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F. R. BENT.

SUPPOSITORY MOLDING MACHINE.

APPLICATION FILED MAY 15, 1903.

NO MODEL.

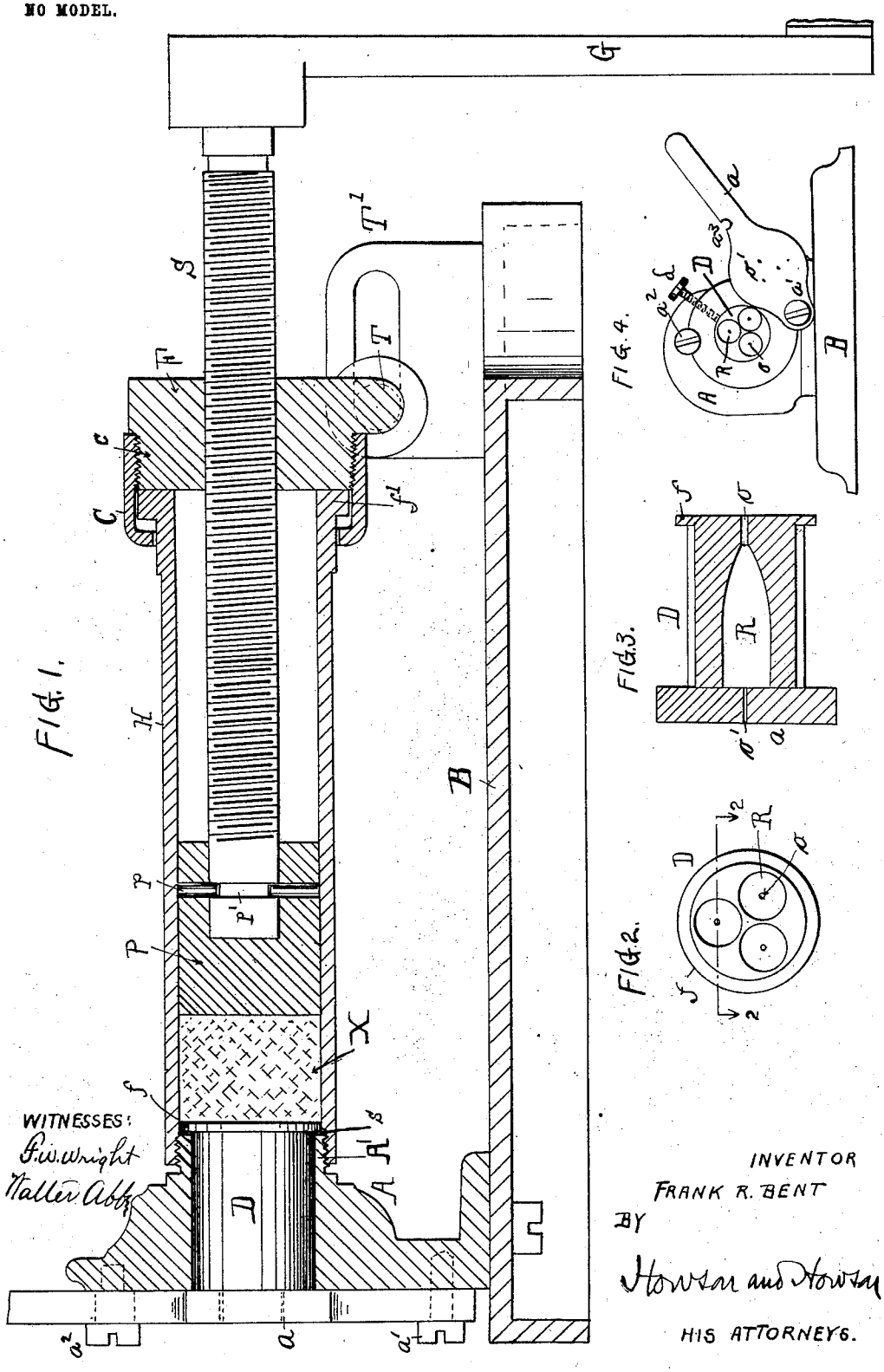

FIG. 1.

FIG. 4.

FIG. 3.

FIG. 2.

WITNESSES:
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No. 756,457. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

FRANK R. BENT, OF HARTFORD, CONNECTICUT.

SUPPOSITORY-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 756,457, dated April 5, 1904.

Application filed May 15, 1903. Serial No. 157,311. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. BENT, a citizen of the United States, residing in Hartford, in the county of Hartford, State of Connecticut, have invented a Suppository-Molding Machine, of which the following is a specification.

This invention relates to machines for molding suppositories and like articles, and has for its object to increase the rapidity of the operation and to improve the construction of such machines and the product thereof.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a suppository-molding machine provided with my improvements. Fig. 2 is an end view of the die. Fig. 3 is a section on line 2 2, Fig. 2, also showing the cut-off gate; and Fig. 4 is a view of the gate end of the machine drawn to a smaller scale.

