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PATENTED DEC. 6, 1904.

T. LUND.

MOLD OR DIE FOR HEEL COMPRESSING MACHINES.

APPLICATION FILED JULY 13, 1904.

NO MODEL.

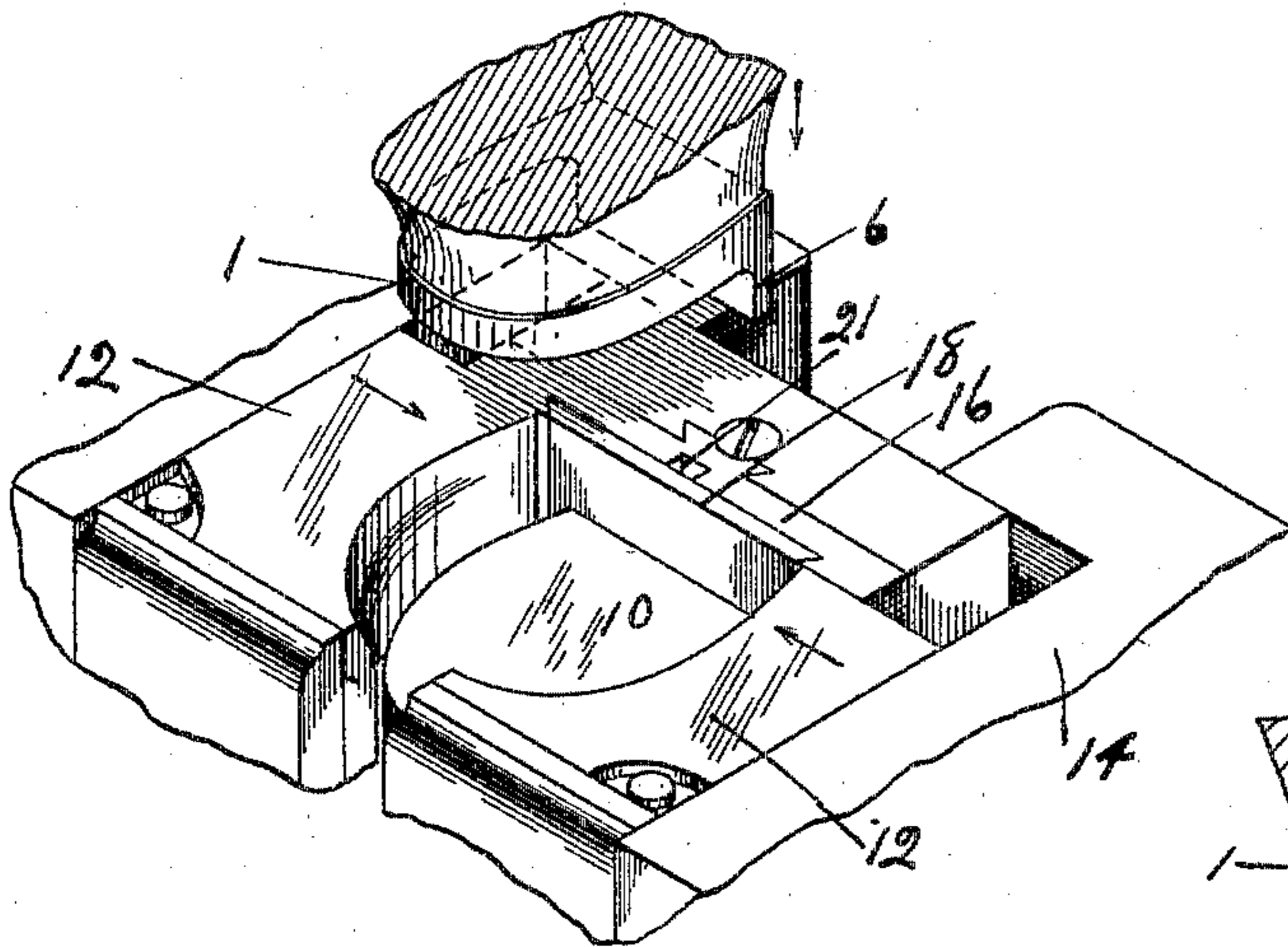


Fig. 1.

