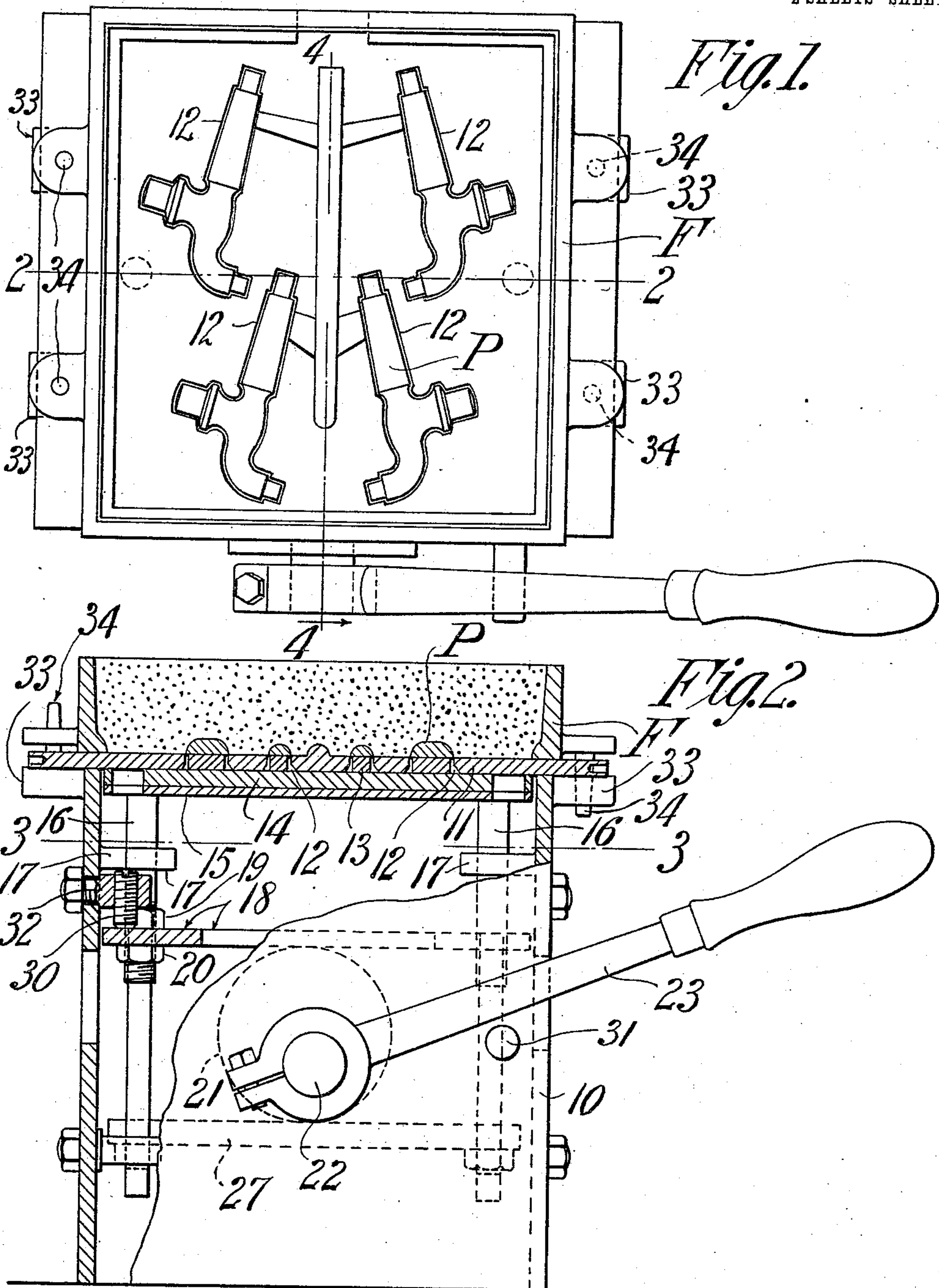


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MOLDING MACHINE.  
APPLICATION FILED JAN. 5, 1909.

928,786.

Patented July 20, 1909.  
2 SHEETS—SHEET 1.



