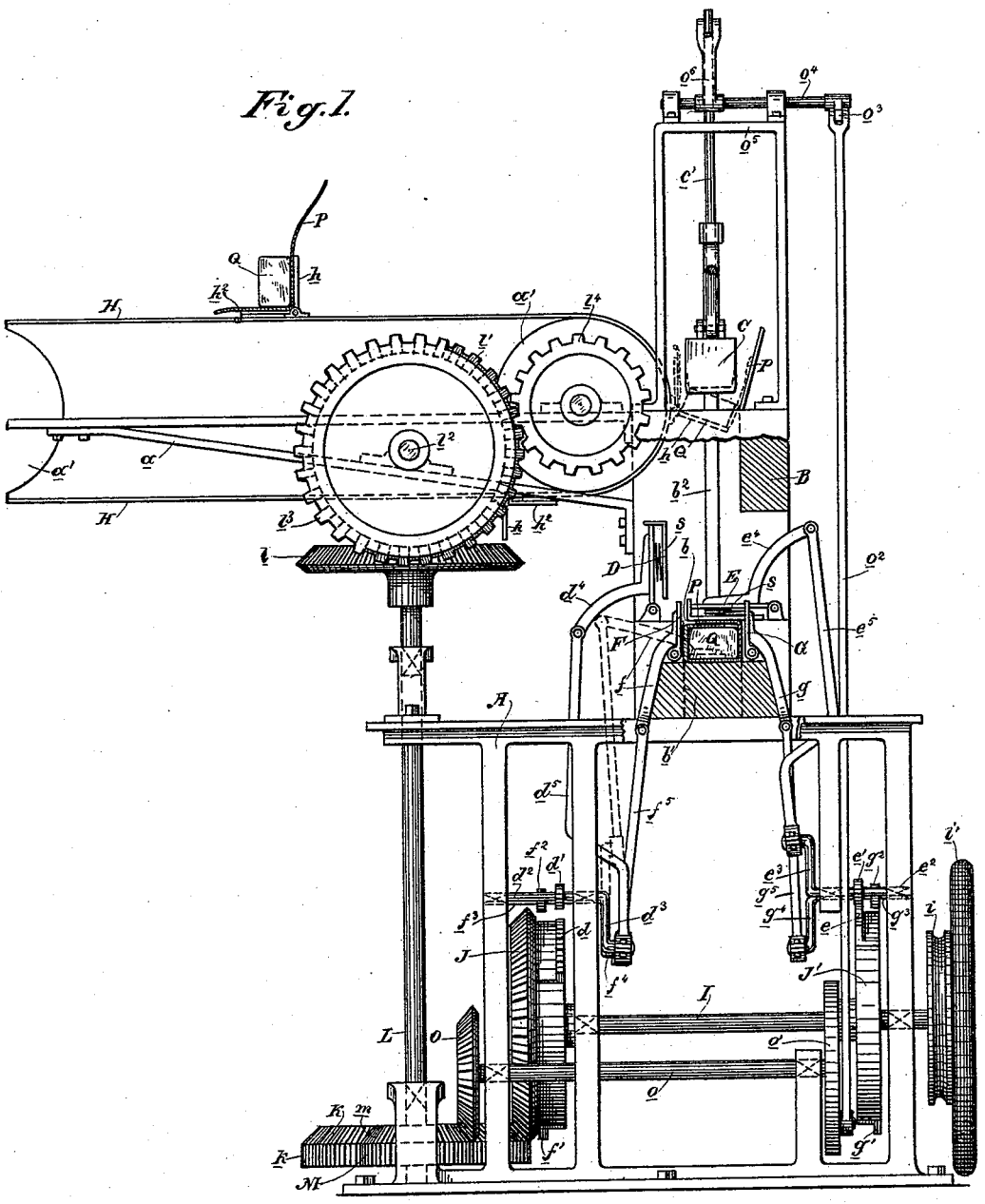
(No Model.) 4 Sheets—Sheet 1.

I. R. HUTCHINSON.

WRAPPING MACHINE.

