

W. H. HOFMANN.
MOLDING MACHINE.

APPLICATION FILED OCT. 25, 1905.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

970,334.

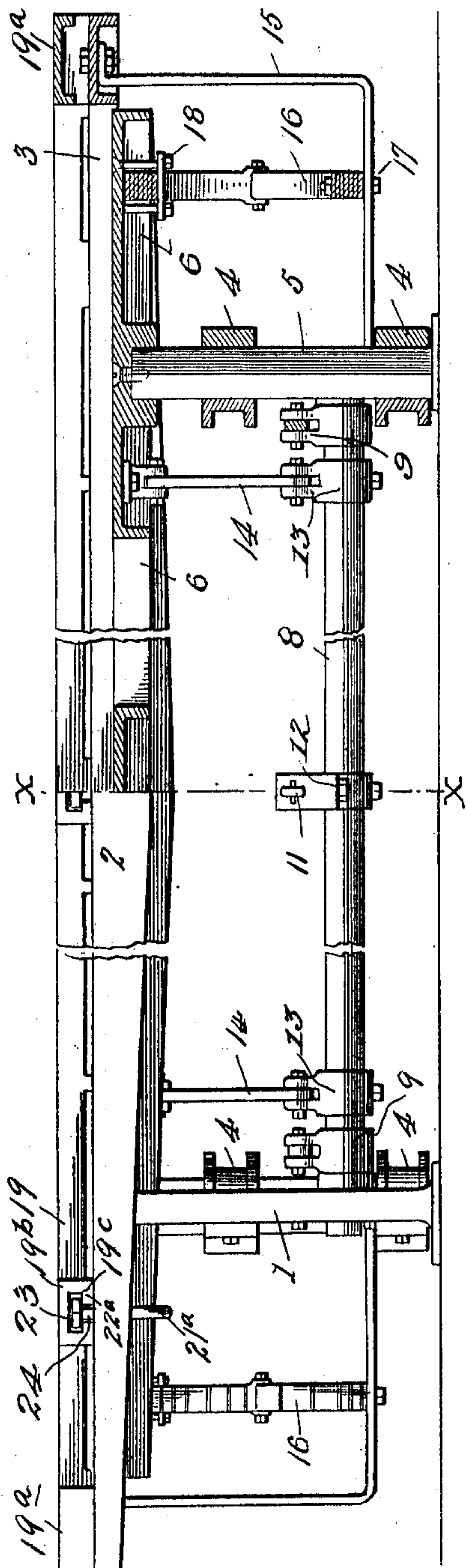


FIG. 1.

WITNESSES:

