

# UNITED STATES PATENT OFFICE.

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## METHOD OF REPLACING WEFT UNITS.

No. 886,127.

Specification of Letters Patent.

Patented April 28, 1908.

Original application filed December 31, 1906, Serial No. 350,115. Divided and this application filed September 30, 1907. Serial No. 395,105.

*To all whom it may concern:*

Be it known that I, AZEL C. HOUGH, a citizen of the United States of America, residing at Janesville, in the county of Rock and State of Wisconsin, have invented a new and useful Method of Replacing Weft Units, of which the following is a specification, the same being a divisional part of an application for United States Letters Patent filed by me December 31, 1906, and numbered Serial No. 350,115.

My invention relates to improvements in methods of replacing weft units in woven shades and the like the fabric of which has a weft of more or less substantial material as wood, and consists broadly in automatically or mechanically extending, drawing out or opening the warp on one side of the weft unit which it is designed to replace and in passing the new unit through the openings thus formed, in juxtaposition with the old unit, before removing the latter, as will be more fully explained hereinafter.

The object of my invention is to provide a method of replacing broken, defective or imperfect slats already woven in shades of the class above mentioned with perfect ones, work which has been done heretofore by hand, or for other similar purposes, whereby a large saving in time, labor, material and expense is effected. The slats, whether perfect or imperfect, to which my invention relates, are termed herein weft units or simply units.

In carrying out my invention the mechanism which forms the subject matter of the aforesaid application may be employed to advantage, and in the accompanying drawing I show such portions of said mechanism as are deemed necessary or desirable for a clear understanding of the herein described method, but it is obvious that I am not limited to the use of any particular mechanism for putting such invention into practice so far as the scope of the present application is concerned.

Said drawing represents a section of a shade resting upon a table and a weft unit being introduced into the shade by means of a needle of peculiar construction, together with parts of an abutment mechanism designed to prevent the new weft unit from buckling while being inserted.

Before describing the method as rendered effective with the help of the mechanism

illustrated, I will describe the same in detail without reference to any specific mechanical aids. First the shade must be so placed that the defective weft unit is in a convenient position and then while such shade is held in this position the loops of the warp on one side of the defective unit are forced away from said unit and the new unit is thrust through the loops thus opened until it lies along the entire length of the defective unit between the latter and the warp. The warp loops are opened or spread successively beginning at one end of the defective unit. The perfect unit is forced or driven in to the shade, as stated, hence it must be so held to its course in advancing that it cannot buckle, otherwise it would be liable to break or in any event to interfere with the complete success of the operation; this guarding against buckling constitutes one of the important steps in the method, although it is not to be considered as indispensable in all cases. As a final step the old unit is removed from the shade, leaving the new unit in its place. It is usual, in practice, to place the shade on a table with the defective or imperfect weft unit uppermost and to superimpose the new unit on such imperfect or defective unit, although this arrangement is not imperative so far as the broad idea of the invention is concerned. Referring now to the drawing it will be observed that a portion of a shade 1 is there represented, and that such shade is supported on a table 2, being fastened or clamped thereto by some suitable means which does not appear in the illustration, with a defective slat 3 on top of said table. A needle 4, so constructed that it can be forced along on top of the slat 3 to open the warp 5 for the entrance of a slat 6 which is to replace finally said slat 3, is employed by inserting its point or bill 7 beneath the loop in the first line of warp which is above the imperfect slat, at one end, and by forcing it forward through the medium of the slat 6, the front terminal of which latter is received into a socket 8 at the end of the needle opposite said bill. The slat 6 may be forced or driven forward by means of friction wheels which are not herein shown, or by any other suitable means. As the needle 4 is thus driven forward on the slat 3 its point enters beneath the second warp loop before the body 9 of said needle passes from beneath the first loop and while such body is subjected to



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Fig. 1.