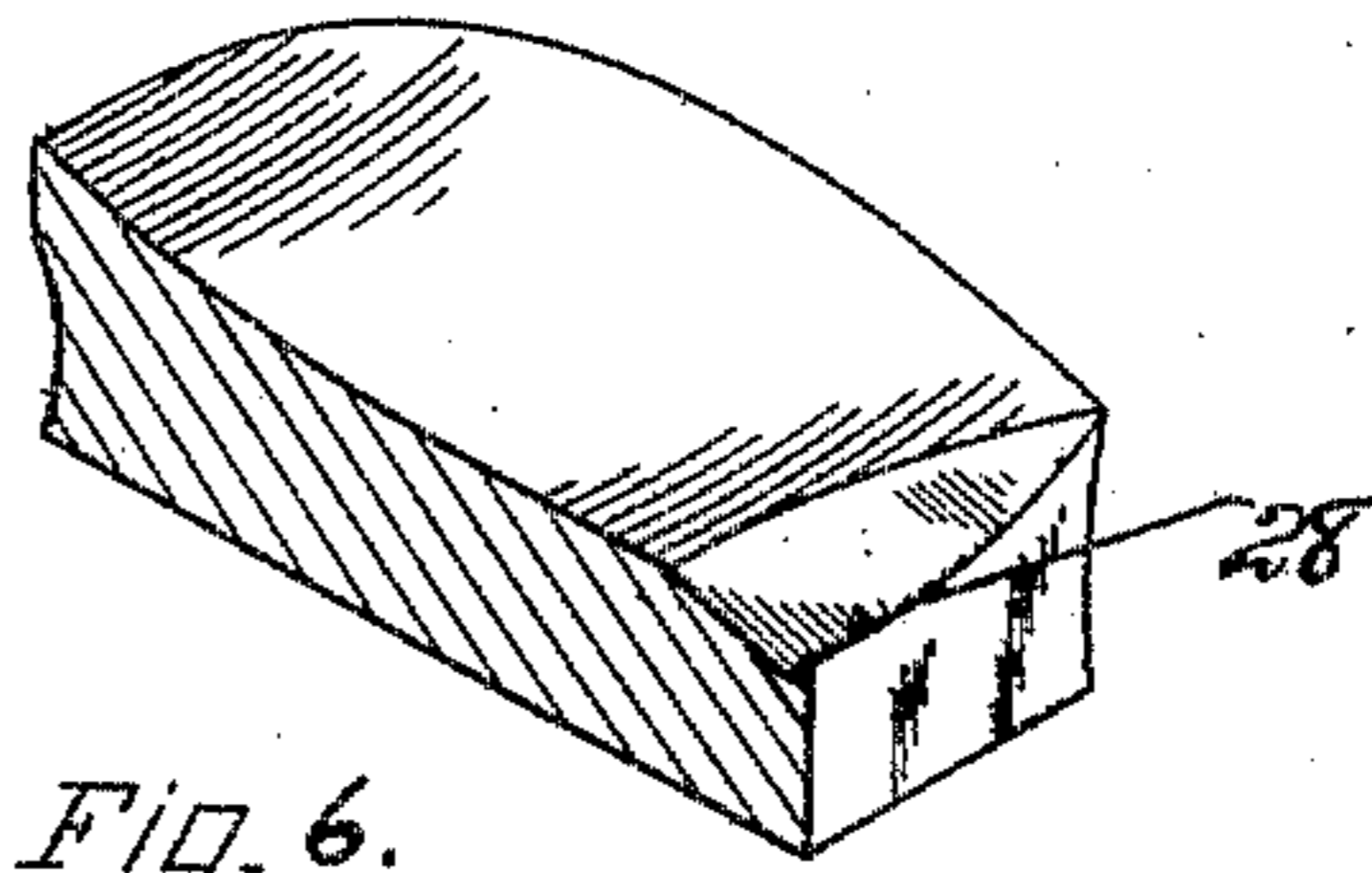


Fig. 6.

