

L. L. ROWE.  
TUMBLER WASHER.  
APPLICATION FILED APR. 27, 1908.

910,587.

Patented Jan. 26, 1909.

3 SHEETS—SHEET 1.

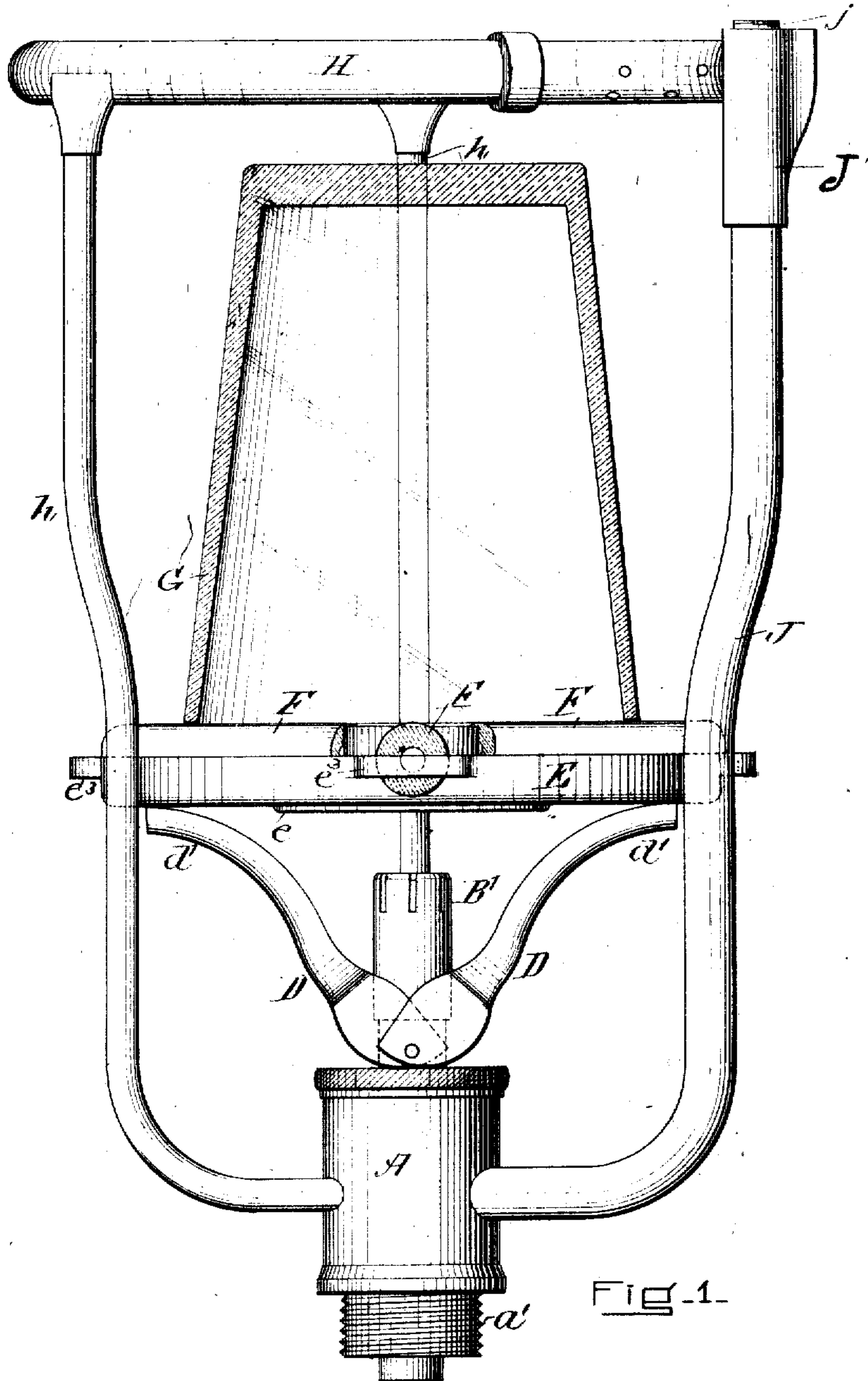


FIG. 1.