Chas. H. Davies
D. E. Smith

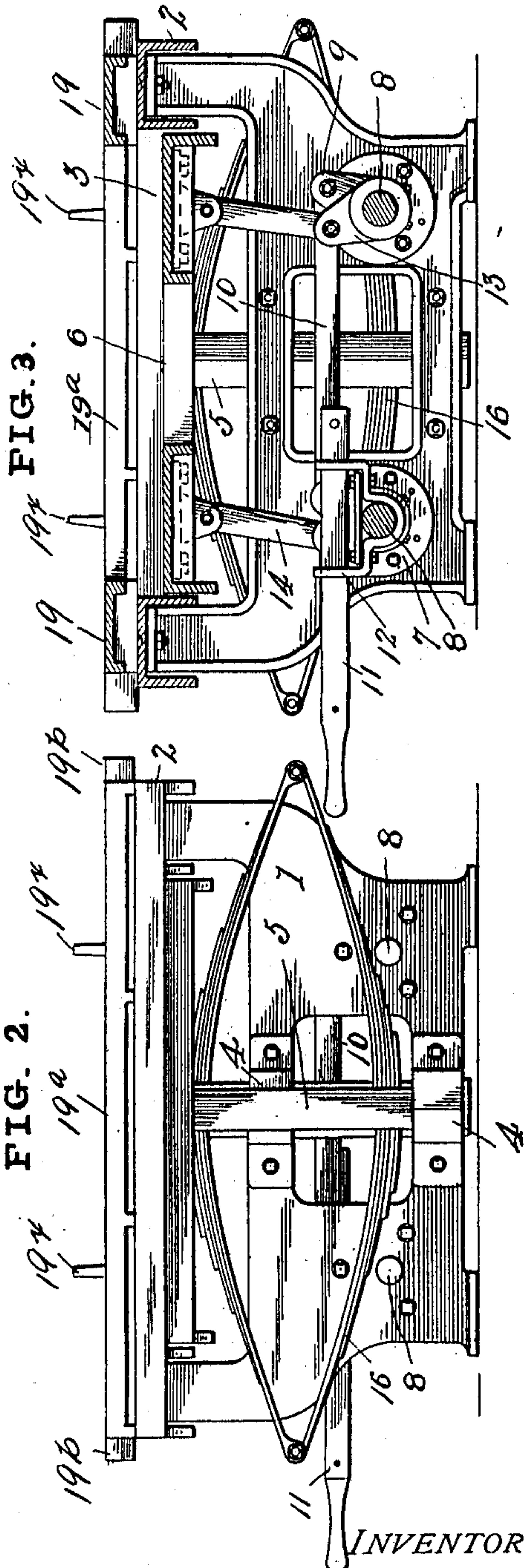


FIG. 2.

FIG. 3.

INVENTOR

Walter H. Hofmann.

