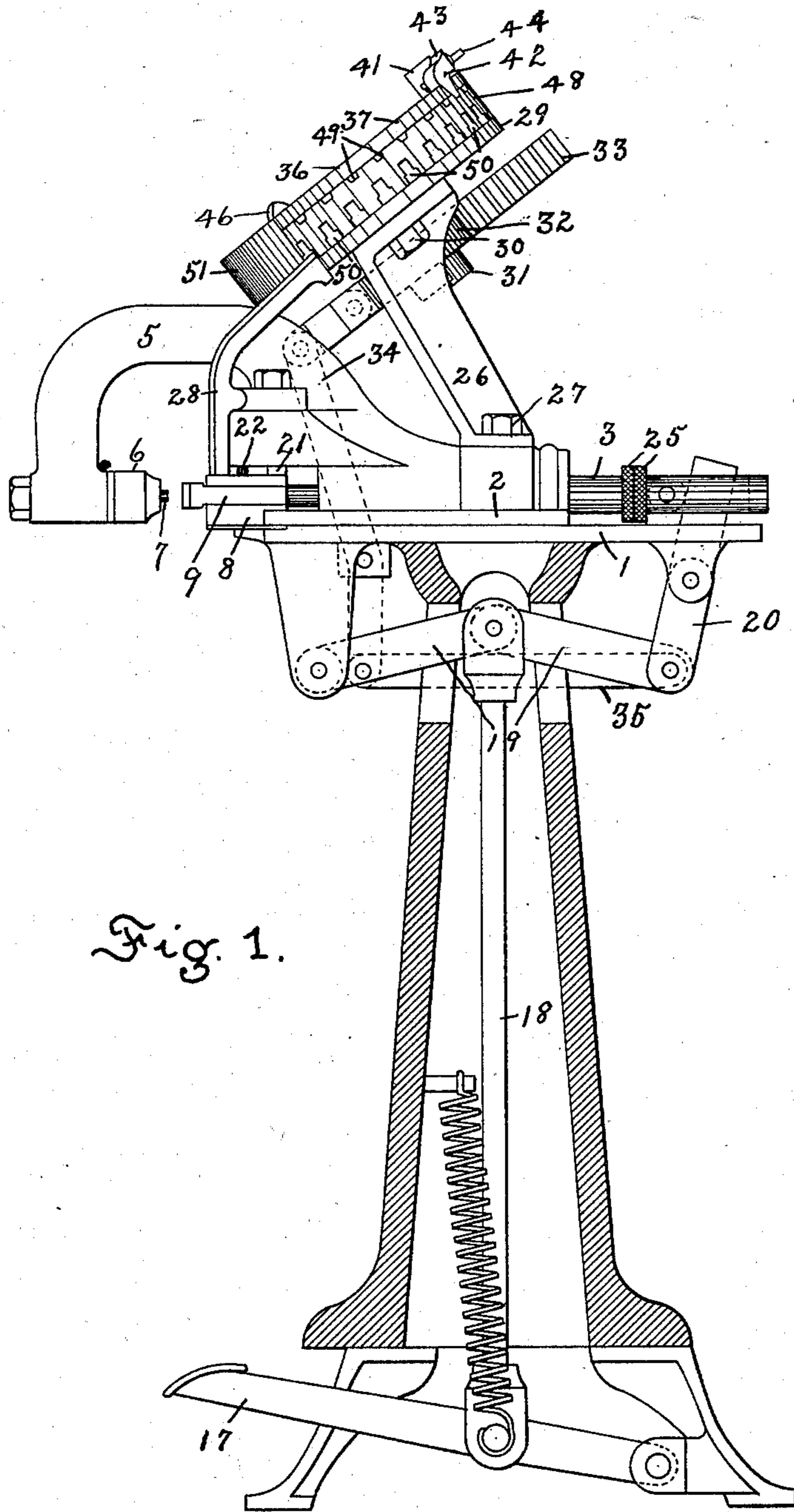


Fig. 1.

Witnesses:

Henry Watson

Charles L. Durbin.

Inventors  
George W. Gwin  
Henry C. Smith  
By *Chapman Ferguson*  
Attorney.

No. 719,939.