WITNESSES:

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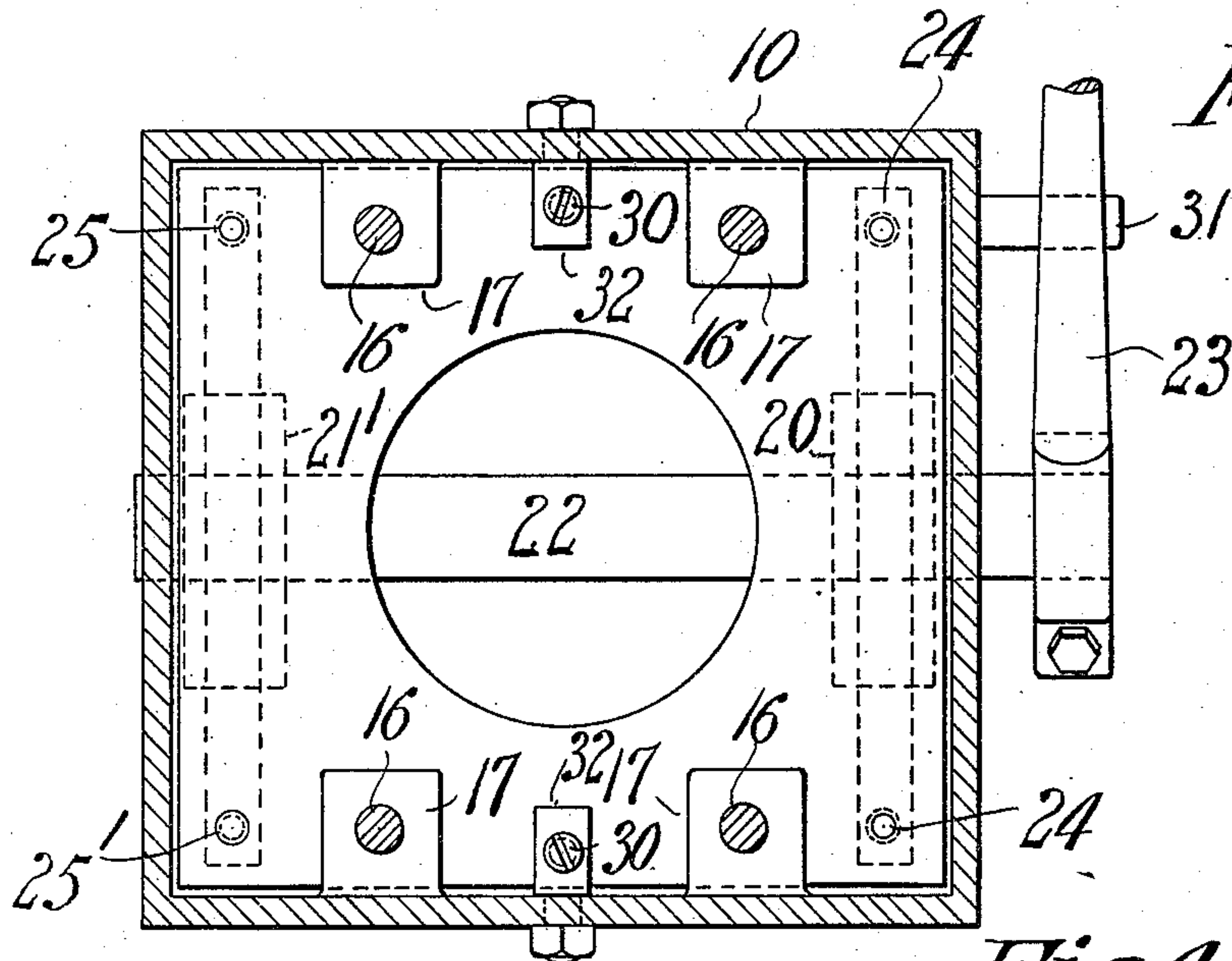


Fig. 3.

