

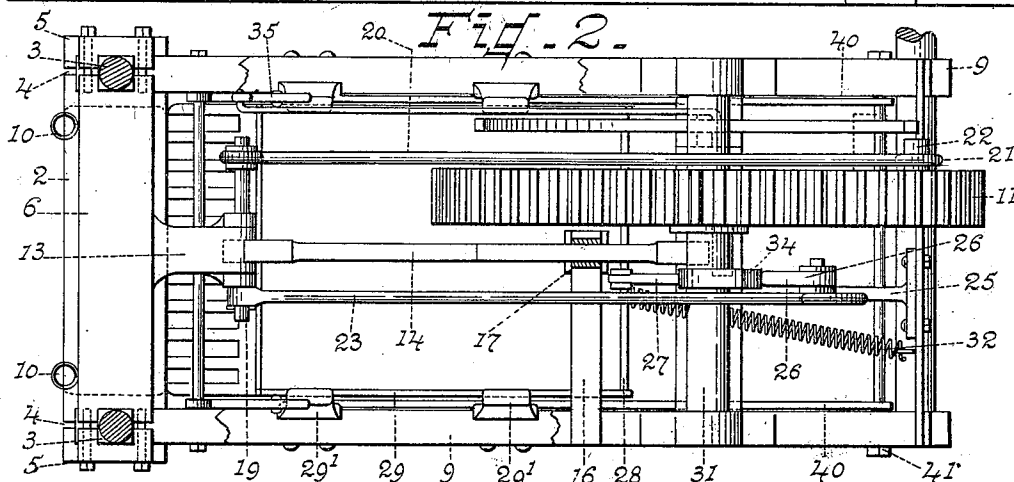
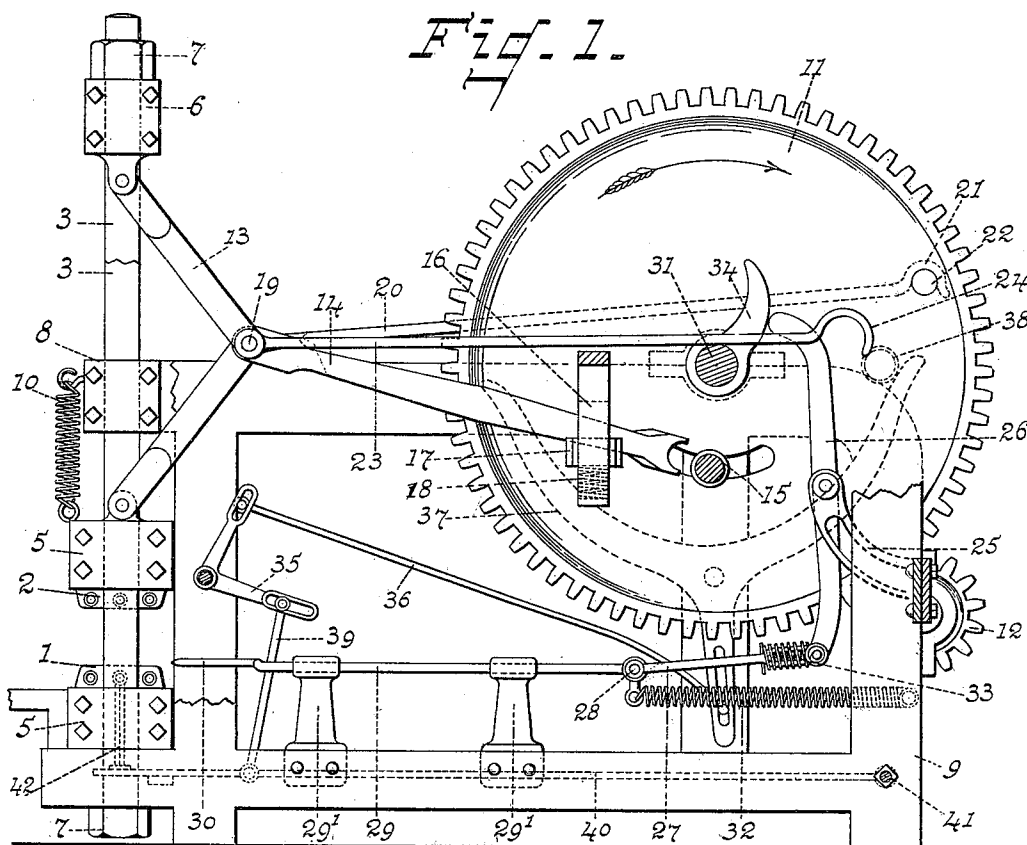
No. 659,347.

