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J. M. DOVE.

MATRIX CENTERING MECHANISM FOR TYPE MACHINES.

APPLICATION FILED JUNE 24, 1902.

NO MODEL.

Fig. 1.

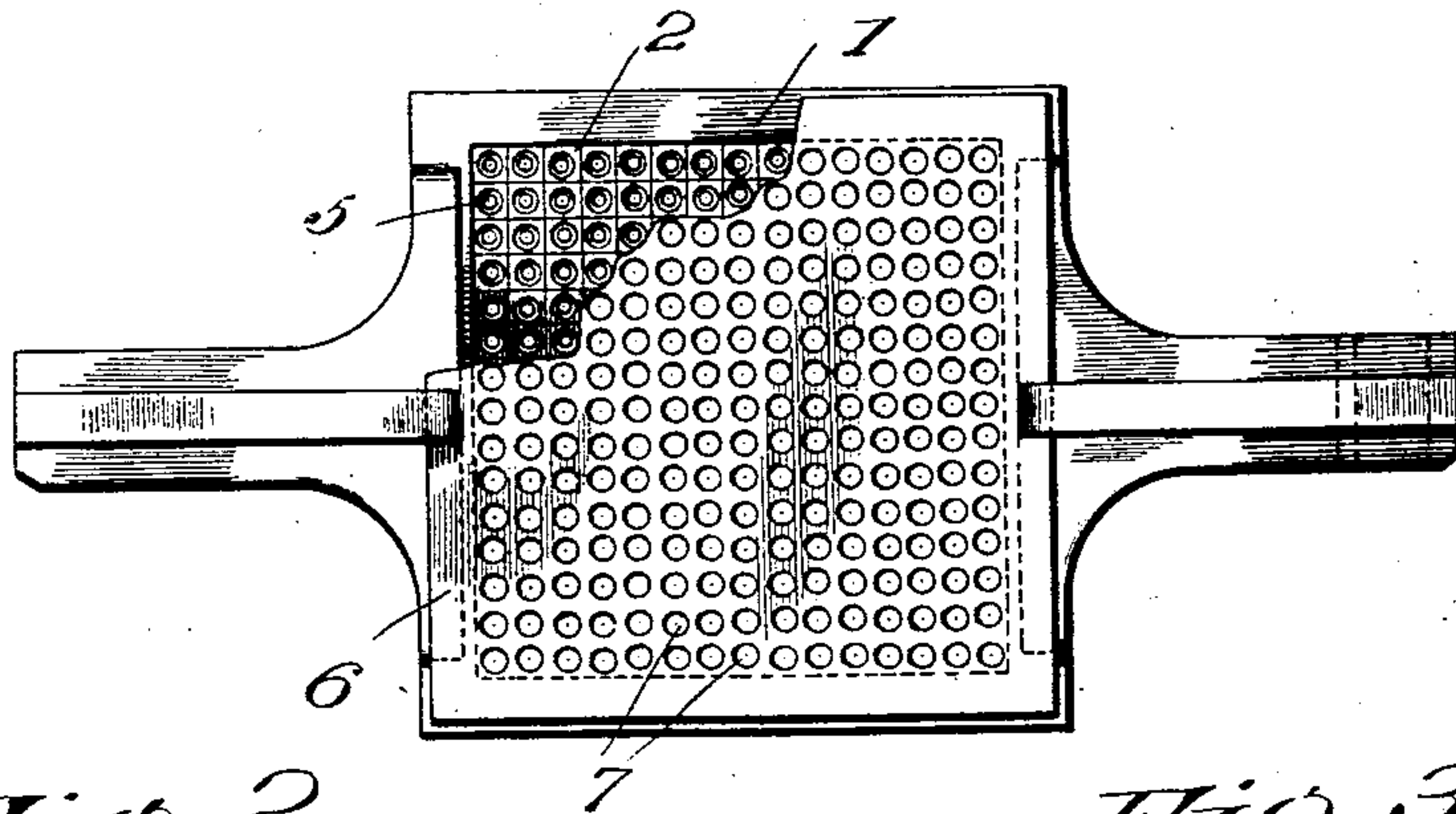


Fig. 2.