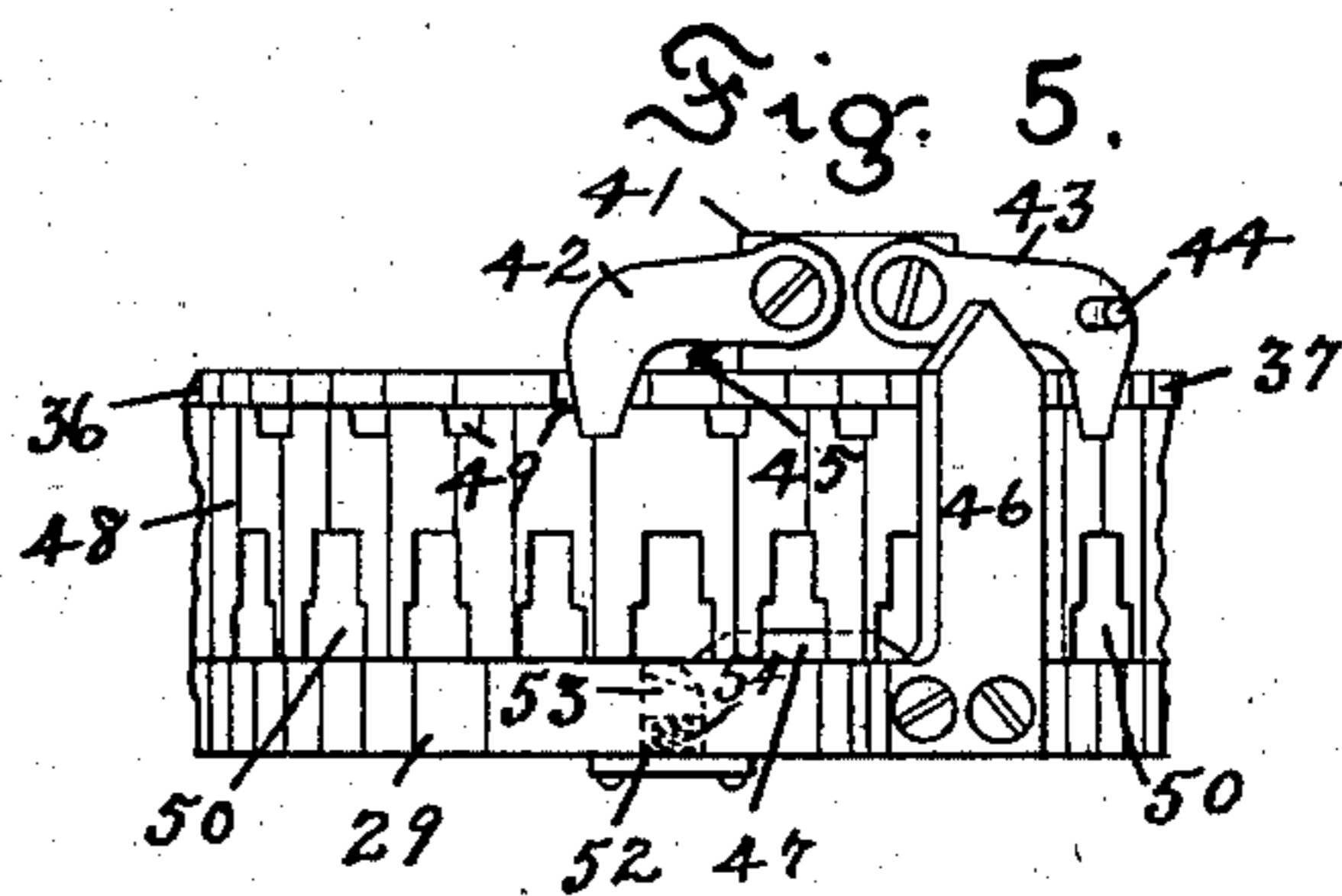
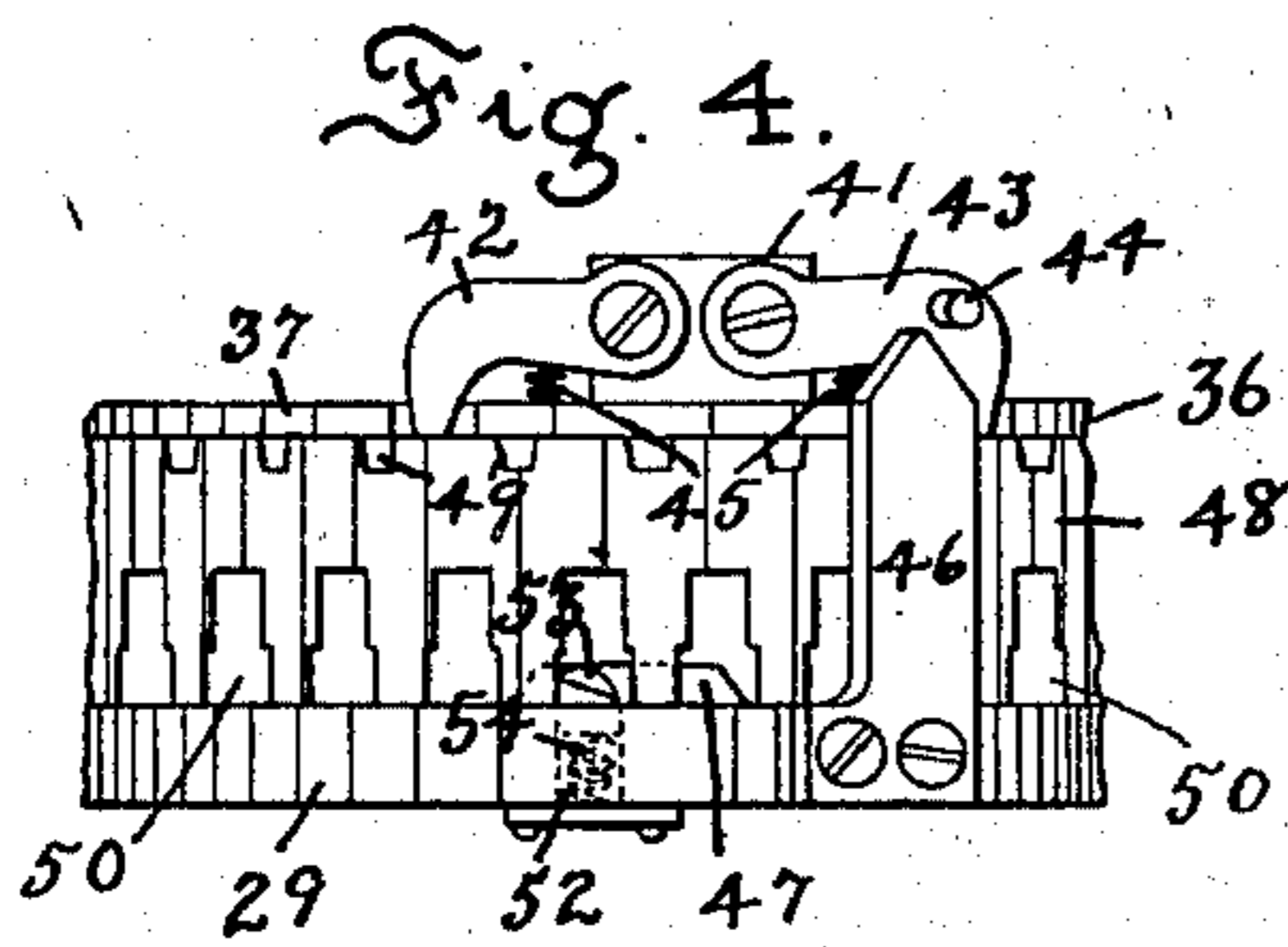