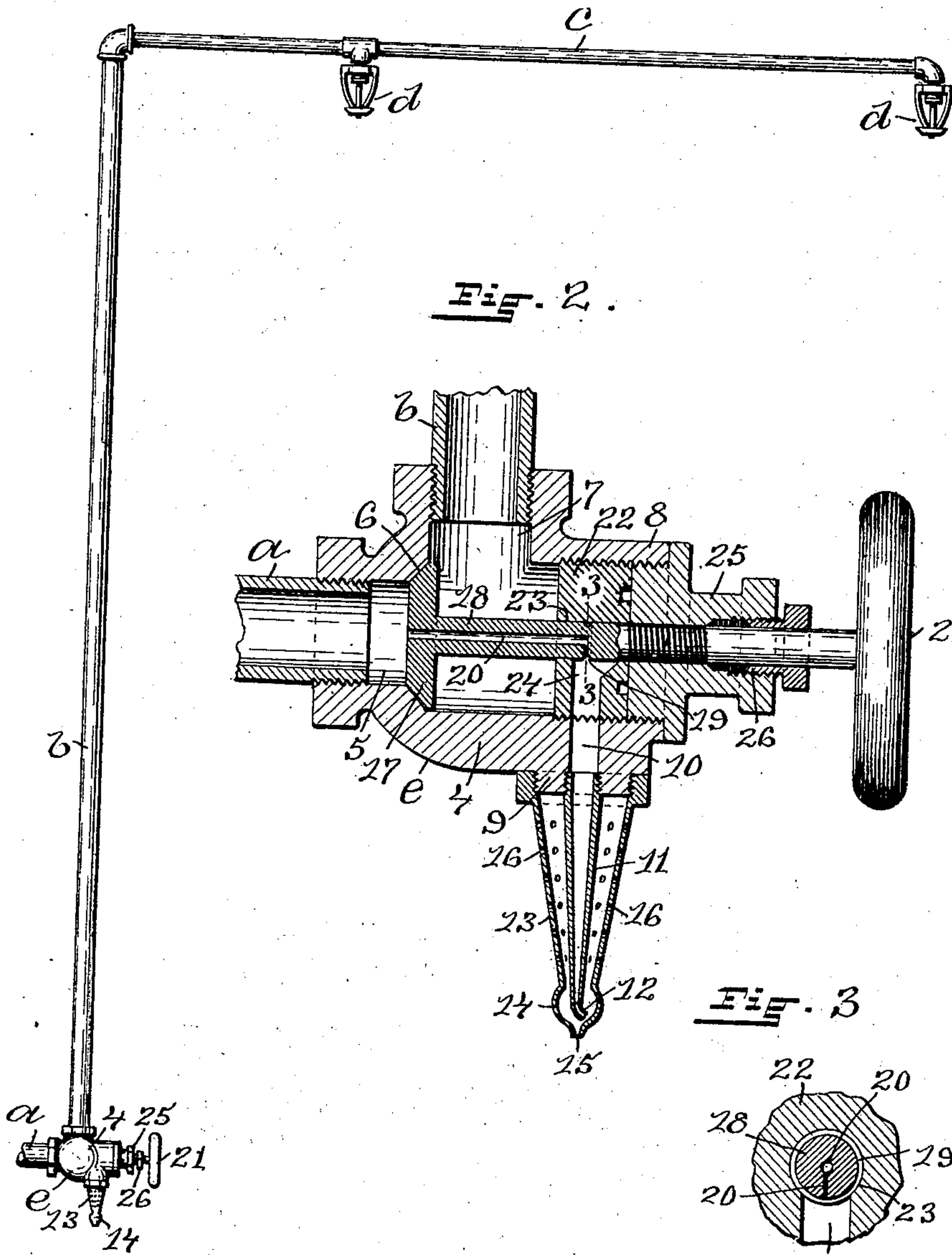


Fig. 2.

