

No. 665,854.

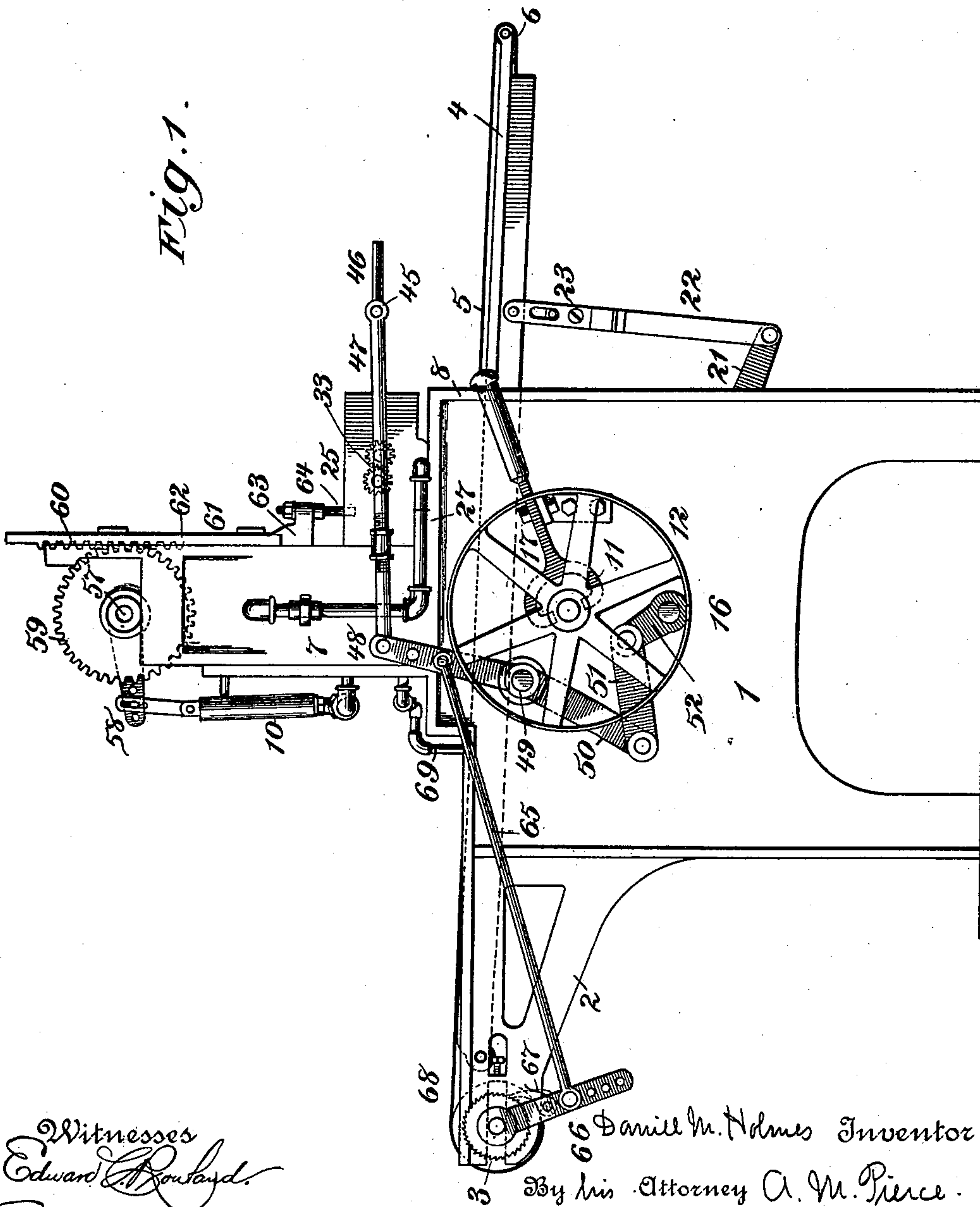
Patented Jan. 8, 1901.

D. M. HOLMES.
CONFECTIONERY FORMING MACHINE.

(Application filed Apr. 7, 1900.)

(No Model.)

3 Sheets—Sheet 1.



No. 665,854.

