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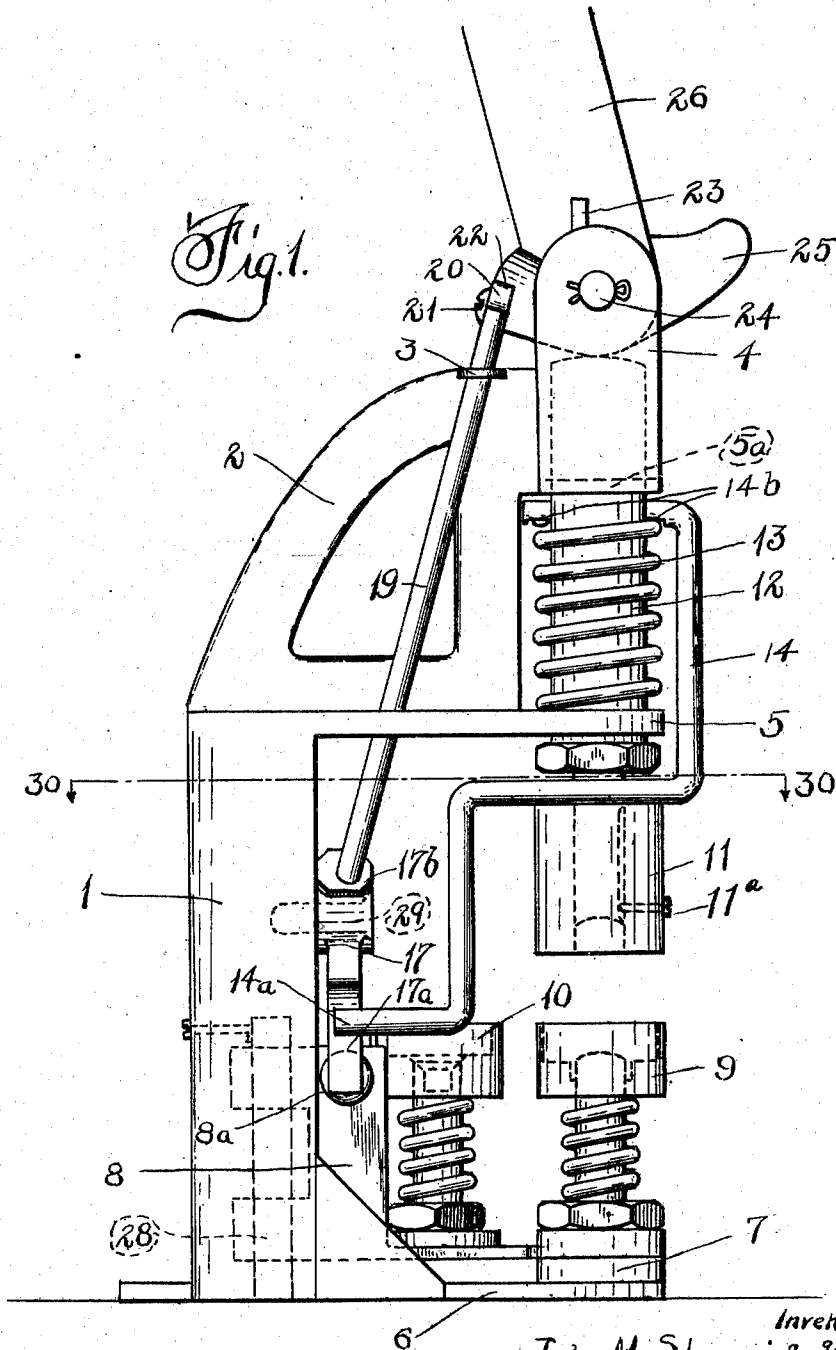
BUTTON MAKING MACHINE.

APPLICATION FILED APR. 9, 1909.

966,778.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

JOHN M. SHERWIG AND MORTON C. PETITT, OF CLEVELAND, OHIO.

BUTTON-MAKING MACHINE.

966,778.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed April 9, 1909. Serial No. 488,937.

To all whom it may concern:

Be it known that we, JOHN M. SHERWIG and MORTON C. PETITT, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Button-Making Machines, of which the following is a specification.