Patented Oct. 9, 1900.

**N. C. LA CASSE.
BUTTON MACHINE.**

(Application filed Jan. 2, 1900.)

(No Model.)



Witnesses:

J. J. Westfall
Esq. N. Crenham

Inventor:

Napoleon C. La Basse
by Frank R. Rathbun,
Attorney-

UNITED STATES PATENT OFFICE.

NAPOLEON C. LA CASSE, OF AUBURN, NEW YORK, ASSIGNOR OF ONE-HALF
TO BENJAMIN M. WILCOX, OF SAME PLACE.

BUTTON-MACHINE.

SPECIFICATION forming part of Letters Patent No. 659,347, dated October 9, 1900.

Application filed January 2, 1900. Serial No. 129. (No model.)

To all whom it may concern:

Be it known that I, NAPOLEON C. LA CASSE, a citizen of the United States, residing at Auburn, county of Cayuga, State of New York, have invented a new and useful Improvement in Button-Machines, of which the following is a specification, reference being had to the accompanying drawings, on one sheet, making part of this specification.

My invention relates to improvements in button-machines in which the buttons are formed of a plastic material that hardens upon cooling by pressure between two die-beds provided with dies of suitable form and one of said die-beds being adapted to descend upon the other, which is fixed in position through the action of a knuckle-joint arranged to be operated by a connecting-bar and rotating wheel.

The objects of my invention are, first, to provide means whereby the said operating connecting-bar may be released after having straightened or pushed the knuckle-joint to its power limit and to catch and retain the said connecting-bar in position for renewed action; second, to provide means for flexing or retracting said knuckle-joint; third, means for preventing the said knuckle-joint from passing beyond its vertical limit, or, rather, from being flexed outward or in an opposite direction, which is not infrequently attended with danger to the operator; fourth, providing means whereby the button-dischargers, which discharge the buttons from the thread eye-pins, may be operated more positively and an arrangement of parts whereby said button-dischargers can be relieved should they meet with an obstruction when about to discharge, and, lastly, in hinging the rods actuating the thread eye-pins far to the rear of the machine. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a button-machine of the kind named, showing my improvements thereon; and Fig. 2 is a plan view of the same.

Similar figures of reference refer to similar parts in both views.

In Fig. 1, 1 is the lower die-bed, and 2 is the upper die-bed of the machine. The die-beds

are boxed at their ends on square guide-posts 3 3, with a space interval 4 provided between the boxes 5 and the ends of said die-beds 1 and 2. The lower die-bed 1 is fixed on said square guide-posts 3 3, and the upper die-bed 2 is free to move vertically on said square guide-posts 3 3. A top cross-head 6 is also fixed in position by a similar boxing on the square guide-posts 3 3 and in the manner already mentioned. Nuts 7 7 screw on the ends of the square guide-posts 3 3, which are turned and threaded for the purpose. A similar boxing 8 is also provided on that part of the framework 9 through which the square guide-posts 3 3 pass, and spiral-springs 10 10 connect the die-bed 2 at either end with the frame 9 above. The main wheel 11 is mounted on a shaft 31 on the framework 9 and is driven by a small pinion 12.

A knuckle-joint 13 is hinged at the ends of its limbs to the top cross-head 6 and the upper side of the upper die-bed 2. The knuckle-joint 13 is pivoted to the connecting-bar 14, which actuates the same. In proper position on the wheel 11 is adjusted the push-pin 15, and a stirrup 16 is fastened in desired place on the framework 9 and is provided at its depending end with a sliding buffer 17, which rests on a buffer-spring 18.

The pivot-pin 19 of the knuckle-joint 13 is extended at either side thereof for purposes which will presently be seen. On one side of said knuckle-joint 13 and on the extended pivot-pin 19 is pivoted one end of a link-rod 20, having formed at its other end a hook 21, which hooks on a pin 22, provided in proper working place on the side of the wheel 11. On the opposite side of the knuckle-joint 13 and on the extended pivot-pin 19 is pivoted a link-rod 23 at one end, the other end being turned into the hook 24, as seen in Fig. 1. The object of this arrangement of parts will presently be explained.

