J. Wales,

Candle Mold.

No. 113,117. Patented Mar. 28. 1871.

Fig. 1.

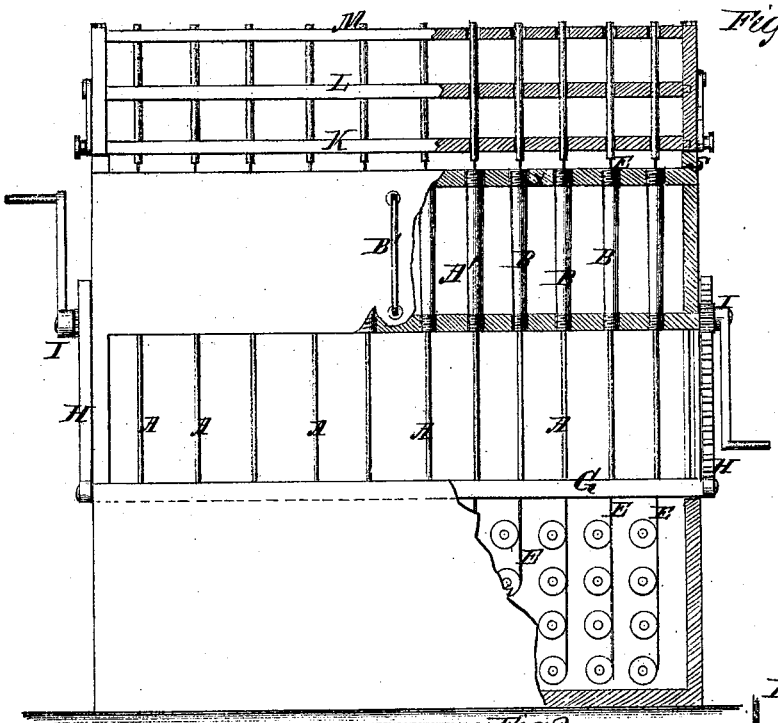


Fig. 2.

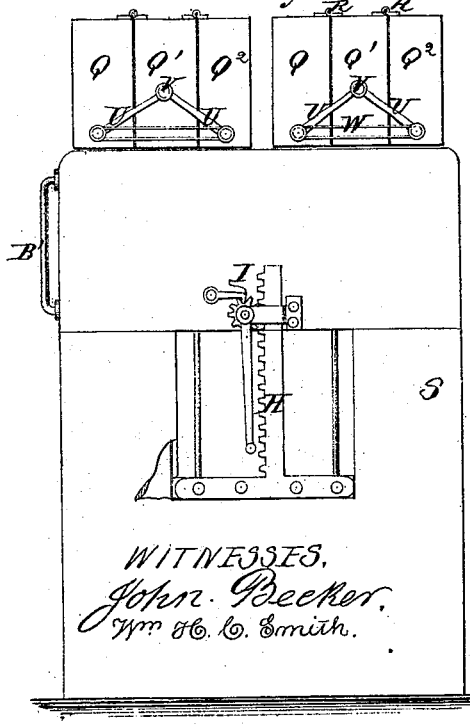


Fig. 3.

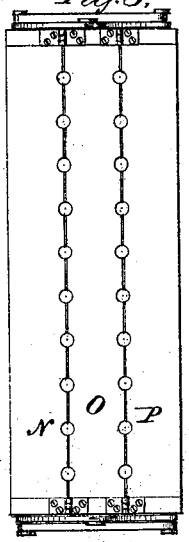
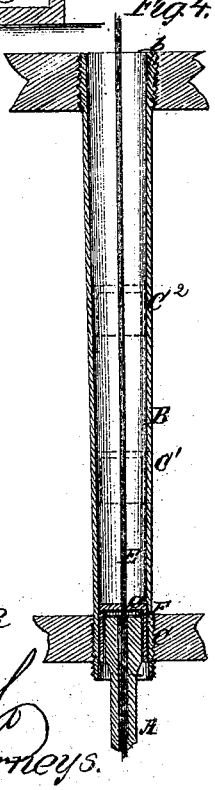


Fig. 4.



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JOSEPH WALES, OF NEW YORK, N. Y.

Letters Patent No. 113,117, dated March 28, 1871.

IMPROVEMENT IN CANDLE-MOLDING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH WALES, of the city, county, and State of New York, have invented a new and improved Candle-Molding Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in machines for molding candles; and

It consists in improvements in the lifting-rods used for closing the molds when the melted substance is poured in, and for lifting them out, whereby I am enabled to make candles of different weights in one machine; also in packing the pistons around the holes for the wick.

It also consists in a novel construction of the clamping apparatus used for receiving the candles when lifted out of the molds, holding them till the next batch is molded, and then removing them.

It also consists in certain details of construction in relation to the application of the molding-tubes to the supporting-plates, and to the introducing and drawing off of the water employed for cooling the molds, all as hereinafter described.

Figure 1 is a front view of my improved machine, partly in elevation and partly in vertical section;

Figure 2 is an end elevation;

Figure 3 is a plan view of the clamping apparatus; and

Figure 4 is a sectional elevation of one of the molds; also one of the pistons or pushers for forcing the molded candles out.

