

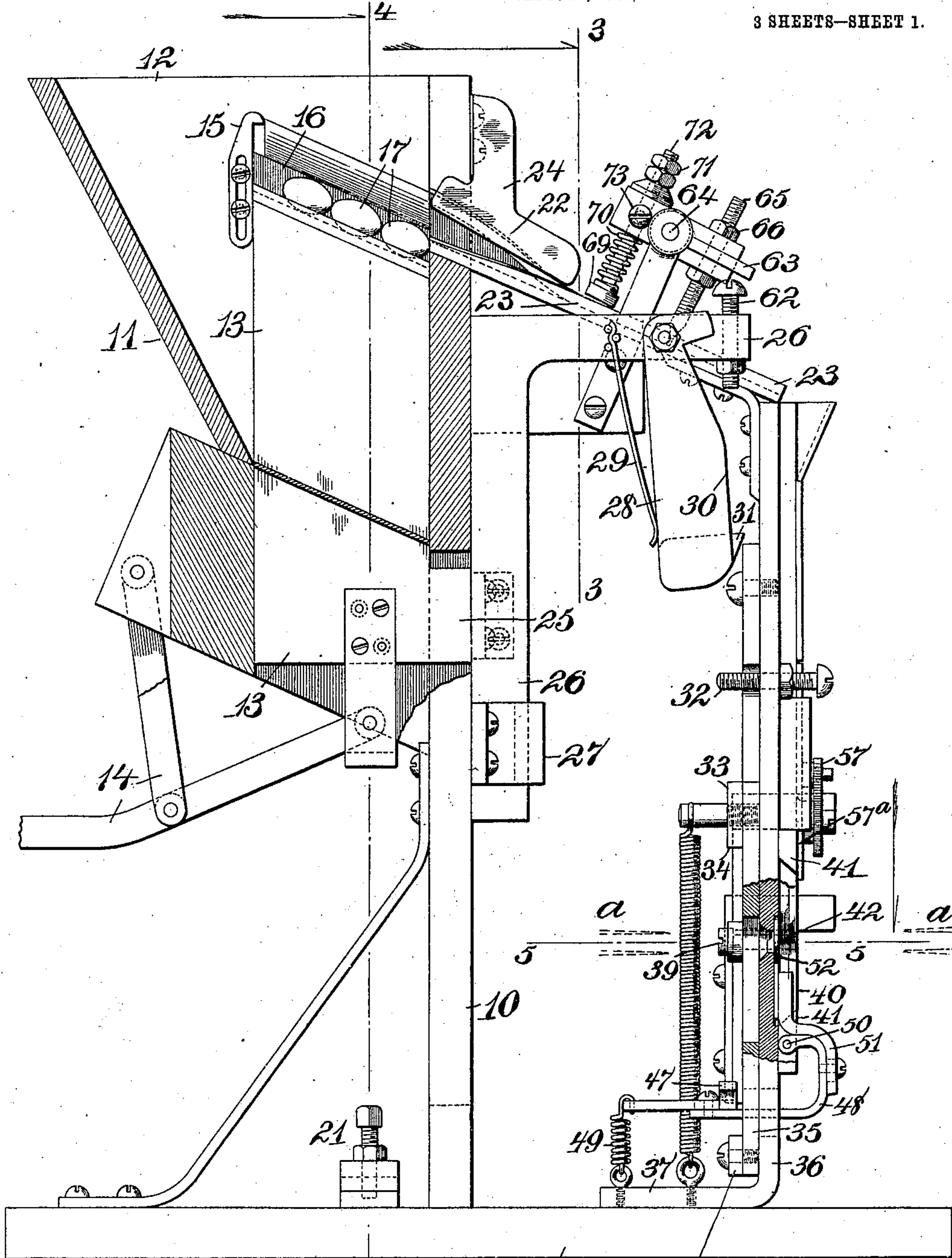
No. 846,806.

PATENTED MAR. 12, 1907.

H. J. SKIPP.
BUTTON MACHINE.

APPLICATION FILED SEPT. 12, 1906.