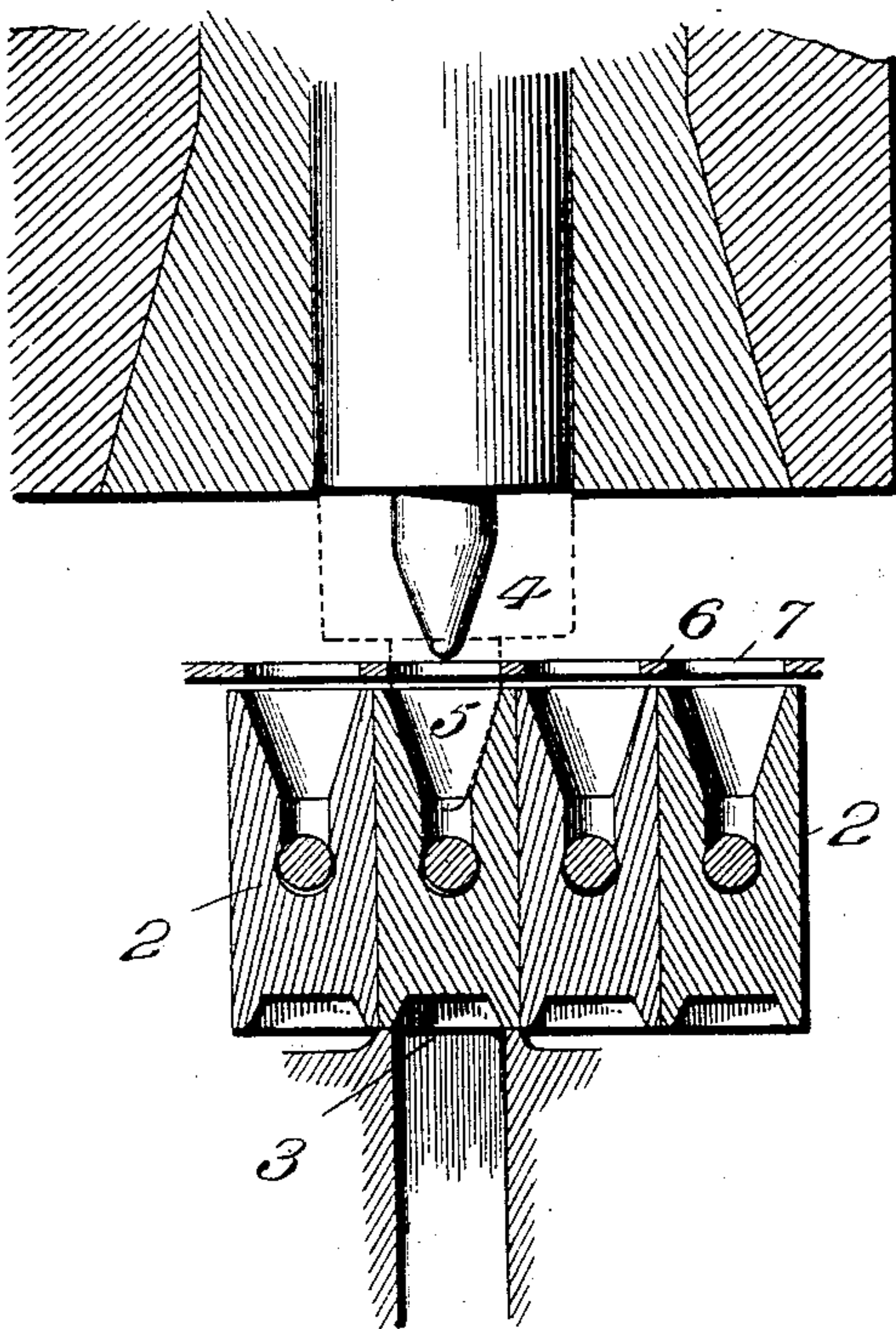
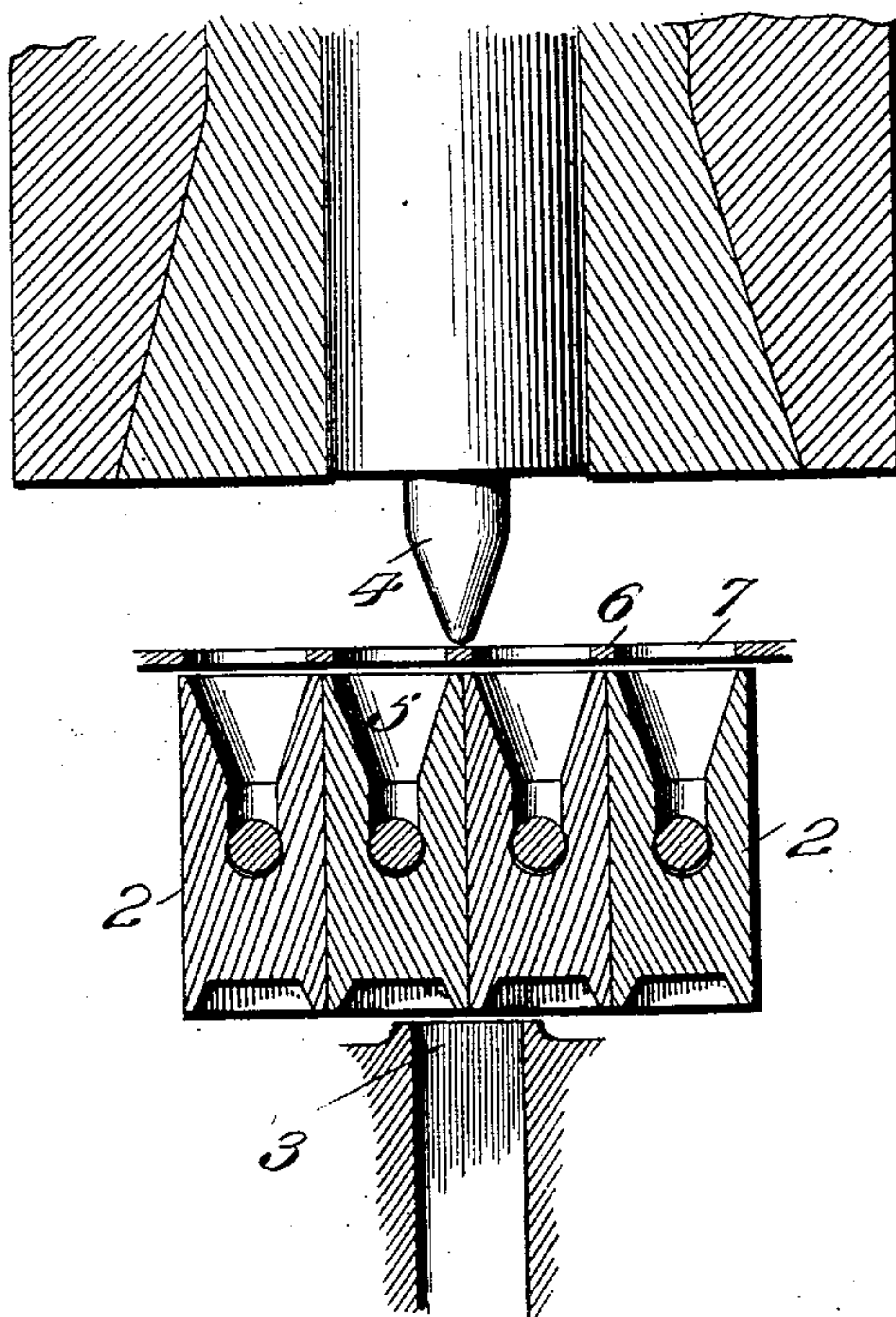


