No. 800,759. PATENTED OCT. 3, 1905.

J. A. NOBLE.

MACHINE FOR MOLDING BUILDING BLOCKS.

APPLICATION FILED OCT. 28, 1904.

3 SHEETS—SHEET 1.

Fig. 1.

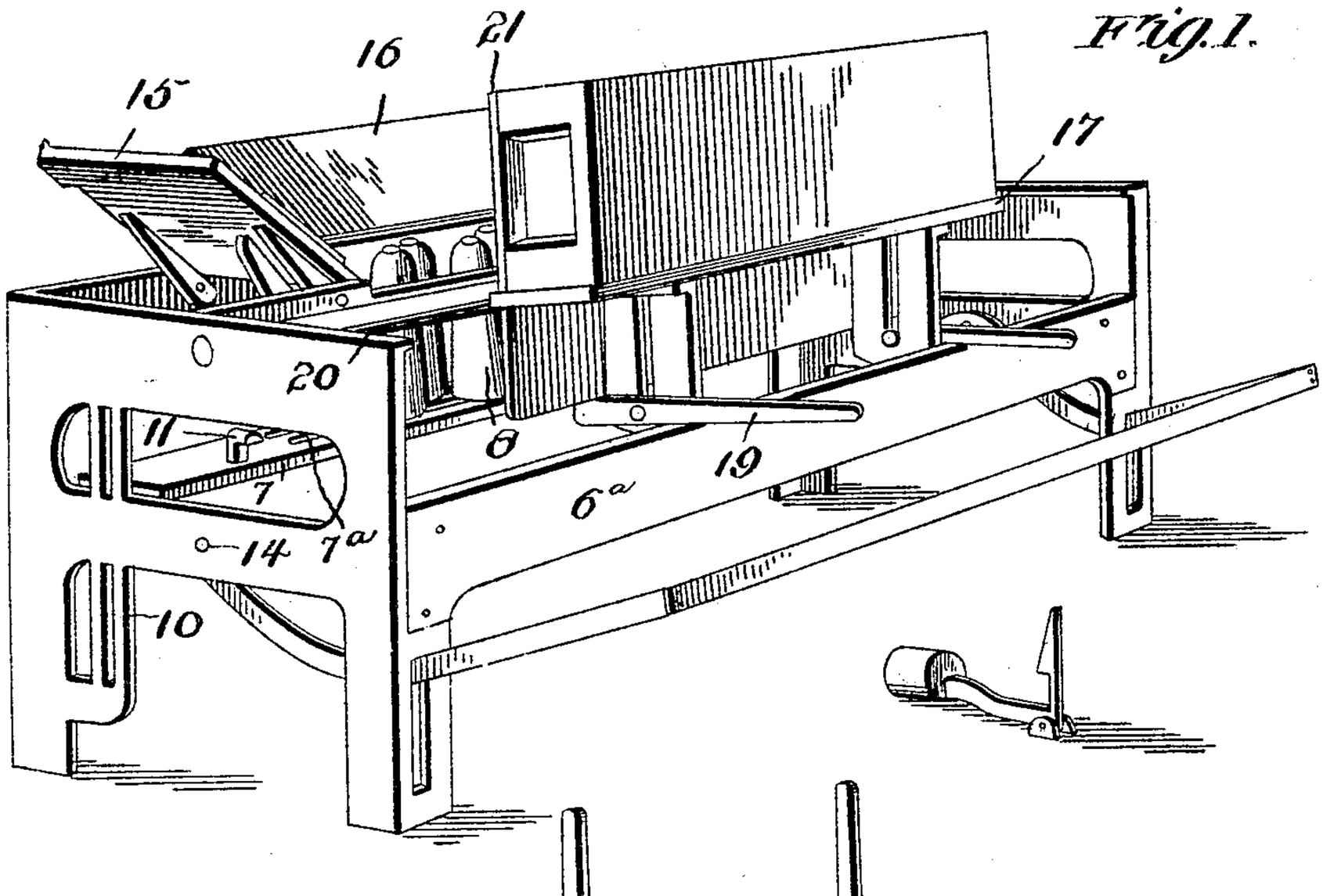
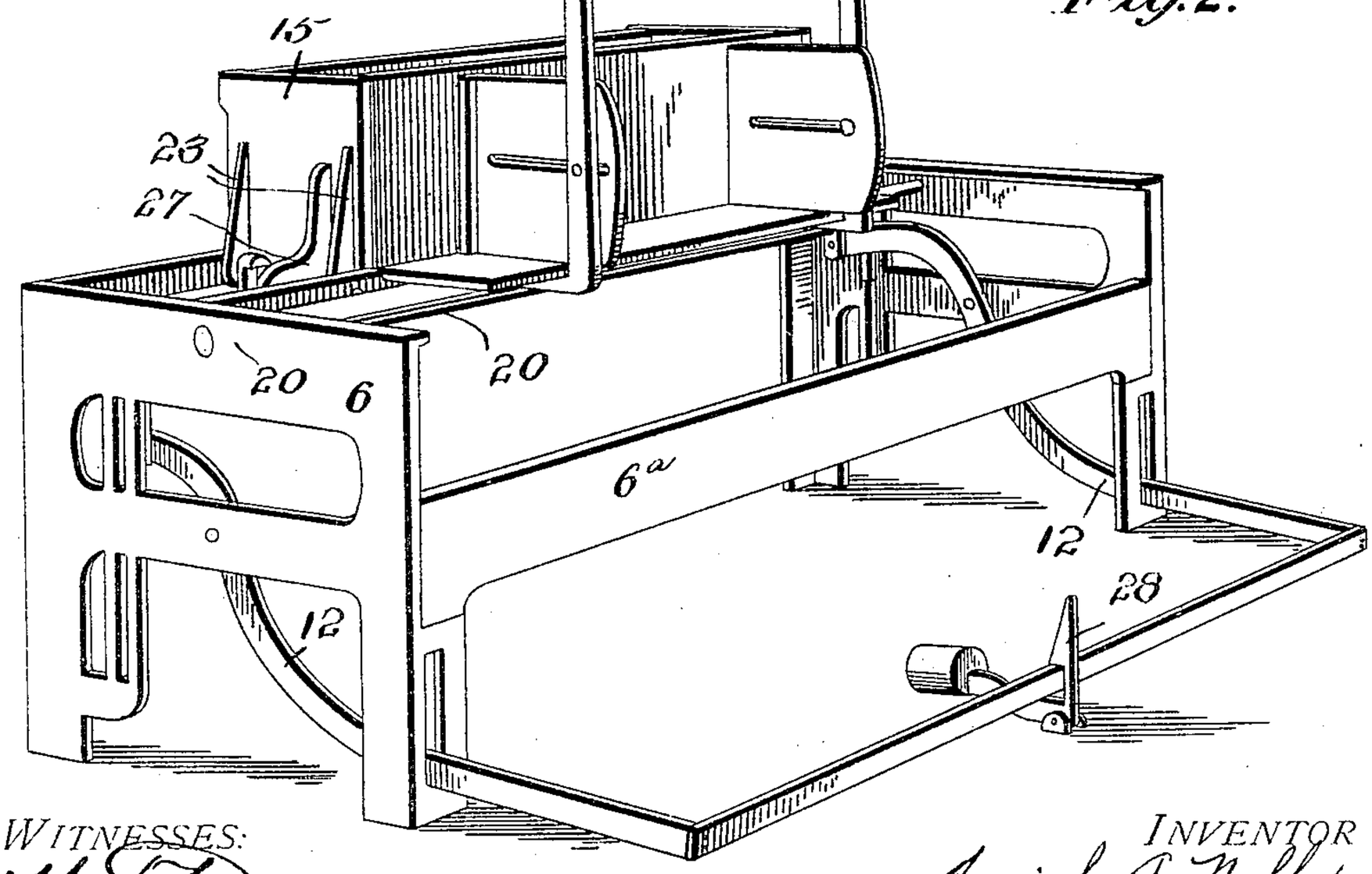


Fig. 2.



