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F. H. PIERPONT.

TYPE MOLD.

APPLICATION FILED SEPT. 26, 1902.

NO MODEL.

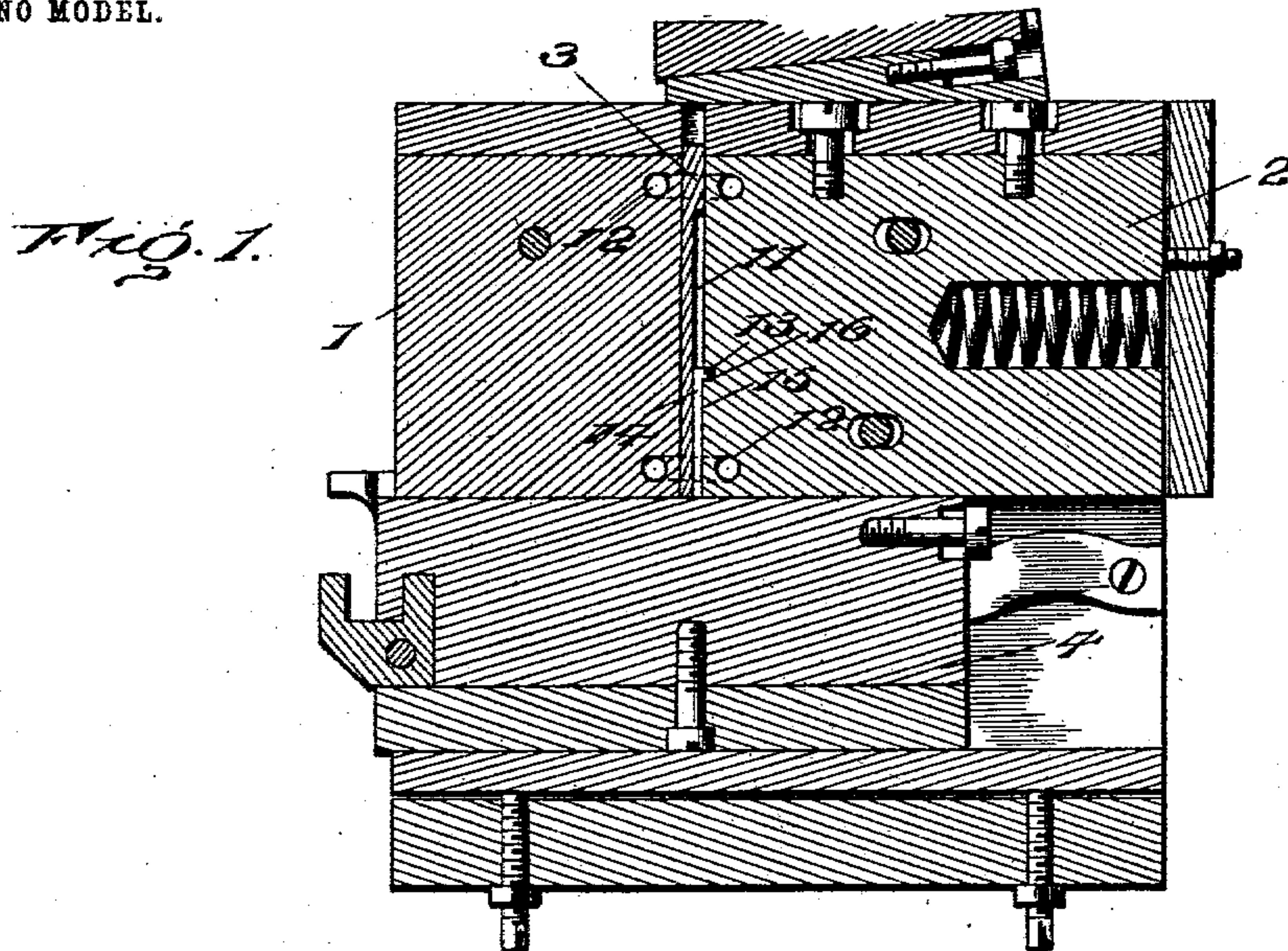


Fig. 2.