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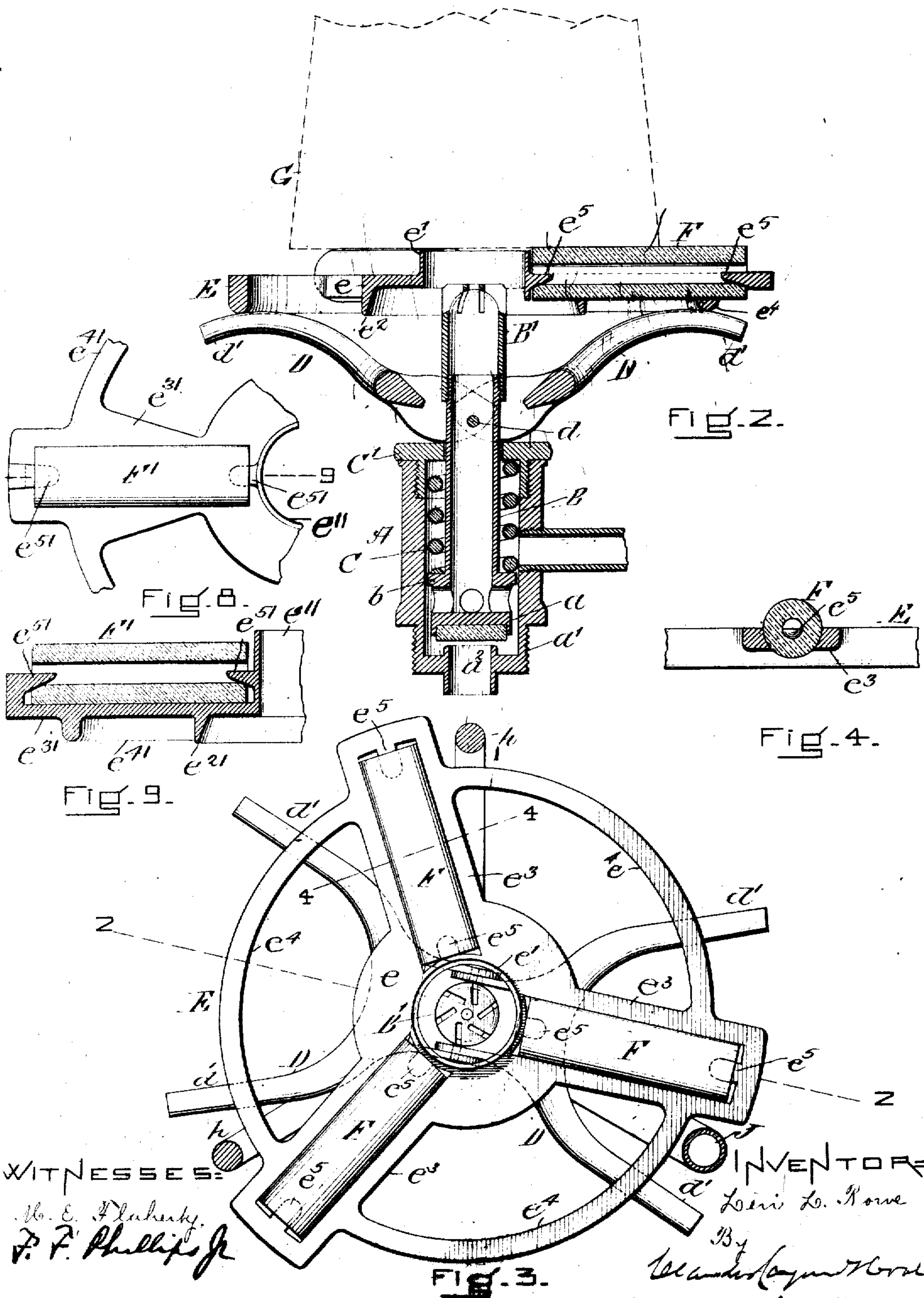
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