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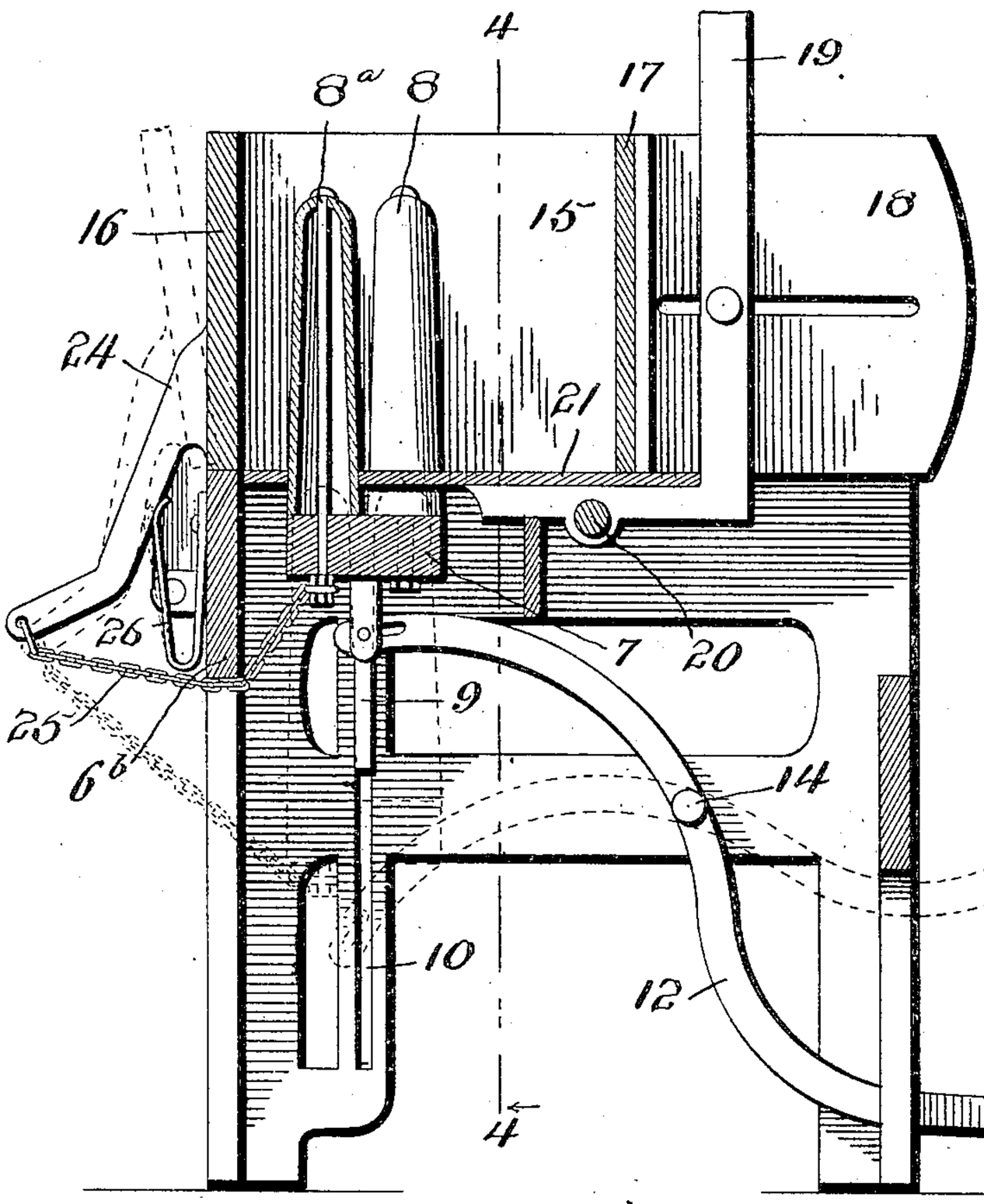
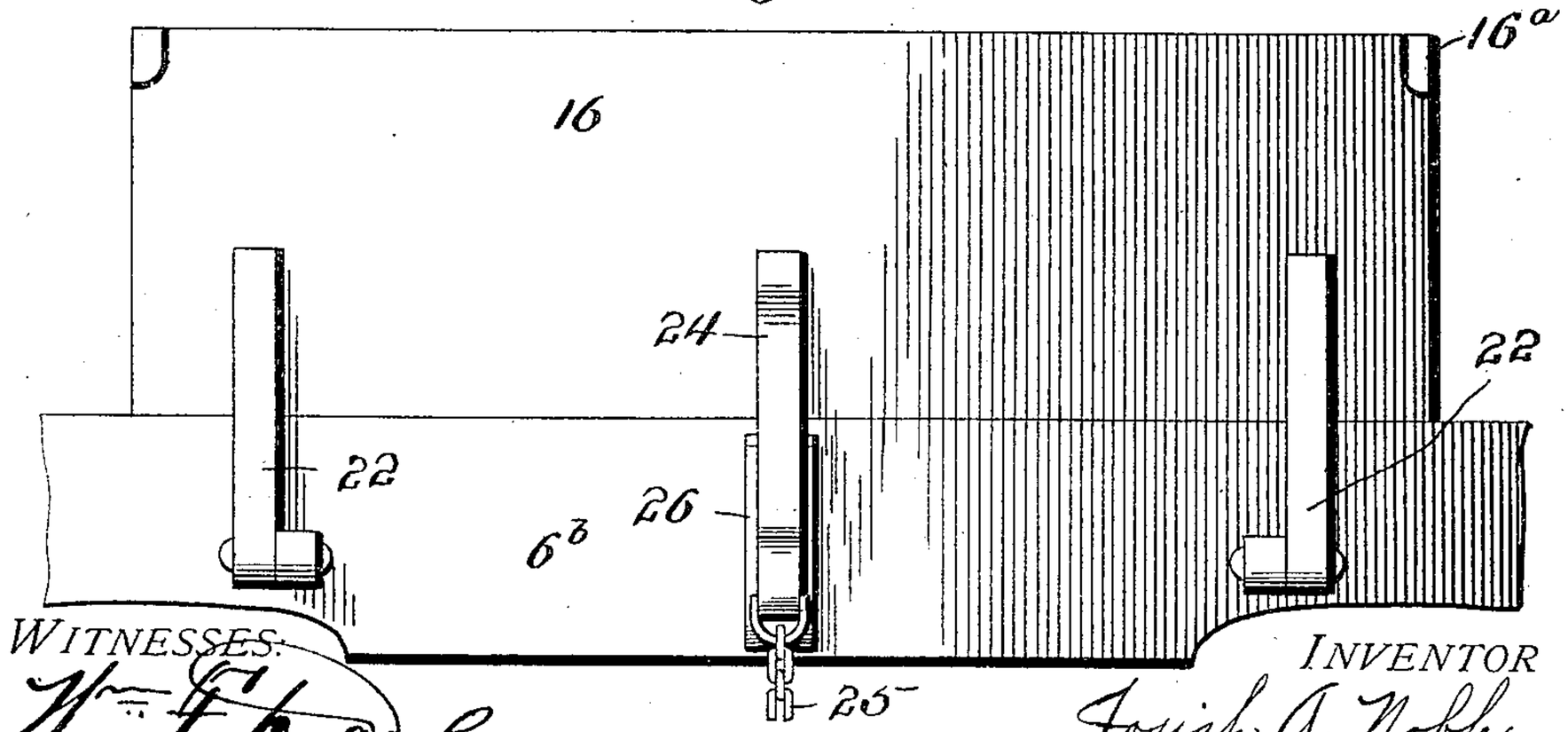