BY

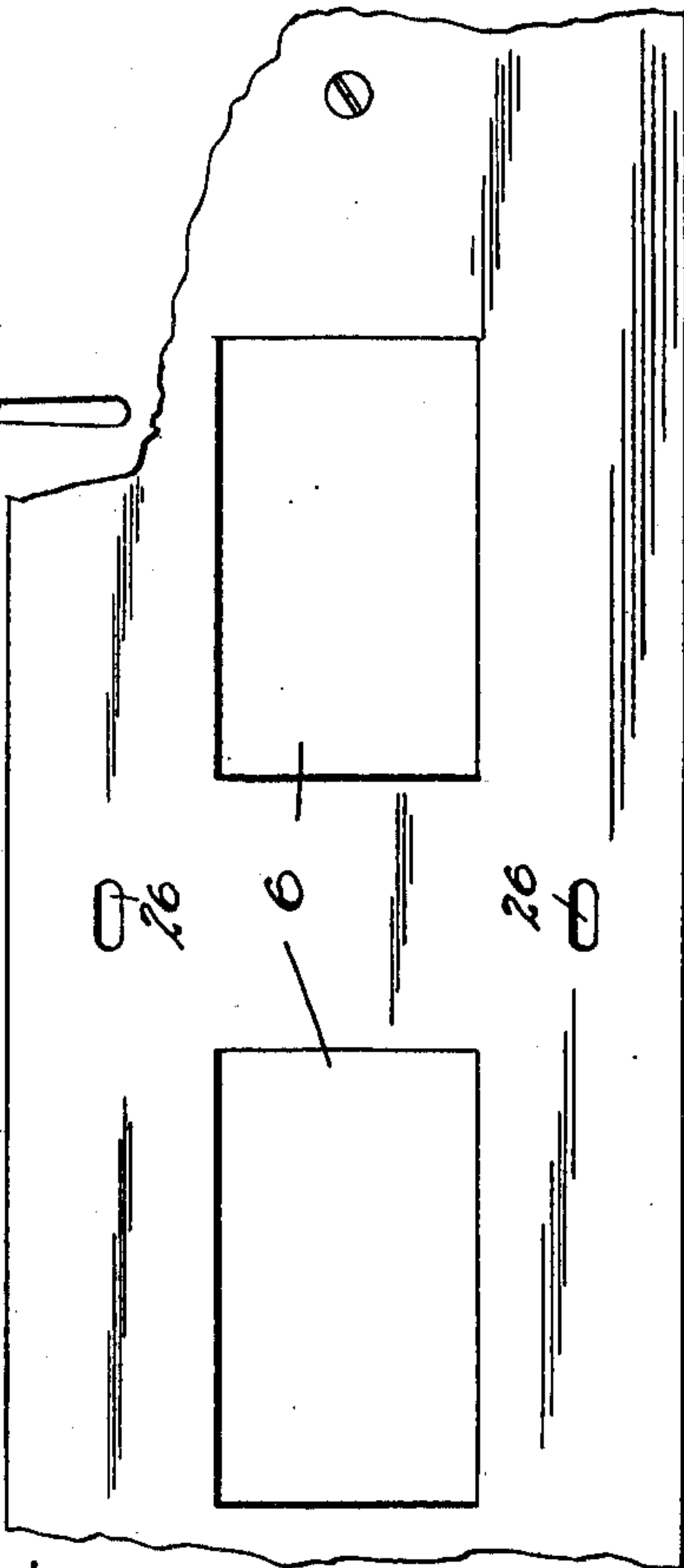
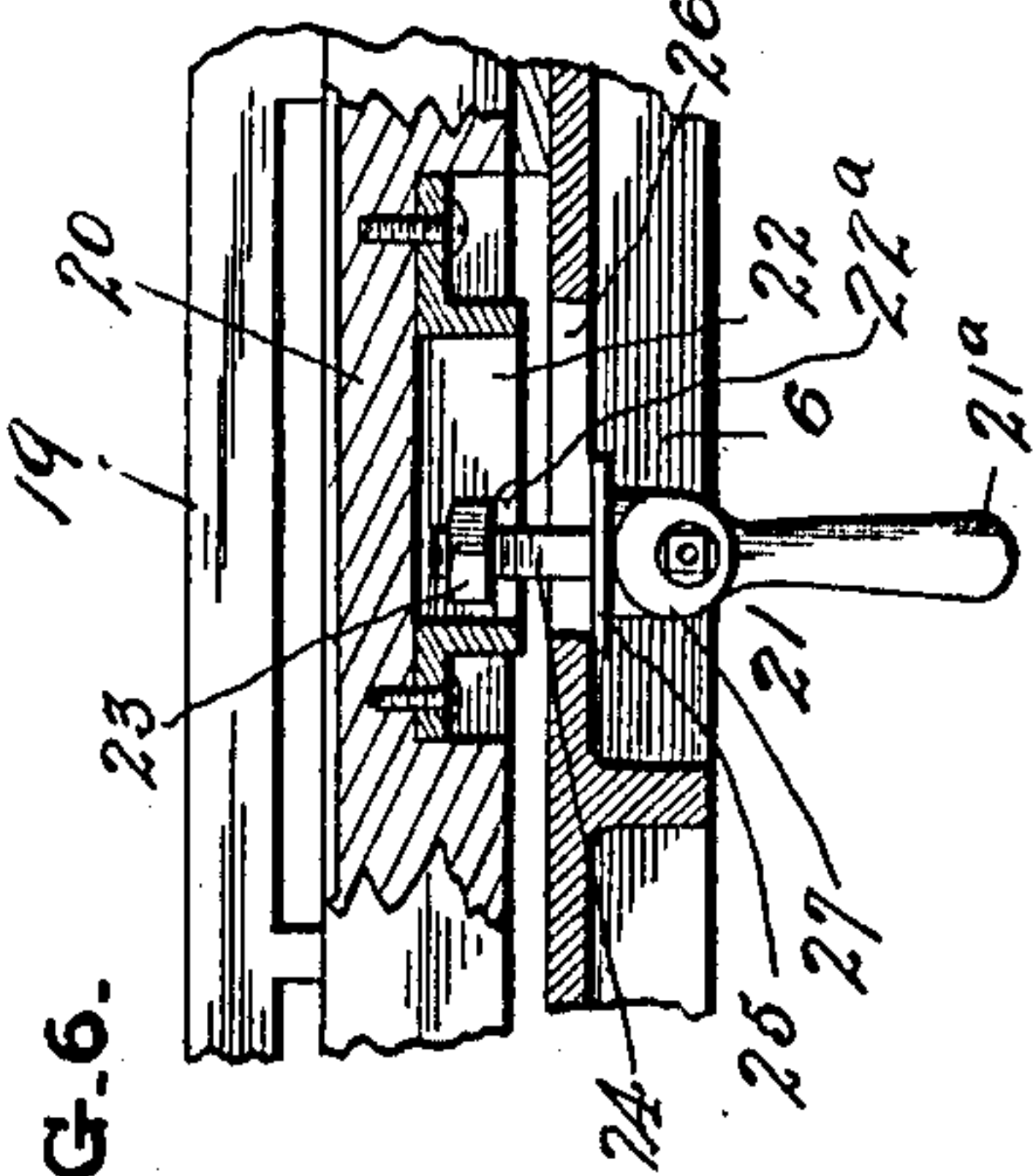