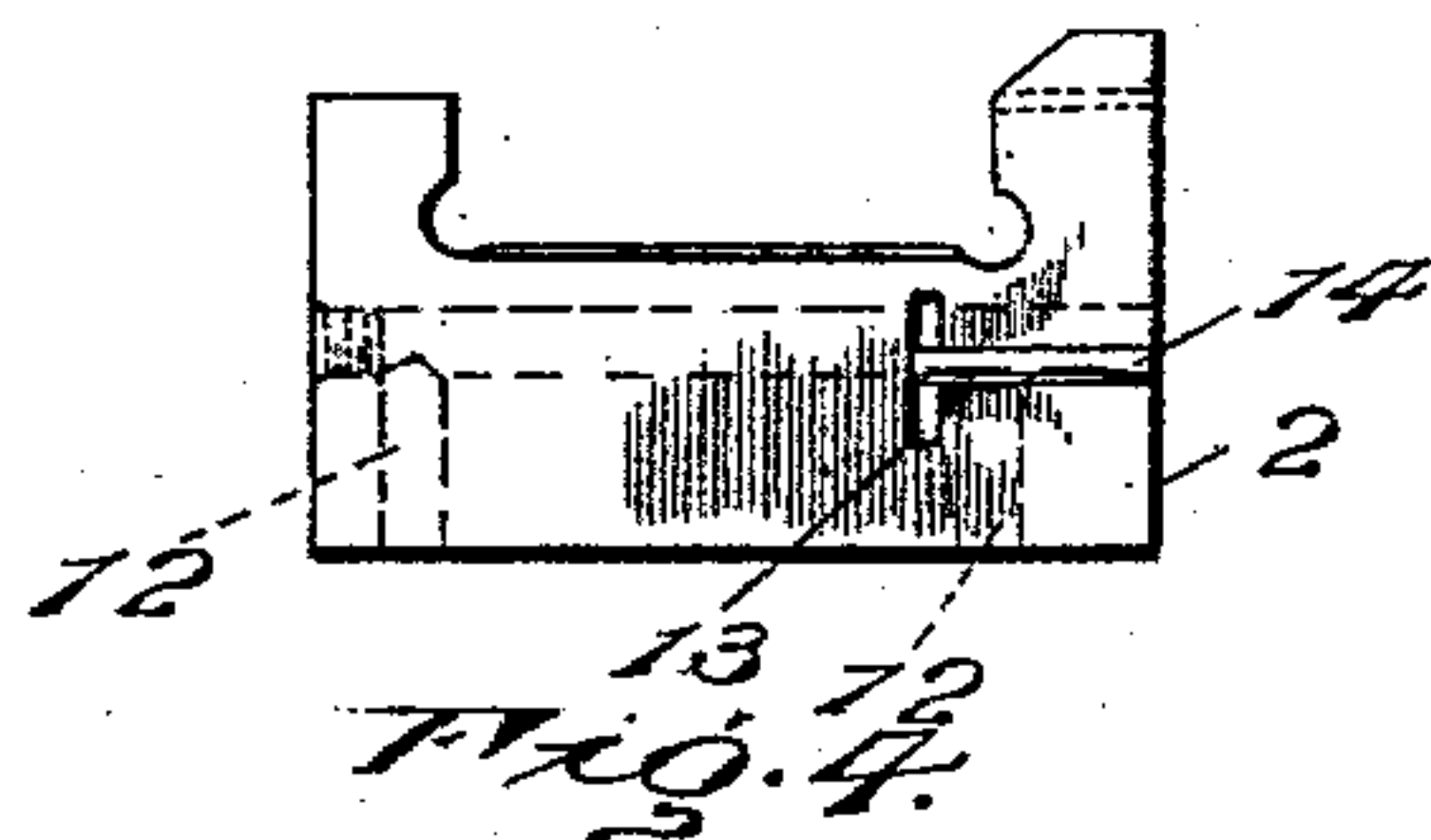


Fig. 3.