Fig. 3.

Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 4.

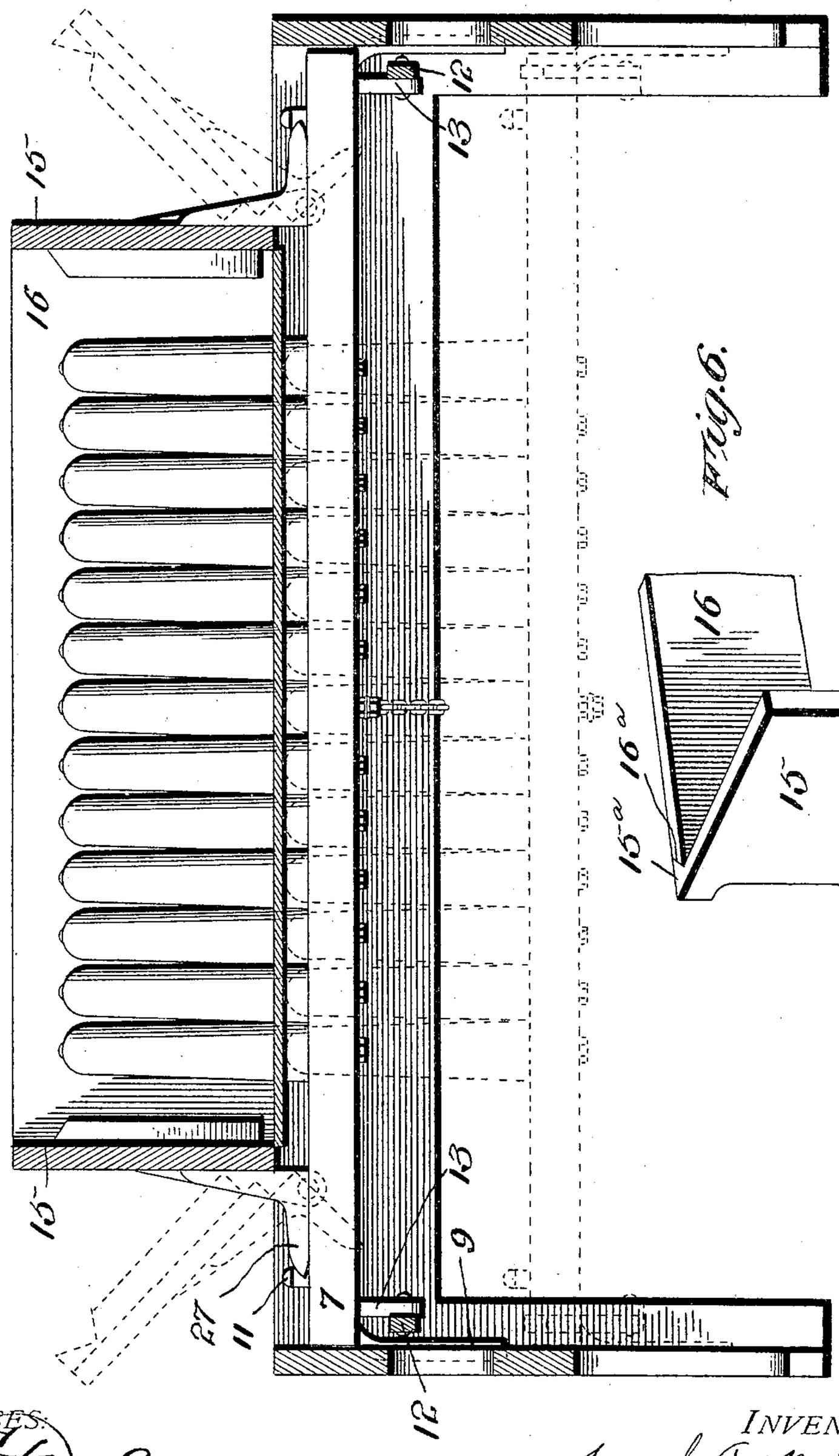
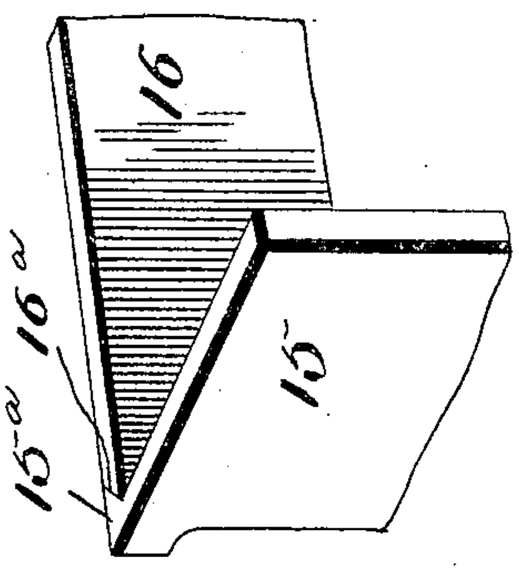