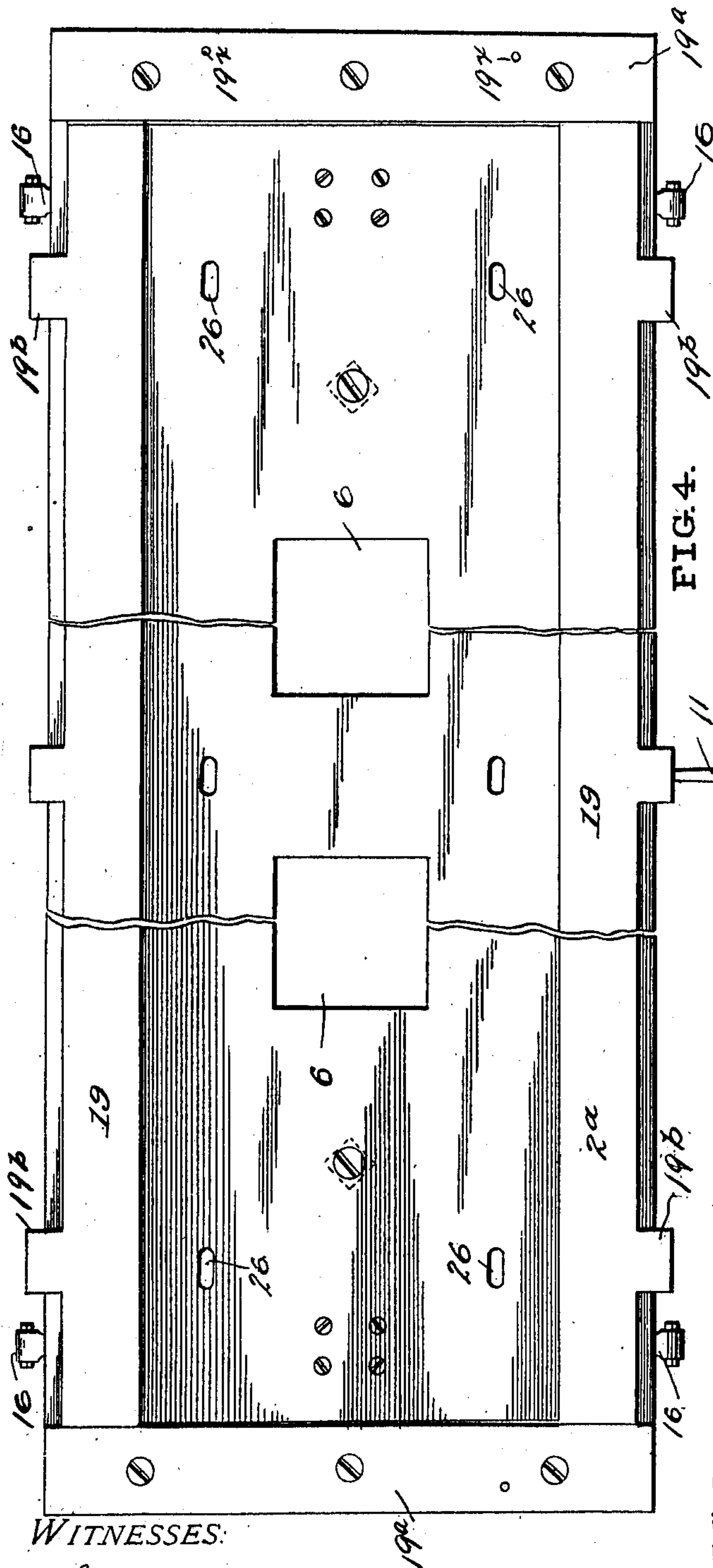
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970,334.