3 SHEETS—SHEET 1.



WITNESSES:

Fig. 1
E. A. Peck
Ralph Lancaster

INVENTOR

Herbert J. Skipp.
BY
J. H. Campfield
ATTORNEY

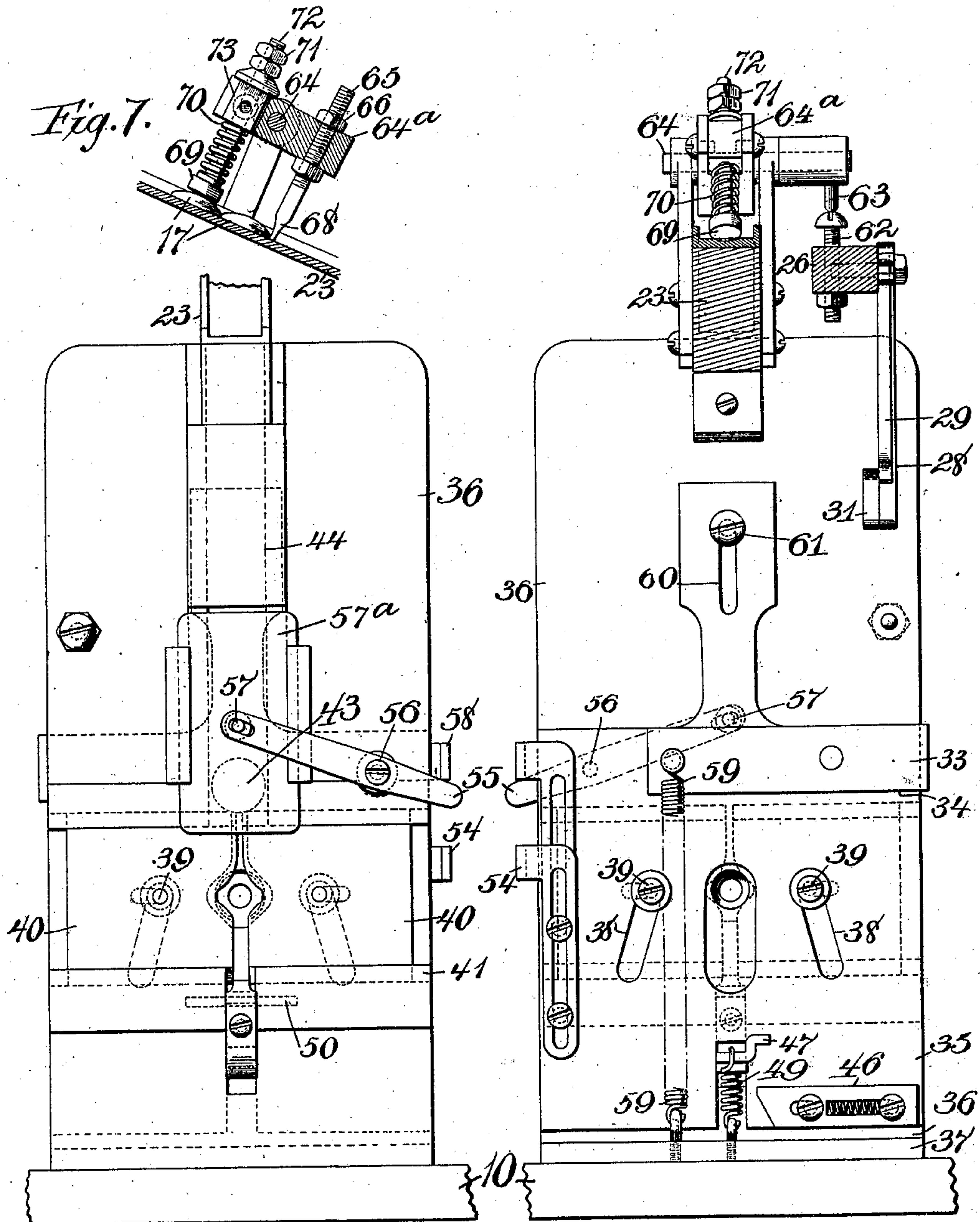
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3 SHEETS—SHEET 2.