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSIAH A. NOBLE, OF FOSTORIA, OHIO.

MACHINE FOR MOLDING BUILDING-BLOCKS.

No. 800,759. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed October 28, 1904. Serial No. 230,338.

To all whom it may concern:

Be it known that I, JOSIAH A. NOBLE, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented new and useful Improvements in Machines for Molding Building-Blocks, of which the following is a specification.

This invention is a machine for the manufacture of building-blocks, particularly hollow blocks made of cement or other plastic material; and it has for its object to produce an improved machine of the kind characterized particularly by ease and rapidity of operation and by improved means for inserting the core or cores into the mold-box and withdrawing the same therefrom preparatory to the removal of the finished block. The mold-box has separable sides, at least one of which is adjustable to vary the size of the block, and the parts so connected that when the cores are inserted or removed the sides are automatically closed or separated, as will more fully appear hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of the machine with the cores retracted and the sides of the mold open or separated. Fig. 2 is a similar view showing the mold closed. Fig. 3 is a vertical cross-section. Fig. 4 is a vertical longitudinal section on the line 4 4 of Fig. 3. Fig. 5 is a detail in elevation of the rear side of the machine and part of the supporting-frame. Fig. 6 is a detail in perspective showing the joint between an end and the back of the mold.

Referring specifically to the drawings, 6 indicates the frame of the machine, which is of suitable size and construction to support and guide the operative parts to be hereinafter described. A core plate or bar is indicated at 7, carrying a series of cores 8. The core-plate is slotted, as at 7^a, so that the cores may be located at any desired position along the plate and the number of cores varied as desired. They are fastened in place by bolts, (indicated at 8^a,) which extend through the slots 7^a. The end of the core-plate has cast to it vertical guide-ribs 9, which slide in ways 10, produced in the ends of the frame of the machine. At each end upon the top of the core-plate there is bolted a dog 11. This core plate or bar is slidable vertically and is raised or lowered by the levers 12, pivotally connected to lugs 13, depending at the ends thereof. The levers are pivoted at 14 to the end frames of the machine. The guides 9 and 10 maintain true vertical movement of the core-plate.

The core-box includes two end plates 15 and a back plate 16, which are hinged to the frame of the machine. These form three sides of the mold. The fourth side is formed by a removable board or pallet 17, which rests against and upon adjustable sliding brackets 18. These sliding brackets are fastened to angular levers 19, which are pivoted upon a rock-shaft 20, extending across between the ends of the frame of the machine. The bottom board of the mold is indicated at 21. It rests upon the lower arm of the angular levers 19 and has suitable openings through which the cores 8 may be inserted and removed. Obviously when the number or location of the cores is changed a suitable bottom board must be provided.

The hinges of the backboard 16 of the mold-box are indicated at 22, and the hinges of the end boards are indicated at 23. The backboard 16 has a projecting arm 24, which is connected by a chain 25 to the core-plate 7. A spring 26, between the arm 24 and a rear cross-bar 6^b of the frame, normally tends to close or swing in the backboard 16. Projecting from each of the end boards 15 is a cam 27, which is properly positioned to rest upon the plane top of the core-bar 7 and engage under the dog 11 when the core-bar is raised.