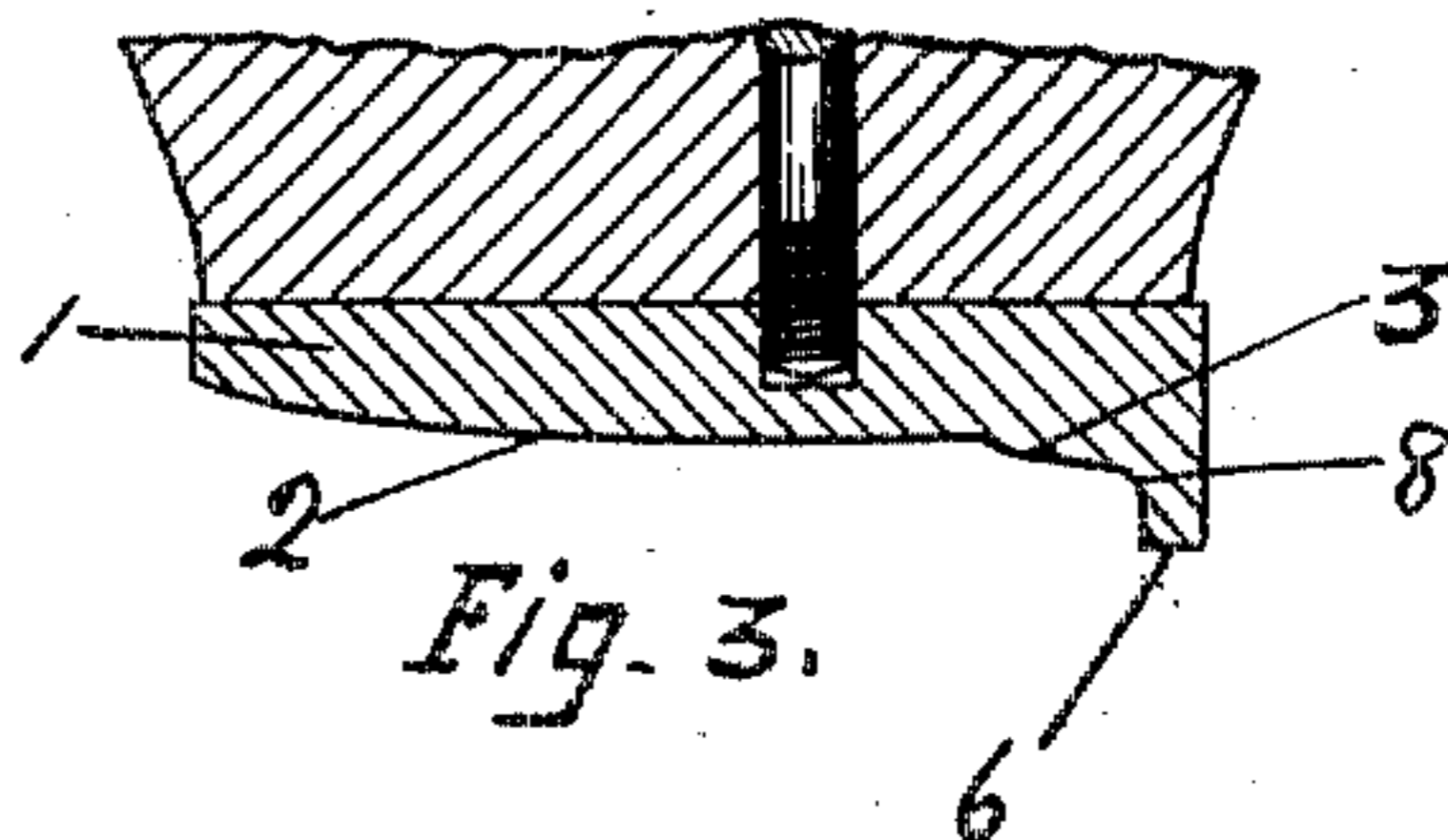


Fig. 3.

