

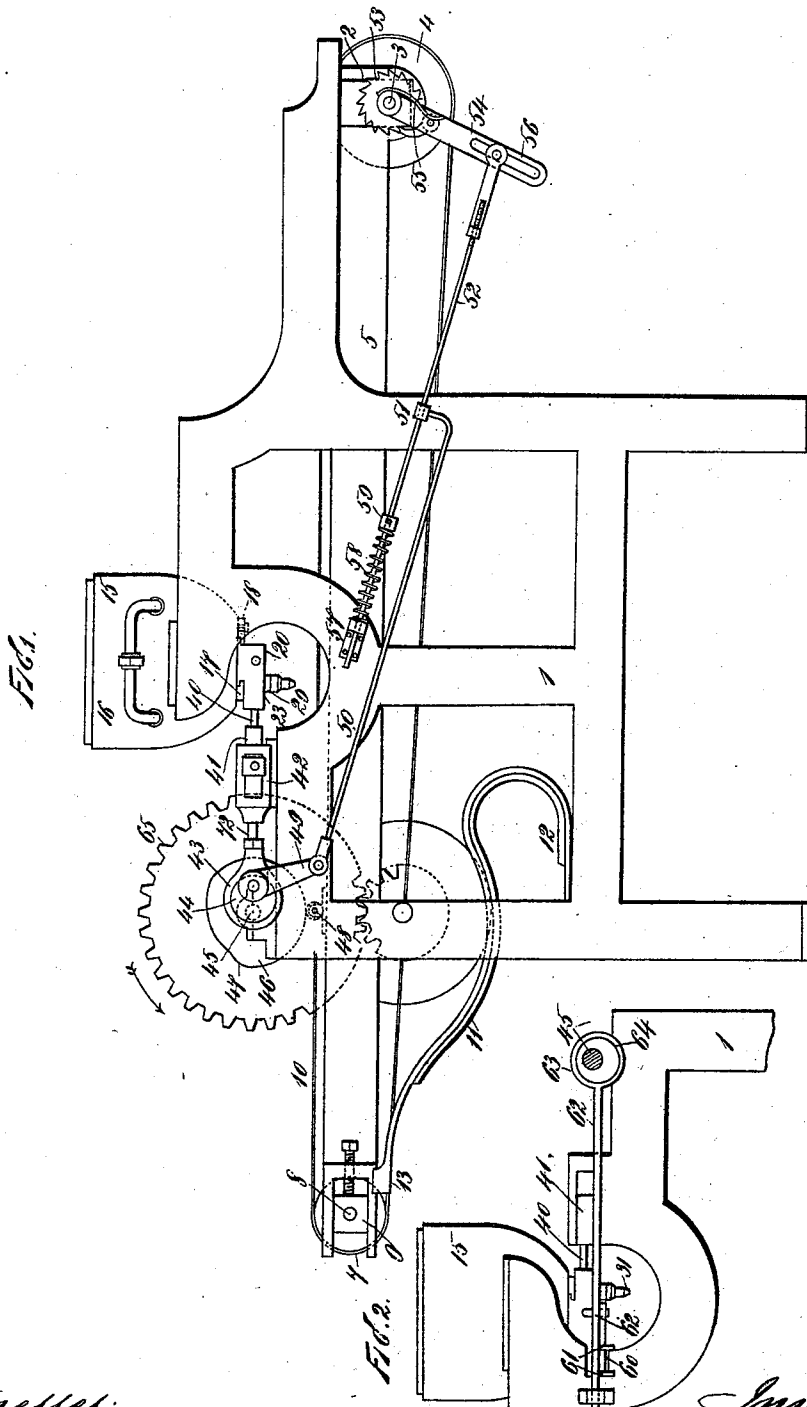
(No Model.)

3 Sheets—Sheet 1.

D. M. HOLMES.
MACHINE FOR MOLDING CONFECTIONERY.

No. 528,723.

Patented Nov. 6, 1894.



Witnesses:
John Buckler,
William B. Hubbard.

Inventor:
Daniel M. Holmes,
A. M. Pierce,
Attorney.

