

C. E. SAFFORD.

SAD IRON.

APPLICATION FILED JAN. 11, 1909.

951,743.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

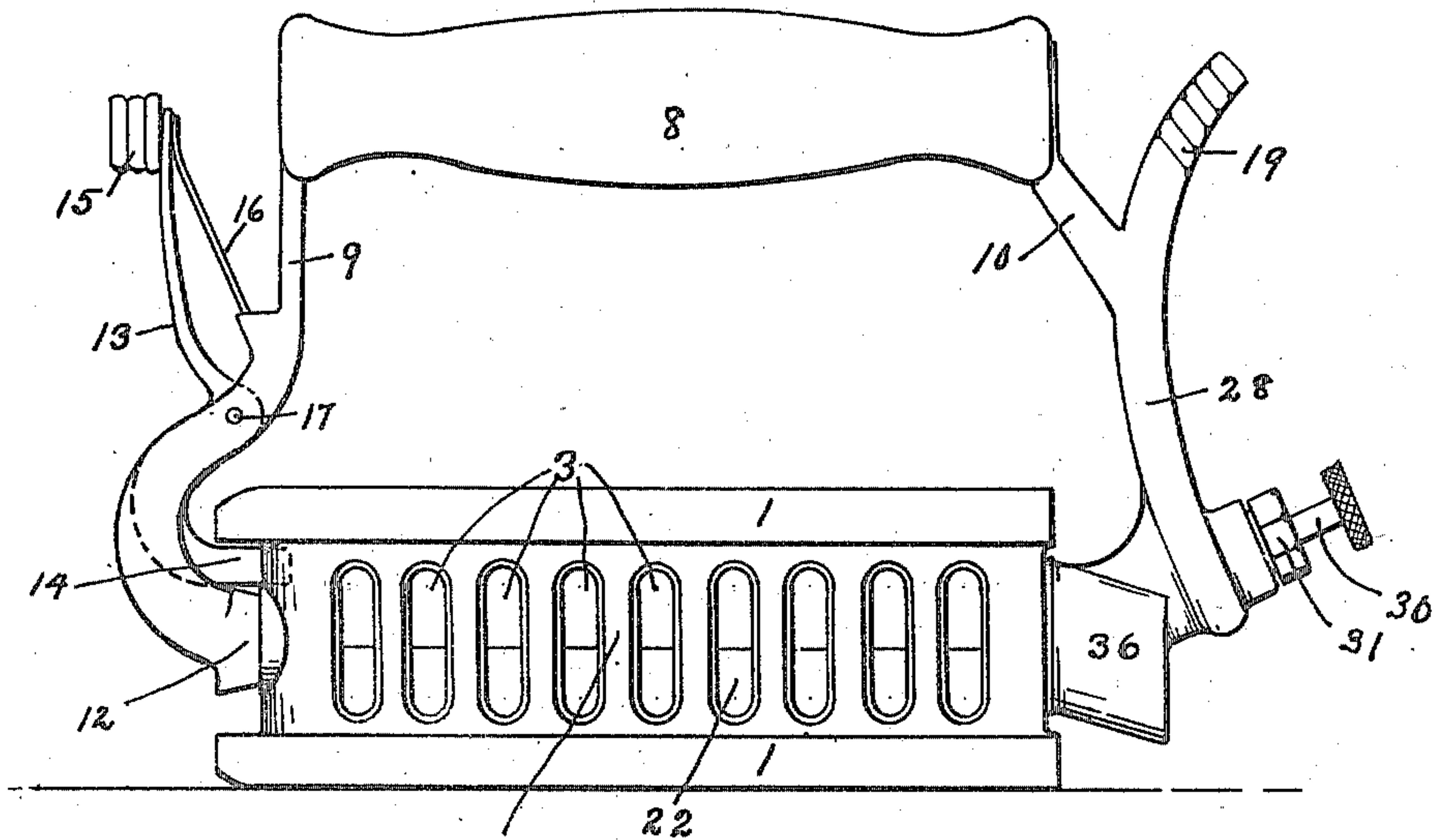


Fig. 1.