WITNESSES:

Fig. 2
E. A. Pee
Ralph Lancaster

INVENTOR

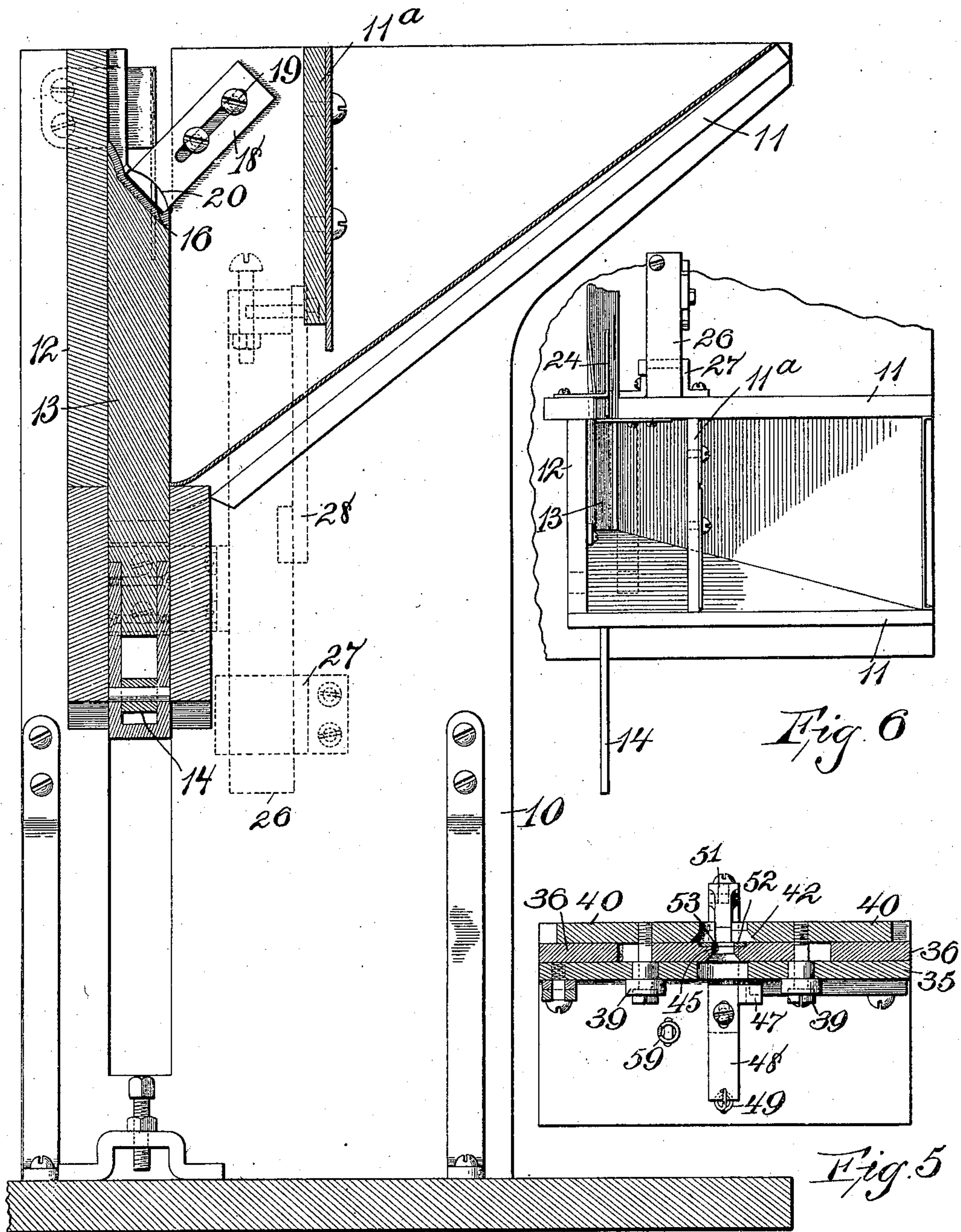
Fig. 3
Hubert J. Skipp
BY
Wm. H. Campfield
ATTORNEY

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3 SHEETS—SHEET 3.