No. 490,608. Patented Jan. 24, 1893.

Fig. 1.



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(No Model.) 4 Sheets—Sheet 2.

I. R. HUTCHINSON.

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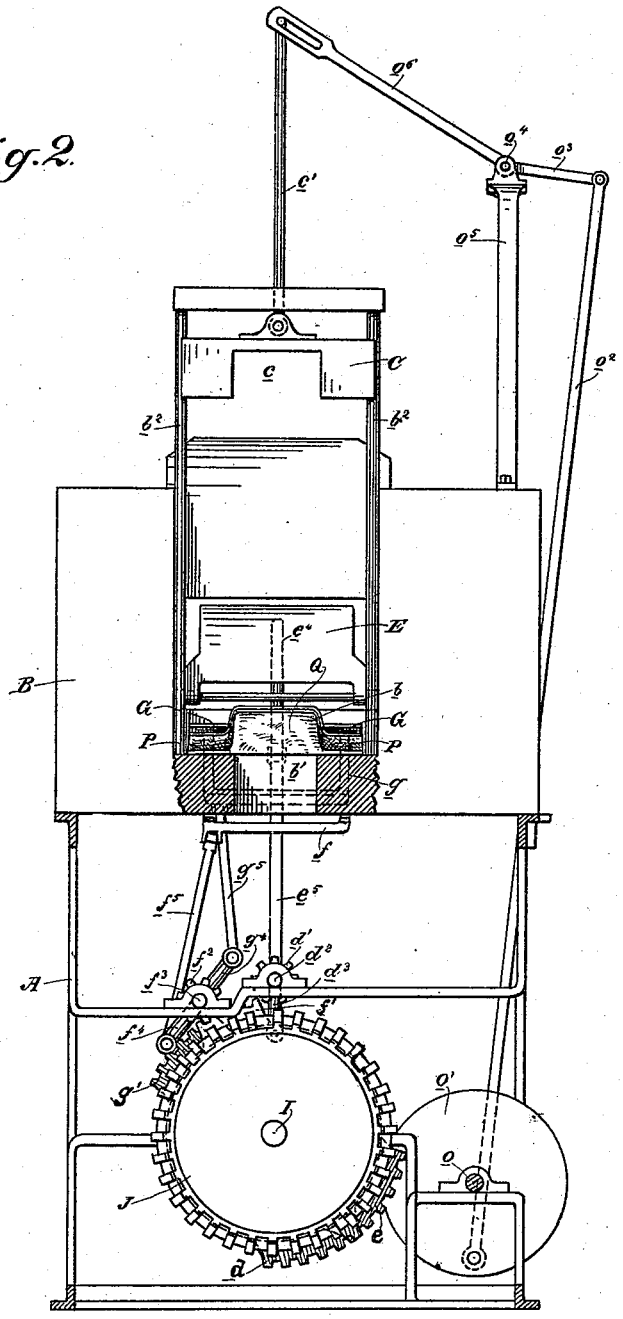
Fig. 2.



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(No Model.) 4 Sheets—Sheet 3.

I. R. HUTCHINSON.

WRAPPING MACHINE.

No. 490,608. Patented Jan. 24, 1893.

Fig. 3.

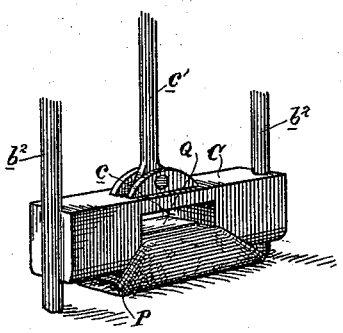
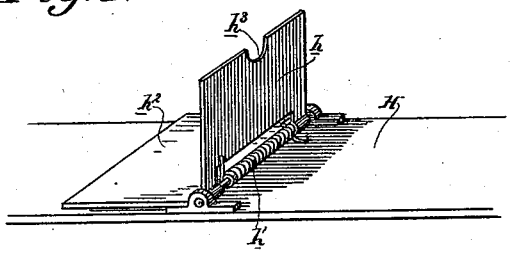


Fig. 4.