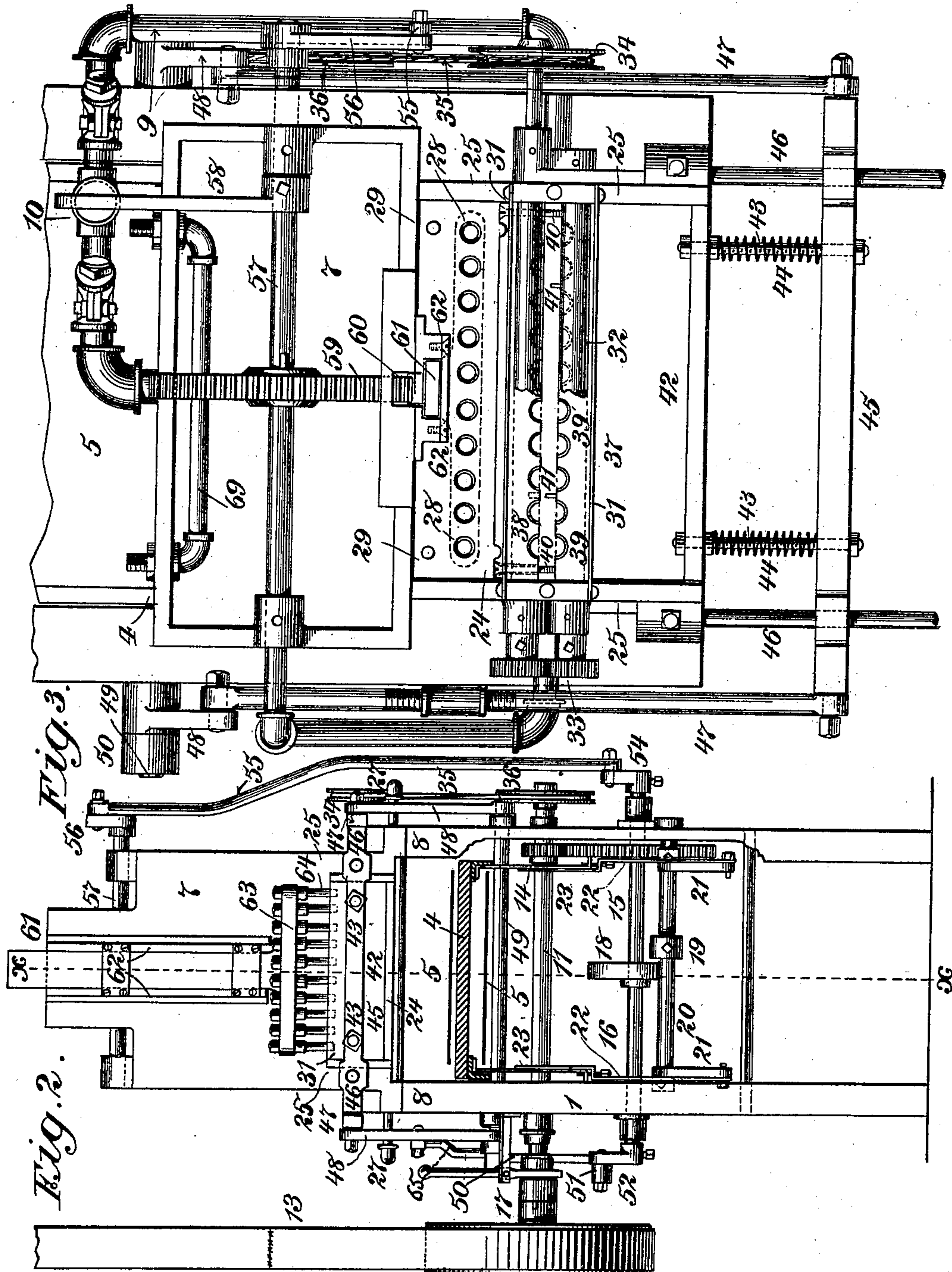
Patented Jan. 8, 1901.

D. M. HOLMES.
CONFECTIONERY FORMING MACHINE.

(Application filed Apr. 7, 1900.)

(No Model.)