Similar letters of reference indicate corresponding parts.

As the candle-molding machines are at present arranged it is necessary to employ a complete machine for each size it is required to make; consequently, the machines being quite expensive and there being many different sizes required, the manufacture of candles involves the investment of a large amount of capital in machines, much of which I propose to save by constructing the machines so that they may be used for different sizes by slight changes being made.

In respect to the general arrangement of the machine, it is similar to others now in use, and need not therefore be described in its main features, which are well understood.

The first part of my invention consists in the employment, with the piston-rods or pushers A and the mold-tubes B, of two or more caps, C, according to the number of different sizes of candles it is desirable to make in one machine, which caps are detachably connected to the pushers, and are to be employed one at a time with each piston, being of different sizes, the smallest being of such size that when on the piston it will drop to the lower end of the mold, and fit in it there so as to close it to hold the melted substance for making the candles of the largest sizes.

The cap of the next greater size will be so as to fill the mold, say, at two-thirds the way down at C^1, and stop there for making shorter and lighter candles, and another size may be so as to lodge, say, half way down, as at C^2, and make still shorter and lighter candles.

As many different sizes may be employed as required, and they will all be adjusted so as to produce, by the filling of the molds above them, the several standard weights of candles, respectively.

These caps are made in cast metal, in the form of a cup, with internal screw-threads, and they are screwed on the upper ends of the pistons, as shown. They have a small hole through the bottom at the center, for the wick E to be drawn up through them and the hollow pistons, as in other machines.

In order to pack around the wick tightly to prevent the melted substance from escaping through these holes, I propose to introduce a soft India-rubber disk, F, with a central hole for the work, between the bottom of the cap and the top of the piston, as shown, for pressing snugly against the wick by being screwed in tight to close the passage, but allow the wick to be drawn up, which it will do by reason of the soft and yielding nature of the material.

As the pistons will not fall so low when the large caps are used, the board G, by which they are lifted, through the medium of the racks H and pinions I, will be arrested sooner in the downward movement.

The improvement in the clamping apparatus for receiving and holding the candles after having been lifted out of the molds is as follows:

The three boards or plates K L M are divided into three parts, N O P, and connected to end boards Q Q^1 Q^2, similarly divided, and hinged at the top, as shown at R, the middle pieces Q^1 being arranged on the top of case S, so that the other parts on each side of them may swing toward and from them for opening and closing the holes T, for the candles which are formed by the semicircular grooves in each of the parts along the wires on which the said boards are divided, which holes are coincident with the molds.

The end pieces Q and Q^2 have rods U jointed to them, which rods are jointed together at V, being of such length that, when the joint V is moved down into the right line connecting the joints of the said rods with the said pieces, the latter, with the parts N and P of the boards K L M, will be separated for receiving the candles, the parts of the board K being

opened the greatest amount, while those of board M will open but little, but the holes T in these being made larger, will insure the proper reception of the candles therein.

W represents endless elastic bands of any kind, connected to the pivots by which the rods U are jointed to the boards Q Q^2, so that they will be stretched when the rods are moved down to open the clamp, but when the joints V are moved above the right line again the bands will readily close the clamp. These parts are operated by hand. Springs of any kind, or cords and weights, may be substituted for these elastic bands.

When so closed upon the candles the latter will be held by the boards K and L until the next batch is molded, when the clamp is removed and the completed candles removed from it, the wick being first cut at the caps of the candles in the clamps.

I propose to attach the molds B to the supporting-plates X X by having screw-threads *a b* formed on the molds as shown, the one, *a*, being smaller, so as to pass through the hole for *b* readily, and securing them into the said plates.

This plan is much cheaper and simpler than the present mode of applying flanges or collars to the molds for the upper sides of the plates and clamping nuts on the molds below.

The space A′, between the plates X, is in practice alternately filled with steam for heating the molds to the proper condition for reception of the melted tallow and cold water for solidifying the same after the molds have been filled.

Now, in making short candles according to my above-mentioned plan, in these long molds, it will not be necessary to draw the water all out of the said space for heating the molds, but only so far down as the molds are filled. I therefore propose to employ, in connection with the pistons and caps arranged as described for making candles of different lengths, a glass or other transparent gauge-tube, B′, arranged with the said space as shown, for indicating when the water has been sufficiently drawn out, and thereby economize considerable time and water.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The employment, with the molds and pistons, of detachable caps C, of different sizes for varying the length of the molds, for making candles of different sizes in one machine, all substantially as specified.

2. The combination, with the caps C and pistons A, of the elastic packing-disks F, substantially as specified.

3. The divided plates K L M of the clamp, having the semicircular notches for clamping the candles connected to the end pieces Q, Q^1, and Q^2, which are hinged together and provided with the jointed rods U and the elastic bands or springs, all substantially as specified.

4. The attachments of the molds B to the plates X by the screw-threaded portions *a b*, substantially as specified.

5. The application, to the cooling and heating-tank of a candle-molding machine, arranged for making different sizes, as herein described, of the glass water-gauges B′, substantially as specified.

JOS. WALES.

Witnesses:
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