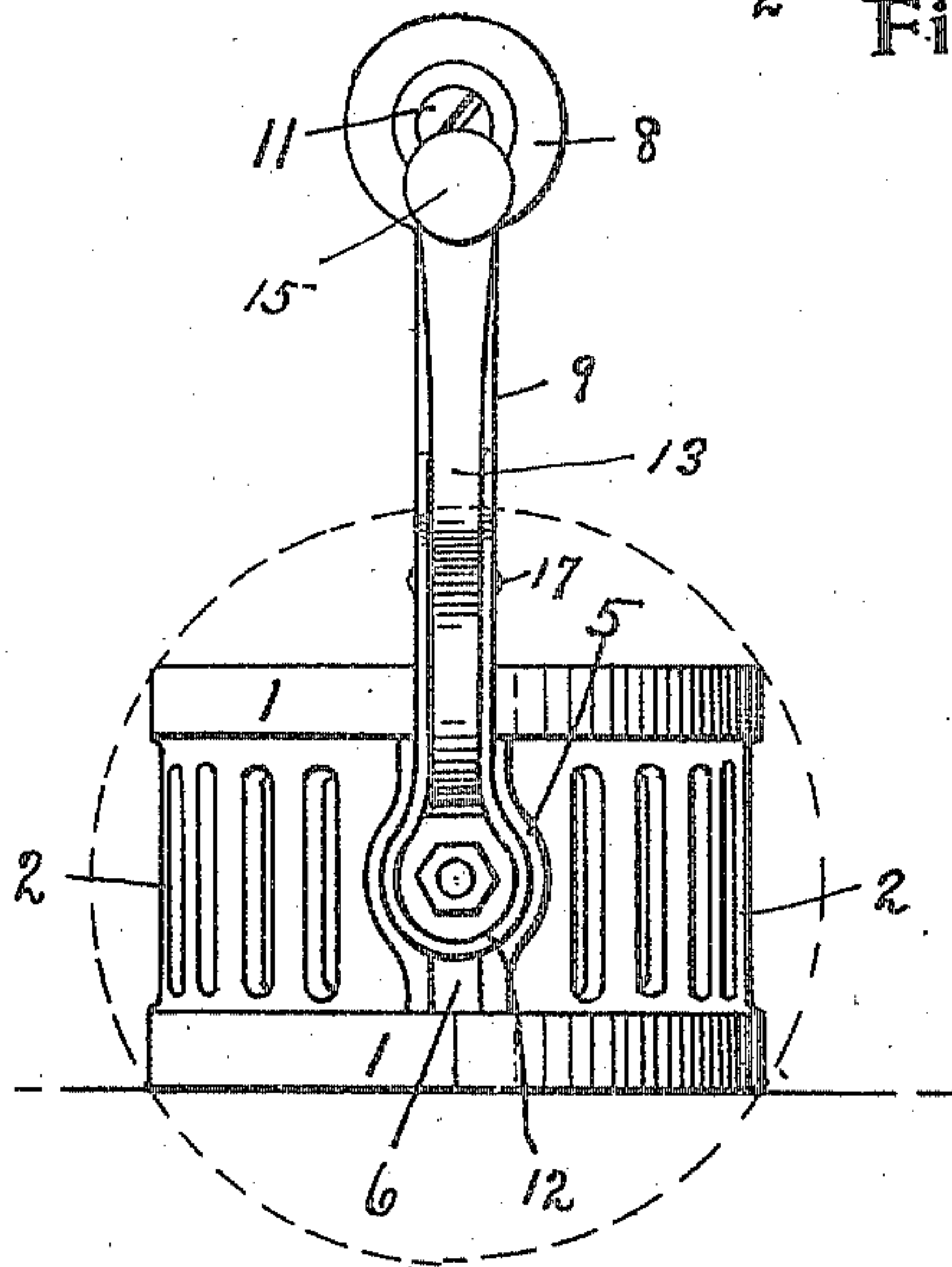


Fig. 2.