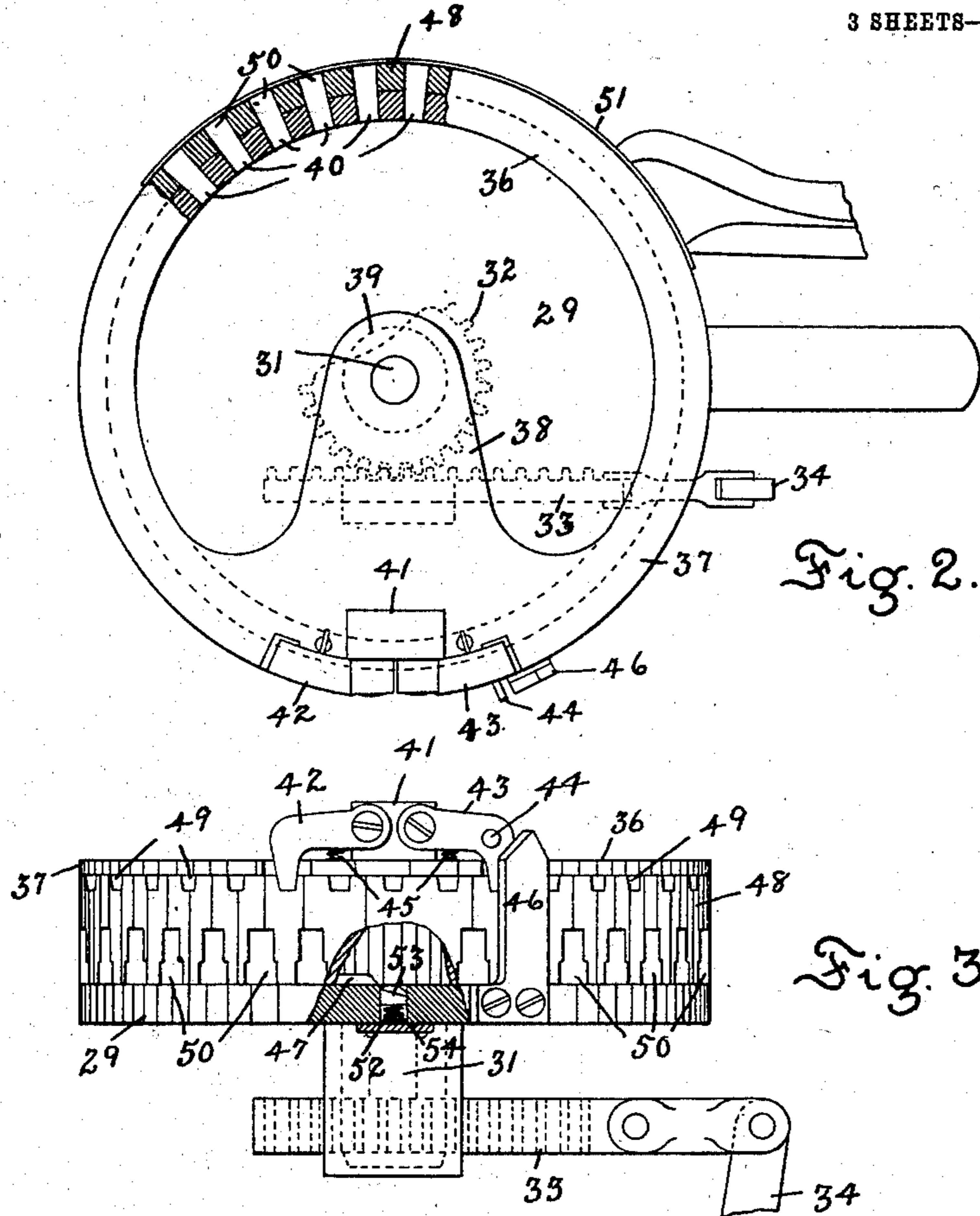
PATENTED FEB. 3, 1903.