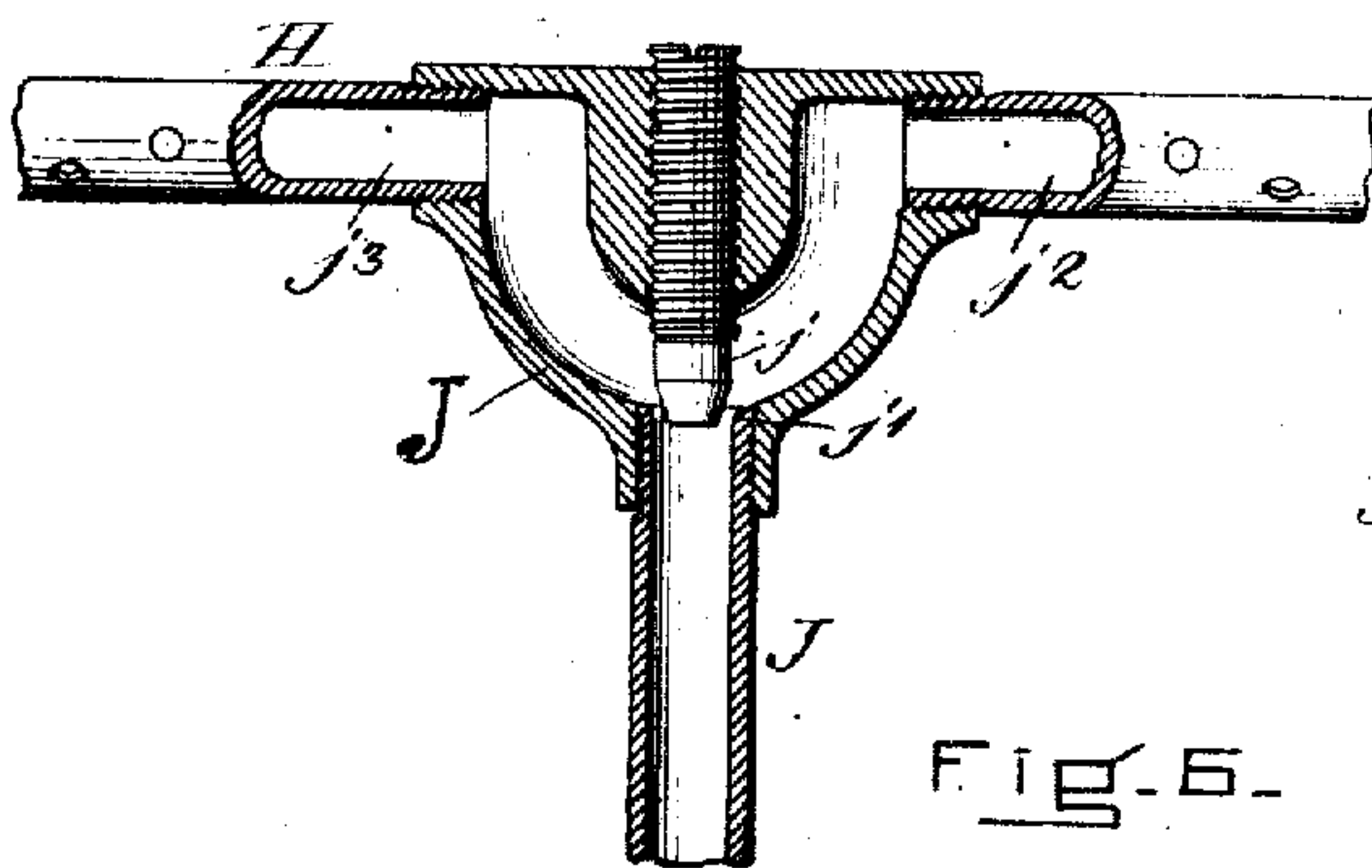


FIG. 6.