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2 SHEETS—SHEET 2.



WITNESSES:
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WALTER H. HOFMANN, OF UNION HILL, NEW JERSEY, ASSIGNOR TO RICHEY, BROWNE
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MOLDING-MACHINE.

970,334.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed October 25, 1905. Serial No. 284,384.

To all whom it may concern:

Be it known that I, WALTER H. HOFMANN, a citizen of the United States, and a resident of Union Hill, in the county of Hudson and State of New Jersey, have invented a new and useful Molding-Machine, of which the following is a specification.

My invention relates to molding machines, and has for its object the provision of a machine of this class which is economical in construction, simple, light, is not liable to get out of order, and is adapted for use with many different forms of pattern.

The machine is of particular advantage in molding large work such as doors and frames. It can be advantageously and economically used for a large range of work varying from doors and frames to risers and treads, and is in fact used to advantage in all kinds of architectural house metal work. The patterns may be made of wood or metal.

The nature and advantages of my invention are more particularly described herein-after with reference to the accompanying drawing which illustrates exemplifying structures embodying my invention, and in which:

Figure 1 is a side elevation of one form of my invention, one half in section, taken on a vertical plane through the longitudinal center line; Fig. 2, an end elevation of the same; Fig. 3, a sectional elevation on the line $x-x$, Fig. 1; Fig. 4, a plan view of Fig. 1; Fig. 5, a plan view of a portion of the pattern plate; and Fig. 6, a detail view.

1 are standards, one at each end of the machine.

2 is a bed plate supported by the standards, and suitably secured thereto; 3, vertical inner walls of the adjustable plates, forming an inclosure in which the pattern plate moves; 4, boxes or guides carried by the standards 1; 5, plungers, preferably of angular construction, vertically movable in the guides 4; 6, the pattern carrying frame, resting upon the top of the plungers 5, and suitably secured thereto; 7, journal plates secured to the standards; 8, rock shafts, preferably two in number, journaled on the plates 7; 9, arms upon said rock shafts, preferably one at either end of each shaft; 10, links, each pivotally connected at one end to one of said arms 9 on one of said rock shafts 8, and at its other end to the arm on

the other rock shaft opposite the arm first mentioned; 11, an operating lever; 12, a suitable mounting on one of the rock shafts 8 whereby the lever 11 is secured to the same; 13, toggle arms on said shaft 8, preferably one at each end of said shaft; 14, toggle links, preferably one corresponding to each arm 13, each connected at one end pivotally to one of said arms, and at the other or upper end pivotally connected to the pattern plate 6; the lever, rock shafts, connecting links, toggle arms and toggle links serve to move the pattern plate vertically upon manipulation of the lever; 15, spring brackets, one at either end of the machine, suitably connected to the standards 1 and the bed-plate 2; 16, suitable springs, preferably double-elliptic springs, one at either end of the machine, resting at 17 on the brackets 15, and suitably secured thereto, and at 18 suitably secured to the pattern carrying frame 6, serving to equalize the motion of the pattern plate; 19, adjustable side members of the stripping plate resting on the bed 2; 19^a, rigid end members of the stripping plate, secured on the ends of bed 2; 20, a pattern plate carrying either the cope or nowel pattern; 21, the general designation of quick acting clamping devices for securing side members 19 of the stripping plate in adjusted position and for securing the pattern plates to pattern carrier 6; 19^b, lateral extensions of adjustable stripping plate members 19; 19^c, T-slotted guides in members 19, preferably passing through extensions 19^b; 23, nuts or heads engaging the lower flanges of guides 19^c; 24, bolts carrying nuts 23 and passing through the side members of table 2; 21^a, handles, one for each of the clamping devices 21, which serve by suitable mechanism to draw nuts 23 toward the table and clamp members 19 to the table in adjusted position; the complete construction of these clamping devices may be similar to that of the clamps for the pattern plates which will now be described; 22, suitable sockets secured to the pattern plates; 22^a, slotted flanges in the sockets, engaged by nuts 23; 25, washers, one on each bolt 24, straddling slots 26 in the pattern carrying frame; 27, eccentric cams, one pivoted to each bolt 24, and to which handles 21^a are connected.