G. W. GWINN & H. C. SMITH.  
BUTTON SETTING MACHINE.

APPLICATION FILED NOV. 7, 1901.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses:  
Henry Watson.  
Charles L. Durbin.

Inventors  
George W. Gwinn  
Henry C. Smith  
By Chapin Fergusson  
Attorney.

No. 719,939.

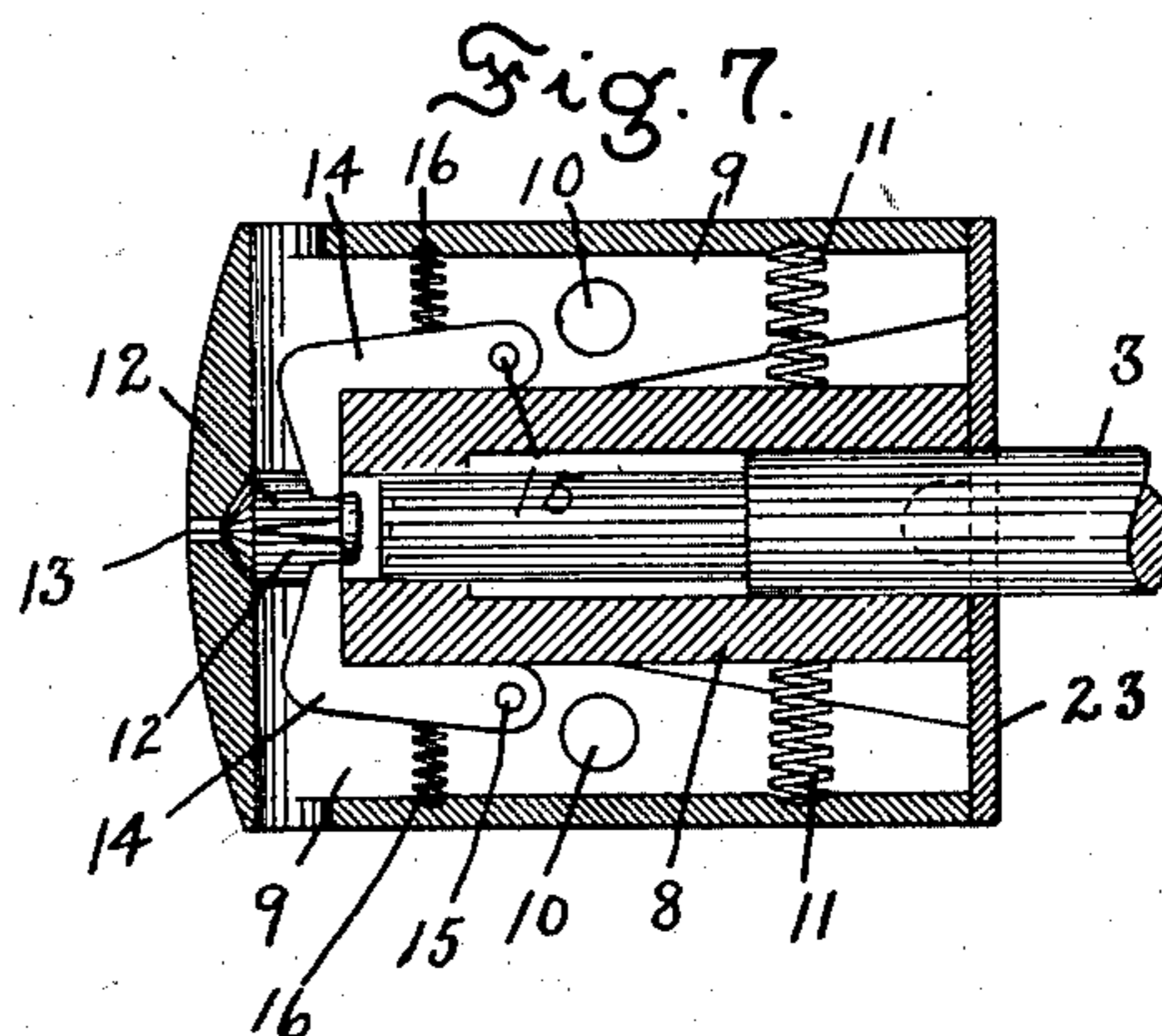
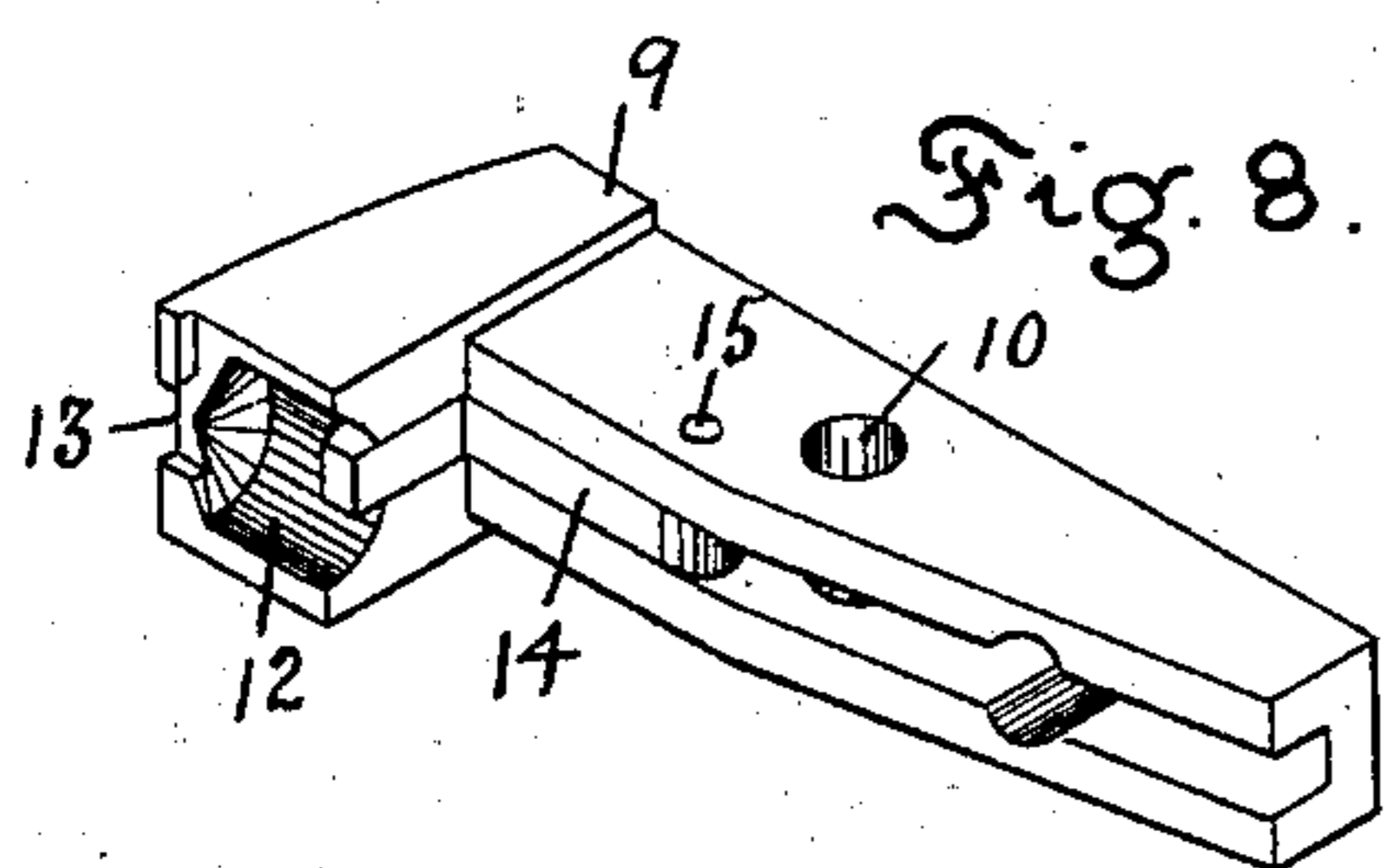
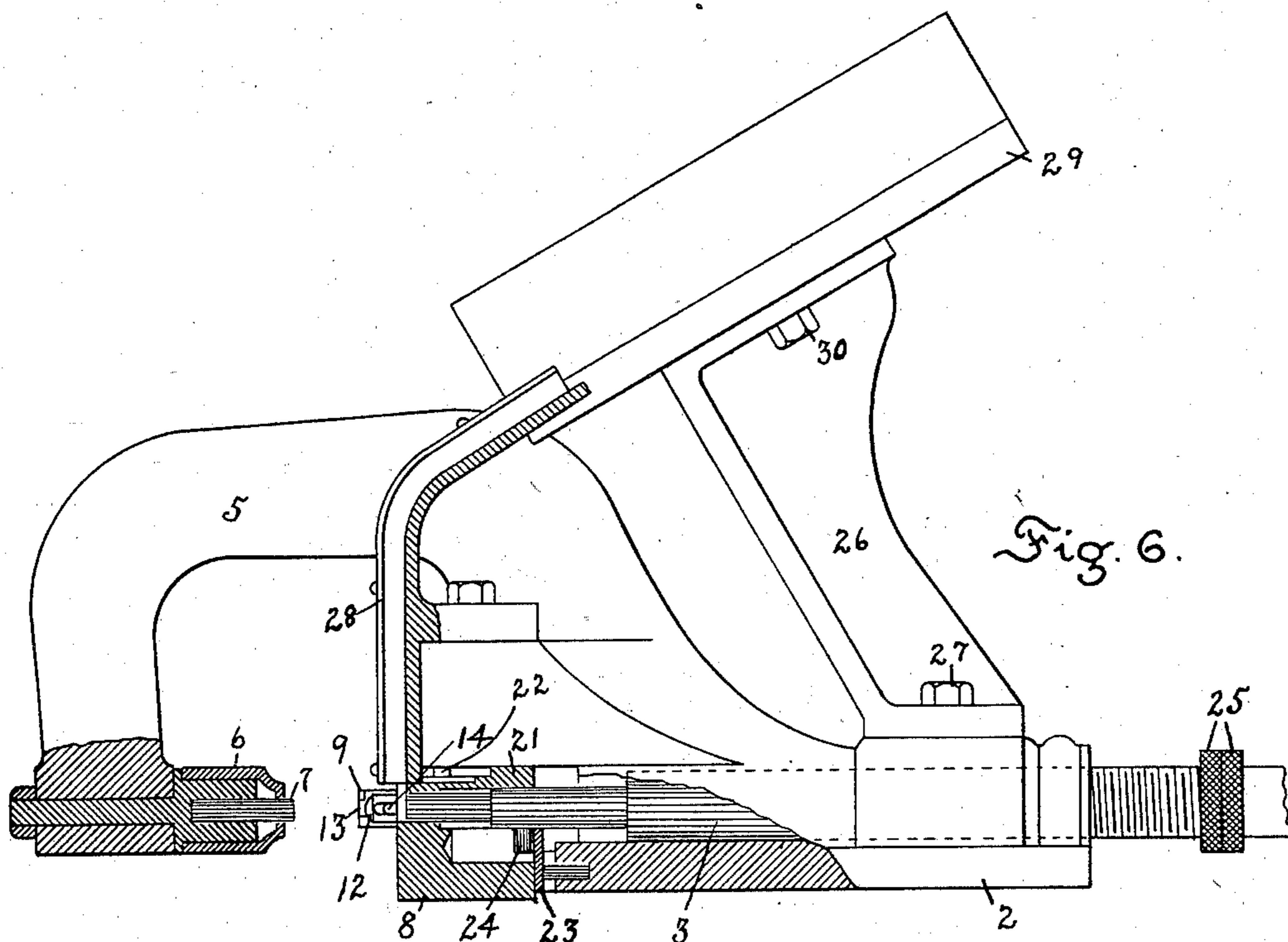
PATENTED FEB. 3, 1903.