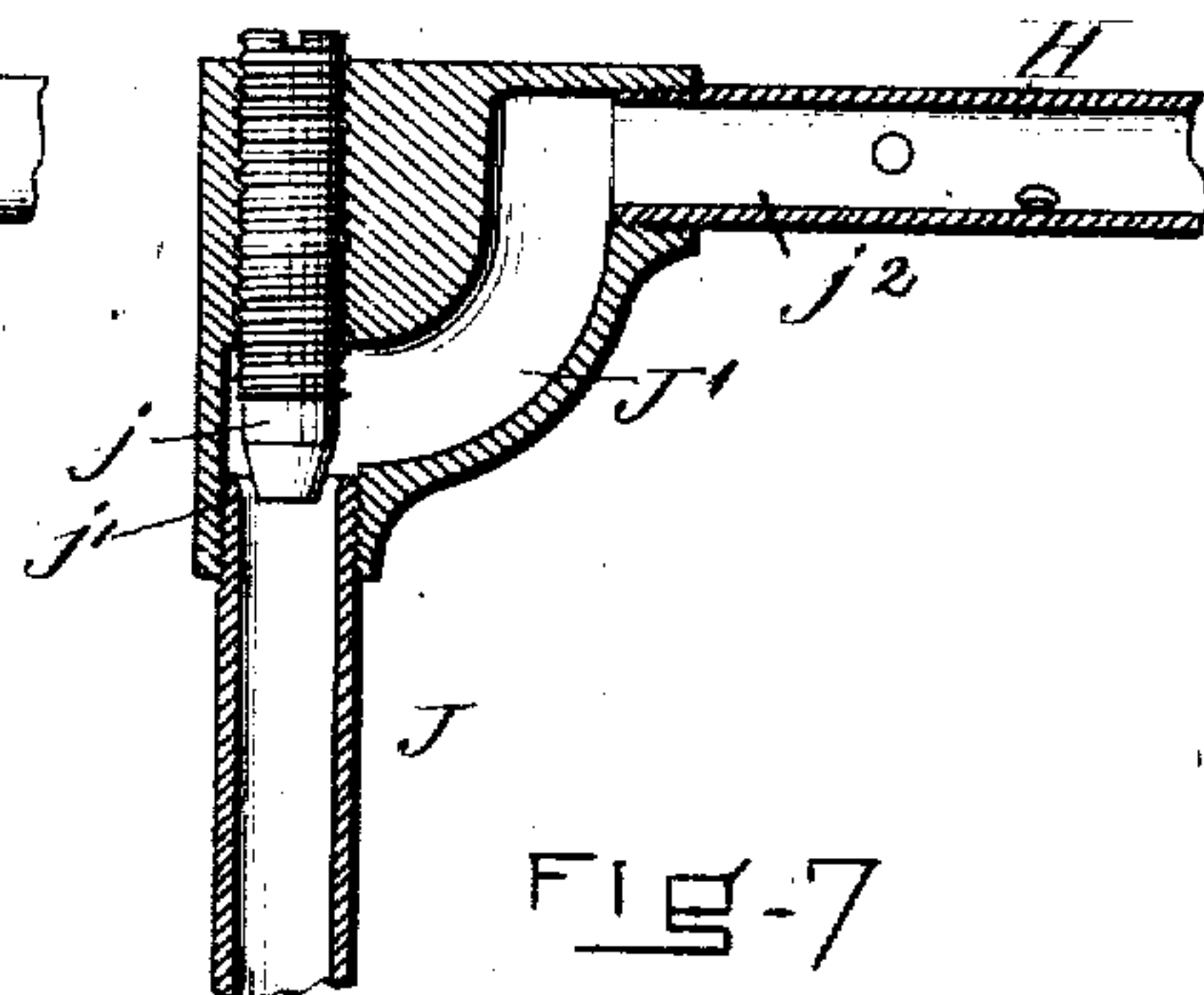


FIG. 7.