This invention relates to that class of button making machines characterized by a reciprocating die, and a pair of stationary dies which are alternately swung into operative relation with respect to the reciprocating die.

The object of the present invention is to provide an improved mechanism for operating the reciprocating die, and also to provide a connection between said mechanism and the carrier of the stationary dies, whereby the movement of said carrier to shift the stationary dies is effected simultaneously with the operation of the reciprocating die, thus enabling the operator to place the material in position with one hand and with the other hand operate the machine.

With the foregoing object in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, reference being had to the drawings hereto annexed in which—

Figure 1 is a side elevation of the machine; Fig. 2 is a front elevation; Fig. 3 is a horizontal section on the line 30—30 of Fig. 1; Fig. 4 is a rear-end view of a portion of the machine.

Referring more particularly to the drawings, 1 denotes a standard rising from a suitable base 6. At the upper end of the standard is a bracket which is formed with vertically spaced bearings 5 and 5^a in which is mounted a vertically reciprocating plunger 12, to the lower end of which, below the bearing 5, is fitted the die 11. The die 11 has a sliding connection with the plunger 12, said connection being made by a set screw 11^a passing through the die and into a longitudinal slot made in the plunger. From the bearing 5^a rise cheeks 4 between which the upper end of the plunger extends, and between said cheeks is fulcrumed at 24 an operating lever 26. The toe 25 of this lever is cam-shaped, and engages the upper end of the plunger, so that when the lever

is swung on its fulcrum in one direction, the plunger will be depressed.

The stationary dies are indicated at 9 and 10, respectively. Both of these dies are mounted on a carrier 8^b which swings in a horizontal plane, so that the dies may be alternately brought into operative position with respect to the die 11. The standard is formed with a recess 32 into which the carrier extends. In this recess is mounted a vertically disposed rod 28 to which the carrier is pivotally connected so as to swing in a horizontal plane as stated. On the carrier is an upstanding flange 8 having bearing lugs 8^a on opposite sides, which are for a purpose to be presently described.

To the standard 1 is pivoted at 29, to swing in a vertical plane, a lever 17 having at its upper end a head 17^b, and at its lower end a fork 17^a between the branches of which the flange 8 is received, and said branches engaging the lugs 8^a. Below the bearing 5^a, the plunger 12 has a transverse opening in which is pivoted the inturned end 14^b of a rod 14, and between said end 14^b, and the bearing 5, a spring 13 is coiled around the plunger. The part 14^b engaged by one end of the spring is flattened as shown in Fig. 1. The rod 14 extends downwardly to the die 11 and is then bent inwardly over the top thereof and in contact therewith. The last mentioned bend terminates in a downward bend, at the lower end of which is another inward bend 14^a engageable with one side of the fork 17^a.

To the heel of the lever is pivoted at 21 a trip comprising a pair of fingers 20 and 20^a which extend at right angles to each other. This portion of the lever also has a shoulder 22, which has a purpose to be presently described.

At 19 and 31 are indicated rods which have their upper ends located respectively in the path of the fingers 20 and 20^a at certain positions of the latter. These rods are slidably mounted in guides 3 on the standard and openings in the bracket which carries the bearing 5. At their lower ends, the rods rest on the head 17^b.

In line with the axis of the plunger 12, the base has a raised portion 7 on which that end of the carrier on which the dies 9 and 10

are mounted slides, and which serves to take up the shock of the blow and thus prevents injury to the table, the dies when they are in operating position being directly above this raised portion.

From the cheeks 4 project lugs 23, the function of which will be presently described.