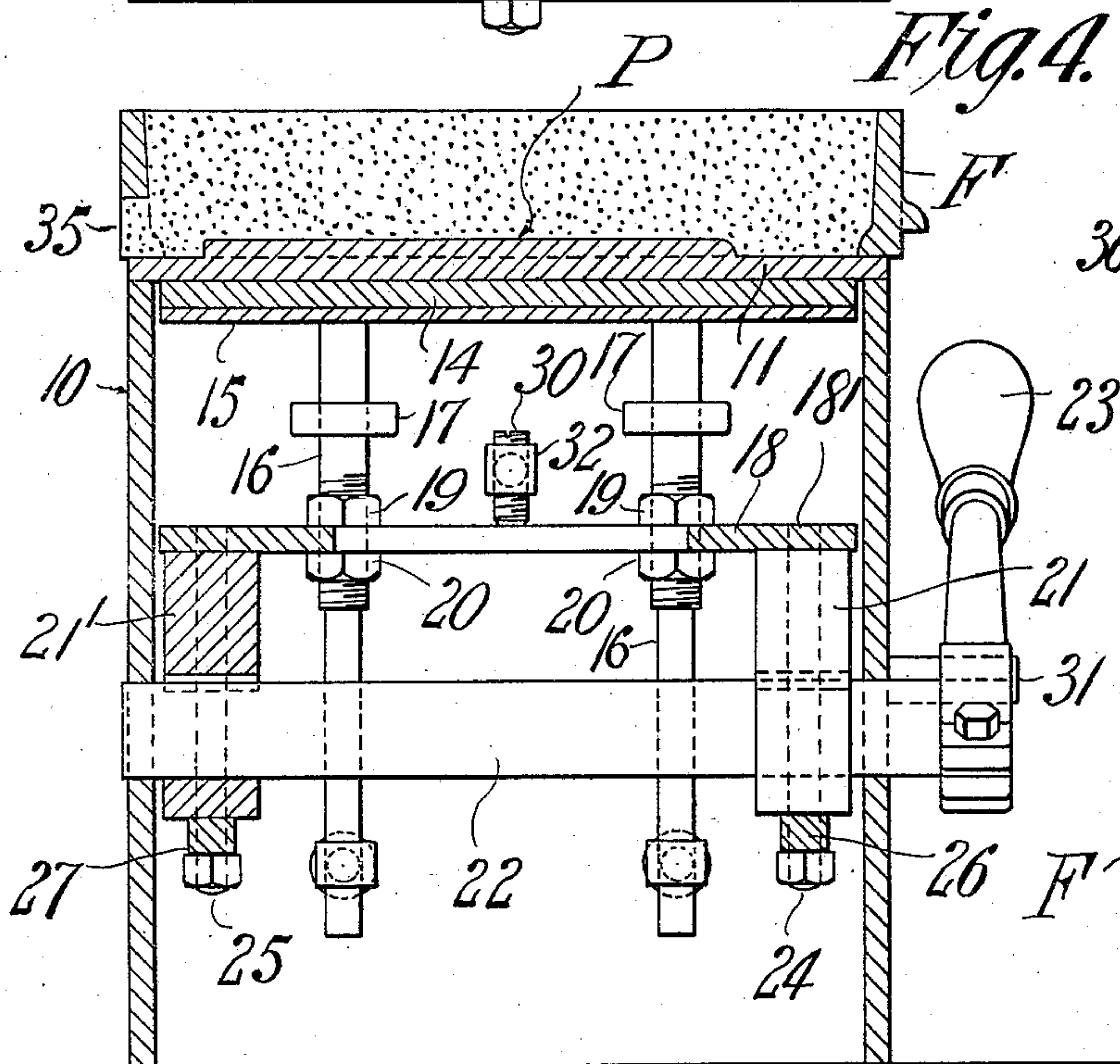
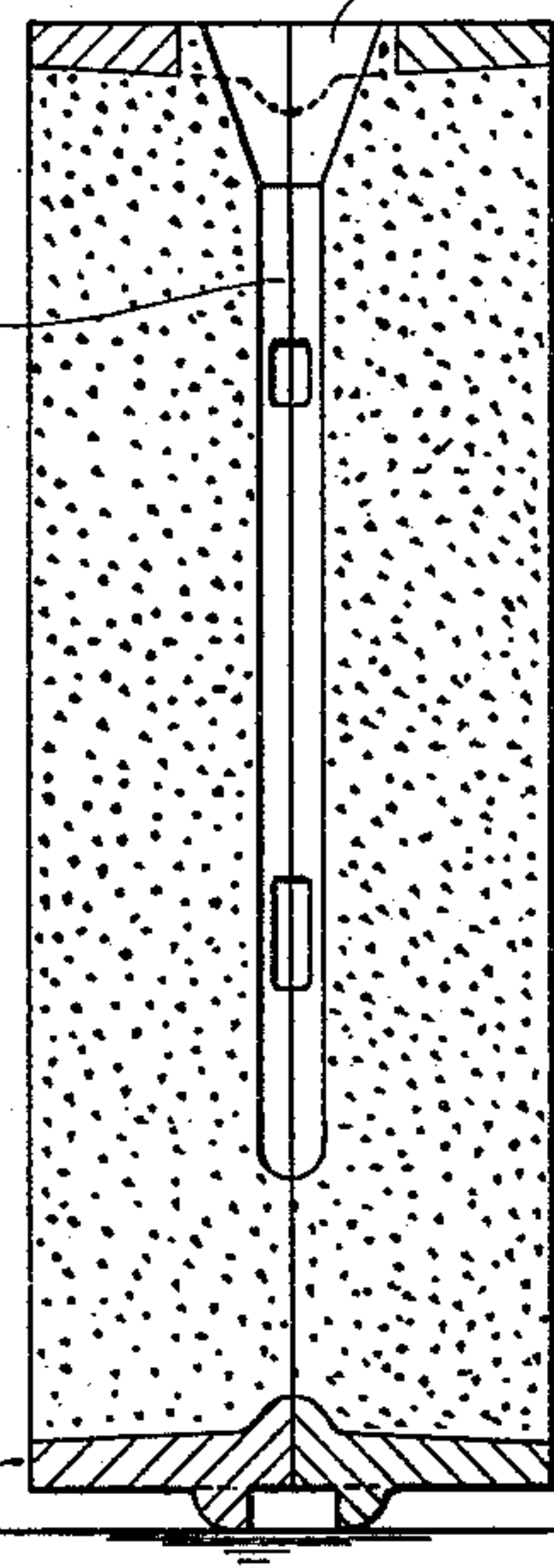


