

No. 106,273.

PATENTED AUG. 9, 1870.

W. NEWSHAM.
MOLDING AND VENTING MACHINE.

2 SHEETS—SHEET 2.

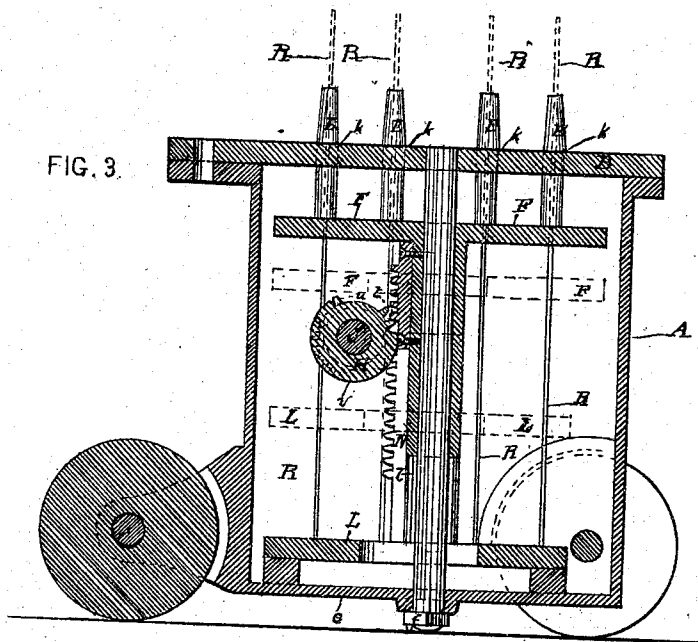
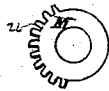


FIG. 4.



WITNESSES.

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WILLIAM NEWSHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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Letters Patent No. 106,273, dated August 9, 1870.

IMPROVEMENT IN MOLDING AND VENTING-MACHINE.

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

I, WILLIAM NEWSHAM, of the city of Philadelphia and State of Pennsylvania, have invented certain Improvements in Molding and Venting-Machines, of which the following is a specification.

The nature of my invention mainly consists of a machine in which a plate carrying patterns for making the impressions for setting cores, and also a plate carrying venting wires, are operated by means of mutilated vertical pinions and racks, in connection with said plates, in such a manner as to elevate and depress the same, for molding and venting without any backward movement of the pinion-shaft, as hereinafter described.

It also consists of such a construction and arrangement of the pinion which gives motion to the pattern-plate in relation to the pinions which produce the movement of the venting-wires, as to cause the latter to commence descending before the former, to prevent the breaking of the sand above the imprint patterns.

To enable others skilled in the art to which my improvement appertains to make and use my invention, I will now give a detailed description thereof.

In the accompanying drawing which makes a part of this specification—

Figure 1 is a plan view of the machine.

Figure 2 is a side elevation of the same.

Figure 3 is a vertical section at the line *x x* of fig. 1.

Figure 4 is a side view of a pinion, M.

Like letters in all the figures indicate the same parts.

A is a case containing the molding devices.

B is a stationary follow-board forming the top of the case, having holes *a a a*, for receiving the dowels of the flask.

The said follow-board has openings *b* and *d d*, for the support of the ends of the guide-posts C and D, the lower ends of which are passed through the bottom *e* of the case A, and confined by means of nuts *f*.

The board is also provided with perforations *g*, for the passage of the patterns E, the lower ends of which are permanently confined to the plate F.

The said plate has vertical movements given it by means of a rack, G, on the hub *h* of the plate, and the mutilated pinion H on the horizontal shaft J, which is provided with a hand-wheel, K, for operating the same, as hereinafter described.

The patterns E are such as are used for making imprints for setting cores for balls, or mandrels used in making metal tubes.

For venting the sand above the cores, there are wires R, which are guided at their upper ends by central holes *k*, in the patterns E.

The lower ends of the wires are secured in the plate L, which have hubs *l l*, that move on the guide-posts D D, above described.

The said plate L is elevated and depressed by means of the mutilated pinions M M on the shaft J, and the vertical racks N N on the said hubs *l l*.

The operation is as follows:

The hand-wheel K is turned in the direction of the arrows until the patterns E are elevated far enough above the follow-board B for forming the imprints, as seen in figs. 2 and 3; then the catch O is forced forward by the wire spring P in the stationary socket Q, so that the catch enters the notch *m* in the periphery of the wheel.

When the patterns are thus brought to a state of rest, the flask is put in position on the follow-board B, and the sand rammed in the flask in the usual manner; then, the hand-wheel K is again turned forward, and the segmental portions of the pinions M M, having teeth *u* connect with the vertical racks N of the hubs *l l* of the plate L, carrying the wires R, until the wires are brought to their elevated position seen in figs 2 and 3, during which time the segmental blank *v* (whose peripheral face is in the same circumferential line as that of the ends of the teeth) of the pinion H; passes under the tooth *t* of the rack G, and prevents the downward movement of pattern-plate F.

The teeth *u* of the pinions M M are disengaged from the racks N N before the segmental blank *v* has passed beneath the tooth *t* of the rack G, so as to keep the patterns E in their elevated position until the venting wires R, by the descent of the plate L, are withdrawn from the sand, to prevent the breaking of the same.

I do not claim the vertical movement of the patterns by means of racks and pinions, as that is not new; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the mutilated pinions H and M M with the racks G and N N on the hubs *h* and *l l*, the said pinions being constructed and arranged in relation to each other for elevating and depressing the patterns E and wires R, substantially in the manner and for the purpose set forth.

2. The construction of the pinion H with the segmental blank *v*, in combination with and for retaining the pattern-plate F in its elevated position during the upward movement of the venting wires R and partial descent of the same, substantially in the manner and for the purpose specified.

In testimony that the above is my invention I have hereunto set my hand and affixed my seal this 25th day of June, 1870.

WILLIAM NEWSHAM. [L. S.]

Witnesses:

THOMAS J. BEWLEY,
J. C. MILLER.