A. HELLER.

MOLDING MACHINE.

APPLICATION FILED DEC. 20, 1911.

1,100,562. Patented June 16, 1914.

Fig. 1.

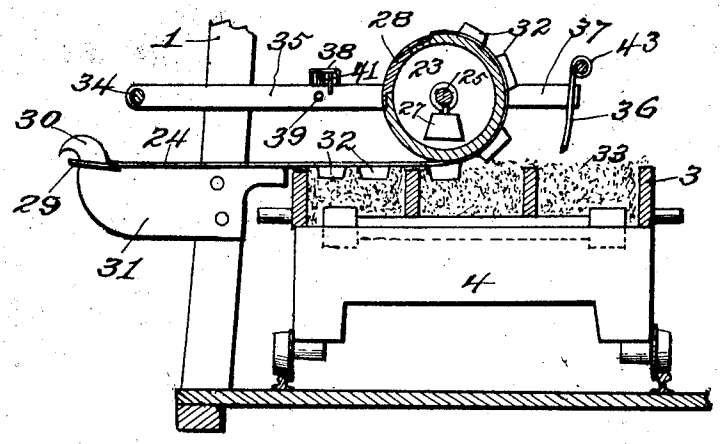


Fig. 5.

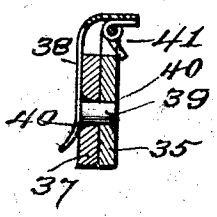


Fig. 2.

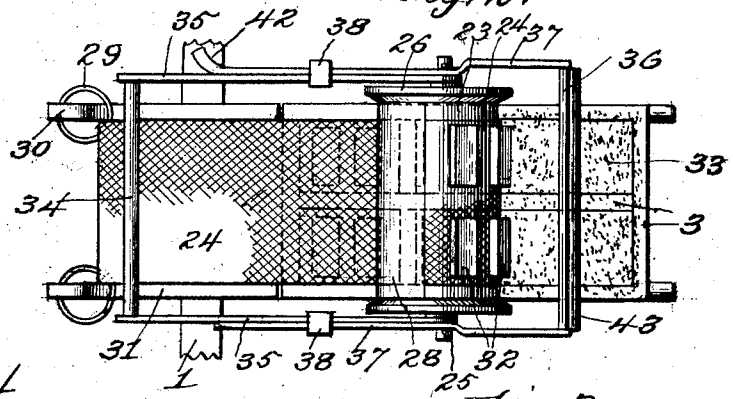


Fig. 4.

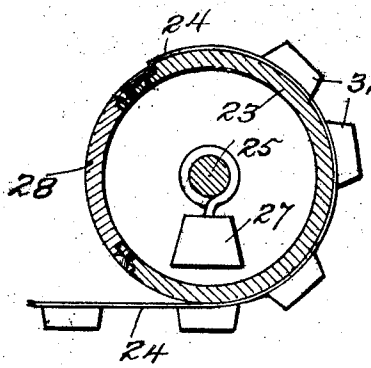
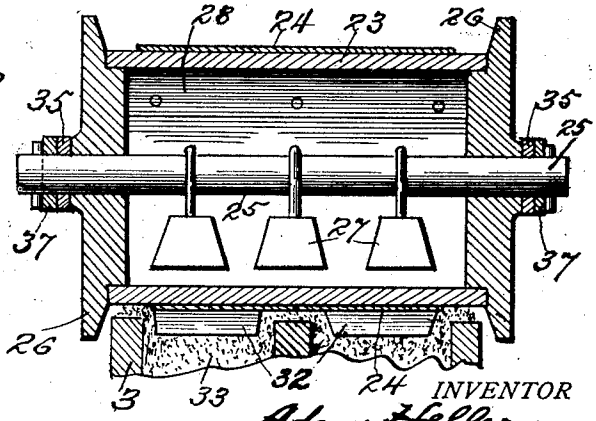


Fig. 3.



WITNESSES

Y. A. Rauberschmidt

Edw. L. Fugel

INVENTOR

Adam Heller

By C. F. Burton

Attorney

UNITED STATES PATENT OFFICE.

ADAM HELLER, OF BALTIMORE, MARYLAND.

MOLDING-MACHINE.

1,100,562. Specification of Letters Patent. Patented June 16, 1914.

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To all whom it may concern:

Be it known that I, ADAM HELLER, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Molding-Machines, of which the following is a specification.

This invention relates to the class of molding machines employing a sand-packing roller.

The object of the invention is to provide novel and peculiar means for packing sand into sand flasks.

A further object of the invention is to provide a specially constructed sand roller and means operated by the roller for packing sand into the sand flasks of molding machines.

In the accompanying drawings forming part of this application Figure 1 is a sectional view of the roller and the sand flask. Fig. 2 is a top view of the parts as shown in Fig. 4. Fig. 3 is an enlarged longitudinal section of the roller and part of the sand flask. Fig. 4 is a detail cross section of the roller. Fig. 5 is a detail cross section of one pair of the scraper-arms.