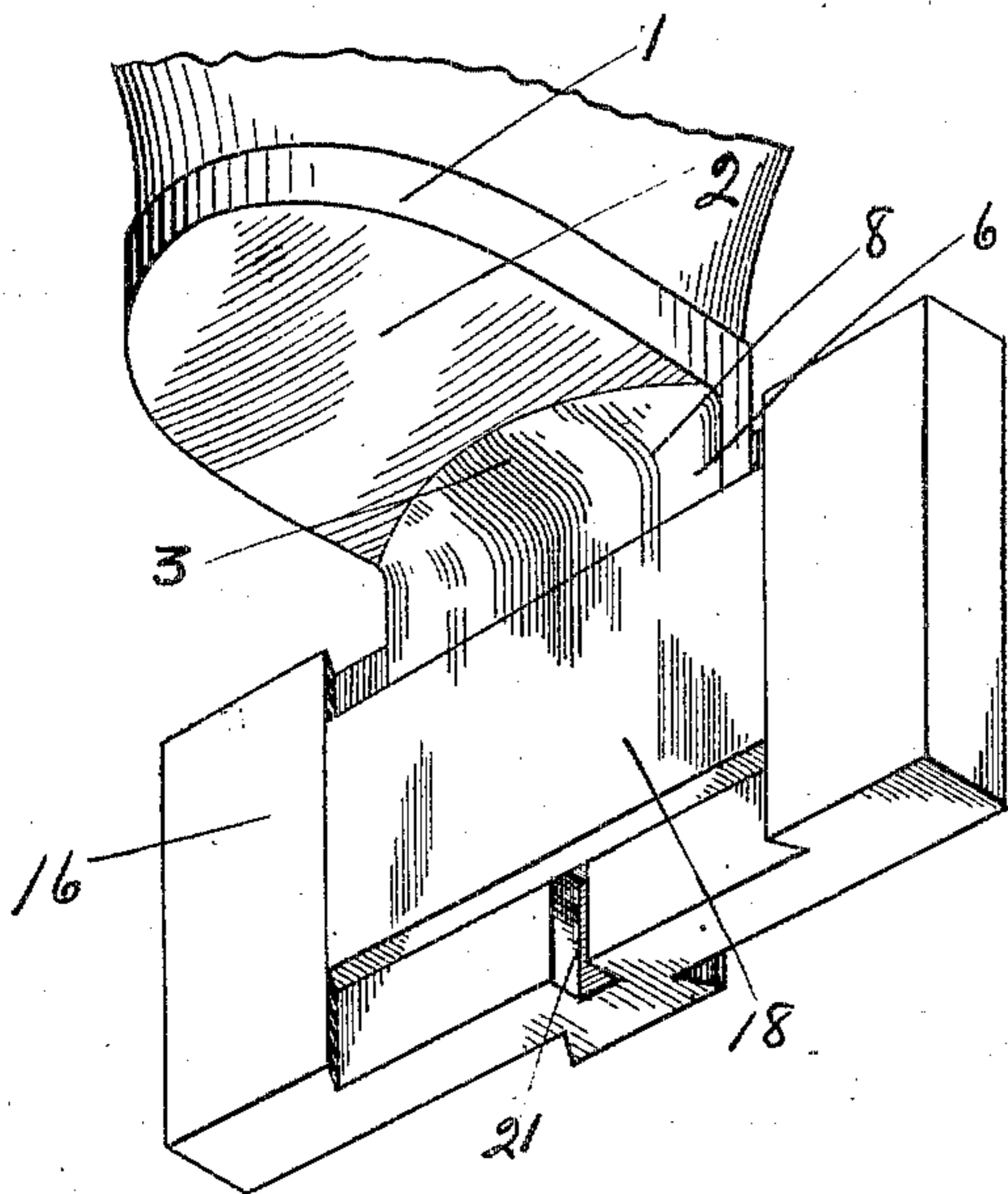


Fig. 2.