In operation, the plunger 12 is forced downwardly by swinging the lever 26 forwardly and downwardly. The process of making the button requires two operations. In the first operation the lever 17 is swung so as to bring the die 9 below the die 11, and the rod 14 over the edge of the die 11, and the lever is then swung to depress the plunger. The plunger 12, is kept from participating in the first operation, the rod 14 holding the die below the end of the plunger. In the meantime the rod 31, by the swinging movement of the lever 17, is elevated, so that its upper end is higher than the upper end of the rod 19. Then, when the lever 26 is raised, the trip finger 20^a lowers and strikes the upper end of the rod 31, and said finger engages the shoulder 22, thus forcing the rod 31 downwardly. This movement of the rod, by reason of the engagement of its lower end with the head 17^b of the lever 17 swings the latter, thus forcing the rod 19 upwardly, and pushing the rod 14 to the position of dotted lines in Fig. 2, off the die 11. At the same time, the carrier 8^b is swung so as to bring the die 10 in position beneath the die 11, by reason of the engagement of the fork 17^a with the flange 8. Then by swinging the lever 26 forwardly, the second operation takes place, the plunger 12 being brought into play with the die 11 inasmuch as the latter is free of the rod 14. When the lever 26 is again swung back, the rod 19 is forced down by the trip finger 20, and the rod 31 rises. The rod 14 swings over onto the die 11 by reason of the spring compression on the flat surface 14^b. The lever 17 having been swung over, the die 9 is again under the die 11, and the parts are then in position for the next operation.

The trip falls by gravity, so that the fingers 20 and 20^a extend over the upper ends of the rods 19 and 31, respectively, as the lever 26 is swung back. However, should the trip fail to fall, the lugs 23 will force it into proper position to operate as herein described.

The machine allows the work to be placed on the dies 9 and 10 with one hand, leaving the other hand free to operate the lever 26; or said lever may be operated by foot power, or in any other convenient manner, thus doing away with the trouble and time consuming operation of shifting the carrier 8^b by hand.

We claim:

1. In a button-making machine, a reciprocating die, a lever for actuating said die, a swinging carrier, dies mounted on said carrier, a flange on the carrier, a forked lever straddling the flange, and a connection between the forked lever and the first-mentioned lever for shifting the carrier to alternately bring its dies into operative relation with respect to the reciprocating die.

2. In a button-making machine, a reciprocating die, a lever for actuating said die, a swinging carrier, dies mounted on said carrier, a flange on the carrier, a forked lever straddling the flange, slide rods engageable with the forked lever, and means on the first-mentioned lever alternately engaging the slide rods for actuating the forked lever to shift the carrier and bring its dies alternately into operative relation with respect to the reciprocating die.

3. In a button-making machine, a reciprocating die, a lever for actuating said die, a swinging carrier, dies mounted on said carrier, a lever operatively connected to the carrier for shifting the same to alternately align its dies with the reciprocating die, slide rods engageable with the last-mentioned lever, for swinging the same, and a gravitating trip carried by the first-mentioned lever, and alternately engageable with the slide rods to actuate the same.

4. In a button-making machine, a reciprocating die, a lever for actuating said die, a swinging carrier, dies mounted on said carrier, a flange on the carrier, a forked lever straddling the flange, slide rods engageable with the forked lever, and a gravitating trip carried by the first-mentioned lever, and alternately engaging the rods to actuate the same.

5. In a button-making machine, a reciprocating plunger, a die carried by the plunger, a swinging carrier, dies mounted on said carrier, a lever operatively connected to the carrier for shifting the same to alternately align its dies with the first-mentioned die, slide rods engageable with the lever, a lever having a shouldered heel, and a cam-shaped toe, the latter being engageable with the plunger, and a gravitating trip carried by said lever below the shoulder, said trip alternately engaging the rods to actuate the same.

6. In a button-making machine, a reciprocating plunger, a die carried thereby, a lever for actuating the plunger, a swinging carrier, dies mounted on said carrier, a lever operatively connected to the carrier for swinging the same to alternately align its dies with the first-mentioned die, a connection between said lever and the first-mentioned lever, and a rod pivotally connected to the plunger, and engageable with the carrier-operating lever.

7. In a button-making machine, a reciprocating plunger, a die carried thereby, a lever for actuating the plunger, a swinging carrier, dies mounted on said carrier, a lever
5 operatively connected to the carrier for swinging the same to alternately aline its dies with the first-mentioned die, a connection between said lever and the first-mentioned lever, a rod pivotally connected to
10 the plunger, and having a flattened portion,

and engageable with the carrier-operating lever, and a spring bearing on the flattened portion of the rod.

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

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Witnesses:

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