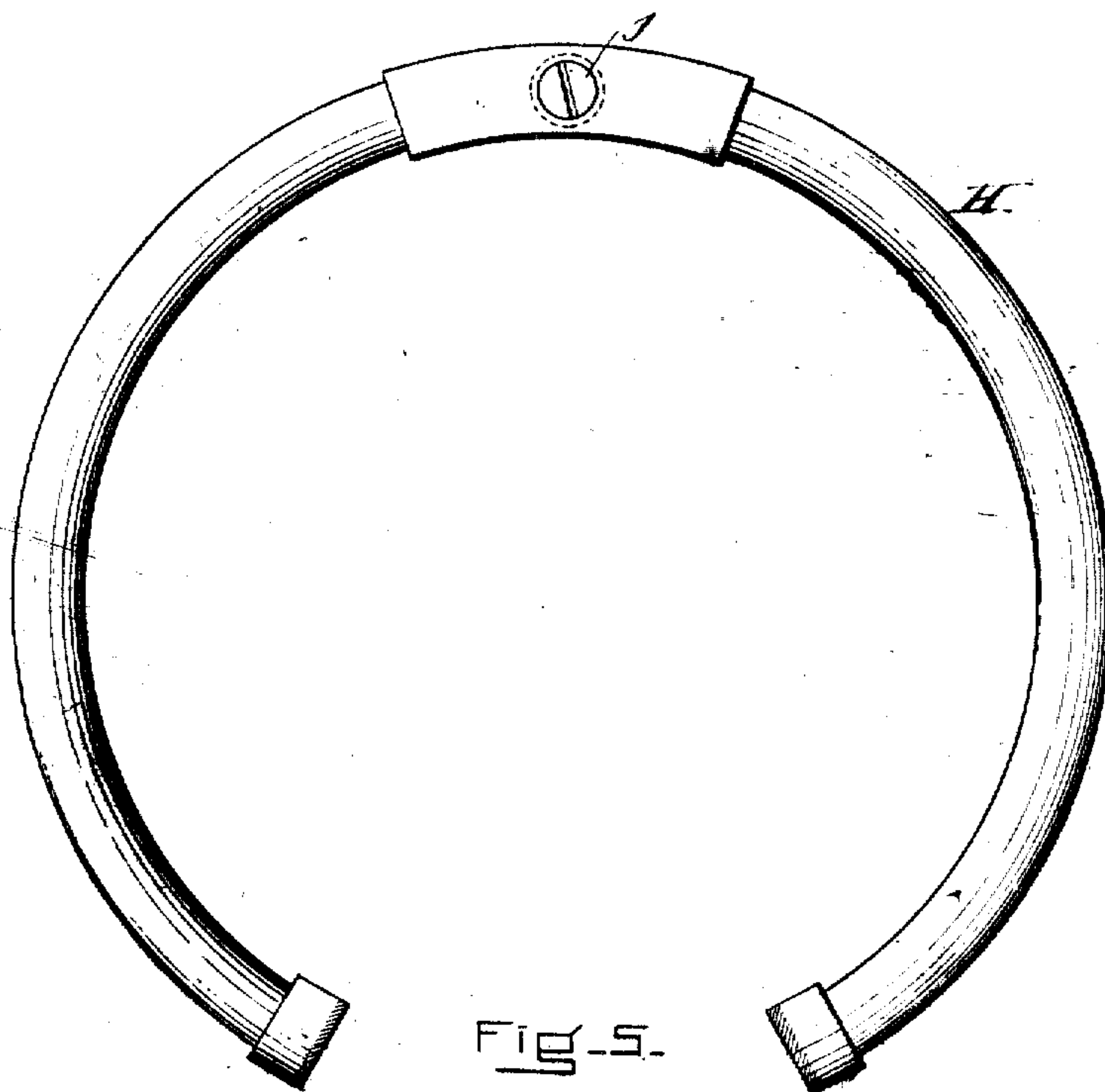


FIG. 5.

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# UNITED STATES PATENT OFFICE.

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## TUMBLER-WASHER.

No. 910,587.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed April 27, 1908, Serial No. 429,338.

*To all whom it may concern:*

Be it known that I, LEVI L. ROWE, of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Tumbler-Washers, of which the following is a specification.

My invention relates to that class of tumbler washers in which the depression of the tumbler opens the valve and allows the flow of water through the nozzle to wash the tumbler. Broadly speaking such devices are old. The chief fault found with them is that in many cases the valve begins to open before the tumbler has been depressed low enough to receive side streams given out from the nozzle so that such side streams may wet the operator or the customer as well as the counter, etc.

My invention is primarily for the purpose of deflecting such streams downward until the relations of the tumbler and the nozzle have been so established that such streams will strike the interior of the tumbler.

My invention also relates to means for washing the exterior of the tumbler.

My invention will be understood by reference to the drawings in which—

Figure 1 is a side elevation of a tumbler washer embodying my invention, the tumbler being in section. Fig. 2 is a section on line 2—2 of Fig. 3. Fig. 3 is a plan of the main portion of my invention. Fig. 4 is a section on line 4—4 of Fig. 3. Fig. 5 is a plan of the exterior washing device. Fig. 6 is a vertical cross section of the pressure controller. Fig. 7 is a modified form of the pressure controller. Figs. 8 and 9 show a modified form of the rest to be described below.

A is a valve casing containing within it a valve  $a$ . A threaded coupling  $a^1$  is provided to connect this casing with the water supply,  $a^2$  being a passage to lead the water from the supply into the casing, the upper edge of this passage serving as a seat for the valve  $a$ . The valve  $a$  is mounted at the lower end of a hollow stem B which carries at its upper end a nozzle B' suitably slotted or perforated to supply water to the interior of the tumbler.

The lower end of the stem B is provided with an enlargement  $b$  which serves as a rest for the lower end of the spring C, the upper end of which bears against the screw plug C' which closes the top of the casing, the function of this spring being to keep the valve  $a$

normally seated on  $a^2$ . The enlargement  $b$  is perforated to allow water to flow into the interior of the stem B and to the nozzle B' when the valve is unseated.