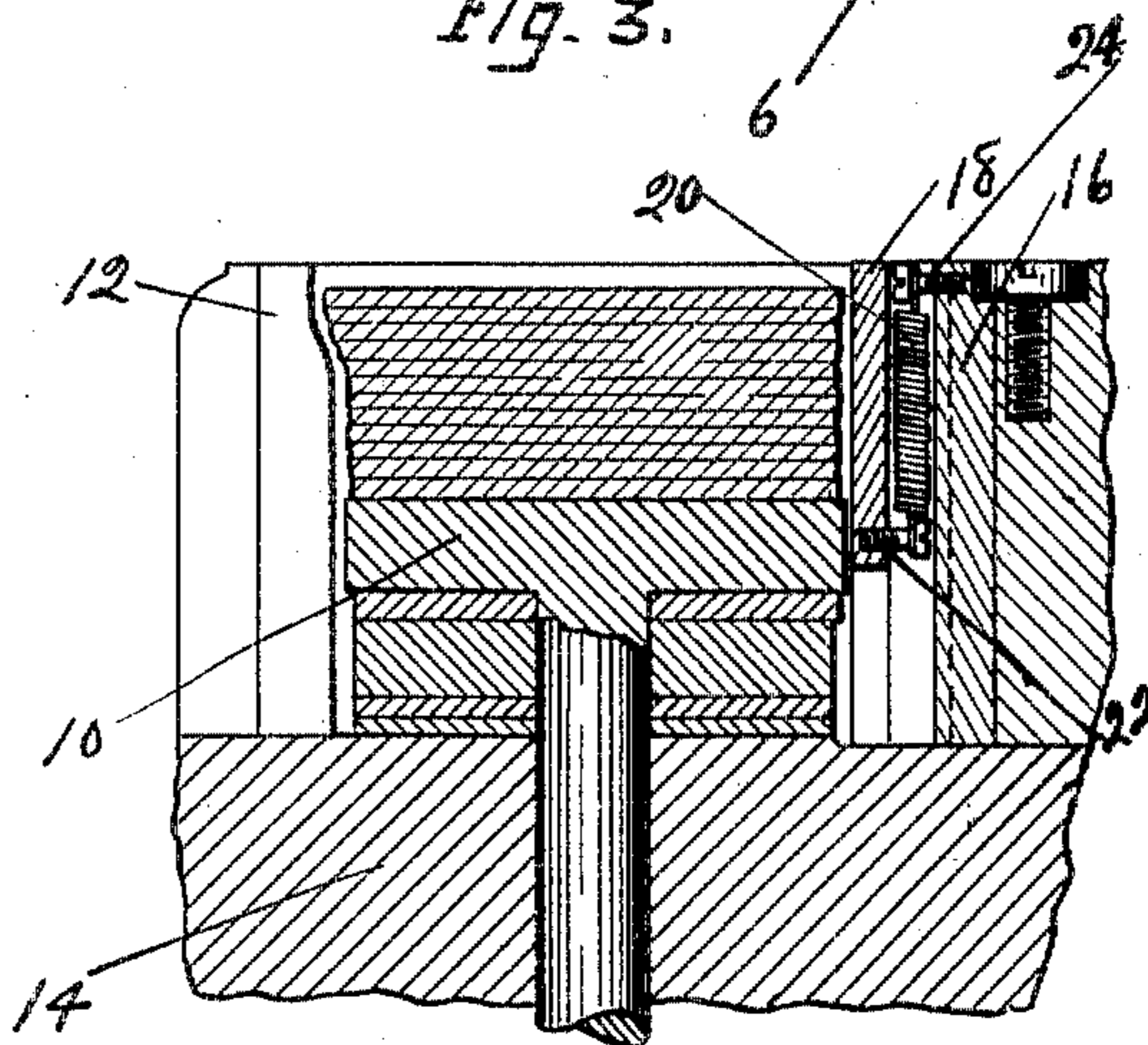


Fig. 4.