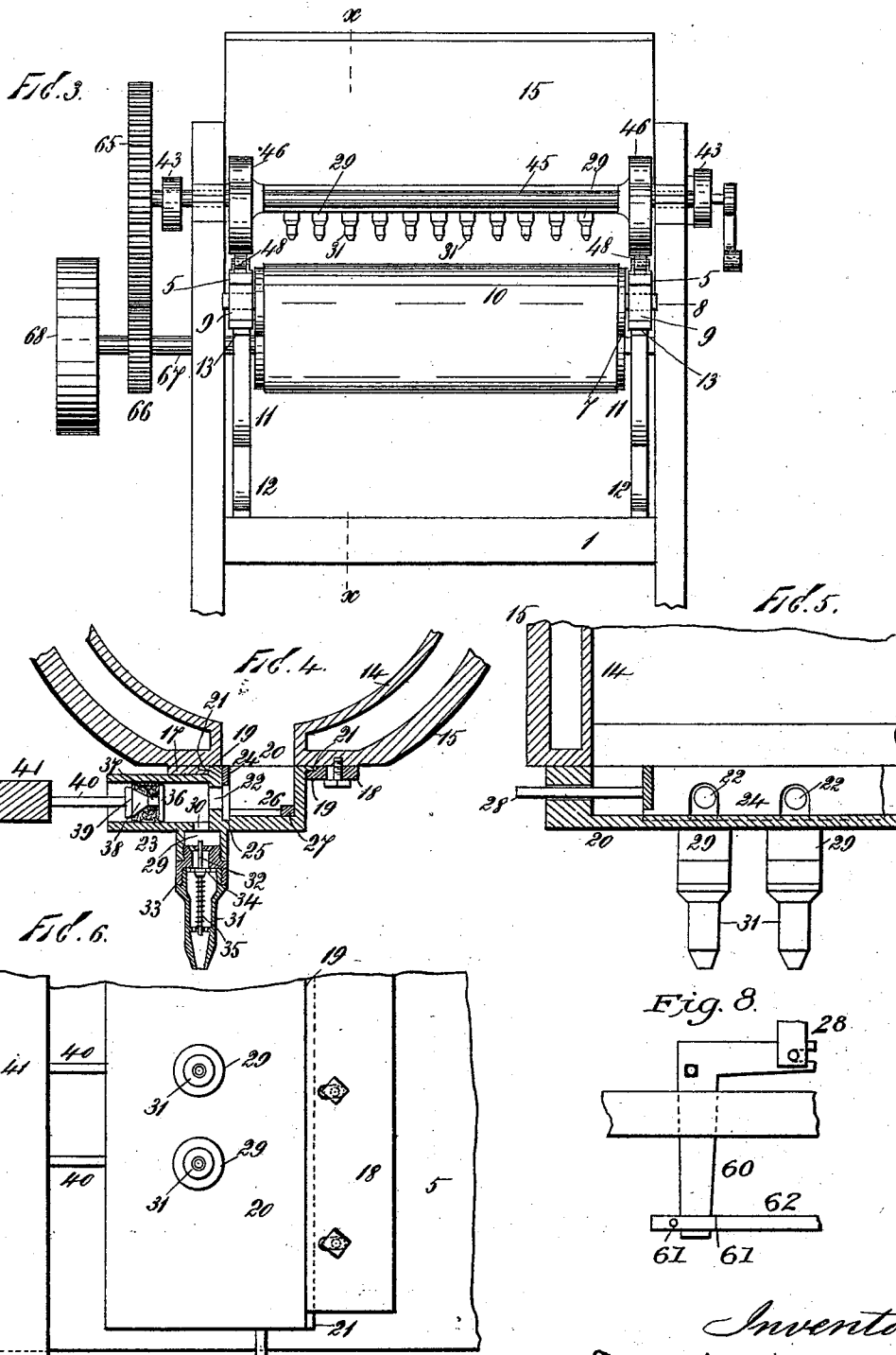
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By A. M. Pierce, Attorney.