3 Sheets—Sheet 2.



Witnessed
Edward C. Howard.
Richard M. Howard.

Daniel M. Holmes Inventor
By his Attorney A. M. Pierce.

No. 665,854.

Patented Jan. 8, 1901.

D. M. HOLMES.
CONFECTIONERY FORMING MACHINE.

(Application filed Apr. 7, 1900.)

(No Model.)

3 Sheets—Sheet 3.

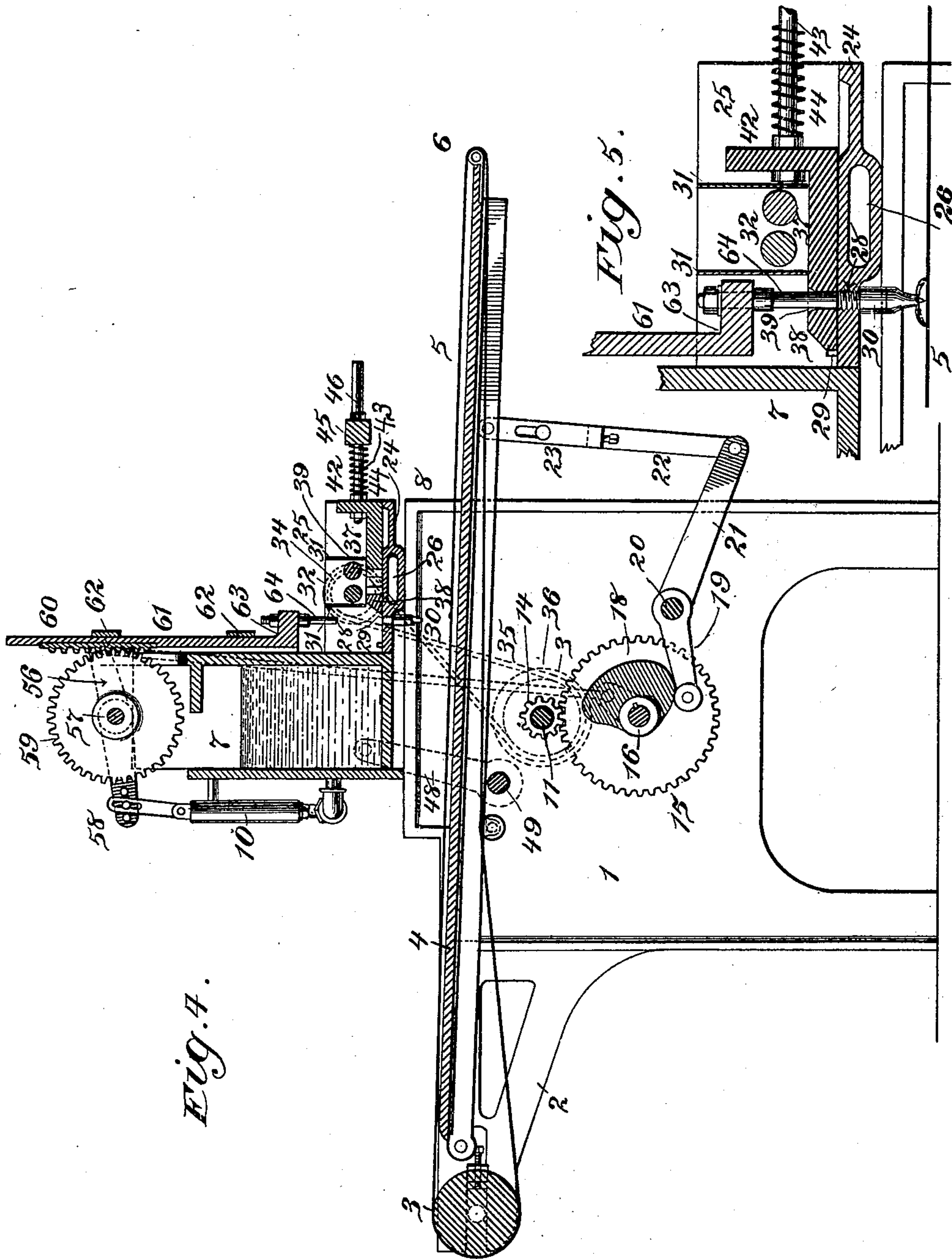


Fig. 4.