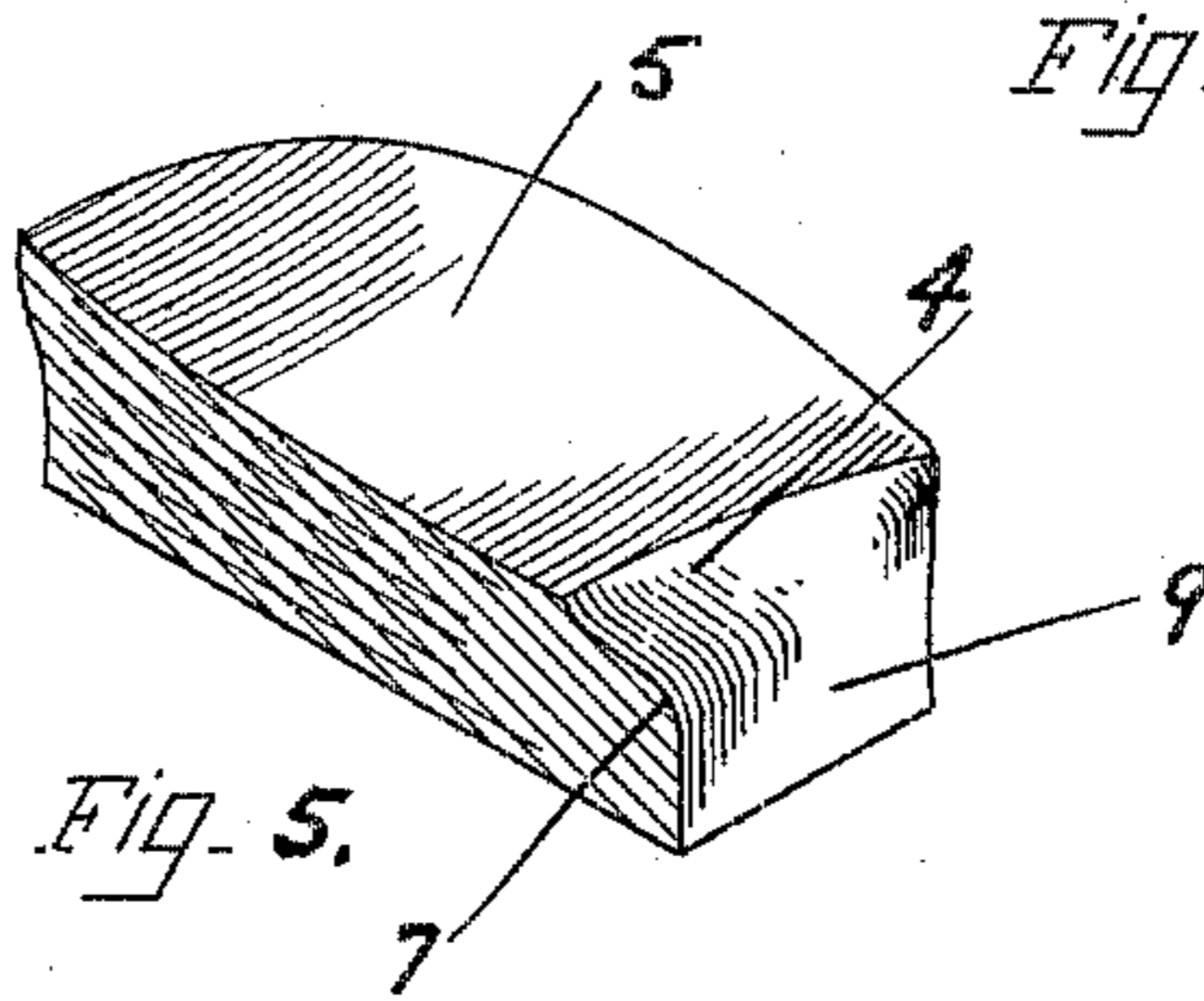


Fig. 5.

WITNESSES.

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MOLD OR DIE FOR HEEL-COMPRESSING MACHINES.

SPECIFICATION forming part of Letters Patent No. 776,860, dated December 6, 1904.

Application filed July 13, 1904. Serial No. 216,368. (No model.)

To all whom it may concern:

Be it known that I, THOMAS LUND, a subject of the King of Great Britain, residing at Winchester, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Molds or Dies for Heel-Compressing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to compressing-dies; and the object of the invention is to provide improved dies for compressing heels, and particularly to provide improved means for forming a heel having a rounded corner or edge at the junction of its seat and breast.