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(No Model.)

4 Sheets—Sheet 4.

I. R. HUTCHINSON.

WRAPPING MACHINE.

No. 490,608. Patented Jan. 24, 1893.

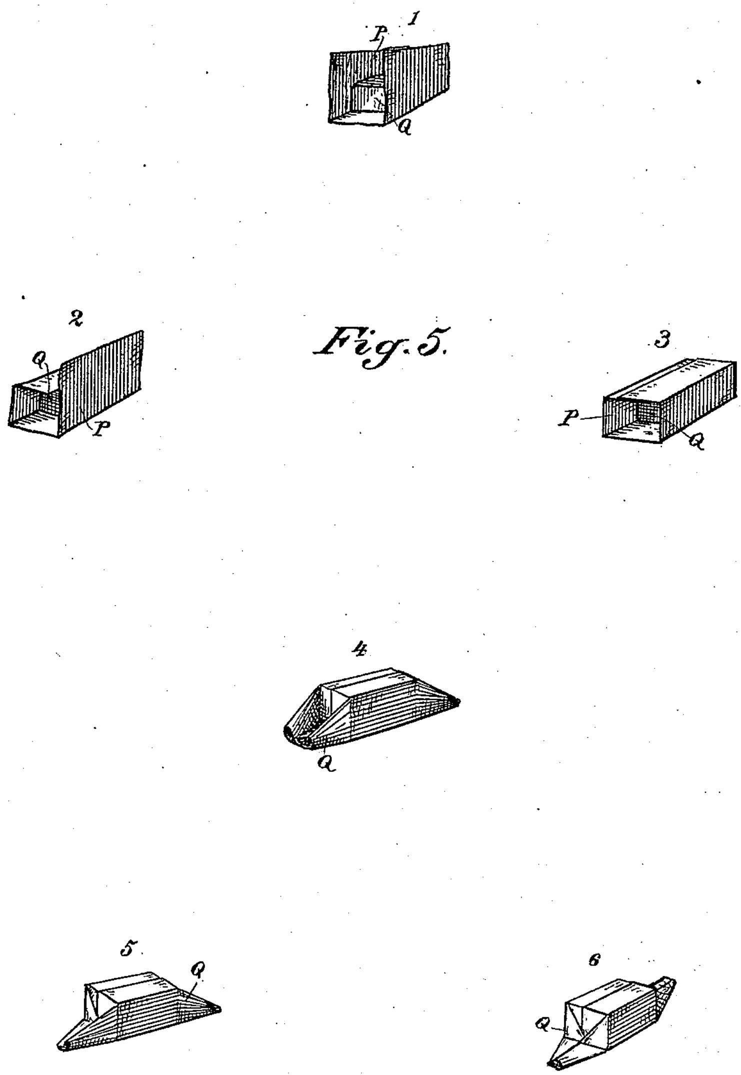
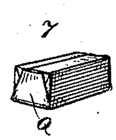


Fig. 5.



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UNITED STATES PATENT OFFICE.

IRA R. HUTCHINSON, OF FRESNO, CALIFORNIA.

WRAPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 490,608, dated January 24, 1893.

Application filed February 12, 1892. Serial No. 421,305. (No model.)

To all whom it may concern:

Be it known that I, IRA R. HUTCHINSON, a citizen of the United States, residing at Fresno, Fresno county, State of California, have invented an Improvement in Wrapping-Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of machines for wrapping articles of merchandise in which swinging flaps are employed to lay the folds of the paper in place about the article.

My invention consists in the novel construction and arrangement of the several flaps, the reciprocating plunger, the means for feeding the articles, and the mechanisms for operating the several parts as I shall hereinafter fully describe and specifically point out in the claims.