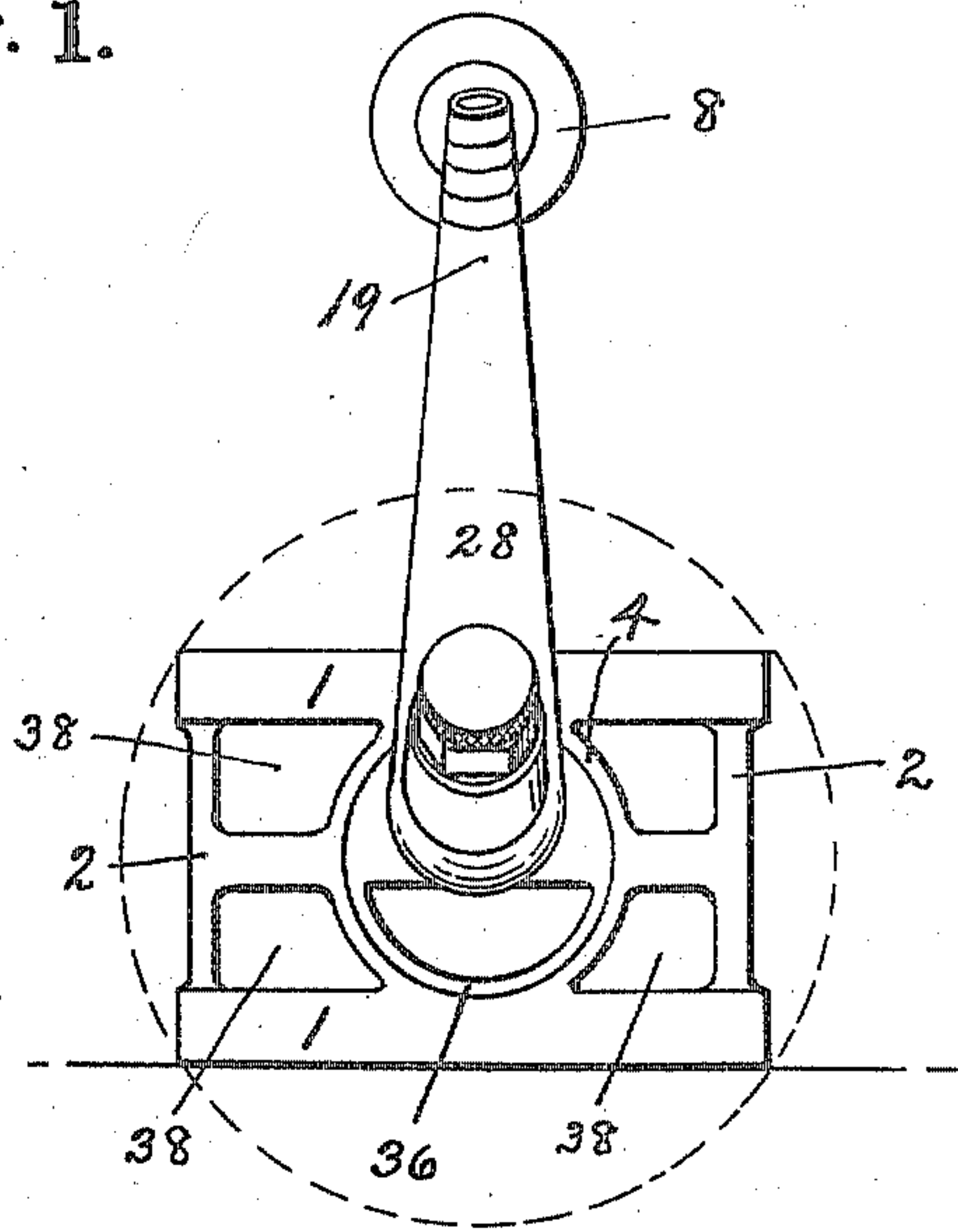


Fig. 3.