At the rear of the framework 9 is bolted an arm 25, on which is pivoted a vertical lever 26, the bottom end of which is pivoted in the slotted end of the rod 27, which in turn is pivoted to the end bar 28, on which the slide-rods 29 of the button-dischargers are hinged. The said slide-rods 29 are supported and slide in ways provided on the top sides of the

posts 29' 29', as shown in Fig. 1. The top end of the vertical lever 26 is so arranged as to be actuated by a cam 34, fixed on the shaft 31. A spiral spring 32 has one end attached to the end bar 28 and the other end to a convenient rearward place on the framework 9, as shown, and it serves to retract the button-dischargers 30 through the connections therewith. A spiral spring 33 is arranged around the slotted end of the rod 27, between a stop-pin shown in place thereon and the vertical lever 26, and serves to relieve any undue strain on said vertical lever which might be caused through the button-dischargers meeting with an obstruction in their forward movement.

Bell-cranks 35 35 are provided near the forward end on the inside of the framework, which are actuated through a rod connection (shown at 36) with a forked lever 37, which latter is actuated by a pin 38, provided on the wheel 11. To the lower arms of the bell-cranks 35 35 are pivoted the connections 39, which connect said bell-cranks with the eye-pin bar-rods 40, which I have preferred to hinge at the extreme rear of the machine, as seen at 41. The eye-pins 42 are represented in their retracted position.

Having thus described the several parts of my improvements and some of the parts therewith connected, I will now set forth their operation.

Referring to Fig. 1, it will be noted that the wheel 11, which rotates in the direction of the arrow, will soon release the pin 22 from the hook 21 of the link-rod 20 through the contact of the latter with the shaft 31, on which it will then find a resting-place. By this time the push-pin 15 of the wheel 11 will have entered the notch at the end of the connecting-bar 14, and as the wheel 11 continues rotation the said push-pin 15 will cause the connecting-bar 14 to straighten the knuckle-joint 13, which will bring the upper die-bed 2 down in contact with the lower die-bed 1. At this point the hook 24 of the link-rod 23 will have hooked onto the shaft 31 of the said wheel 11 and through its connection with the knuckle-joint 13 will prevent it from flexing in the opposite direction or away from the direction of the wheel 11. Heretofore a wood bar or beam has been fastened across the upper limb of the knuckle-joint with its ends passing beyond the guide-posts at either side, thus causing them to serve as stops. It has been proved in actual work that this arrangement is attended with danger. The wheel 11 still rotating in the direction of the arrow soon disengages the push-pin 15 from the notched end of the connecting-bar 14, which falls through its own weight and is caught on the buffer 17, resting on the buffer-spring 18 in the stirrup 16, provided on the frame for the purpose. As the wheel 11 continues its rotation the pin 22 is caught in the hook 21 of the link-rod 20, which through its connection at the other end with the knuckle-joint

13 causes the same to be flexed inward and the upper die-bed 2 to be raised, which movement is somewhat aided by the retraction or recoil of the spiral springs 10 10. At the point of time when the knuckle-joint 13 is nearly or quite flexed the cam 34 on the shaft 31 is brought into action against the top of the vertical lever 26, which thrusts the button-dischargers forward to discharge the formed buttons. The slot and spring 33, provided at the pivot connection of the bottom of the said vertical lever 26 with the rod 27, serve also to relieve said vertical lever 26 from undue strain should anything obstruct the advance of the button-dischargers.

The pivoting of the eye-pin bar-rods 40 to the rear end of the framework 9 at 41 I have found of advantage, in that the eye-pins are made more positive and efficacious in their work than by pivoting them near the front end of the framework 9.

Having thus explained the construction and arrangement, as well as the operation, of the several parts of my improvements, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a button-machine for forming buttons of plastic material the knuckle-joint 13, between the top cross-head 6, and the upper die-bed 2, having spiral springs 10, 10, near either end provided at its flexing-point with the connecting-bar 14, the link-rod 20, having a hook 21, and the link-rod 23, having a hook 24; the main wheel 11, carried on the shaft 31, having the cam 34, and provided with a push-pin 15, on one side and a pin 22, on the other side thereof; a stirrup 16, having a buffer 17, and a buffer-spring 18, on the framework between the knuckle-joint and the shaft of the main wheel; and a vertical lever 26, pivoted centrally at one end of the framework and having a slotted rod 27, and spring 33, around said slotted rod at its bottom end the said slotted rod being pivoted to the end bar of the button-dischargers 29, and a spiral spring 32, between said button-dischargers and the rear end of the machine substantially as described and shown.