The object of my invention is to provide a simple, effective and rapidly operating machine for wrapping all kinds of articles of merchandise, but specially adapted for the wrapping of caramels.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is an end elevation of my wrapper, the end wall of the wrapping chamber being broken away. Fig 2 is a front elevation, the wrapping chamber being in section. Fig. 3 is a perspective view of plunger C showing it in the act of folding down the upper portions of the ends of the paper on the ends of the caramel. Fig. 4 is a perspective detail of one of the holder plates *h* on the feed carrier. Fig. 5 is a view showing the several wrappings of the paper. No. 1 showing the caramel when first forced into the folding chamber. No. 2 with one side of top folded over by flap D. No. 3 with the other top folded over by flap E. No. 4 with top ends pressed down by socketed plunger C, also shown in main Fig. 3. No. 5 with one side of ends pressed inwardly by flaps F. No. 6 with other side of ends pressed inwardly by flaps G. No. 7 with remaining folds pressed upwardly by being forced downwardly through the open bottom of the folding chamber.

A is the frame of the machine. On top of this is located a casing B in which is formed the vertical wrapping or folding chamber *b* which has in its bottom a discharge aperture *b'* with which a suitable delivery chute may be connected. Rising from the frame B are guide standards b^2 upon which is mounted and adapted to be reciprocated vertically a plunger C formed with a central socket or recess *c*. This plunger is in the vertical plane of the wrapping or folding chamber and is adapted to descend therein and to rise therefrom.

Pivoted horizontally on one side of the frame B and of the folding or wrapping chamber is one of the top flaps D, and pivoted on the other side in a corresponding position is the other top flap E. Pivoted horizontally on the first side of the frame B and of the folding or wrapping chamber, and at a point below the top flap D are the end flaps F which consist of plates separated from each other, and lying on each side of the ends of the discharge aperture of the wrapping chamber. These two plates are connected and operate simultaneously by means of a pivoted bail *f* which carries them. Pivoted in a corresponding position on the other side of the wrapping or folding chamber are the other end flaps G connected and operating simultaneously by means of a pivoted bail *g*. These parts constitute the folding mechanism, and it will be well at this point to describe their operation.

Suppose the article, such as a caramel, to be wrapped, be placed under the plunger, and above the folding chamber with the paper in which it is to be wrapped directly under, but not folded about it. The downward movement of the plunger forces the caramel and under-lying paper down into the folding or wrapping chamber so that it lies directly over the discharge aperture *b'*, but does not pass through it, because the aperture is very little larger than the caramel, and the unfolded paper prevents it from slipping through. In this downward movement of the caramel, the walls of the chamber cause the sides of the paper to be pressed upward vertically about the sides of the caramel. The plunger thereupon rises and immediately the top flap D swings inwardly and carries the side of the paper with it down over the top of the caramel, and said flap immediately rises. Then the other top flap E swings inwardly and folds the other side of the paper down upon the

top of the caramel which is now encircled by the paper, and flap E then rises. Thereupon the plunger descends once more and fitting its central recess or socket *c* over the caramel, the sides of the plunger on each side of said recess or socket press downwardly and inwardly the top portions of the ends of the paper upon the ends of the caramel. The plunger then rises, and thereupon the end flaps F swing inwardly, and press in the sides of the ends of the paper upon the ends of the caramel, and immediately following, the opposing end flaps G operate similarly upon the other sides of the ends of the paper, thus leaving the caramel fully wrapped with the exception of the lower folds of the ends which still project outwardly over the ends of the discharge aperture. A fresh caramel having been fed to the machine, is pressed down upon the top of the preceding caramel, thereby forcing said last named caramel down through the discharge aperture, and as it passes through said aperture, the lower end folds of the paper are pressed upwardly about the ends of the caramel, thus completing the wrapping.

To provide for different thicknesses of caramels, if such provision be necessary, the top flaps D and E are made of a springy or yielding nature by constructing them of separate plates, as shown, united and controlled by springs *s*. By this construction the flaps will act upon the caramel whether thick or thin, with a pressure sufficient to firmly fold the paper down upon its top.