In the heel-compressing dies in general use the follower or die which acts upon the seat-face of the heel is provided with a lip for forming a bevel in the breast end of the seat of the heel. If the heel were not formed with this bevel, the portion of the heel that is to be removed by the breasting operation would cut into the shank portion of the sole in the attaching operation and make an indentation which would detract greatly from the appearance of the shoe when finished. The bevel has been formed in the seat of the heel in an attempt to obviate such defacement of the sole; but this expedient has not been satisfactory, as will now be explained.

In heel-compressing machines heretofore used the presser-plate, which acts upon the tread-face, the breastplate, which acts upon the breast, and the radially-moving dies, which act upon the sides of the heel, are usually mounted on a cross-head, said cross-head and the follower or heel-seat die being movable relatively to each other in the operation of the dies for compressing a heel, and as the follower is of the same size and outline as the seat of the heel after it is compressed the end face of the lip on the follower and the acting face of the breastplate pass each other in a substantially shearing action when the dies are brought together. It is practically im-

possible in machines of this character to keep the acting face of the breastplate in exact alinement with the end face of the lip on the follower, and a space is accordingly formed between these two faces into which some of the leather in the heel flows, thereby forming a roughened projection on the upper edge of the breast of the heel at its junction with the beveled portion of the seat. A heel having a roughened projection of this character is almost as objectionable as one in which the breast end of the seat has not been beveled, because when the heel is being attached the roughened projection will cut into the shank portion of the sole and make an indentation which will show plainly after the heel has been breasted. To prevent such a roughened projection from forming on the upper edge of the breast of a heel during the compressing operation, I have devised compressing-dies comprising a follower provided with means for rounding the upper edge of the breast of a heel, and cooperating with said follower is a movable breastplate for molding the breast-face of the heel. Preferably the follower is provided with connected engaging faces for acting upon the seat, a portion of the breast, and the upper edge of the breast of the heel, and the movable breastplate acts upon the remaining portion of the breast and is yieldingly sustained in position with relation to the dies which act upon the sides of the heel.

Referring to the drawings, Figure 1 is a perspective view of compressing-dies which represent the preferred form of my invention. Fig. 2 is a detail perspective view showing the relative position of the follower and breastplate when the dies are closed. Fig. 3 is a sectional view of the follower. Fig. 4 is a sectional view of the presser-plate, radially-moving dies, and breastplate and shows a heel-blank in position to be operated upon by the follower. Fig. 5 is a view, partly in section, of a portion of a heel that was formed in my improved dies; and Fig. 6 is a view, partly in section, of a portion of a heel that was formed

in dies such as have heretofore been in common use.

In the preferred form of my invention, as herein shown and described, the follower 1 is provided with an engaging face 2 for molding the seat-face 5 of a heel and is also provided with a lip 3 for forming a bevel 4 in the breast end of said seat, as shown in Fig. 5. Projecting downwardly from the breast end of the follower is an extended part 6, having an engaging face for acting upon a portion of the breast 9 of the heel, and said engaging face is connected with the engaging face of the lip 3 by a curved surface 8, which rounds the edge or corner 7, formed by the junction of the breast with the beveled portion of the seat of the heel.

The presser-plate 10, which acts upon the tread-face, and the radially-moving dies 12, which act upon the sides of the heel, are carried by a cross-head 14, on which a breastplate block 16 is mounted, said block having a guideway in which the breastplate 18 is movably mounted. The breastplate is mounted in alinement with the extended part of the follower and is normally held in the position shown in Figs. 1 and 4, with its upper end flush with the upper end of the breastplate-block, by means of a spring 20, said spring being connected at one end by a screw 22 to the breastplate and at the other end by a screw 24 to the breastplate-block.

During the first part of the compressing operation the entire breast-face of the heel is engaged by the breastplate 18, which is then in its elevated position, as shown in Fig. 4; but before the compressing operation is completed said breastplate will be engaged by the extended part 6 of the follower, and thereafter said breastplate will yield relatively to the dies which act upon the sides of the heel, so that the engaging face of said extended part can act upon the upper portion of the breast of the heel. The lip 3 on the follower forms a bevel in the breast end of the seat of the heel, and as the engaging face of said lip curves downwardly and merges into the engaging face of the extended part 6 the surface of the beveled and rounded portion in the end of the seat of the heel will merge into the breast-face of the heel.