Witnesses

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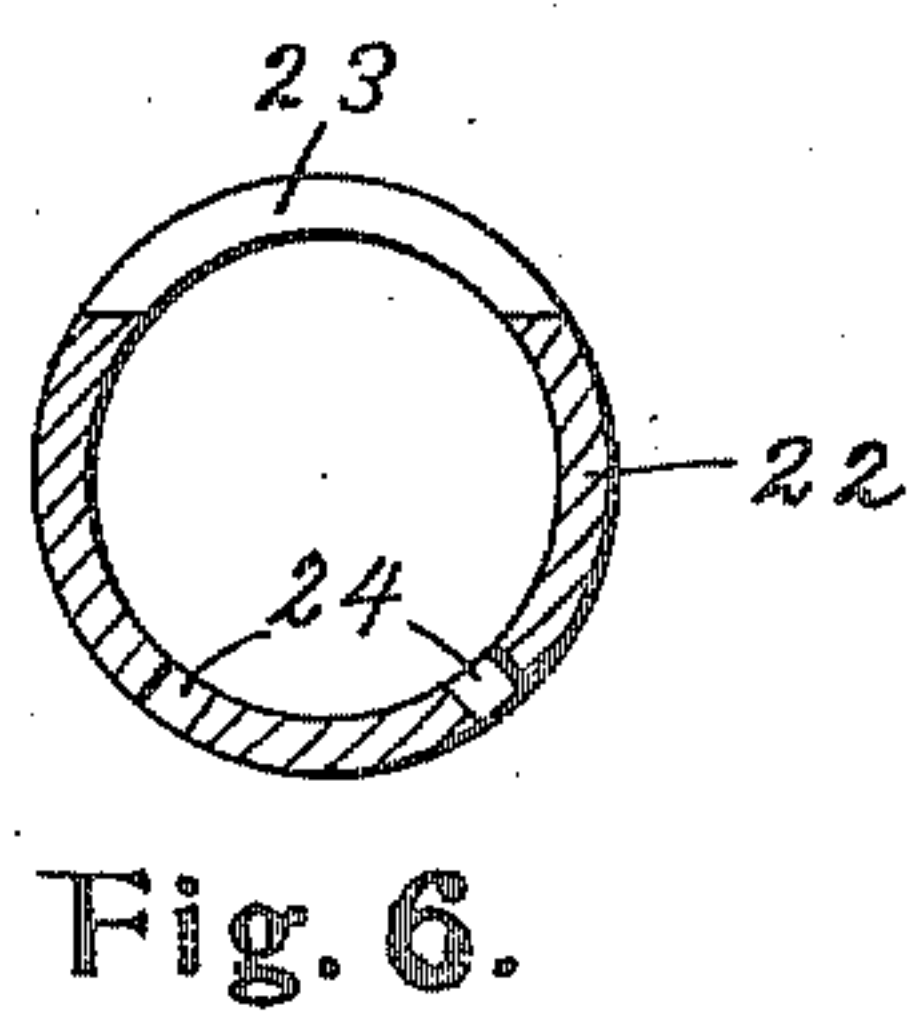