The means for feeding the caramels and holding them in position temporarily to be acted upon by the plunger are as follows:—Extending outwardly from the front of the machine is a frame *a* in the ends of which are journaled the drums *a'* upon which is mounted a traveling carrier H of any suitable construction. Upon this carrier are located at equi-distant points the holders *h* consisting of transverse plates pivoted so as to swing from a vertical to a horizontal position and each controlled by a spring *h'* whereby they are returned to and held in a vertical position. In front of these holders, the caramels are placed either directly upon the carrier or preferably upon platform plates h^2. The normal position of the holder-plate is vertical, though it may swing to either side of it. The paper P is laid in front of it with one side turned up against it, and the caramel Q is laid upon the paper on edge and rests against the vertical holder-plate. Now, when the carrier is rotated it moves the caramel and paper to a position directly over the folding chamber and under the plunger, and they are held temporarily in this position. The caramel now lies flat by reason of having turned over the end drum. The plunger then comes down upon it to force it down into the chamber. As the plunger meets it and forces it downwardly, the holder-plate *h* being pivoted, yields before it, and allows the caramel to slip from it and the plunger to pass it. Thereupon the holder-plate springs back to its normal position. The holder-plate has in its edge a slot h^3 to enable it to fit over the plunger rod and allow the latter to play in it, and as the plunger rises the holder-plate yields upwardly or backwardly before it and then returns to normal position.

The mechanism for operating these several parts will now be described:—In the frame A is mounted the main power shaft I, which is driven by any suitable source of power, preferably by a treadle, unnecessary to show, which is connected by a belt with the pulley *i* on the shaft, said shaft also carrying a fly-wheel *i'*. Upon the inner end of shaft I is a beveled gear or wheel J which meshes with a horizontal bevel gear K mounted upon a vertical shaft L. This bevel gear K has also straight teeth *k* which mesh with a gear M, said gear having also beveled teeth *m* which mesh with the beveled pinion O on a counter-shaft *o*, the other end of which carries a crank disk *o'*. From this crank wheel extends upwardly a connecting rod o^2, the upper end of which is connected with the crank o^3 of a rock shaft o^4 mounted in a standard o^5 rising from the frame, said shaft having a crank arm o^6, the other end of which is connected with the vertical rod *c'* of the plunger C. The several gears in this power transmitting connection are so proportioned as to effect the timely operation of the plunger.

The feeding carrier is operated by the following mechanism:—Upon the top of the vertical shaft L is a beveled pinion *l* which meshes with a beveled gear *l'* on a short counter-shaft l^2, said gear having straight teeth l^3 which mesh with a pinion l^4 on the shaft of one of the driving drums of the carrier. The straight teeth l^3 do not extend entirely around the gear, but as far as these teeth are concerned, said gear is a mutilated one so that the engagement with the pinion of the driving drum is not continuous, but periodical, thereby providing for the periodical movement of the carrier to advance its holders successively and at proper times into position and keep them there temporarily until the plunger can remove the caramel from them.

The top flap D is operated by the following mechanism: Upon the flange or face of the wheel gear J is secured a short toothed or rack segment *d*. This meshes with a pinion *d'* on a shaft d^2 having a crank d^3. Secured to the back of the flap D is a crank arm d^4, the end of which is connected with a crank d^3 by a rod d^5.

The opposing top flap E is operated as follows:—Upon the main shaft I is a wheel J' which carries a toothed or rack segment *e* which meshes with a pinion *e'* on a shaft e^2 having a crank e^3. Secured to the back of the flap E is a crank arm e^4 which is connected with the crank e^3 by a rod e^5. The relative positions of the toothed or rack segments *d* and *e* are such that the flap D shall be swung in-

wardly and withdrawn, immediately preceding the movements of the flap E, and the position of these segments with relation to the general power transmitting mechanism is such as to effect the timely movements of these flaps with respect to the movements of the other parts of the apparatus.

The end flaps F are operated as follows:—Upon the wheel J is secured a toothed or rack segment f' which engages with a pinion f^2 on a shaft f^3 having a crank f^4, and this crank is connected by a rod f^5 with the bail f of the end flaps F.