Fig. 4.

Fig. 5.



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# UNITED STATES PATENT OFFICE.

THOMAS E. McNAMARA, OF SPRINGFIELD, MASSACHUSETTS.

## MOLDING-MACHINE.

No. 928,786.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed January 5, 1909. Serial No. 470,888.

*To all whom it may concern:*

Be it known that I, THOMAS E. McNAMARA, a citizen of the United States of America, and resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Molding-Machines, of which the following is a full, clear, and exact description.

This invention relates to molding-machines, and more especially to that class thereof which are employed in metal foundries; and it has for one of its objects the provision of a machine in which the pattern plate may be positively manipulated so as to let the pattern project above the base-board of the mold flask for a certain pre-determined amount.

My invention has, furthermore, for its object the provision of means whereby the mold or flask constituting one-half of the two part flask may be accurately positioned so that when removed from the base-board, and combined with the other half or part of the flask, these two elements will properly meet to form the complete mold.

My invention has also for its object the improved construction of the molding-machine, as a whole, so as to render the same easy of manipulation and rapidity in working.

Further objects of the invention will hereinafter appear, and the means for their attainment be particularly pointed out in the claims.

The invention has been clearly illustrated in the accompanying drawings in which similar characters denote similar parts, and in which—

Figure 1 is a plan, or top view of a molding-machine embodying my invention. Fig. 2 is a vertical section thereof on line 2, 2 of Fig. 1. Fig. 3 is a horizontal section on line 3, 3 of Fig. 2. Fig. 4 is a vertical section taken on line indicated by 4, 4 on Fig. 1, and Fig. 5 represents a pair of flask sections put together to constitute the mold ready for pouring the metal.

Briefly stated, my improved machine comprises a base-board, on top of which a flask section is placed to be filled with molding

sand, as usual, and which is provided with suitably shaped apertures through which one-half of the pattern is caused to project into the interior of said section. After the sand has been rammed around the pattern, the pattern-plate whereby the pattern sections are carried, is withdrawn from the flask, and another flask section is then placed on top of the base-board, while the pattern-plate is again brought to its highest position, as before, and the second section is then filled with sand so that now the latter may be removed and placed in conjunction with the first section to constitute the complete mold of the device.

Referring to the drawings, the numeral 10 denotes a casing, on the top of which is placed a base-board 11 having a series of apertures 12 of such size as to closely fit the pattern P, but at the same time to permit the same to be easily withdrawn therefrom downwardly. In the present instance, the machine is illustrated for use in connection with faucets, and the patterns therefor consist of sections which are substantially the equivalent of one-half of the completed articles. In other words, inasmuch as the faucet body is symmetrical in shape only one-half of the pattern itself is used to form both parts of the casting. These half patterns are supported by pads 13 procured upon a pattern-plate 14 which is mounted for vertical movement relative to the base-board 11, and is for this purpose secured upon a platen 15, and may be removed therefrom together with the pads 13 and the pattern P for the purpose of substituting other patterns for those employed before.

Means are provided for imparting to the platen 15 a vertical reciprocatory movement, these means comprising, in the present instance, a series of guide rods 16 secured thereto and passing through lugs 17 secured to or forming a part of the casing 10. Held on the rods 16, is a yoke 18 which constitutes the member directly acted upon by the elevating mechanism to be hereinafter referred to, and the position of which may be closely adjusted relative to such mechanism, as for instance, by check-nuts 19, 20 disposed above and below said yoke respectively. The ele-



vating mechanism consists in the preferred form thereof shown of a pair of cams formed in the shape of eccentrics 21, 21' mounted upon a shaft 22 and rotatable therewith, said shaft being journaled in bearings provided therefor in the casing 10 (see Fig. 4) and having a handle lever 23 for its manipulation, which may come to rest against a stop-pin 31. The yoke 18 also carries a series of studs 24, 25 in pairs, the studs 24 supporting a tie 26 disposed beneath the eccentrics 21 while a tie 27, carried by the studs 25, is engaged by the cam 21', so that the rotation of the shaft 22 will result in acting directly upon the yoke 18 to raise the same, while during the reverse motion of said shaft, said yoke will be drawn downward by virtue of the ties 26, 27.