A roughened projection, such as shown at 28 in Fig. 6, could not possibly form on a heel compressed in dies of the character herein shown, because the follower is provided with connected engaging faces for acting upon the seat, a portion of the breast of the heel, and the corner or edge formed by the junction of these two faces. Such dies, moreover, can be used for a longer period than dies in which there is a shearing action between the breastplate and the end face of the lip on the follower, as such an action causes these faces to wear rapidly.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In dies for compressing heels, the combination, with means for rounding the upper edge of the breast of a heel, and for engaging a portion of the breast of the heel, of means for acting upon the sides of the heel, and a breastplate independent of said first-named means and movable transversely of the means for acting upon the sides of the heel.

2. In dies for compressing heels, the combination, with a follower comprising means for beveling the breast end of the seat of a heel and means for rounding the upper edge of the breast of the heel, of dies for acting upon the sides of the heel, and a breastplate movable independently of the follower and also movable transversely of the dies for acting upon the sides of the heel.

3. In dies for compressing heels, the combination, with a follower comprising means for molding the seat and means for rounding the upper edge of the breast of a heel, of dies for acting upon the sides of the heel, a breastplate movable relatively to said dies, and means for yieldingly sustaining said breastplate in normal position.

4. A follower for heel-compressing dies, having engaging faces for acting upon the seat and a portion only of the breast of a heel, comprising a surface for forming a bevel in the breast end of the seat, and a surface for rounding the corner at the junction of said bevel with the breast of the heel.

5. In dies for compressing heels, the combination with a follower having engaging faces for acting upon the seat and a portion of the breast of a heel, of means for acting upon the sides of the heel, and a breastplate movable independently of the follower and also movable transversely of said means.

6. In dies for compressing heels, the combination with a follower provided with a lip for forming a bevel in the breast end of the seat of a heel, and having an engaging face for molding a portion of the breast of the heel, of movable dies for molding the sides of the heel, and a breastplate movable transversely of the plane of movement of said dies.

7. In dies for compressing heels, the combination with a follower provided with an engaging face for molding the seat and a portion of the breast of a heel and having a curved surface for rounding the upper edge of said breast, of dies for molding the sides of the heel, and a breastplate movable relatively to said dies.

8. In dies for compressing heels, the combination with a follower provided with a seat-engaging face, an engaging face for acting upon a portion of the breast of a heel, and an engaging face which connects the seat-engag-

ing face with the breast-engaging face and which curves downwardly and merges into the breast-engaging face, of dies for molding the sides of the heel, and a breastplate movable
5 relatively to said dies.

9. In dies for compressing heels, the combination, with a follower having an engaging face for acting upon the seat and a portion of the breast of a heel and provided with a curved
10 surface for rounding the upper edge of said breast, of dies for molding the sides of the heel, a breastplate adapted to be moved by the follower transversely of the plane of movement of said dies, and means for moving the
15 breastplate independently of the follower.

10. In dies for compressing heels, the combination, with a follower having an engaging face for acting upon the seat and a portion of the breast of a heel and provided with a curved
20 surface for rounding the upper edge of said breast, of dies for molding the sides of the heel, and a breastplate movable relatively to said dies and coöperating with the breast-engaging face on the follower for molding the
25 entire breast-face of the heel.

11. In dies for compressing heels, the com-

bination, with a follower provided with an extended part having an engaging face for acting upon a portion of the breast of a heel, of dies for acting upon the sides of the heel, a
30 breastplate-block provided with a guideway, a breastplate movably mounted in said guideway and a spring connected to said block and plate for yieldingly sustaining said breastplate in normal position.

12. In dies for compressing heels, a follower having a seat-engaging face and a face for forming a bevel in the breast end of the seat of a heel, dies for acting upon the sides of the heel, a breastplate adapted to be engaged and
40 moved by the follower when the dies are being closed together, and a spring for returning the breastplate to normal position when the dies are opened.

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

THOMAS LUND.

Witnesses:

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ARTHUR L. RUSSELL.