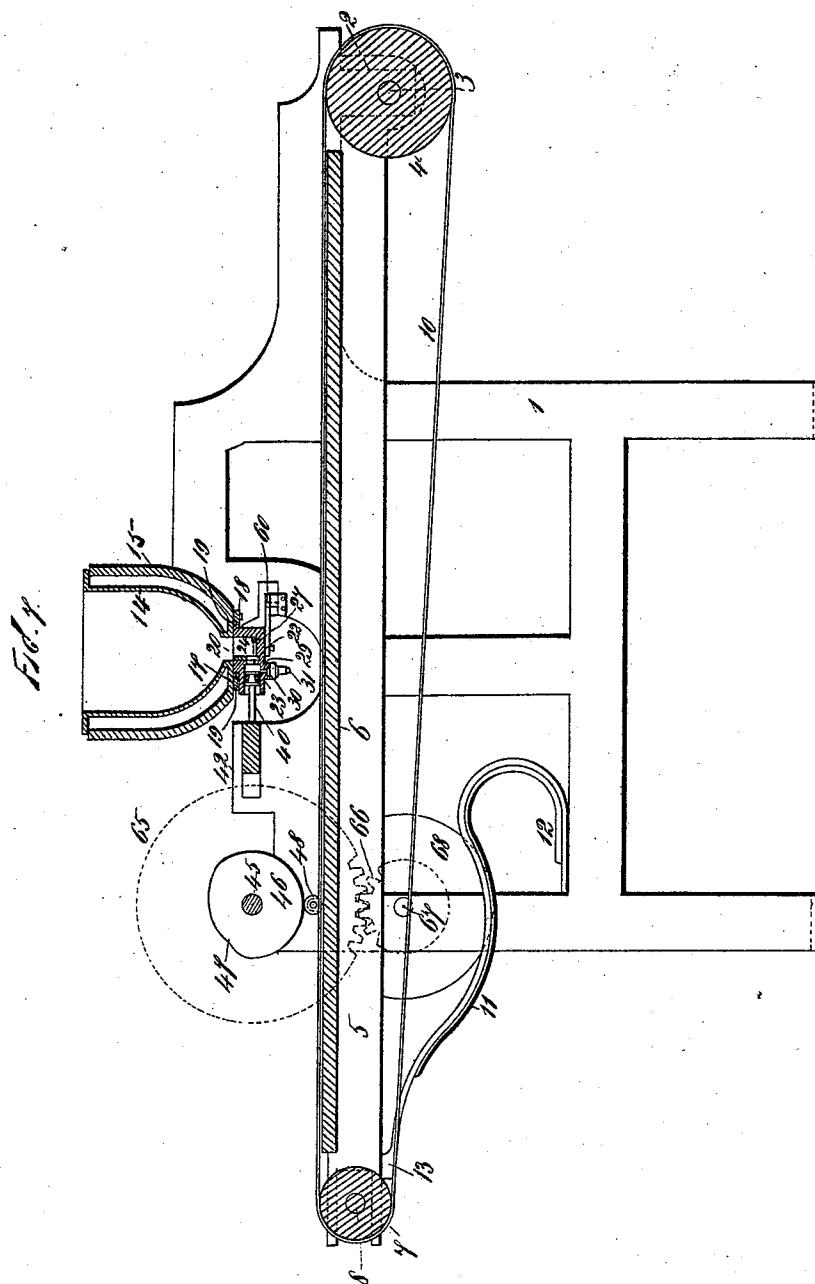
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UNITED STATES PATENT OFFICE.

DANIEL M. HOLMES, OF ARLINGTON, NEW JERSEY.

MACHINE FOR MOLDING CONFECTIONERY.

SPECIFICATION forming part of Letters Patent No. 528,723, dated November 6, 1894.

Application filed April 14, 1894. Serial No. 507,541. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. HOLMES, a citizen of the United States, residing in Arlington, Hudson county, State of New Jersey, have invented a new and useful Improvement in Machines for Molding Confectionery, of which the following is a specification.

My invention relates especially to means and mechanism employed for molding confectionery from semi-fluid material, and has for its object the provision of an automatic machine which will produce such confectionery in a rapid and perfect manner, turning out goods of a superior finish and quality.

To attain the desired end, my invention consists in certain novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a side elevation of my confectioner's machine. Fig. 2 is a side elevation of the stock chamber, opposite to that shown in Fig. 1. Fig. 3 is an end elevation of the machine. Figs. 4, 5 and 6 are enlarged detail views of portions of the stock discharging mechanism. Fig. 7 is a longitudinal, sectional view of the machine at line $x-x$ of Fig. 3. Fig. 8 is a plan view upon an enlarged scale of the bell crank 60, and connected parts.

Similar numerals of reference, wherever they occur, indicate corresponding parts in all the figures.