Particular attention is called at this time to the adjusting feature, as described in connection with the check-nuts 19 and 20 in connection with the yoke 18 inasmuch as by these means I am enabled to gage the extent of rising movement of the platen 15 and consequently the pattern-plate 14, pads 13 and pattern P, to the required degree. Furthermore, practice has demonstrated that it is very desirable that the platen 15 with the devices carried thereby shall be firmly held in its upward position, so that the ramming action on the sand in the flask will not cause any downward movement of the pattern. For this reason I have provided on the casing a pair of stop-screws 30 which are adapted to be engaged by the upper face of the yoke during its upward travel, and before the shaft 22 has been rotated sufficiently to bring the highest point of the eccentrics directly over the center of said shaft. Consequently, it will be seen, by referring to Fig. 2, that when the lever 23 will be depressed until the yoke-bar 18 strikes stop-screws 30 provided on the side of the casing 10, the eccentric 21 may move a trifle more without, however, raising the yoke 18 so that the arms 18' of said yoke will naturally be slightly sprung, it being understood, of course, that said arms 18' are sufficiently thin to have the required resiliency. It will also be understood that inasmuch as these stop-screws 30 are in screw threaded engagement with lugs 32 which are rigidly held on the casing 10, a very fine adjustment as to the final altitude of the patterns, or their projections beyond the upper face of the base-board 11 and into the flask F may be obtained. The casing 10 may also be provided with lugs 33 having suitable apertures for the reception of dowel-pins 34 so that the flask section F may be accurately positioned relatively to the patterns on the baseboard 11, so that when two of such flask sections have been completed or molded, both of them may be combined, as

illustrated in Fig. 5, to constitute the complete mold into which molten metal may be poured through the sprue opening 35 formed in the sand and connecting with the "gate" channel 36 left by the pattern.

I claim:

1. The combination, with a base-board, of a pattern-plate, a resilient bar carried by said plate, a cam in engagement with the central portion of said bar relatively to the base-board, a pair of stops adapted to engage the ends of said bar for limiting the upward movement of said plate. 70 75
2. The combination, with a casing, a base-board, and means for positioning the base-board on the casing, of a pattern-plate, a yoke carried thereby, an eccentric for reciprocating the yoke relatively to the base-board, means for guiding the yoke during its movement, and a stop on the casing for limiting the movement of said yoke in one direction. 80 85
3. The combination, with a casing, a base-board, a flask, and means for positioning said base-board and flask on the casing, of a platen, a pattern-plate carried by said platen, a yoke comprising a resilient bar and connected with said platen, means for guiding said yoke and platen on the casing, means for moving said yoke relatively to the base-board, and means for limiting the movement of the platen relatively to the base-board. 90 95
4. The combination, with a casing, a base-board, and means for positioning said base-board on the casing, of a pattern-plate, means for guiding said pattern-plate on the casing, and comprising a yoke having a resilient bar, means for moving said bar relatively to the base-board, and stops adapted to engage the ends of said bar for limiting the movement thereof. 100 105
5. The combination, with a casing, a base-board, and means for positioning the base-board on the casing, of a pattern-plate, guide rods carried by said pattern-plate and for guiding the same on the casing, a yoke carried by said guide rods, means for positioning said yoke thereon, a shaft journaled in the casing, a pair of cams on the shaft and in engagement with said yoke, and means for limiting the movement of the pattern-plate. 110 115
6. The combination, with a casing, and a base-board held on the casing, of a pattern-plate, means for guiding the pattern-plate on the casing, a yoke carried by the pattern-plate, means for raising said yoke, lugs on the casing, and stop-screws in the lugs to engage said yoke for limiting the upward movement thereof. 120
7. The combination, with a casing, a base-board held on the casing, and a pattern- 125



plate, of means for guiding the pattern-plate  
on the casing, a resilient yoke carried by the  
pattern-plate, means for raising said yoke,  
means for positioning the yoke relatively to  
5 the plate, lugs on the casing, and adjustable  
stop-screws in said lugs to vary the resiliency  
of said yoke.

Signed by me at Springfield, Mass., in  
presence of two subscribing witnesses.

THOMAS E. McNAMARA.

Witnesses:

HERBERT J. SHEEHAN,  
WM. S. BELLOWES.