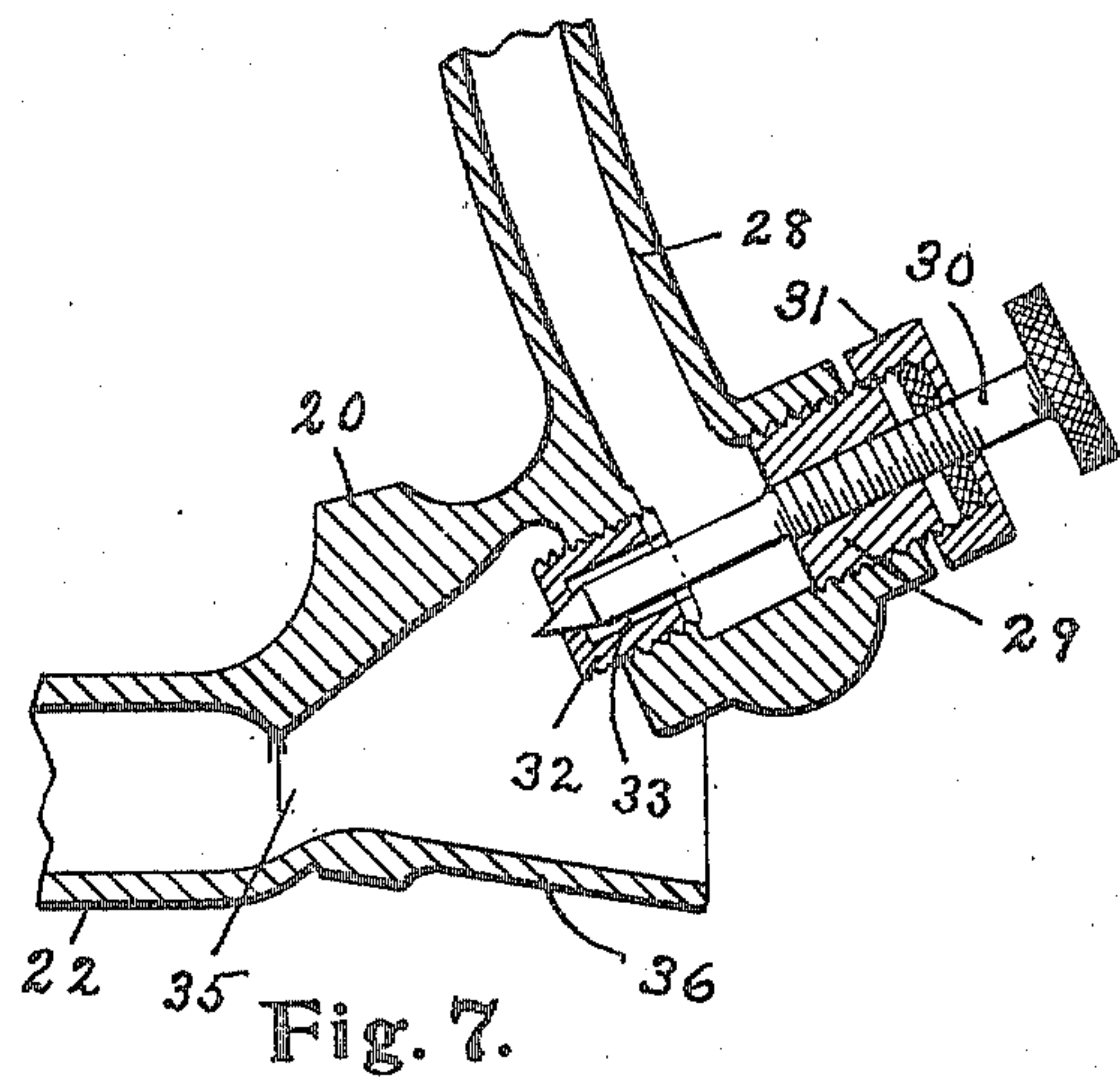
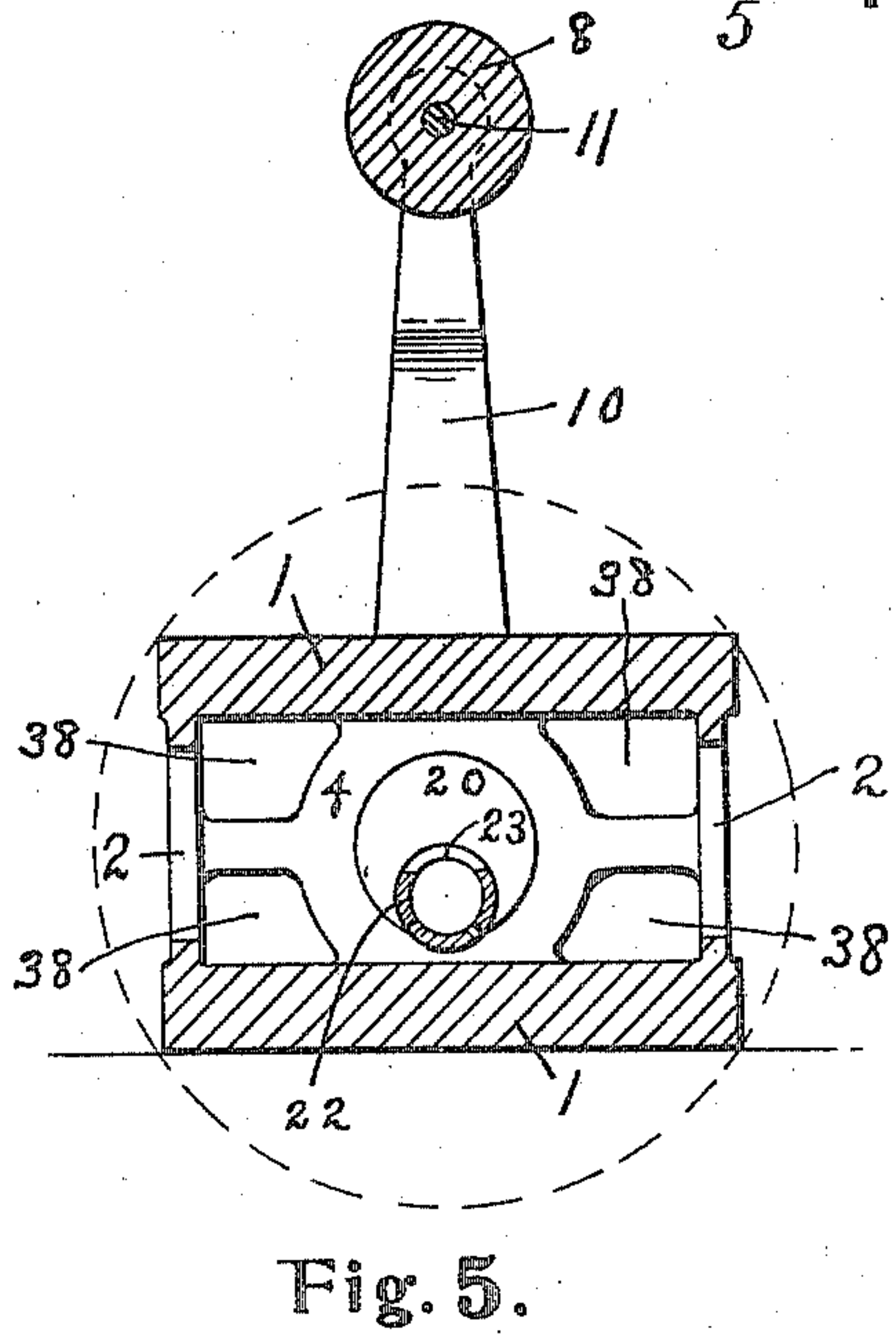