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MATRIX-CENTERING MECHANISM FOR TYPE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 745,800, dated December 1, 1903.

Application filed June 24, 1902. Serial No. 113,027. (No model.)

To all whom it may concern:

Be it known that I, JOHN MAURY DOVE, of Washington, District of Columbia, have invented certain new and useful Improvements in Matrix-Centering Mechanism for Type-Machines; and I do 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 that class of automatic type-casting machines illustrated in Patents Nos. 625,998 and 633,088, in which a die-case carrying a series of independently-movable matrices, each furnished with a centering-cavity, is shifted intermediate a centering-plunger and mold to present successive matrices opposite the mold and properly locate and hold them upon the mold while casts are being made, and has for its object to facilitate the final centering of the matrices and to prevent injury thereto both during the final centering and in the event of inaccurate preliminary centering incident to defective adjustments.

To this end the invention consists in the use of a centering guard-plate mounted upon the shifting die-case and provided with a perforation opposite each matrix for the passage of the centering-plunger, whereby the final centering of the die-case is effected by the plunger in advance of its contact with the selected matrix and the final centering of the latter, and in the event the preliminary centering is incorrectly performed, owing to defective adjustment, the impact of the centering-plunger will be received upon said centering-plate instead of upon the matrices, and the mutilation of the latter will thereby be prevented, all as hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, illustrating the preferred embodiment of said invention, Figure 1 is a top plan view of the die-case, detached, with the centering-plate applied thereto. Fig. 2 is a vertical sectional view through the die-case and centering-plate, together with the operating end of the center-

ing-plunger and mold. Fig. 3 is a similar view with the die-case out of proper preliminary centering position and the centering guard-plate protecting the matrices.