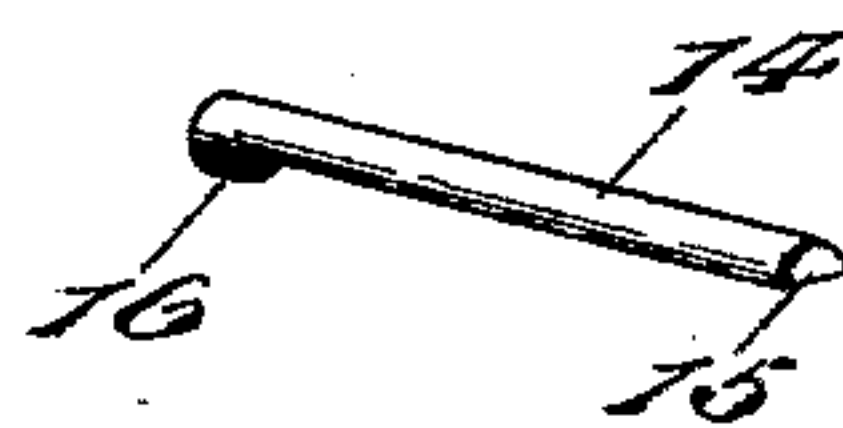


Fig. 6.

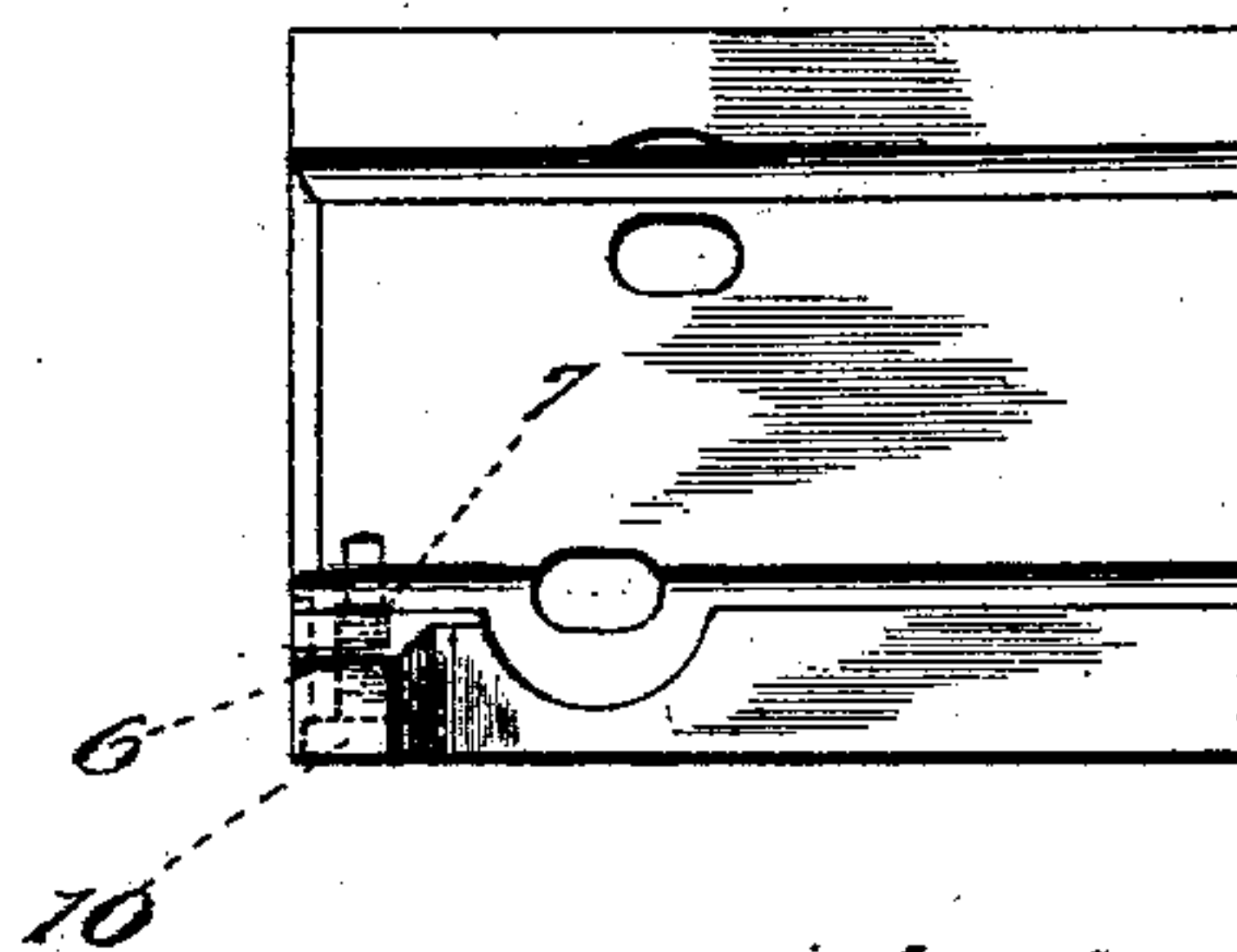


Fig. 5.