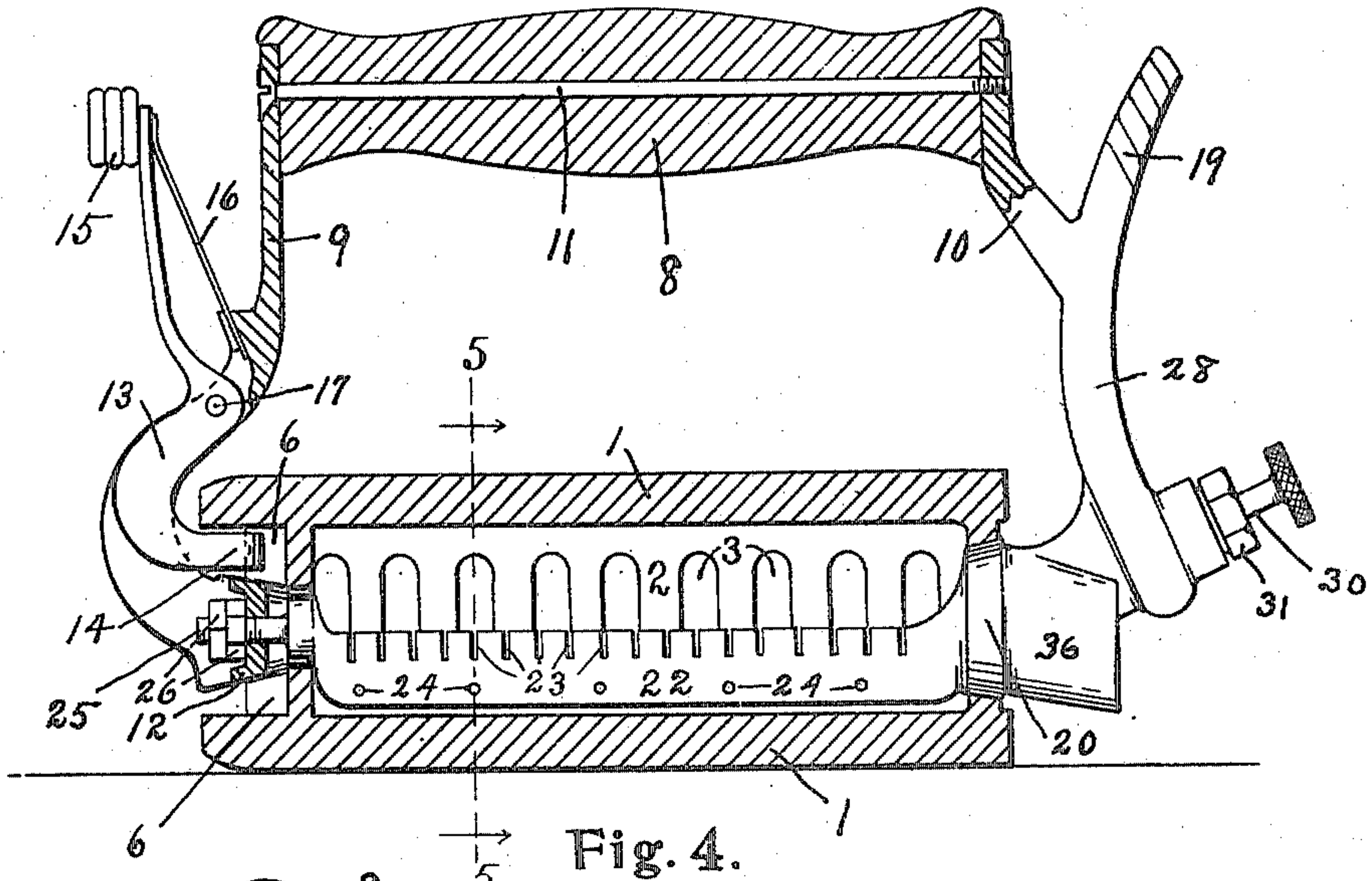
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UNITED STATES PATENT OFFICE.