G. W. GWINN & H. C. SMITH.  
BUTTON SETTING MACHINE.

APPLICATION FILED NOV. 7, 1901.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses:  
Henry Watson  
Charles L. Durboian.

George W. Swinn  
Henry C. Smith  
By Chapman Ferguson  
Attorney.

# UNITED STATES PATENT OFFICE.

GEORGE W. GWINN AND HENRY C. SMITH, OF BALTIMORE, MARYLAND,  
ASSIGNORS TO THE RAYMOND BUTTON COMPANY OF BALTIMORE  
CITY, A CORPORATION OF MARYLAND.

## BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 719,939, dated February 3, 1903.

Application filed November 7, 1901. Serial No. 81,446. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE W. GWINN, and HENRY C. SMITH, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Button-Setting Machines, of which the following is a specification.

This invention relates to an improved machine for attaching buttons to garments by means of a staple or other similar fastener; and the invention consists of a machine having substantially the parts and combination of parts hereinafter more particularly shown, described, and claimed.

Referring to the drawings, Figure 1 is a side elevation of our machine, partly in section and showing the parts in their normal position. Fig. 2 is a detailed plan view, partly in section, of the magazine. Fig. 3 is a rear elevation of the magazine, partly in section. Fig. 4 is a detailed view of the magazine, partly broken away, showing the pawls lifted from the slots ready to transfer to the next slot. Fig. 5 is a similar view showing the position of the pawls after advancing one slot. Fig. 6 is a detailed view, on an enlarged scale, of the upper portion of the machine, partly in section and showing the plunger and the operative parts of the chuck. Fig. 7 is a detailed longitudinal section of the chuck, showing a staple in position to be driven. Fig. 8 is a detailed view of one of the jaws of the chuck.

Similar numerals designate like parts throughout the several views.

Referring to the accompanying drawings, forming part of this specification, 1 designates a stand or table to which is secured a base-plate 2, in which the plunger 3 reciprocates. The plate 2 is secured to the stand 1 by means of bolts or other suitable means and has a laterally-projecting arm 5, which latter is provided with a magnetized collar 6 to hold a metal button thereto, and a clencher 7, across which the bar of the button projects. The said clencher 7 is in line with the travel of the plunger 3 and serves to clench or curl the legs of the staple around the bar of the button.