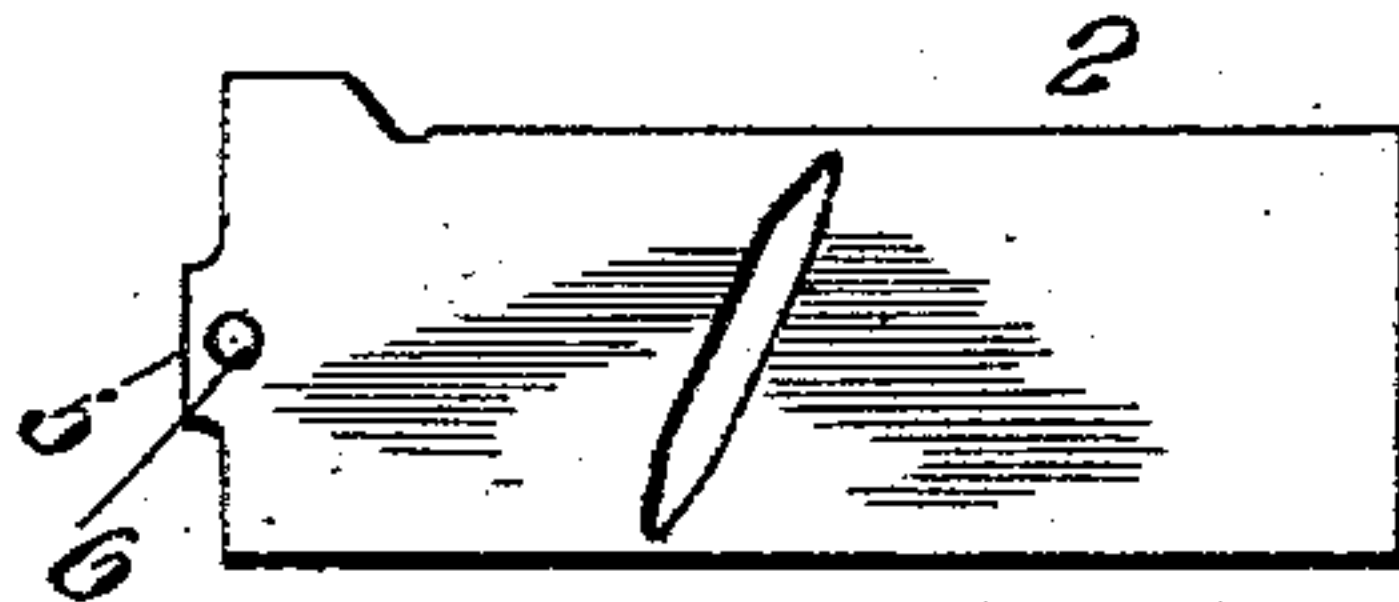
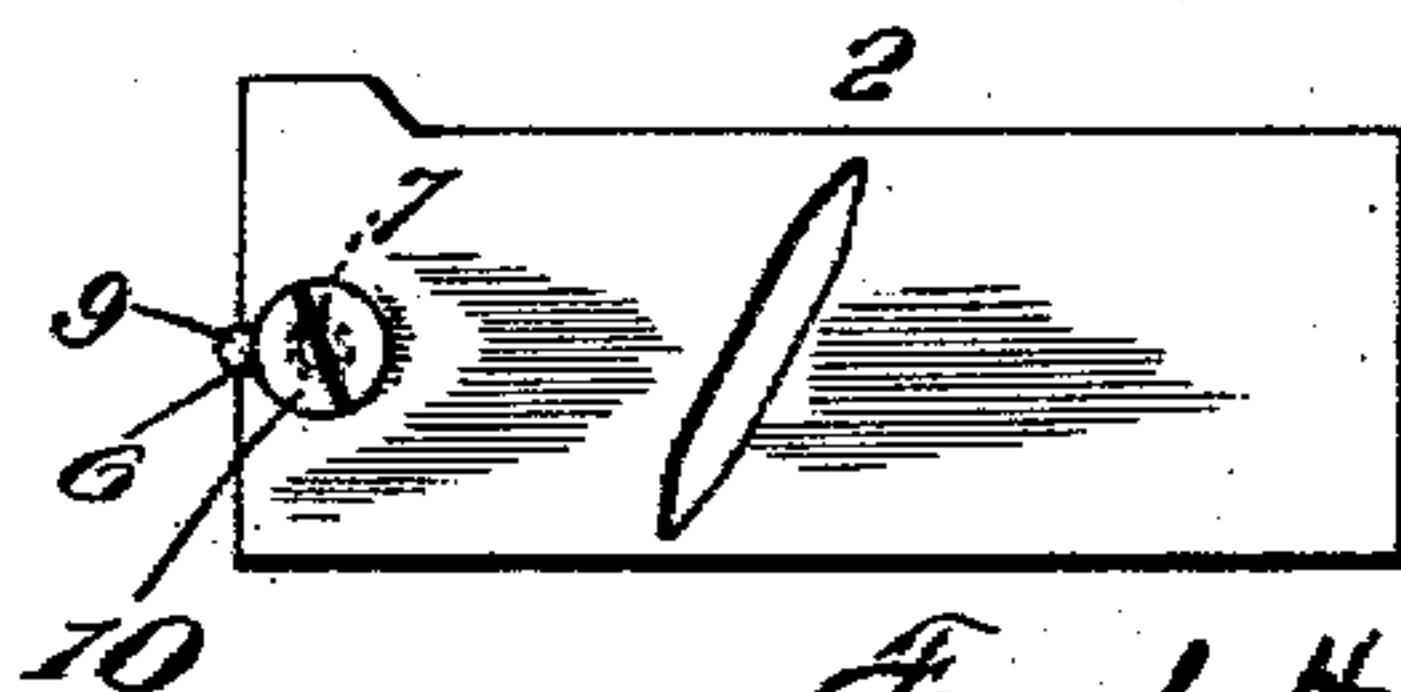


Fig. 7.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## TYPE-MOLD.

SPECIFICATION forming part of Letters Patent No. 720,736, dated February 17, 1903.

Application filed September 26, 1902. Serial No. 125,006. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK HINMAN PIERPONT, a citizen of the United States, residing at Horley, in the county of Surrey, England, have invented certain new and useful Improvements in Type-Molds; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures of reference marked thereon.

This invention relates to type-molds, more especially the class illustrated in Patent No. 625,998, wherein a movable mold-blade is interposed between two fixed walls or blocks forming the sides of the mold-cavity and co-operates with an abutment or cross-block to vary the dimensions of the mold-cavity in one direction, and thereby determine the thickness of the type setwise. The dimensions of the type in the transverse direction are determined by and conform to the thickness of the mold-blade. Hence variations in this direction are produced by the substitution of mold-blades of different widths. To produce the nick in the side of the type, one of the side blocks is furnished with a rib parallel with the direction of motion of the mold-blade, which latter is grooved to receive said rib.