1 is the main frame of the machine. 2 are ears, extending downward from the upper portion of the main frame, and 3 is a shaft, journaled in the ears 2, bearing a roller, 4, firmly secured thereto. Extending from the shaft 3 are side bars 5 of a table, 6.

7 is a roller, mounted upon a shaft 8 journaled in adjustable boxes, 9, at the extremities of the side bars, 5.

10 is a carrying belt passing around the rollers 4 and 7, and the table 6.

11 are springs fixed to the main frame 1 at 12, and supporting the side bars 5 at 13.

Mounted upon the main frame, near the center thereof is a stock chamber, consisting of an inner portion, 14, and outer portion 15.

16 is a steam supply pipe, designed for applying heat to the space between the two por-

tions of the stock chamber to keep the stock at the requisite consistency for molding. Beneath the stock chamber are two plates 17 and 18 provided with holding lips, 19. The plate 17 is rigidly fixed to the bottom of the stock chamber, but the plate 18 is held by bolts passing through holes therein, slotted in such a manner as to permit a slight lateral movement to the plate, the object of such a construction being to provide means for loosening the parts supported by the said plates 17 and 18 by retracting the plates 18 when sugar, or other stock has become embedded in the interstices.

20 is an open topped box, having lips 21 near its upper edge, adapted and arranged to engage with, and be held by the lips 19 upon the plates 17 and 18. One side of box 20 is perforated with holes, as at 22, and extending beyond each perforation is a cylinder 23. Within the box 20 is placed a sliding bar, 24, having openings therein corresponding to the perforations 22. The lower edge of this bar 24 fits into a guiding slot, 25, in the bottom of the box 20, the said bar 24 being kept in snug contact with the side of the box by cross-pieces 26, engaging with a transverse rod, 27, resting against the opposite side of the box. Engaging with the sliding bar 24, at one end thereof, is a rod 28, whereby said bar is caused to longitudinally reciprocate, as will be hereinafter explained.

Beneath each cylinder 23, is a screw-threaded collar 29, surrounding a perforation 30, communicating with the interior of said cylinder. Connected to each collar 29, is a valve shell, 31, (see particularly Fig. 4) wherein is mounted a stem, 32, arranged to play in the center of two perforated disks, 33. The stem 32 bears a valve plate, 34, which is normally held against the upper perforated disk within the valve shell by means of a spring, 35.

Within each cylinder 23 is located a piston head 36, having a packing ring, 37, formed of suitable material back of it, said ring being forced in contact with the wall of the cylinder by means of a beveled collar, 38, passing beneath the packing, and being adjusted by a nut, 39, or the equivalent, mounted upon the piston rod, 40. The piston rods 40 are fixed in a horizontal bar 41, mounted in slide-ways, 42 in the main frame 1. The bar 41 is pro-

vided near each extremity with rods, 72, connecting with eccentric straps 43, encircling eccentrics, 44 mounted upon a shaft 45 journaled in the main frame.

5 Mounted upon the shaft 45, are cams, 46, having a slight depression at 47, said cams being arranged to bear against friction rollers, 48, upon the table side-rails 5.

49 is a crank, fixed to the shaft, 45 and engaging with a pitman, 50, having a perforated eye 51, through which passes a rod 52.

53 is a ratchet, secured to the roller 4.

54 is an arm, pivoted upon the extremity of the shaft 3, and bearing a pawl 55. This 15 arm is slotted at 56, and in said slot is adjustably secured to the rod 52.

57 is a bearing fixed to the main frame 1, the rod 52 passing through this bearing.

58 is a spring, coiled around the rod 52, and 20 engaging with a collar 59 fixed upon the rod 52.

Connected to the rod 28, is a bell crank 60, pivoted in the main frame, the outer arm of said crank passing between pins, 61, fixed in a sliding bar, 62, connected to an eccentric 25 strap, 63, encircling an eccentric 64 mounted upon the shaft 45.

65 is a gear wheel, mounted upon the shaft 45, said wheel meshing with a gear wheel 66, mounted upon shaft 67, journaled in the main 30 frame 1, and bearing a driving pulley, 68.