The plunger 3 carries on its front end a chuck 8, which latter has its lower surface resting upon the stand or table 1 and is formed with a shoulder 21 on its upper surface at the rear thereof. The said chuck 8 is provided with two jaws 9, pivoted thereto at 10 and are held normally closed by means of the springs 11. The jaws 9 are provided with a concavity 12 for the reception of the staples as they fall from the raceway 28 one at a time. The rear ends of the said jaws 9 are cut on an incline to permit the front ends thereof to be forced apart. The front ends of the said jaws 9 are concaved at 12 and taper toward the front to an opening 13, through which the legs of a staple project. Secured within the jaws 9 are auxiliary jaws 14, pivoted at 15, which are held in their normal position by the springs 16. These jaws 14 fit on each side of the legs of the staple and serve to hold the said staple in its proper position ready to be forced through the opening 13 in the front of the jaws and clenched around the bar of the button by the plunger 3.

The plunger 3 is reciprocated through the medium of the treadle 17, lever 18, toggle-levers 19, and the rock-arm 20. As the plunger moves forward it carries the chuck 8 forward until the shoulder 21 on the chuck comes in contact with the pin 22, when the said chuck will be held while the plunger 3 continues to move forward. As the plunger 3 continues to move forward it carries in front of it a staple which has previously been deposited in the cavity 12 with the head thereof back of the jaws 14 and the legs being held in line with the opening 13 by the said jaws 14 and forces the auxiliary jaws 14 apart against the tension of the springs 16 and also forces the jaws 9 apart against the tension of the springs 11. The legs of the staple straddle the bar of a button held to the collar 6 and are forced against the clencher 7 and are curled around and secured to the button. When the plunger returns, the jaws 9 will hold fast to the end of the said plunger and be carried back with it until the rear end of the chuck comes into contact with the plate 23, against which the said chuck will be held while the plunger continues back until the

lug 24 comes into contact with the plate 23 and the rearward movement of the plunger is arrested. The plunger 3 is provided with set-screws 25 to limit its forward movement.

5 The machine is provided with a magazine to hold the staples and to feed the latter to the chuck one at a time. The magazine is supported by a bracket 26, secured to the plate 2 by a bolt 27 and has a raceway 28,  
10 leading from the magazine to the chuck, through which the staples are fed. The bottom 29 of the magazine is stationary and is held to the bracket 26 by means of the bolt 30. Extending through the bottom of the  
15 magazine is a shaft 31, on which is secured a pinion 32. A rack 33 gears with the pinion 32. The rack 33 is connected at its outer end to a rock-arm 34, which latter is connected to the rock-arm 20 by a link 35 and is  
20 operated by the mechanism which operates the plunger. The magazine is provided with an annular inner wall or ring 36, which is provided with an annular flange 37 at its upper end and a projection 38. This projec-  
25 tion 38 is provided with a downwardly-projecting perforated boss 39, which fits over and is secured to the upper end of the shaft 31, which causes the said ring 36 to revolve with the shaft 31. The ring 36 is provided at  
30 its lower edge with a number of slots 40, (in the present instance six,) through which the staples fall to the outer ring. At the rear of the ring 36 is an upwardly-projecting lug 41, to which is pivoted the pawls 42 and 43, the latter  
35 having a laterally-projecting pin 44. These pawls 42 and 43 are held to their normal position by the springs 45. Secured to the bottom 29 and projecting upwardly in line with the travel of the pin 44 is a cam 46. The  
40 inner ring 36 is provided with a recess 47 at its lower edge. The outer ring 48 fits around the inner ring 36, rests upon the bottom 29, and is flush with the flange 37 and the bottom 29. The upper end of the ring 48 is pro-  
45 vided with a number of approximately V-shaped slots 49, arranged at equidistant intervals, in which the pawls 42 and 43 rest. The lower edge of the ring 48 is also provided with slots 50, corresponding in shape to  
50 the slots 40 in the inner ring, through which the staples fall to the raceway. These slots are arranged to register with the slots in the inner ring 36. Secured to the flange 37 of the inner ring 36 is a metal plate 51, extend-  
55 ing downwardly and covering a number of the slots in the outer ring. The bottom 29 is provided with an opening 52, into which is fitted a stop 53. This stop is pressed upward against the inner ring 36 by the spring 54.  
60 The operation of the machine is as follows: After the staples have been placed in the magazine and one has been fed to the chuck through the raceway 28 the machine is then ready for operation. The treadle 17 is pressed  
65 down, which imparts motion, through the rod 18, toggles 19, and rock-arm 20, to the plunger 3, causing the latter to move forward. As