As is well known, an extreme degree of accuracy is required in the formation and fitting of the parts which go to make up the mold in order to produce commercial type of standard form and dimensions and as free from fins as is possible, and in practice one of the most difficult and expensive elements of the mold is the nick-pin and its support. The two methods commonly practiced are, first, to form the nick-rib integral with the side block, and, second, to form it separately and insert it in a way or groove formed in the face of the side block. Of these the first is by far the more expensive, as the presence of the rib and the necessity for forming a true and smooth surface thereon, as well as upon the face of the block next the mold-blade, renders the operations of grinding, lapping, &c., difficult, tedious, and uncertain. Hence in practice the second method

is preferred as being the more economical in that the nick-pin and side block can be separately treated, the latter presenting a plain surface for grinding, lapping, &c.; but even so the cost of manufacture of the nick-pin side block is relatively high as compared with the opposite smooth-face side block, owing to the necessity of forming and properly locating the nick-pin recess and holding devices in said side block. The usual practice is to first form the block with an enlargement or rib on one side, then drill a hole longitudinally of the block on a center slightly to one side of the plane of the surface of the block when dressed to dimension. A second hole parallel to the first is also drilled and tapped in the end of the block for the reception of the holding-screw. After hardening the block the rib is ground off or otherwise removed and the face of the side block dressed down and lapped to dimension, said face intersecting the nick-pin drill-hole slightly to one side of its center to produce a segmental retaining-groove for the reception of the nick-pin. This nick-pin groove, together with the hole for the retaining-screw, being formed in the body of the block near the casting-surface thereof prevents locating the water-circulation channel close to the casting-surface, and in this way interferes with the proper cooling of the mold. It is obvious that to change the form, location, or number of nicks in the type not only must a different mold-blade be substituted, but also a new side block, the former because of its nick-pin groove and the latter because the nick-pin is specially fitted and its location fixed and unchangeable.

Now the object of the present invention is to retain the advantages of the separate nick-pin construction, especially such as pertain to the dressing and finishing of the casting-surface of the side block next the movable mold-blade, and at the same time provide a nick-pin attachment which will be not only cheaper in construction and fitting, but more flexible as to form, number, and position and will not interfere with the proper locating of the water-circulation channels in the side block, to which end the invention consists in



the employment, in connection with a flat-faced side block provided with a transverse groove located to one side or in rear of the casting-face, of a nick-pin formed with a flat surface to contact and form a tight joint with the face of the side block and provided with an offset or head at or near one end engaging the groove in the side block, said head and groove serving to prevent longitudinal displacement of the nick-pin, while the longitudinal groove in the mold-blade fitted to the outer surface of the nick-pin prevents lateral displacement and at the same time determines the location of the nick-pin, all as hereinafter more fully described.

In the accompanying drawings, Figure 1 is a sectional view of a mold with the improvement shown applied thereto. Fig. 2 is an elevation of the side block with nick-pin in position. Fig. 3 is the improved nick-pin shown in perspective. Figs. 4 and 5 are top and end views, respectively, of the side-block blank; and Figs. 6 and 7 are similar views of the completed side block as heretofore made.

Similar numerals in the several figures indicate the same parts.