WITNESSES:

E. A. Peel
Ralph Lancaster

INVENTOR
Herbert J. Skipp
BY *Wm. H. Campfield*
ATTORNEY

UNITED STATES PATENT OFFICE.

HERBERT J. SKIPP, OF NEWARK, NEW JERSEY.

BUTTON-MACHINE.

No. 846,806.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed September 12, 1906. Serial No. 334,227.

To all whom it may concern:

Be it known that I, HERBERT J. SKIPP, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Button-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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention is designed to provide a feeding attachment for button finishing or drilling machines, and is designed to supply the buttons to the punches or drills one at a time and to feed these buttons by a tripping mechanism from a hopper in which the buttons are fed.

The machine is also designed to admit a button to a holding means that is in the path of the drill or dills and to eject the finished button from the machine just before the next button is fed into its place.

The machine is designed to provide a mechanism for this purpose which is simple, machines of this class as previously designed being complex and embodying a great many mechanical movements that are dispensed with in this construction.

The machine is further designed to provide a plunger that will take up a number of buttons from the hopper in which they are placed and feed them into a chute, where a regulating device holds the buttons in check, allowing but one to pass at a time, the ejection of a finished button at one end of the machine being followed by the admission of another to a chute leading to the point where the buttons are drilled.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation, parts of the machine being broken away to show the interior of the construction. Fig. 2 is a face view of the lower part of the machine, and Fig. 3 is a section on line 3 3 in Fig. 1. Fig. 4 is a section on line 4 4 in Fig. 1, and Fig. 5 is a section on line 5 5 in Fig. 1. Fig. 6 is a plan view of the hopper and the chute leading therefrom on a reduced scale, and Fig. 7 is a detail of the mechanism for regulating the admission of but one button at a time.

The framework 10 of the machine em-

bodies a base portion and an upright, to which is secured a hopper 11, the walls of which are inclined, except one, the wall 12, and against this wall 12 and through the bottom of the hopper is arranged a plunger 13 to reciprocate vertically, being actuated by any suitable motive mechanism 14, which mechanism can be either manually operated or connected to a button-machine. An adjustable stop 15 is arranged on the inside of the wall 12 to limit the upward movement of the plunger 13. The upper surface 16 of the plunger, as shown more particularly in Figs. 1 and 4, is inclined in two directions, so as to receive the buttons and hold them when the flat side of the button rests on the upper edge of the plunger, but allowing them to slide off when the rounded edge is downward, thus insuring the seating of a number of buttons at each reciprocation of the plunger. A partition 11^a is arranged across the hopper to prevent too many buttons resting on the plunger when it is down. The buttons 17 are thus slid upward with the plunger when it ascends, and a plate 18, being adjustably secured by the screws 19, has a lower edge 20 formed to approximately fit the upper surface of the buttons to further insure the proper feeding of the buttons in their proper positions.

A set-screw 21, arranged on the base-plate of the machine, limits the downward movement of the plunger, so that the top of the plunger is flush with the bottom of the hopper at its lower extremity of movement. The buttons when the plunger is at its topmost point then slide into a trough 22, which takes them in their inclined position and feeds them into the flat portion of the trough 23, the buttons in the meantime being prevented from falling out by having their tops engaged with the lower edge of the guard-plate 24. The path of the buttons from this point will be described hereinafter. The plunger 13 has on its forward end a projection 25, which slides in the slot in the front of the upright 10, and secured to this projecting portion 25 is a right-angled arm 26, which slides when the plunger is reciprocated in the bearing 27. Depending from the arm 26 is a plate 28, normally held outward by the spring 29 and having a beveled front face 30, to one side of which and near the bottom is arranged a nose 31. When the plunger goes down and is at the bottom of its movement, the nose 31 catches under the lower

edge 34 of the rib 33, which is fastened to a sliding plate 35, this plate sliding against and in relation to the upright supporting-frame 36, which is fastened to the base-plate 10 by means of the right-angled portion 37.