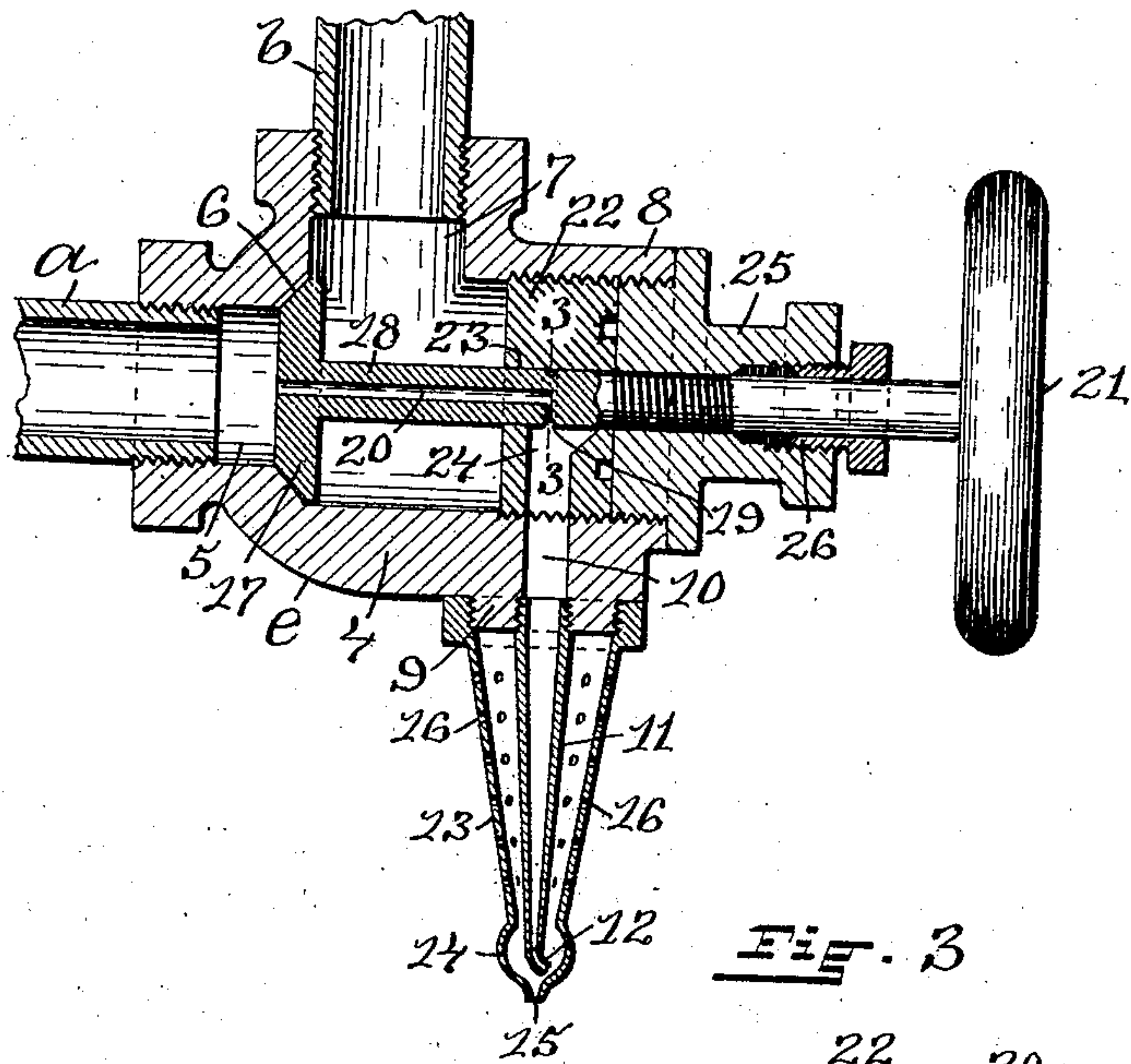
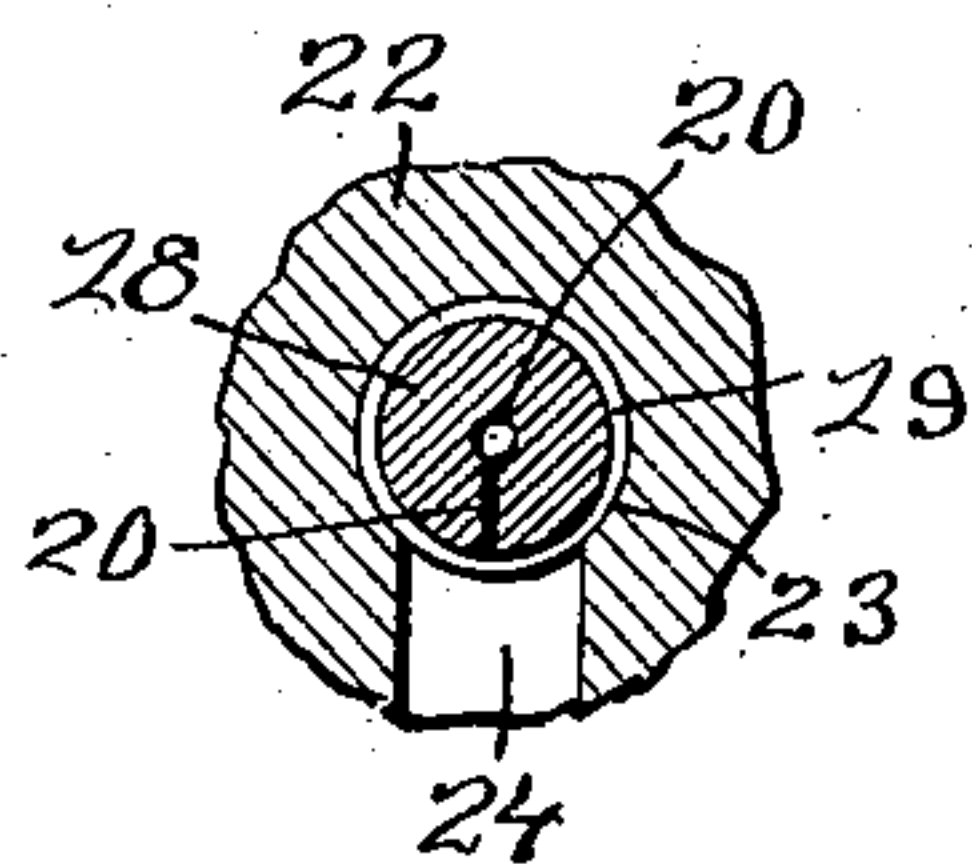


Fig. 3.



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