D are levers which are pivotally connected at  $d$  to the stem B and are provided with rocking edges which rest on the top of the plug C', this construction being such that upon depressing the outer ends of the levers D the stem B will be lifted and the valve opened to admit water to the interior of the casing A.

I prefer to provide the levers D with arms  $d^1$  in order that they may form a steady support for the rest E upon which the tumbler is to be supported. This rest E comprises means whereby it may be supported upon the levers D so as to operate them by pressure, means for supporting the edge of the tumbler, an opening through which the nozzle may project, and deflectors to prevent the streams from being thrown laterally until the tumbler is in position. As shown it consists of a hub  $e$  having a passage through it somewhat larger than the diameter of the nozzle B' and having an upwardly projecting rim  $e^1$ . The hub also has a downwardly projecting rim  $e^2$  of somewhat larger diameter than the rim  $e^1$ . These two rims are arranged and proportioned to receive the stream from the sides of the nozzle while the valve is being opened and before it is opened wide by the full depression of the tumbler.

From the hub  $e$  project three arms  $e^3$  preferably grooved and connected near their ends by segments  $e^4$  which support the rest upon the levers D and leave apertures about the hub through which the water may drain off from the tumbler. From each end of the groove in each arm project fingers  $e^5$  sufficiently small to project a short distance within the ends of a piece of rubber tubing F each of which forms a cushion upon which the edge of the tumbler rests during the washing operation. Rubber tubing is a convenient form of material to receive the edge of the tumbler although solid cylinders of rubber or the like may be used. I prefer to use pieces of rubber having a diameter substantially equal to the width of the grooves in the arms  $e^3$  (see Fig. 4) so that each will be confined laterally somewhat under any pressure which it may receive from the tumbler.

The operation of this part of my invention is as follows: The valve  $a$  being normally closed by the spring C, a tumbler G is placed



upon the rest E and is pressed down by the operator. This opens the valve *a* more or less quickly as the case may be and the water forces itself out through the openings in the nozzle under a pressure which may be considerable as my washer is intended to be connected to the city or town water supply. It will be seen from Fig. 2 that when the nozzle is lifted but slightly the valve will be opened somewhat so that water will escape through the nozzle and the side streams will strike the rim *e*<sup>2</sup> which will shield the operator and as the rest moves down over the nozzle the streams will continue to strike either the rim *e*<sup>2</sup> or the rim *e*<sup>1</sup> until it projects up through the central opening in the rest when these streams will be received by the inner rim of the tumbler which will thus be well washed. Other streams will reach the other portions of the interior of the tumbler and will give it a thorough washing and thereafter the water will drain down through the draining apertures into the basin or other receptacle below.

It will be remembered that these washers are generally used with city water pressure which is quite high and hence when once released by the opening of the valve the stream is very strong.

To wash the outside of the tumbler I provide a perforated pipe H which is nearly circular and is supported on three supports, two of which *h* are rods and the third a pipe J leading from the casing A so that when the valve *a* is open a portion of the water will pass up through the pipe J and out through the perforations in the pipe H.

If the water emitted through the valve *a* is under say ordinary city pressure which may in fact be quite high, the splashing of the water on the bottom of the sides of the tumbler will be considerable and may be very annoying to the bystanders. For this reason I prefer to lead the pipe J into a valve chamber J<sup>1</sup> which contains a second valve *j* adapted to screw down towards a seat *j*<sup>1</sup> in the top of the pipe J. In Fig. 6 the valve chamber is constructed with two outlets *j*<sup>2</sup>, *j*<sup>3</sup> and is adapted to be located midway between the ends of the pipe H as shown in Fig. 5, each outlet *j*<sup>2</sup>, *j*<sup>3</sup> communicating with a branch of the pipe H. In Fig. 7 I have shown a valve chamber from which there is only one outlet *j*<sup>2</sup> and this form of chamber is adapted to be located at one end of the pipe H, as shown in Fig. 1.

By means of the screw valve *j* the force of the flow through the pipe H and its perforations can be reduced. Thus the perforations may deliver water under very low pressure so, for example, it will strike about the middle of the bottom of the tumbler and around its sides and so give it sufficient washing without undue splashing, and the location of this valve at the top of the water column is especially effective for this purpose.