The machine is used as follows: The two

halves of the pattern are secured to boards, forming two pattern plates. These plates are of considerably varying width. In architectural iron work a great many of the
 5 castings are of substantially the same length. Therefore I have provided an adjustment in my machine for width and not for length of pattern. It will be evident that other ad-
 10 justments may be provided depending on the conditions. One of the pattern plates provided with sockets 22 is put on the pattern carrying frame 6 and secured by clamps 21. This is done by raising handles
 15 21^a of the clamps, inserting the ends of the bolts 24 in sockets 22, moving the bolts in slots 26 until nuts 23 engage slotted flanges 22^a of sockets 22 and then pulling down
 20 handles 21^a, causing eccentrics 27 to pull the pattern-plates firmly against frame 6. It is assumed that lever 11 is raised, and the pattern carrier 6 and plates in elevated po-
 25 sition. The adjustable side members 19 of the stripping plate are now moved toward or away from the center of the machine to correspond with the width of the pattern
 30 plate and are locked in position by their clamps 21. The end members 19^a of the stripping plate are provided with pins 19^x for locating the flasks. It is customary to
 35 place these pins on the sides of the flasks, but since applicant's stripping plate is made adjustable for width, in the exemplifying structure shown the pins are placed on the end members of the plate. A flask, either
 40 the cope or drag according to the pattern plate in position, is now placed on the stripping plate and accurately located by pins 19^x. Sand is put in the flask and rammed up in the usual manner; the pattern is re-
 45 moved from the mold by lowering lever 11 which depresses the pattern carrier 6; the flask is then raised and removed. The operation is repeated until the desired number of drag mold sections has been completed; the pattern plate is removed and the other pattern plate put in position and the cope

flasks rammed up to the number correspond-
 ing to the drag flasks.

To insure accuracy in positioning the patterns in the flasks, each pattern plate is 50 marked with a center line and this is lined up with a center line on the pattern-carrying frame when the pattern plate is put in the machine. The pattern carrier moves in a guide formed by the inner faces 3 of table 55 2 and its position is therefore always correct. Pins 19^x locate the flasks accurately on the machine. Therefore the upper and lower halves of the mold may be quickly prepared with the assurance that they will 60 match perfectly.

What I claim is:

1. In a molding machine, the combina-
 tion of a frame, a table thereon having a rec-
 tangular opening defined by vertical walls, 65
 a pattern carrier approximately fitting the opening in the table and guided thereby, means for raising and lowering the carrier and a stripping plate mounted on the table comprising members adjustable toward and 70 from the center of the machine to correspond to different patterns.

2. In a molding machine, the combination of a frame, a table thereon having a rec-
 tangular opening defined by vertical walls, 75
 a pattern carrier approximately fitting the opening in the table and guided thereby, means for raising and lowering the carrier and a stripping plate mounted on the table comprising movable members which may be 80 adjusted toward and from the center of the machine over the pattern carrier to accom- modate different sized patterns, and means for securing the movable members in ad-
 85 justed position.

In testimony whereof I have affixed my signature in the presence of two witnesses.

WALTER H. HOFMANN.

Witnesses:

C. WM. CHAMBERLAIN,
 JOSEPHINE WEISSE.