the plunger 3 moves forward it carries the chuck 8 with it until the shoulder 21 comes in contact with the pin 22, when the chuck 70 will be held while the plunger 3 continues to move forward. As the plunger continues to move forward it carries in front of it a staple and forces the auxiliary jaws 14 apart against the tension of the springs 11. As the 75 staple is pushed out its legs will straddle the bar of the button, held against the collar 6, and be forced against the clencher 7 by the plunger and caused to curl around the bar of the button and secure the latter to the 80 garment. When the plunger returns, the jaws 9 will clamp the end of the plunger and remain open until the chuck 8 comes into contact with the plate 23, when the said chuck will be held, while the plunger 3 continues 85 back, until the lug 24 comes into contact with the plate 23 and the rearward movement of the plunger is arrested. When the treadle 17 is pressed downward to operate the plunger, motion will be transmitted through the rod 90 18, toggle-levers 19, rock-arm 20, rod 35, and rock-arm 34 to the rack 33. As the rack 33 reciprocates it revolves the pinion 32 and shaft 31, which latter rotates the inner ring 36. The slots 40 of the inner ring 36 register with 95 a corresponding number of slots 49 in the outer ring 48, and as the outer ring is reciprocated the staples fall through the slots of the inner and outer rings and rest against the plate 51. The inner and outer rings are held together 100 by the pawls 42 and 43, as shown in Figs. 1 and 3. As the inner ring 36 turns it carries the outer ring with it until the pin 44 comes into contact with the cam 46, when the pawl 43 will be lifted out of the slot and at the 105 same time the stop 53 will be forced up into the recess 47 of the inner ring 36 by the spring 54 and also into one of the slots 50 of the outer ring and will assume the position shown in Fig. 4. The outer ring will be held 110 by the stop 53, as seen in Fig. 4, until the inner ring has traveled the distance sufficient to permit the pawls 42 and 43 to advance one slot, as seen in Fig. 5. When the pawl 43 is lifted out of the slot and is being advanced 115 to another slot, the pawl 42 will ride out of its slot, owing to the inclination of the pawl and slot, and advance with the ring 36 to the next slot. When the inner ring is returned, it carries the outer ring back, which latter 120 rides over the inclined surface of the stop 53, pressing it down, in which position it is held by the inner ring 36. It will be seen that while the inner ring reciprocates back and forth the outer ring advances a distance equal 125 to the distance between the V-shaped slots 49. The pawl 43 carries the outer ring in one direction and the pawl 42 in opposite direction. When the outer ring 48 is held by the stop 53 and the inner ring moves the dis- 130 tance from one V-slot 49 to another, the metal plate 51, secured to the outer ring, will uncover one of the slots 49 and allow one staple to fall into the raceway and be conveyed

to the chuck. It will be seen that each time the inner ring is reciprocated the outer ring 48 will advance one slot and one slot in front of the raceway will be uncovered and allow 5 one staple to pass into the raceway.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a button-setting 10 machine, of a magazine for holding staples, comprising a stationary bottom; an inner ring revolubly secured to said bottom and having a plurality of slots in its lower edge; an outer ring having a plurality of slots in 15 its lower edge arranged equidistant around the entire edge; means to hold the said inner and outer rings together; and means to reciprocate the said inner ring, as and for the purpose described.

2. The combination with a button-setting 20 machine, of a magazine for holding staples, comprising a stationary bottom; an inner ring revolubly secured to said bottom and having a plurality of slots in its lower edge; an outer ring having a plurality of slots in its 25 lower edge, and a plurality of slots in its upper edge; two pawls carried by the inner ring and normally resting in the slots in the upper edge of the outer ring; and means to reciprocate the inner ring, as and for the purpose 30 described.

3. The combination with a button-setting 35 machine, of a magazine for holding staples, comprising a stationary bottom; an inner ring revolubly secured to said bottom and having a plurality of slots in its lower edge; an outer ring having a plurality of slots in its lower edge and a plurality of slots in its upper 40 edge; two pawls carried by the inner ring one of which has a laterally-projecting pin; said pawls normally resting in the slots in the upper edge of the outer ring; a cam secured to the bottom and projecting upwardly in line

with the travel of the laterally-projecting pin on one of the pawls; and means to revolve 45 the inner ring, substantially as and for the purpose described.

4. The combination with a button-setting machine, of a magazine for holding staples, comprising a stationary bottom; an inner 50 ring revolubly secured to said bottom and having a recess in its lower edge at the rear, and a plurality of slots in its lower edge; a stop in the bottom in line with the recess in the inner and the slot in the outer rings; an 55 outer ring having a plurality of slots in its lower edge and a plurality of approximately V-shaped slots in its upper edge; two pawls carried by the inner ring and normally resting in the slots in the upper edge of the outer 60 ring, one of said pawls having a laterally-projecting pin; a cam secured to the bottom and projecting upwardly in line with the travel of the laterally-projecting pin; and means to revolve the inner ring, substantially as and 65 for the purpose described.

5. The combination with a button-setting machine, of a magazine for holding staples, comprising a stationary bottom; an inner 70 ring revolubly secured to said bottom and having a plurality of slots in its lower edge arranged at equidistant intervals, and an outer ring having a plurality of slots in its lower edge arranged at equidistant intervals around the entire edge; means to hold the 75 said inner and outer rings together; means to reciprocate said inner ring; and a raceway leading from the magazine to the machine as and for the purpose described.

In testimony whereof we affix our signatures in the presence of two witnesses. 80

GEORGE W. GWINN.  
HENRY C. SMITH.

Witnesses:

CHAPIN A. FERGUSON,  
HENRY WATSON.