For purposes of illustration the present invention is shown as applied to the type-mold of Patent No. 625,998, whose principal parts are the two side blocks 1 and 2, between whose parallel sides or faces is fitted the movable mold-blade 3. These form three walls of the mold-cavity, the fourth being furnished by the reciprocating front block or cross-blade 4. The nick-pin is usually applied to the side block 2, and the mode of attachment heretofore employed is illustrated in Figs. 4 to 7, inclusive. A blank, Figs. 4 and 5, is formed with a rib or projection 5, extending longitudinally of one side or face. This is to afford material in which to form a drill-hole 6 parallel with the face of the side block when dressed to final dimensions. A second drill-hole 7 is formed beside 6 to receive the holding-screw 8, Figs. 6 and 7. After the block has been hardened the rib 5 is milled or otherwise dressed down and the side face ground and lapped on a plane intersecting hole 5 on one side its center, as seen in Fig. 7. A cylindrical nick-pin 9 of the diameter of drill-hole 6 is inserted therein and held to place by a screw 10, threaded into hole 6, with its head engaging a shoulder on the nick-pin, said shoulder being formed by cutting away one side of the nick-pin, as seen in Figs. 6 and 7. The mold-blade is furnished with a longitudinal groove 11 on one side, snugly fitting the exposed section of the nick-pin to form a close joint and prevent escape of metal. As will be obvious, this method requires great skill and much time to form and fit the several parts, so they shall maintain the proper relation and present close joints. As the seat for the nick-pin must be parallel with the mold-blade and extend inward beyond the face of the block in contact with the mold-blade, it is essential that a sufficient

quantity of surplus metal be provided to receive the drill; hence the presence of rib 5. Otherwise the whole face of the block would have to be dressed down to a plane intersecting the drill-hole 6. No flexibility as to number, form, or position of the nick-pin is permitted. It must remain as originally designed. Moreover, the space occupied by the nick-pin and screw require that the circulation opening or passage 12 be located remote from the casting-surface.

According to the improvement illustrated in Figs. 1 to 3, inclusive, instead of forming a seat for the nick-pin extending across the casting-surface, which latter is located at the end next the cross-blade 4, the face of block 2 is made flat, similar to that of block 1, a form most readily produced by milling or grinding and lapping, and beyond the casting-surface in rear of the face of mold-blade is formed a parallel-sided groove 13. The nick-pin 14, of semicircular or other section, is provided with a flat face 15, which rests against and forms a tight joint with the flat face of the side block 2, while a lateral projection or head 16, having parallel shoulders at right angles to the body of the pin, is seated between the opposite walls of groove 13. The head 16 fits snugly in groove 13, so as to prevent longitudinal displacement of the nick-pin and sustain it parallel with the mold-blade and at the same time permit of ready removal when the latter is withdrawn, and the longitudinal groove in the side of the mold-blade serves to retain the nick-pin in position and prevent lateral displacement when in use. As thus constructed and arranged not only can the form of the nick-pin readily and at comparatively slight cost be changed, but its position can be varied, and, if desired, two or more nick-pins can be employed by introducing a properly-grooved mold-blade and without any change in the form or arrangement of the side block 2, which is a very important advantage on the score of economy, as heretofore to effect such changes not only the mold-blade, but the side block 2 as well, had to be replaced. Another important advantage secured is the better cooling of the mold, for in the absence of the retaining-groove 6 and screw 10 the water-channel 12 can be brought much nearer the casting-face of block 2, as indicated in Fig. 2.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a type-mold, the combination with the flat-faced side block of a nick-pin provided with a flat face, in contact with the face of the side block and a head engaging a recess in said side block to prevent longitudinal displacement and permit lateral adjustment; substantially as described.

2. In a type-mold the combination with the side blocks grooved mold-blade and cross-blade, of a nick-pin held in contact with the flat face of the side block by the mold-blade



and provided with a lateral projection engaging a recessed seat to prevent longitudinal displacement; substantially as described.

5 3. In a type-mold the combination with the side block provided with a separable nick-pin sustained in position against the flat face of said side block and a water-passage located in close proximity to the casting-face of said side block, substantially as described.

10 4. As a new article of manufacture, a nick-pin for type-molds formed with a flat seating face or surface on one side and an engaging head, substantially as described.

5. In a type-mold the combination with the fixed side blocks and interposed reciprocating mold-blade, of a nick-pin resting loosely against the flat face of one side block and held to position thereon by the mold-blade and a projection on the nick-pin engaging a recess in the side block in rear of its casting- 20 surface; substantially as described.

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