Referring to Figs. 2 and 3, it will be seen that the plate 35 has a pair of diverging slots 38—one on either side of the center—and through these slots project the pins or screws 39, which pass through horizontal slots in the upright 36 and are fastened to the plates 40 on the front of the supports 36, this being also shown in Fig. 5. Thus when the plate 35 is raised the screws 39, and consequently the plates 40, are forced apart, and the jaws 42 of the plates 40 separate, the plates 40 sliding in the ways 41. This parting of the plates 40 thus releases a button, which is held by them, in the path of any suitable drills *a*, (shown in Fig. 1,) the jaws 42 being far enough apart to admit of the exit of a button when the slots 38 have forced the pins 39 about half their distance apart, but not far enough to allow the exit of a button 43, (shown in Fig. 2,) which button is in a chute 44 and supported by the top edges of the plates 40. The upright 36 is perforated, as at 45, to allow the passage of the drills through the upright. At the same time this is taking place a spring-actuated latch 46 engages a lip 47 on the pivoted lever 48, this lever being pivoted at 50, and the lever, having the swinging motion operating transversely of the latch 45, releases the lip 47 after a certain distance has been traveled. This is caused by the latch 46 moving perpendicularly and the lip 47 swinging on the center 50. The latch 46 on its return is allowed to slide over the lip 47 by the compression of its spring. At the moment the jaws 43 of the plates 40 are far enough apart to clear the button held therein the pivoted lever 48 is normally held in position by a spring 49 and to its other end is secured a plate 51, which has in extension a perforated disk 52, (see Figs. 1 and 5,) which when the plate is tilted ejects the button that has been finished from its place and clears the machine at this point for the entrance of the button 43, which is still resting on the top of the plates 40, as in Fig. 2. At the completion of this operation, the plate 35 still ascending, the plates 40 are slid far enough apart to allow the button 43 to drop down in the path of the jaws 42, resting on the top edge of the arm 51. To hold the button in this position until the plates 40 again slide together, the upward movement of the plate 35 causes a finger 54 to engage the end of a lever 55, pivoted at 56, and the end 57 of the lever carries down the plate 57^a opposite the perforation 53 to hold the button in place. On the return downward stroke of the plate 35, which reverses the operation hereinbefore described and forces the plates 40 together, a

finger 58 engages the end of the lever 55 and causes it to again assume the position shown in Figs. 2 and 3. A downward movement of the mechanism is assured by means of a spring 59 and the slotted arm 60, and the screw 61 assists in directing the plate 35 in its movements. While the plate 35 is being propelled upward by means of the nose 3 at a predetermined point, the inclined face 30 of the plate 28 engages the inner end of an adjustable screw 32, and the nose 31 is forced to let go of the rib 33, and the plate 35 and its connected mechanism drops to clamp a button. The chute 44 is now empty, there being no button resting on the top edge of the plates 40, and on the upward limit of movement of the plunger 13 and the arm 26 the top of the screw 62 engages the lever 63, which rocks a shaft 64, which in turn supports a bar 64^a, which carries the tripping mechanism. When the lever 63 is raised, it raises the end of the bar 64^a, that supports the screw 65, which is adjustably secured by the nuts 66, and the finger 68 on the end of the rod is raised to allow one button to pass down through the trough 23 into the chute 44 to the position shown at 43 in Fig. 2. At the same time the other end of the bar 64^a is forced downward, and this causes a disk 69 to step on the succeeding button, a yielding pressure being supplied by means of the springs 70, and the rod 72, adjustably secured by the nut 71, regulates the amount of pressure of the spring. This mechanism is arranged to slide in a block 73, pivotally held in the bar 64^a.

It will be seen from this description that the finger 68 and the disk 69 alternately hold and release a button, so that the supply of buttons furnished by the plunger 13 is dispensed one by one by means of this tilting feed. I have thus supplied a machine that furnishes an adequate supply of buttons, regulates this supply to furnish the buttons one by one to a clamping means, clamps the buttons in this clamping means while they are being drilled, then ejects the finished button and allows another button to be fed into the clamping means from the chute, and finally allows another individual button to fall into the chute of the machine, this button to be next in the clamping means. The jaws 42 are made so that there is a beveled surface on the inside, and when these jaws are pushed toward one another they tightly wedge the button up against the support 36, which leaves the surface of the button clear for drilling.