When the levers 12 are depressed, the core-plate and cores are lifted, the latter passing through the openings in the bottom plate of the mold into the mold. This movement slacks the chain 25, and the spring 26 expanding closes the back plate 16 into a vertical position. At a higher point in its movement the core-bar strikes the cams 27 and turns the end plates 15 into the vertical position, the lips 15^a on the end plates engaging the bevels 16^a at the upper corners of the back plate 16, which correct any variation in position of the plates and adjusts and holds them securely together. When the levers reach their lowest point, they are held by a suitable catch 28. The mold is then ready to receive the cement. When the block is sufficiently set, the levers 12 are raised. This draws down the core-plate 7 and cores 8, freeing them from the newly-made block which rests upon the bottom plate 21. As the core-plate descends the dogs 11 engage the end of the cams 27, tilting the end plates 15 away from the block and freeing the beveled corners 16^a from the lips 15^a. At a further point in its descent the slack of the chain 25 is taken up and it pulls down on the arm 24,

which swings out the plate 16 and frees it from the block. It will be seen that all this is automatic with the descent of the core-plate. The newly-made block now rests upon the bottom plate 21 and against the board or pallet 17, which forms one side wall of the mold. The hand-levers 19 are then swung out and down upon the rock-shaft 20 until they rest upon the cross-bar 6ª, as shown in Fig. 1. This turns the block on its side, so that it rests upon the pallet 17, and resting upon said pallet is lifted from the machine and conveyed away. Another pallet is then substituted, the bottom board swung back to horizontal position, and the operation repeated.

The configuration of parts may be varied to suit the kind of blocks being molded. The adjustable slides 18 permit the width or thickness of the block to be varied.

The levers 12 are conveniently operated by foot-power and the levers 19 by hand, so that one man can operate the machine, and the opening and closing of the mold being automatic rapid action is possible.

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

1. In a block-molding machine, the combination with a fixed frame, and separable side plates hinged thereto, of a tilting bottom plate with which one of the side plates is movable away from the remaining side plates, to remove the block from the mold.

2. A block-molding machine having separable bottom and side plates, the bottom plate and one of the side plates being tiltable independent of, and away from, the remaining side plates, to turn the block out of the mold, upon the said side plate.

3. In a block-molding machine, the combination of separable bottom and side plates, the bottom plate having openings, and cores removable through said openings, the bottom plate and one of the side plates being tiltable independent of, and away from, the remaining side plates, to turn the block out of the mold, upon the said plate.

4. In a block-molding machine, in combination, a frame, separable side plates hinged thereto, and a tilting bottom and removable side plate mounted to rock together on the frame away from the remaining side plates, to turn the block out of the mold and upon the said removable plate.

5. A mold having sides and a bottom plate, the bottom plate and one of the sides being tiltable together and away from the remaining sides, to turn the block out of the mold.

6. In a molding-machine, in combination, a frame, a mold therein having hinged side plates and a bottom plate with openings therein, a core-plate slidable vertically in the frame, under the bottom plate, and carrying cores movable through said openings, and having ends extending beyond the sides of the mold, and cams secured to the side plates and arranged to be struck by the said ends of the core-plate.

7. In a block-molding machine, the combination with separable side plates, of a bottom plate tiltable together with one of the side plates and levers carrying the said bottom plate and side plate, to tilt the same, the latter being adjustable with respect to the other parts, to vary the size of the mold.

8. In a block-molding machine, the combination with the frame, and the separable side and end plates thereon, of the bent levers fulcrumed on the frame, a bottom plate carried on the levers, adjustable brackets secured to the levers, and a side plate supported by the brackets.

9. In a block-molding machine, a mold having hinged side plates, and a movable plate having ends extending beyond the sides of the mold and carrying cores which are movable into and out of the mold, the side plates having projections which extend into the path of the ends of the core-plate, and dogs on the ends of the said plate, arranged to engage said projections, to open and close the side plates according to the operation of the core-plate.

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

JOSIAH A. NOBLE.

Witnesses:
WILLIAM D. HECKERT,
ESTELLA V. ZECHIEL.