Similar numerals in the several figures indicate the same parts.

The invention is illustrated in connection with the die-case and centering mechanism of Patent No. 625,998. It is sufficient for present purposes to remark that the die-case 1, carrying the separate and independently-movable matrices 2, is so connected to appropriate actuating devices as to be shifted laterally to present any one of its matrices opposite the mold 3 and centering-plunger 4, the latter provided with a conical tip adapted to enter a corresponding recess 5 in the upper end of each matrix and press and hold the latter in position upon the mold. The die-case-shifting mechanism effects a preliminary centering of the selected matrix by measured movements of the die-case in transverse planes. The final adjustment of the matrix is effected by the centering-plunger. The preliminary centering affects directly the die-case and is subject to slight variations, and the final centering affects directly the selected and preliminarily-centered matrix to cover its individual range of motion in the die-case and may include in addition a slight movement of the die-case.

It not infrequently happens, especially when starting up a machine, that through improper adjustment of the connections the preliminary centering of the die-case is not entirely accurate, although well within the range of the taper on the centering-plunger, in which event the latter in its descent will engage the side wall of the matrix and force the latter, as well as the die-case, into position. In this way the matrices are subjected to an excessive degree of wear, as through them the shifting of the relatively heavy die-case is effected, resulting in rapid deterioration of this valuable and delicate element of the machine. Moreover, it sometimes happens that through accident or want of proper adjustment the die-case during the preliminary centering operation will be arrested in a posi-

tion so as to bring the axis of the conical centering-plunger wholly or partially to one side of the margin of the centering-cavity, so that upon the descent of the plunger its point instead of entering the centering-cavity will engage and be driven into the surface of the matrix, resulting in serious, if not irreparable, injury to the latter.

To protect the matrices from wear and mutilation, the die-case 1 is provided with a guard-plate 6, interposed between the matrices and the centering-plunger. This guard-plate, preferably of steel and detachably applied to the die-case frame, is provided with a series of perforations 7, spaced to correspond with the correct positions of the matrices and adapted to fit the stem of the plunger, so that before engaging any matrix the plunger must first pass through the corresponding perforation in the guard-plate. By this means two important practical results are obtained. In the first place the final centering of the die-case as a whole is effected by the engagement of the tapered plunger with the guard-plate and the friction incident thereto is transferred from the centering-cavity in the comparatively soft matrix to the walls of the orifice in the relatively hard guard-plate, so that the final centering operation is limited to the shifting of the matrix through the very slight degree of motion permitted the individual matrices in the die-case, and in the second place direct contact of the centering-plunger with the rear end or face of the matrix and the mutilation of the latter incident thereto is rendered impossible, because if the preliminary centering of the die-case is such as to permit the entrance of the centering-plunger into one of the perforations 7 the matrix must stand or be brought into such relation to the point of the plunger that the latter will surely enter the centering-cavity, and if through maladjustment the die-case is not so presented an imperforate section of the guard-plate will be interposed between the plunger and matrix, as seen in Fig. 3, in position to

receive the impact of the plunger, and thus prevent mutilation of the matrix.

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

1. In a type-casting or analogous machine, the combination with a reciprocating tapering centering-plunger and a shifting die-case provided with independently-movable matrices each furnished with a centering-cavity, of a perforated guard-plate movable with the die-case and interposed between the centering-plunger and the matrices; substantially as and for the purpose set forth.

2. In a type-casting machine such as described the combination of the following elements, to wit; a mold; a centering-plunger in alinement with the mold; a die-case reciprocating in a plane substantially at right angles to the axis of the centering-plunger and intermediate the latter and the mold; a series of independently-movable matrices supported in the die-case and each furnished with centering means cooperating with the centering-plunger; and a guard-plate carried by the die-case and provided with centering-orifices for the passage of the centering-plunger in advance of its engagement with the centering means of the matrices.

3. In a type-casting machine such as described the combination of the following elements, to wit; a mold; a die-case provided with a series of independently-movable matrices and shiftable across the mold to bring any matrix into position; a centering-plunger for engaging and centering the selected matrix; and a perforated guard-plate moving with the die-case and operating to prevent engagement of the centering-plunger with the matrices when said parts are out of alinement.

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