CLARENCE E. SAFFORD, OF DETROIT, MICHIGAN.

SAD-IRON.

951,743.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed January 11, 1909. Serial No. 471,618.

To all whom it may concern:

Be it known that I, CLARENCE E. SAFFORD, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Sad-Iron, of which the following is a specification.

My invention relates to that class of sad irons in which gas is burned between two smoothing faces of the ironing-body, and its object is to provide a device of this kind in which the smoothing-faces may be easily kept at the desired temperature, and which shall utilize a maximum of the heat units in the gas.

My invention consists in a sad-iron having a revoluble ironing-body provided with two smoothing-faces, in combination with a novel burner so constructed that there will be maximum space above the burner, and having the ironing-body provided with tapering sockets to receive tapering trunnions on the handle.

It further consists in the novel details especially set forth in the claims and shown in the accompanying drawings, in which—

Figures 1, 2, and 3 are side, front and rear elevations of my improved sad iron. Fig. 4 is a vertical central cross section of the same. Fig. 5 is a cross section on the line 5—5 of Fig. 4. Fig. 6 is a cross section of the burner. Fig. 7 is a cross section of the fuel mixer.

Similar reference characters refer to like parts throughout the several views.

The ironing-body of my improved sad-iron is provided with two parallel opposed smoothing-faces 1 connected by a wall 2, having slots or perforations 3, the rear end being formed with a tapering socket 4 to receive one trunnion on the handle, and the front end being formed with a tapering socket 5 to receive the other trunnion on the handle, and with notches 6 to receive the lower end of the locking lever. The handle is formed by a cross piece 8, preferably of wood, and front and rear arms 9 and 10 which are secured to the cross piece by means of the screw 11. The lower end of the front arm 9 is in the form of a tapering trunnion 12 adapted to fit the socket 5. This arm 9 is provided with a longitudinal slot, in which is mounted the locking lever 13 on the pin 17, the inner end or finger 14

of which is adapted to engage in either notch in the front of the ironing body to position the same. The upper end may be provided with a button 15, and the finger 14 is normally held in locking position by the flat spring 16. This finger 14 is tapering with flat sides. This insures positive locking of the ironing body on the handle, preventing all vibration. The notches 6 have flat sides and the wedging action of the finger 14 under the action of the spring 16 renders the union of the parts practically rigid.

The rear arm 10 of the handle is formed hollow, and with a connection 19 to which a flexible gas-tube may be attached. The trunnion 20, formed on this arm fits the tapering socket 4 in the rear of the ironing-body. Extending downward from the trunnion, then horizontally and then upwardly is the burner tube 22, formed with transverse slots 23 and downwardly inclined holes 24 to permit the escape of gas. A threaded rod 25 projects through a hole in the trunnion 12, and is provided with jam-nuts 26 whereby the trunnions 12 and 20 can be positioned and the bearings of the ironing-body on the handle accurately adjusted. The front end of the burner tube 22 is entirely free in the socket 5. This permits the tapering trunnions to be accurately adjusted without interference by the burner tube.

The tubular part 28 of the rear arm 10 of the handle is provided with an enlargement into which is secured a sleeve 29, which is threaded for the needle-valve stem 30. A stuffing box gland 31 insures a tight joint. In line with the sleeve 29 is mounted a second sleeve 32 having its bore 33 formed to fit the point of the stem 30. The flow of gas is regulated by turning this stem.

Because of the inclination of the stem 30 and the sleeves 29 and 32, the jet of gas will strike the center of the restricted portion 35 of the bore of the tube 22. The gas entering this restricted passage draws with it a supply of air through the funnel 36, in the manner usual to the Bunsen burner. This restriction also prevents "back-flash." Owing to the depression of the tube 22, maximum of space is obtained above the burner tube. Openings 38 at the rear end of the body admit air to fully and properly

consume the gas. The small holes 24 direct jets of burning gas downward and outward, and thus thoroughly and effectually expelling the burned gases, that have hitherto prevented proper combustion, through the openings 3. They also cause good circulation of air above the slots 23. Air freely enters through the openings 38 in the rear wall and to some extent through the upper ends of the openings 3 in the sides.