When constructed and arranged in accordance with the foregoing description the operation of my device is as follows: Stock being supplied to the stock chamber, the tray 35 of molds to be filled is placed with its first row beneath the discharge valves, and the machine is started. The slide 24 is located with its openings opposite to the perforations 22, and as the shaft 45 revolves, the pistons 40 36 are drawn outward through the medium of the rods 40, cross-bar 41, connecting rods 72, eccentric straps 43, and eccentrics 44 mounted upon the said shaft 45. This operation fills the cylinders 23 with the stock.

45 While this is taking place, the depressions 47 in the cams 46 have passed to the friction rollers 48, and the table carrying the belt 10 is forced upward by the springs 11 to such a height as to cause the discharge valve shells 50 31 to project into the molds not shown beneath them. At this moment the bell-crank 60, through the medium of the connections between it and the eccentric upon the shaft 45, moves the bar 24 so as to close the mouths of 55 the perforations 22, and the pistons commencing their backward strokes, force the stock confined in the cylinders 23 into the discharge valve shells, the pressure opening the valve therein, and permitting the escape of the stock into the molds. As soon as the back- 60 ward stroke of the pistons commences the spring in the valve shell closes the outlet from the cylinder, thus preventing the ingress of air, and the further discharge of stock, and as 65 the perforations 22 have again been opened, the above described operation is repeated. While the discharge of the stock into the row

of molds is taking place, the cams 46 first permit the mold tray to be raised a sufficient distance to cause the valve shells to enter the 70 molds a short distance, the object of this being to give as little drop to the stock at the beginning of the discharge as possible, so as not to injure the fine lines in the molds by displacing the material of which they are 75 formed; but as soon as the stock begins to fill the molds, the cams force the table downward a sufficient distance to cause the valve shells to clear the molds, and the further revolution of the cams depresses the supporting table. 80 At the same time the flow of stock is cut off, with a quick movement, the full distance breaking off the stock, and leaving a clean, perfectly molded product, without any projecting points. While the table is in its de- 85 pressed position, the belt supporting the tray of molds is advanced one step by the action of the connections between the roller 4 and the crank 49 upon the shaft 45, presenting a fresh row of molds to be filled, the entire ac- 90 tion being automatic, it only being necessary to supply the stock and empty molds, removing those already filled.

By my peculiar arrangement, the discharging mechanism is located entirely outside of 95 the stock chamber, and beneath the same. All of the stock will be exhausted from said chamber, and the detachable discharging mechanism is easily cleaned.

Having now fully described my invention, 100 what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a machine of the character herein specified, the combination with the stationary stock chamber, and discharge valve shells con- 105 nected therewith, of the depressible table beneath the stock chamber, and means for causing said table to approach said chamber until the discharge valve shells enter the molds, then recede slightly, dwell in this position a 110 moment, the table finally being forced downward to its initial position, substantially as shown and described.

2. In a machine of the character herein specified, the combination with the spring ele- 115 vated, depressible table, of cams adapted and arranged to permit said table to rise, then descend slightly, and finally to force the table to its initial position, substantially as shown and described. 120

3. In a machine of the character herein specified, a mold supporting table, pivoted at at one extremity and supported upon spring mechanism at the other, a carrying belt pass- 125 ing over said table, in combination with means for depressing the table, and for moving the carrying belt, substantially as shown and described.

4. In a machine of the character herein specified, a stock chamber having supporting 130 bars placed at each side of an opening in its bottom, said bars having holding lips at their inner edges, one bar being laterally movable, in combination with stock discharging meech-

anism adapted and arranged to be removably held by said bars, substantially as shown and described.

5 In a machine of the character herein specified, the combination with a stock chamber, of discharging mechanism in which is comprised a series of escape openings, a perforated reciprocable bar controlling said openings, a series of discharge cylinders provided
10 with reciprocating pistons, and a series of discharge valve shells, connected with said cylinders, substantially as shown and described.

15 6. In a machine of the character herein specified, a stock discharging device in which is comprised a receiving box having a series of openings at one side, means for alternately opening and closing said openings, cylinders connected to said receiving box and contain-

ing reciprocable pistons, and discharge valve shells communicating with the cylinders, the whole combined and arranged to operate, substantially as shown and described. 20

7. In a device of the character herein specified, the combination with the stock chamber, of the discharge openings therefrom; cylinders communicating with said openings; a cut
25 off at the entrance to said cylinders; pistons within said cylinders; means for reciprocating the pistons; and discharge valves connected with each cylinder and arranged to operate, substantially as shown and described. 30

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