On the base B is mounted at one end a die-holding standard A and near the other end a pair of slotted standards T', in which are held the trunnions T of the head F, which carries the feed-cylinder H and piston P. The cylinder H is connected to the head F, so that it can be revolved axially thereon, and for this purpose a flanged coupling-ring C, embracing the flange f' and screwed onto the threaded part c of the block F may be employed. The piston P may be moved longitudinally in the cylinder H by means of a screw feed-rod S, which is threaded into and passes through the head F. This feed-rod has at its outer end a crank-handle G, while at its inner end it has a swivel connection with the piston P, as by pins p in the piston entering an annular groove p' in the end of the feed-rod.

The outer end of the cylinder H can be connected to and disconnected from the die-standard A by screwing the tapped outer end of the cylinder onto the threaded projection A' on the standard A. The loose connection between the flanged rear end of the cylinder H and the head F and also the slots in the standards T' permit this. The slots in the standards T' also permit the cylinder and head to be drawn away from the standard A and tilted up on the trunnions T to refill the cylinder when desired.

The parts which I have so far described are not my invention, but form the subject of the United States Patent of F. S. Chester, dated April 28, 1903, No. 726,507.

The die in which the suppositories or the like are to be molded I construct separately from the standard. In the drawings I have shown this die-piece D as cylindrical and formed with three chambers R, in which the suppositories may be molded. This die-piece is fitted into a corresponding opening in the standard A and normally fits therein loosely, sufficiently freely that compression of the material within the cylinder forces the die tightly against the knife-blade at its outer end. This prevents any material being squeezed out at that end except through the die-holes and insures a sharp-cut base to the suppository and improving the appearance of the article. When the material within the cylinder has been used and it is desired to replenish, the screw d is tightened to hold the die in place and the cylinder unscrewed and withdrawn. If it were not for this screw d, when the handle G was revolved to bring the piston to the end of the cylinder before radially moving the cylinder on its bearings the vacuum produced within the cylinder might draw the die into its interior. I prefer to form a flange f on the end of the die-piece D adjacent to the filling-cylinder H; but exclusive of this flange the die-piece D is made slightly longer than the thickness of the part of the standard A in which the cylinder is held.

Pivoted to the outer face of the standard B at a' is a handled gate a, which is notched at a^3, Fig. 4, to latch over a headed retaining-bolt a^2, Fig. 1, when the gate is closed over the end of the die. The outer end of this die H bears against the gate a when closed, Figs. 1 and 3. There is then a slight clearance left between the flange f on the die D and the end of the projection A' in order that the die may be free to have a sufficient longitudinal movement independently of the cylinder to keep the outer end of the die up against the gate a under the pressure of the material and piston.

A passage o, Fig. 3, leads into the tapered end of each die-chamber R, and smaller aper-

tures o' are formed in the parts of the gate A which lie over the chambers when the gate is closed.

In use the forward feeding of the piston P forces the medicated plastic material X through the holes o and into the chambers R. The filling of the latter will be shown by threads of material being forced out through the apertures o' in the gate. The feeding is then stopped, the gate a is thrown back on its pivot a', Fig. 4, and the molded suppositories are then forced out of the chambers R by a slight forward feed of the piston P. The gate a is then closed again and pressure of piston P applied to force more material into the chambers R and the operation repeated. The pressure of the material X against the flanged end of the die D will cause the latter to bear firmly against the gate and not only prevent leakage at that point, but also insure a clean-cut outline on the base of the article molded.

I claim as my invention—

1. A suppository-molding machine, having a feed-cylinder, piston and standard, with a separate molding-die and a gate, the die being free to move longitudinally independently of the cylinder to bear against the gate by the pressure within the cylinder, substantially as described.

2. A suppository-molding machine, having a feed-cylinder and piston with a standard, a separate molding-die fitted in the standard, and a gate carried by the standard, the die being free to move longitudinally independently of the cylinder to bear against the gate by the pressure within the cylinder, substantially as described.

3. A suppository-molding machine, having a feed-cylinder and piston with a standard having a projecting part, to which the cylinder may be attached, a separate molding-die fitted in the standard and projecting part, and a gate carried by the standard, the die being free to move longitudinally independently of the cylinder to bear against the gate by the pressure within the cylinder, substantially as described.

4. A suppository-molding machine, having a standard, a separate molding-die fitted in the standard, means for supplying material to be molded to the die on one side of the standard, and a gate carried by the other side of the standard, the die being free to move longitudinally independently of the cylinder to be forced against the gate by the pressure of the material, substantially as described.

5. A suppository-molding machine, having a feed-cylinder and piston with a standard having a threaded projecting part to which the end of the feed-cylinder may be screwed, a separate molding-die movable longitudinally independently of the cylinder and fitted in the standard within said projecting part and a gate on the outer side of the standard against which the die can bear, substantially as described.

6. A suppository-molding machine, having a feed-cylinder and piston with a standard, a separate cylindrical molding-die movable longitudinally independently of the cylinder, flanged at its inner end and fitted in the standard, means to prevent the die from rotating and a gate on the outer side of the standard against which the die can bear.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK R. BENT.

Witnesses:
GEORGE W. TULLER,
THOMAS MCMANUS.