The chief advantages of this sad iron are, that it provides for greater combustion space above the burner in proportion to the distance between the faces, the upper surface of the burner tube being at or below the center line of the trunnions, that it insures speedy removal of the burned gases, that a proper mixture is supplied to the burner, and that the ironing-body is properly and adjustably journaled on the handle. The handle may be made of any suitable non-conducting substance. Because of the free circulation of air caused by the jets from the small holes 24, there is no gas unconsumed, perfect combustion being insured by a full supply of air and indicated by the peculiar humming sound which can be noticed when burners of this type are acting properly.

Having now explained my improvements what I claim as my invention and desire to secure by Letters Patent is:—

1. In a sad iron, the combination of an ironing body having parallel smoothing-faces connected by slotted walls and having bearing rings in its ends, a handle having trunnions to enter said rings, a burner tube connected at its ends to said trunnions and bent between its ends so its upper surface is in the center line of the trunnions, and a gas mixing valve to direct the fuel gas down the rear bend of the burner tube.

2. In a sad iron, the combination of an ironing body having parallel smoothing-faces connected by walls having slots and tapering sockets, a handle having tapering trunnions to fit said sockets on which trunnions said body is revoluble, a burner tube extending through said body and connected at its rear end to the handle, a bolt extending from the front end of the burner tube and through the front trunnion, and nuts on said bolt whereby the trunnions may be adjusted relative to the ironing-body.

3. In a sad-iron, the combination of an ironing-body having parallel smoothing-faces connected by perforated walls, a handle having trunnions whereon said body is revoluble, a burner tube extending through said body between the trunnions and provided with openings for the escape of gas, the tube being bent downward at the trunnions and having its upper edge in the center line of the trunnions, the bore of said tube being restricted at the rear trunnion,

and a gas mixing-valve mounted on the handle in line with the restricted portion of the burner tube.

4. In a sad-iron, the combination of an ironing-body having parallel smoothing-faces connected by apertured walls having sockets at the rear and front ends, a handle comprising a cross bar and arms mortised and secured into the ends thereof so as to extend parallel to each other, a burner tube united to the lower end of one of the arms, and an adjustable connection between the opposite end of the tube and the other arm to hold the parts in parallel alinement the middle portion of the burner-tube being eccentric to the bearings.

5. In a sad-iron, the combination of an ironing-body having parallel smoothing-faces connected by apertured walls and having bearing rings at the ends, a handle having trunnions to enter the rings, and a burner tube extending between the trunnions and having downwardly inclined openings for gas jets whereby the burned gases are expelled through the apertures in the walls, the middle portion of the burner-tube being eccentric to the bearings.

6. In a sad iron, the combination of an ironing-body having parallel smoothing-faces connected by perforated walls, a handle having tapering trunnions whereon said body is pivotally mounted, a burner tube extending through said body and provided with transverse slots across its upper portion and downwardly inclined apertures through its lower portion, the tube being bent downward at the trunnions and extending along the lower ironing face.

7. In a sad-iron, the combination of a hollow ironing body having parallel smoothing faces and perforated walls, a handle on which the body is mounted, and a burner tube connected at its ends to said handle and extending through the body, said tube having a row of openings along its upper side and a row along its lower side on each side of the center line inclining downward and outward.

8. In a sad-iron, the combination of an ironing-body having smoothing-faces connected by apertured walls, a socket in each end of the body, a handle having trunnions upon which said body is revoluble, the rear of the handle being hollow, a regulating valve in the handle at the rear of the ironing body, and a gas burner tube extending down from said valve and into the ironing-body and below the center line of revolution of the same, the bore of the tube being restricted where it enters the body to prevent back-flash of the flame.

9. In a sad-iron, the combination of an ironing-body having smoothing-faces and slotted walls between them, a handle for the same having trunnions, a burner tube

extending through said body along the lower
smoothing-face and attached to said handle
at its rear end, and an adjustable connec-
tion between the front end of said tube and
5 the handle, the bore of the tube being re-
stricted where it enters the handle.

In testimony whereof I have signed this

specification in the presence of two sub-
scribing witnesses.

CLARENCE E. SAFFORD.

Witnesses:

EDWARD N. PAGELSEN,
ELIZABETH M. BROWN.