The same reference characters denote the same parts throughout the several views of the drawings.

The invention is applicable to any of the usual sand molding machines, but it is especially applicable to a sand dropping machine which I have devised in connection therewith and which is to form the subject matter of a separate application.

For the purpose of illustrating the application of the invention I have shown part of a molding machine frame 1, and a sand flask 3 carried by a traveling mold box or flask 4.

The means for packing the sand into the sand flask comprises a special roller 23, and a special packing runner 24. The roller is hollow, and is mounted on a shaft 25, extending therethrough, and the roller has end flanges 26 of such depth as to overlap the sides of the flask so as to prevent lateral movement of the roller. In order to vary the weight of the roller and its pressure on the packing runner 24, weights 27 are hung within the roller from the shaft 25, and the roller is provided with a removable section 28, to permit the weights to be placed and removed as desired or as occasion may demand. The weights are loosely hung on the shaft so as to hang perpendicular to the shaft during the rotary movement of the roller. The sand packer or runner 24, consists of a belt-like section having one end attached to the roller, and the other end provided with means such as hooks or rings 29, which are attached to prongs 30, of a pair of roller rests 31 secured to the frame 1. The runner or belt is provided with a plurality of cleats, projections or blocks 32, so arranged relative to each other and to the sand flask-openings 33, as to pack the sand into said openings when the roller is operated. The roller is provided with a hand-rod 34, having side arms 35 mounted on the ends of the shaft 25. A sand scraper 36 is pivoted to the ends of the shaft 25, by means of levers 37, which overlap the arms 35, and the scraper is held in raised position by means of latches 38 hinged or pivoted to the arms 35. Said latches have a pin or projection 39 for engaging holes 40 in the levers 37 and the arms 35, and the latches are provided with a spring 41 for holding them in locked position. It is obvious that when the latches are raised they will release the scraper levers and permit the scraper to follow in the path of movement of the roller. One of the scraper levers is provided with an off-set handle 42, for raising the scraper into locking position. The scraper has a weighted head 43, to insure proper scraping operation.

During the deposit of the sand into the sand flask the roller is located on the roller rests 31, and after such deposit the roller is rolled inwardly upon the packing runner or belt so that the runner-blocks 32 make the first packing of the sand, then the roller is pulled to return it so that the blocks make a second packing of the sand. This operation of the roller may be repeated as often as desired or as may be found necessary for completely packing the sand, it being understood that the scraper is dropped only during the return movement of the roller, and only upon such return movement or movements as may be found necessary to remove the surplus sand in the final packing operation of the roller and the runner or belt.

It will be seen that the weights will adjust themselves during the rolling movement of the roller so as to hang perpendicularly over each presser block as the latter are successively reached by the roller, and as they

reach the flask openings, and that the blocks are wound upon the roller and unwound therefrom during the operation of the roller.

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

1. In a mold ramming apparatus, a flask, a ramming means, and a sand packing member comprising a plurality of flexibly connected blocks carried into and out of packing position by the ramming means.

2. In a molding machine, a sand flask, a roller revoluble over the flask, and means windable upon and operated by the roller for packing the sand in said flask.

3. In a molding machine, a sand flask, a roller revoluble over the flask, and a runner attached to the roller and having packing blocks operated by the roller for packing the sand in said flask.

4. In a molding machine, a sand flask, a roller revoluble over the flask, and a sand packing runner having one end anchored and the other end attached to the roller and windable thereon, said runner being unwound from the roller in a sand packing operation.

5. A device for packing sand, comprising a sand flask, a shaft, a roller mounted on the shaft, weights depending from the shaft within the roller, and a sand packing runner carried by the roller and traversing the flask under pressure of the roller.

6. A device for packing sand, comprising a sand flask having openings, a shaft, a roller mounted on the shaft, weights depending from the shaft within the roller, a runner carried over the flask by the roller, and sand packing blocks upon the runner, said blocks coöperating with the flask openings under pressure of the roller in a sand packing operation.

7. In a molding machine, a sand packing roller, arms in which the roller is revolubly mounted, a sand scraper, levers pivotally connecting the scraper with the roller, and means for locking and unlocking the levers and the arms to change the position of the scraper in a sand packing operation.

8. In a ramming apparatus, the combination of a flask, and mechanism for ramming the sand in the flask to a predetermined degree of hardness comprising a ramming roll, and a flexible sand compressing member adapted to be extended over the flask and retracted therefrom by operating the roll in a ramming operation.

9. In a roll ramming apparatus, the combination of a flask, a roll, and a flexible sand packing device having one end attached to the roll and the other end anchored independent of the roll for ramming the sand in the flask to a predetermined degree of hardness.

10. In a roll ramming apparatus, the combination of a flask, a roll, and a flexible sand packing device extending over the flask and windable upon the roll between the latter and the flask.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ADAM HELLER.

Witnesses:
JOHN R. SMITH,
FAITH A. HARBAUGH.