Fig. 5.

Witnesses
Edward C. Rowland.
Richard Wood.

Daniel M. Holmes Inventor
By his Attorney A. M. Pierce.

UNITED STATES PATENT OFFICE.

DANIEL M. HOLMES, OF ARLINGTON, NEW JERSEY, ASSIGNOR TO RICHARD M. WOODS.

CONFECTIONERY-FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,854, dated January 8, 1901.

Application filed April 7, 1900. Serial No. 11,969. (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 Confectionery-Forming Machines, of which the following is a specification.

My invention relates especially to devices employed for forming drops out of plastic material, such as chocolate or equivalent substances, and has for its object the provision of a machine simple in construction and effective in operation whereby drops of any desired shape and size may be formed and deposited with the greatest uniformity and accuracy.

To attain the desired end, my invention consists, essentially, 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 machine. Fig. 2 is an end elevation thereof. Fig. 3 is an enlarged plan view. Fig. 4 is a vertical longitudinal sectional view at line *xx* of Fig. 2. Fig. 5 is an enlarged sectional view upon the same line, showing the mechanism of the forming device at the opposite end of the stroke from that illustrated in Fig. 4.

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

1 is the main frame or supporting-base of the machine. 2 represents brackets extending therefrom, wherein are mounted an adjustable roller 3 and one extremity of a pivoted rising and falling table 4.

5 is a belt which passes around the roller 3 and over a smaller roller 6 at the opposite extremity of the table 4.

7 is a hot-water tank for keeping the parts of the forming mechanism at the proper temperature, said tank being mounted upon side pieces 8, extending upward from the base 1 at each side of the table 4.

9 is a steam-supply pipe, and 10 is a pump for maintaining a circulation of the water in the tank 7.

11 is a driving-shaft journaled in the main

frame and provided with a pulley 12, from which a belt 13 passes to the source of power.

17 is a clutch for controlling the movement of the machine. Fixed upon the shaft 11 is a gear-wheel 14, the teeth whereof mesh with a wheel 15 upon a shaft 16.

18 is a cam upon the shaft 16, arranged to actuate an arm 19, fixed to a shaft 20, when the shaft 16 is rotated. Extending from the shaft 20 are arms 21, to which are pivoted bars 22, having adjustable bars or extensions 23, which in turn are pivoted to the table 4. By this means the requisite rise and fall may be given to the table in accordance with the work being done, such rise and fall being regulated by the adjustment of the bars 23.

24 is a plate fixed to the front of the water-tank 7, said plate being provided with sides 25. 26 is a chamber in said plate for the circulation of hot water through the pipes 27.

28 represents perforations through the plate 24, and 29 represents stop-pins fixed in the plate.

30 represents nozzles removably secured to the under side of the plate 24 at the perforations 28.

31 31 are plates fitting into grooves in the side pieces 25 and extending downward, forming a hopper.

32 32 are rollers the shafts whereof are journaled in the side pieces 25, said rollers being geared together at 33 and driven by a pulley 34, fixed upon one of the roller-shafts, a band 35 passing from said pulley to a pulley 36 upon the shaft 11.

69 is a steam-circulating pipe.

37 and 38 are the two parts of a plate resting upon the plate 24.

39 represents perforations, one-half being formed in each of the parts 37 and 38. The portion 38 of the plate has perforations through which extend pins or screws 40, which engage with the part 37, limiting the separation of the two parts of the plate, and such screws, together with pins 41 in the part 37, arranged to enter cavities in the part 38, serve as guides to insure accuracy of movement and position of the parts of the plate. At the front of the part 37 is an upwardly-extending portion 42, from which project rods 43, around which are coiled springs 44, the rods 43 pass-

ing loosely through a cross-head 45, against which the outer ends of the springs 44 bear.

46 represents guide-rods which extend from the side pieces 25 and project through perforations in the cross-head 45. Pivoted at each end of the cross-head 45 are rods 47, which pass to rock-arms 48, fixed to a shaft 49, journaled in the frame 1.