Being located between the valve *a* and the ring H the ring will only deliver water at a conveniently low pressure practically independent of the pressure at *a*, and adjustable according to the requirements of any given case.

The part which I have called a screw valve is in fact a reducing valve to reduce the pressure of water in the ring H. Hence it need not be so constructed as to close entirely the passage from the pipe J. The openings in the rest allow the water which has been used to escape out of the tumbler. I have referred to the arms *e*<sup>3</sup> as grooved for I prefer to make them so, as by means of the grooves the rubber cushions are held from lateral displacement. The arms may be flat however as shown in Figs. 8 and 9, in which case the fingers *e*<sup>5</sup> are here represented by *e*<sup>51</sup> which shows them projecting above the level of the arms so that they may hold the cushions here represented by F<sup>1</sup> in place as shown, and in this case the rim *e*<sup>11</sup> should but project as high as the top of the cushions. In these Figs. 8 and 9 *e*<sup>31</sup> represents the flat arm, *e*<sup>11</sup> the connecting segment and *e*<sup>21</sup> the downwardly projecting rim.

It will be observed from the operation of the device that the parts are preferably so proportioned and arranged that at the time the valve has been lifted to a full and complete opening the nozzle will have assumed a position in relation to the upper edge of the rim such that it will project the water into every part of the interior surface of the tumbler.

It is evident that my invention may be embodied in other forms than that above described. The purpose of the main portion thereof is to screen the bystanders and this may be accomplished by forcing down the rest over a stationary nozzle, forcing up a nozzle through a stationary rest or better by the means shown in which both rest and nozzle have a movement. The cushions are preferably made of rubber tubing but solid cushions may be used if they are indented at each end to allow the entrance of the fingers *e*<sup>5</sup> or are otherwise shaped to conform to the holding appliance whatever it may be, for other means may be provided to hold the cushions in place. I prefer the means shown because they do not offer any metal surface to contact with the edge of the tumbler.

What I claim as my invention is:

1. In a tumbler washer, a nozzle, a valve controlling its water supply, a rest, means whereby said nozzle and said rest have a movement with relation to each other, and means for controlling said valve, said rest having means projecting above its surface to deflect lateral streams of water from said nozzle.

2. In a tumbler washer, a nozzle, a valve



controlling its water supply, a rest, means whereby said nozzle and said rest have a movement with relation to each other, and means for controlling said valve, said rest  
 5 having means projecting below its surface to deflect lateral streams of water from said nozzle.

3. In a tumbler washer, a nozzle, a valve controlling its water supply, a rest, means  
 10 whereby said nozzle and said rest have a movement with relation to each other, and means for controlling said valve, said rest having means projecting above and below its surface to deflect lateral streams of water  
 15 from said nozzle.

4. A tumbler washer comprising a peripheral rim, a central hub and arms connecting said rim and said hub, said hub having an aperture through which a nozzle may pass  
 20 and also having means projecting from its surface to deflect lateral streams of water from said nozzle.

5. In a tumbler washer, a rest for a tumbler having tumbler supports comprising  
 25 arms having grooves, in combination with cushions located within said grooves, as described.

6. In a tumbler washer, a rest for a tumbler having tumbler supports comprising grooved  
 30 arms and hollow cushions located within the grooves in said arms, and means forming part of said arms adapted to project within the ends of each cushion to hold it in place as described.

7. A rest comprising arms and tumbler- 35 supporting cushions, said arms carrying fingers and said cushions resting upon said arms between said fingers, said fingers engaging the ends of said cushions and holding them in place upon said arms. 40

8. In a tumbler washer, a valve and means for opening it comprising levers and a tumbler rest, a casing surrounding said valve, a perforated pipe mounted above said casing and connected therewith whereby 45 when the said valve is open water will be supplied through said connection to said pipe and a valve located within said connection whereby the water pressure therein may be reduced as described. 50

9. In a tumbler washer, a valve casing adapted to be connected to a water supply, a valve located in said casing to control the entry of water thereto, a tumbler rest, a nozzle to deliver water to the interior of 55 said tumbler, a perforated pipe connected to said valve casing and located above said casing, to distribute water on the outside of said tumbler, and a valve located to reduce the pressure of water delivered from said 60 casing to said pipe whereby the pressure of water delivered on the outside of the tumbler is less than that within the tumbler, as described.

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Witnesses:

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 F. F. PHILLIPS, Jr.