Having thus described my invention, what I claim is—

1. A feeding device for button-machines comprising a hopper, means for feeding buttons from the hopper, a trough to receive the buttons from the feeding means, a tripping mechanism to release one button at a time

from the trough, a chute arranged to conduct buttons from the tripping mechanism, a clamping means at the bottom of the trough to hold the button while it is being drilled, an ejector for throwing out the finished button, and a mechanism governed by the feeding means actuating the clamping means and the ejector in turn, this mechanism actuating the tripping mechanism alternately with the ejector and the clamping means.

2. A feeding device for button-machines comprising a hopper, a plunger arranged to reciprocate vertically in the hopper and arranged to conduct buttons near the top of the hopper, the upper surface of the plunger being inclined in two directions, a ledge on one edge of the upper surface, a trough to receive the buttons from the plunger, an oscillating bar having means on each end to engage a button, the oscillations of the bar releasing one button at a time, a chute leading from the trough, a clamping means at the bottom of the chute, and means for ejecting the finished button, and a mechanism to operate the parts of the ejector and a connection from the ejector-operating mechanism to the reciprocating plunger, and actuated by the plunger.

3. A feeding device for button-machines comprising a hopper, a plunger to reciprocate in the hopper and support buttons on its top edge, a trough to receive the buttons from the top of the plunger, a support having a chute thereon, at the end of the trough, a pair of horizontally-slidable plates arranged to clamp a button between them at the bottom of the chute, a vertically-movable plate on the support, means for separating the horizontal slidable plates when the vertically-slidable plate is raised, and a latch connected to the plunger to raise the vertically-slidable plate when the plunger is raised, and a tripping mechanism in the trough arranged to release a button when the plunger is at its upward limit of movement.

4. In a machine of the kind described, a clamping means comprising a support, a pair of abutting plates arranged to slide to and from one another, a plate movable transversely to the slidable plates and having diverging slots therein, pins secured to the slidable plates and projecting through the slot of the movable plate, and jaws on the opposed plates for holding a button.

5. In a machine of the kind described, a support, a pair of plates slidable to and from one another, a plate movable transversely to the slidable plates and having slots therein,

pins secured to the slidable plates and projecting through the slots of the movable plate, jaws on the slidable plates for clamping a button, a perforation in the support, an ejector in the support, and a latch on the movable plate to actuate the ejector when the movable plate has been propelled far enough to partly separate the slidable plates.

6. In a machine of the kind described, a button-clamping means arranged therein, a plate movable to actuate the button-clamping means in and out of engagement with a button, and an ejector consisting of a pivoted lever, one end of which is provided with a perforated ejecting-disk, and the other end being provided with a projecting tongue, a latch on the movable plate to engage the tongue to eject the button, and a spring to return the ejector to its normal position.

7. In a machine of the kind described, a support, a pair of plates slidable to and from one another to clasp and release a button, means for actuating the plates, an ejector actuated by the plate-actuating means, and a vertically-slidable plate to cover the space between the slidable plate after the button is ejected, and means to return the slidable plate from between the plates when the plates are drawn together.

8. In a machine of the kind described, a trough, a bar pivoted above the trough, the bar being arranged to rock, a finger projecting from one end of the bar, and a spring-pressed disk from the other end of the bar, the finger and the disk lying in the trough.

9. In a machine of the kind described, a trough, a bar secured above the trough and arranged to rock, a finger secured to one end of the bar and arranged to project into the trough, a rod on the other end of the bar, a disk arranged on a rod and projecting into the trough, and a spring to yieldingly hold the disk in the trough.

10. In a machine of the kind described, a trough, a rocking bar arranged above the trough, a finger projecting from one end of the bar into the trough, a rod on the other end of the bar, a disk arranged on the rod, the rod of the disk being arranged to slide in the bar, a spring between the disk and the bar, and means for rocking the bar.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of September, 1906.

HERBERT J. SKIPP.

Witnesses:

WM. H. CAMFIELD,
E. A. PELL.