2. In a button-machine for forming buttons of plastic material the knuckle-joint 13, between the top cross-head 6 and the upper die-bed 2, having spiral springs 10, 10, near either end, provided with a connecting-bar 14, at its flexing-point combined with the main wheel 11, on the shaft 31, provided on one side with a push-pin 15, for engaging the free end of said connecting-bar 14, to straighten said knuckle-joint and a stirrup 16, having a buffer 17, and a buffer-spring 18, on the framework between the knuckle-joint and the shaft of the main wheel for sustaining said connecting-bar when its end is disengaged from said push-pin substantially constructed in the manner and for the purpose herein specified and shown.

3. In a button-machine for forming buttons of plastic material the knuckle-joint 13, be-

tween the top cross-head 6, and the upper die-
bed 2, having spiral springs 10, 10, near either
end, provided with the link-rod 20, at its flex-
ing-point having a hook 21, on its outer end
5 combined with the main wheel 11, on the shaft
31, provided on one side with the pin 22, on
which the hook 21, of said link-rod 20, hooks
for flexing said knuckle-joint substantially in
the manner and for the purpose herein de-
10 scribed and shown.

4. In a button-machine for forming buttons
of plastic material the knuckle-joint 13, be-
tween the top cross-head 6, and the upper die-
bed 2, having spiral springs 10, 10, near either
15 end, provided with the link-rod 23, at its flex-
ing-point having a hook 24, on its outer end
combined with the shaft 31, of the main wheel
11, and hooking on said shaft when said
knuckle-joint is straightened and adapted to
20 prevent its outward flexion in the manner and
for the purpose herein described and shown.

5. In a button-machine for forming buttons
of plastic material the shaft 31, carrying the
main wheel 11, having the push-pin 15, and
25 the pin 22, provided with a cam 34, at one
side of said main wheel in combination with
the vertical lever 26, centrally pivoted in
suitable place near the end of the framework
9, its top end adapted to ride against the said
30 cam 34, and its bottom end sliding in the
slotted end of the rod 27, against the spring
33, said rod 27, being pivoted to the end bar
28 of the button-dischargers 29, and con-
nected rearwardly to the framework 9, by
35 the spiral spring 32, adapted for retracting
said button-dischargers and said vertical le-
ver substantially in the manner and for the
purpose herein described and shown.

6. In a button-machine for forming buttons

of plastic material the knuckle-joint 13, be- 40
tween the top cross-head 6, and the upper die-
bed 2, having spiral springs 10, 10, near either
end, provided at its flexing-point with the
connecting-bar 14, the link-rod 20, having
the hook 21, at its outer end and the link-rod 45
23, having the hook 24, at its outer end in
combination with the main wheel 11, having
the push-pin 15, on one side adapted to en-
gage in the end of said connecting-bar 14,
and the pin 22, on the other side adapted for 50
the hooking on of the hook of said link-rod
20; the stirrup 16, on the framework having
a buffer and buffer-spring and adapted to
sustain said connecting-bar in position for
engagement with said push-pin; and the 55
shaft 31, of the said main wheel 11, on which
the hook 24, of said link-rod 23, hooks pro-
vided with the cam 34, adapted to operate
against the upper end of the centrally-piv-
oted vertical lever 26, the lower end of which 60
is adapted to slide in the slotted end of the
rod 27, against the spring 33, around said
slotted end its other end being pivoted to the
end bar 28, of the button-dischargers 29, and
connected rearwardly to the framework 9, by 65
the spiral spring 32, for retracting said but-
ton-dischargers and said vertical lever 26,
the whole timed and arranged for joint oper-
ation substantially in the manner and for
the purpose herein described and shown. 70

In testimony whereof I have hereunto set
my hand, at Auburn, county of Cayuga,
State of New York, this 26th day of Decem-
ber, A. D. 1899.

NAPOLEON C. LA CASSE.

Witnesses:

CICERO J. WARNE,
S. J. WESTFALL.