The end flaps G are operated by means of a toothed or rack segment g' carried by the wheel J' which said segment engages with a pinion g^2 on a shaft g^3 having a crank g^4 which is connected by a rod g^5 with the bail g of the end flaps G. The relative position of these toothed or rack segments is such that the operation of the end flaps F shall immediately precede the operation of the end flaps G, and their position in the general arrangement is such as to effect their timely movement with respect to the other parts of the machine.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

1. In a wrapping machine having a folding or wrapping chamber, the combination of a vertically reciprocating plunger for advancing the article to be wrapped into the chamber and opposing horizontal top flaps on each side of and swinging inwardly over the top of the chamber, to fold the sides of the paper down upon the top of the article, said flaps being made of separated plates connected and controlled by springs whereby they adjust themselves to different thicknesses of articles to be wrapped, substantially as herein described.

2. In a wrapping machine having a folding or wrapping chamber, a vertically reciprocating plunger having a central recess or socket adapted to fit over the article to be wrapped whereby the ends of said plunger pass over the ends of said article, and press down the upper portion of the ends of the paper thereon, substantially as herein described.

3. In a wrapping machine having a wrapping or folding chamber, the combination of opposing horizontal top flaps on each side of and swinging inwardly over the top of the chamber for folding the sides of the paper down upon the top of the article to be wrapped, and a reciprocating plunger having a central recess or socket fitting over the article whereby its ends pass over the ends of said article, and press down the upper portion of the ends of the paper thereon, substantially as herein described.

4. In a wrapping machine having a folding or wrapping chamber, the combination of opposing horizontal top flaps on each side of and swinging inwardly over the top of the chamber to fold the sides of the paper upon the top of the article to be wrapped, the reciprocating plunger having the central recess or socket fitting over said article whereby its ends pass over the ends thereof and fold the upper portion of the ends of the paper upon the ends of said article, and the swinging end flaps each consisting of separated connected plates mounted to swing inwardly from each side by the ends of said article and to fold the sides of the ends of the paper in upon the ends of said article, substantially as herein described.

5. In a wrapping machine having a folding or wrapping chamber with a bottom discharge aperture in which the final folds of the paper are made, the combination of the opposing top flaps on each side of and swinging inwardly of the top of the chamber to fold the sides of the paper upon the top of the article to be wrapped, the reciprocating plunger having the central recess or socket fitting the article whereby its ends pass over the ends thereof and fold the upper portion of the ends of the paper upon the ends of said article, and the swinging end flaps, each consisting of separated connected plates mounted to swing inwardly from each side by the ends of the article and to fold the sides of the ends of the paper in upon the ends of said article, substantially as herein described.

6. In a wrapping machine having a folding chamber, the combination of the endless traveling carrier having a holder upon which the paper and article to be wrapped therewith are laid, and by which they are advanced to a position over the chamber, and a reciprocating plunger adapted to force the article and its wrapping paper from the holder down into the chamber, substantially as herein described.

7. In a wrapping machine having a folding or wrapping chamber, the periodically traveling endless carrier having a holder upon which the wrapping paper and article are laid and by which they are advanced to a position over the chamber and held there temporarily, and a reciprocating plunger to force the article and paper from the holder down into the chamber, substantially as herein described.

8. In a wrapping machine having a folding or wrapping chamber, the combination of the endless traveling carrier, the swinging spring controlled holder-plate upon said carrier for receiving the wrapping paper and article and advancing it to and over the chamber, and a reciprocating plunger to force said article from the swinging holder-plate down into the chamber, substantially as herein described.

9. In a wrapping machine, the swinging opposing top flaps D and E, in combination with the mechanism for operating them, consisting of the main power shaft I having the wheels J and J', the toothed or rack segments carried by said wheels, the crank arms of the flaps, and power transmitting connections be-

tween said crank arms and the toothed or rack segments, substantially as herein described.

10. In a wrapping machine, the end flaps F and G each having the connecting bail, in combination with the means for operating said flaps, consisting of the main shaft I having the wheels J and J′, the toothed or rack segments carried by said wheels, and power transmitting connections between said segments and the bails of the end flaps, substantially as herein described.

In witness whereof I have hereunto set my hand.

IRA R. HUTCHINSON.

Witnesses:
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WM. F. BOOTH.