50 is an arm fixed to the outer extremity of the shaft 49 and to which is pivoted a bar 51, passing to a crank 52, mounted upon the shaft 16.

54 is a crank upon the opposite extremity of the shaft 16, and from this crank passes a rod 55 to a crank 56 upon a shaft 57, journaled at the top of the tank 7.

58 is an arm upon the shaft 57, arranged to operate the rod of the pump 10.

59 is a gear-wheel upon the shaft 57, the teeth whereof mesh with a rack 60 upon a slide 61, mounted in ways 62 upon the front of the tank 7. Upon the lower extremity of the slide 61 is a cross-head 63, (not shown in Fig. 3 of the drawings,) bearing plungers 64, corresponding in number and location to the perforations in the two parts 37 and 38 of the plate and the perforations in the plate 24.

Movement is imparted to the belt 5 through the medium of a rod 65, passing from the arm 48 to an arm 66, pivoted upon the shaft of the roller 3, said arm bearing a pawl 67, engaging with a ratchet-wheel 68 upon the shaft of said roller.

The operation of my device is as follows:
The machine being started with the parts in the positions shown in all of the figures with the exception of Fig. 5 of the drawings, chocolate or the equivalent of the proper consistency is supplied to the hopper formed by the plates 31, the rollers 32, revolving toward each other, forcing the material into the space between the two parts 37 and 38 of the plate, completely filling said space. As the plate moves beneath the hopper the edge of the inner plate 31, resting upon the plate-piece 37, removes all surplus material. As the cross-head 45 moves inward the springs 44 force the two parts 37 and 38 of the movable plate together, and the inward movement continues until the stops 29 are reached, bringing the two parts completely together and to the position shown in Fig. 5 of the drawings, the perforations 39 being packed with the material and located directly over the perforations 28 in the plate 24. At this moment the plungers 64 descend, forcing the material through the nozzles 30 and out upon any suitable receiving device placed upon the belt 5, the table 4 having been elevated by the actuating mechanism to the proper position beneath the nozzles. As the machine continues to move the parts return to their initial position and repeat the above-described operation. By this means the complete filling of the nozzles with the material is always obtained, and consequently uniformity of shape and size of the goods is insured.

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

1. In a machine of the character herein specified, a plate having a series of perforations therein provided with nozzles, a partially-inclosing casing, a pair of feed-rollers mounted in said casing, a hopper surrounding said rollers, a movable plate located beneath said hopper, said plate being perforated and divided through the perforations, a series of plungers corresponding to the perforations, and means for reciprocating the divided plate and the plungers, the whole combined and arranged substantially as shown and described.

2. In a machine of the character herein specified, the combination with a perforated, divided, movable plate, the two parts whereof are loosely connected together, of a fixed perforated plate beneath the movable plate, a hopper for plastic material and a series of plungers mounted above said plates adapted and arranged to discharge material through the perforations in the fixed plate, substantially as shown and described.

3. In a machine of the character herein specified, the combination with a fixed perforated plate provided with nozzles, of a movable perforated plate divided through the perforations, a vertical plate bearing upon the movable plate, and a series of plungers corresponding to the perforations in both plates, substantially as shown and described.

4. In a machine of the character herein specified, the combination with a fixed perforated plate provided with nozzles, of a movable perforated plate divided through the perforations, a series of plungers corresponding to the perforations in both plates, and a vertically-movable table beneath the nozzles, substantially as shown and described.

5. In a machine of the character herein specified, the combination of a fixed perforated plate, a movable plate mounted above the fixed plate, said movable plate being divided through the perforations therein, and means for separating and bringing the two parts of the divided plate together, and a hopper for plastic material and means for discharging material through the perforations in the fixed plate, substantially as shown and described.

6. The combination with a fixed perforated plate and a divided perforated plate located thereabove, of means for separating and bringing together the two portions of the said divided plate, and means for supplying material to and ejecting the same from the perforations through the fixed perforated bottom plate.

Signed by me at New York, N. Y., this 12th day of March, 1900.

DANIEL M. HOLMES.

Witnesses:

THOS. F. A. GIBNEY,
A. M. PIERCE.