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PLUMBING FIXTURE

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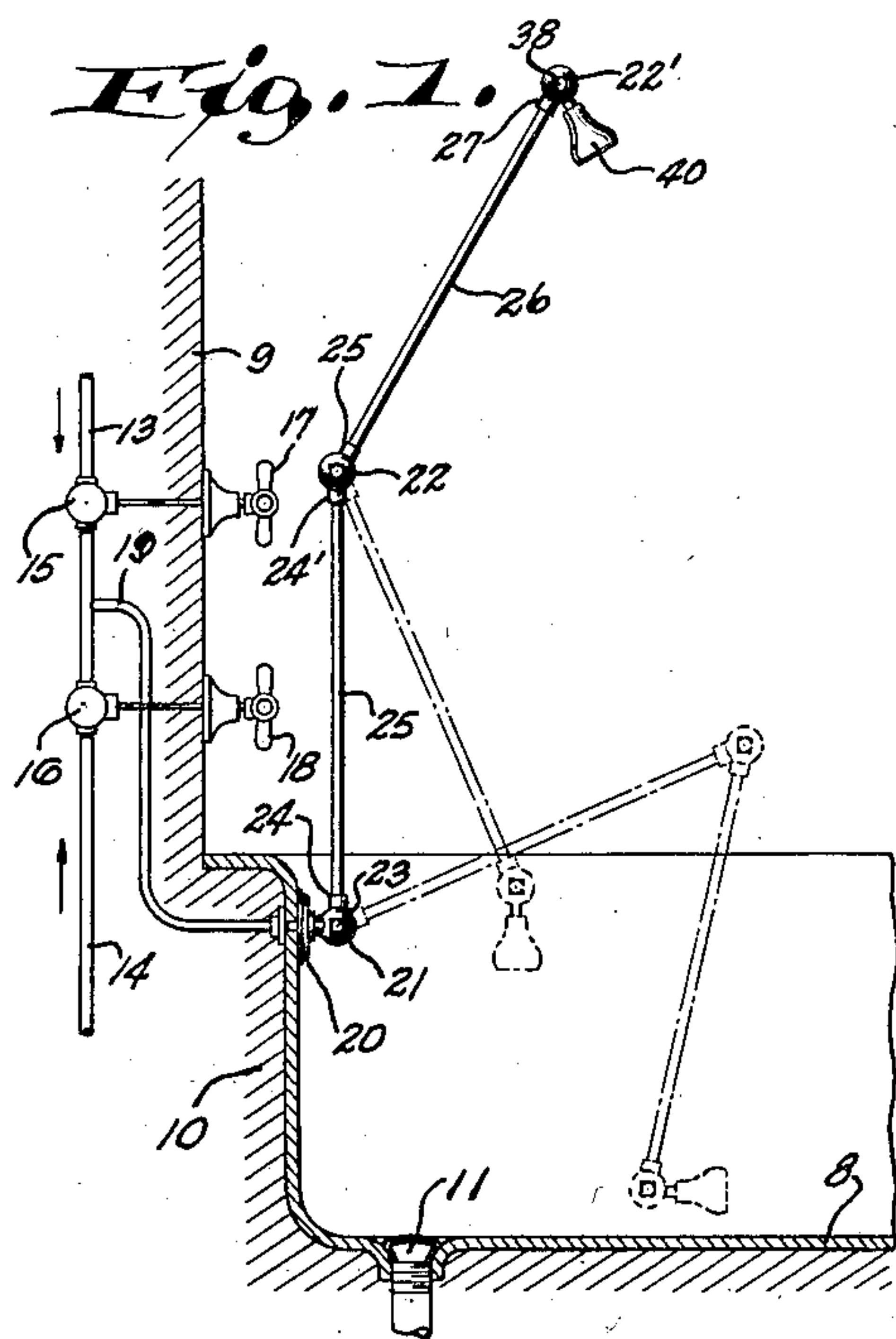
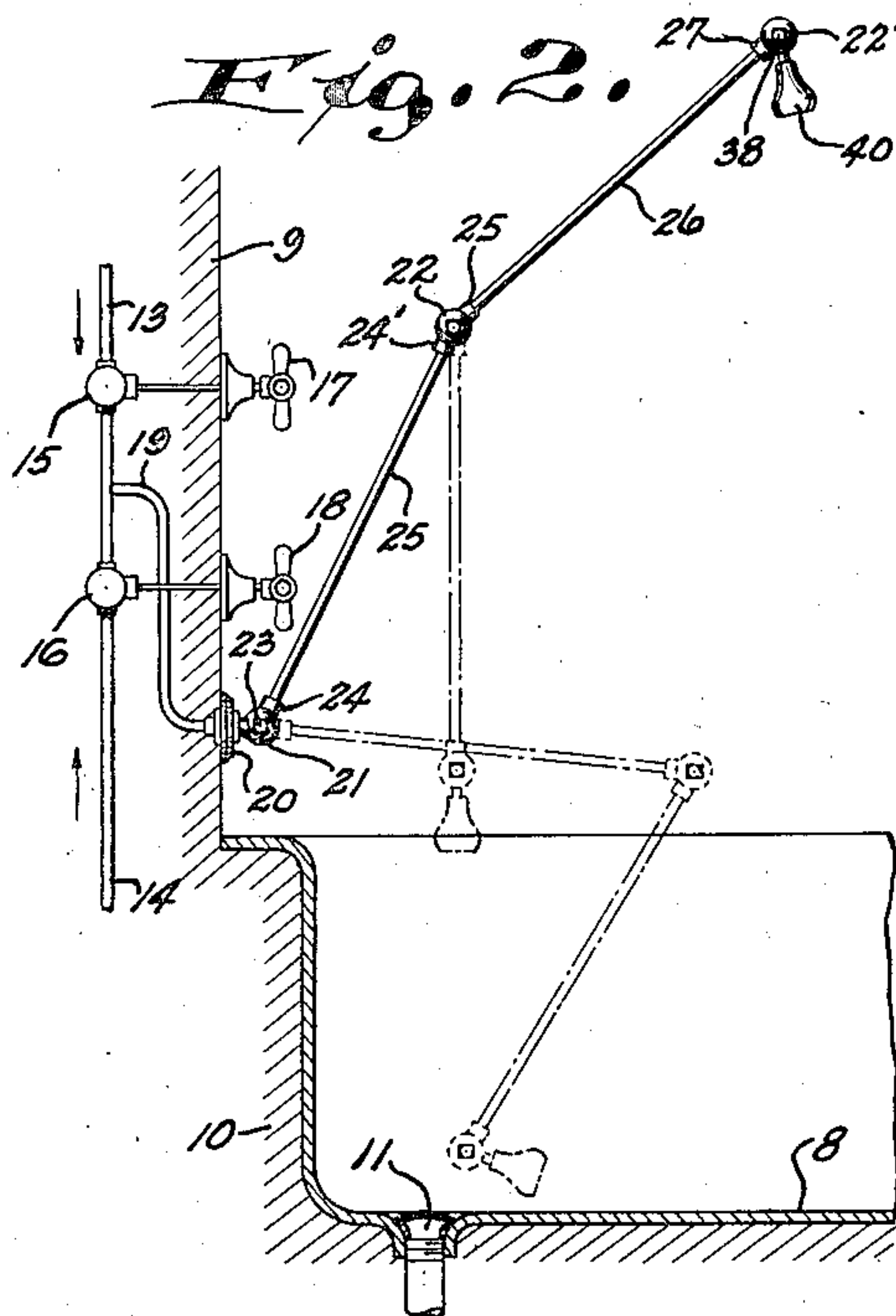
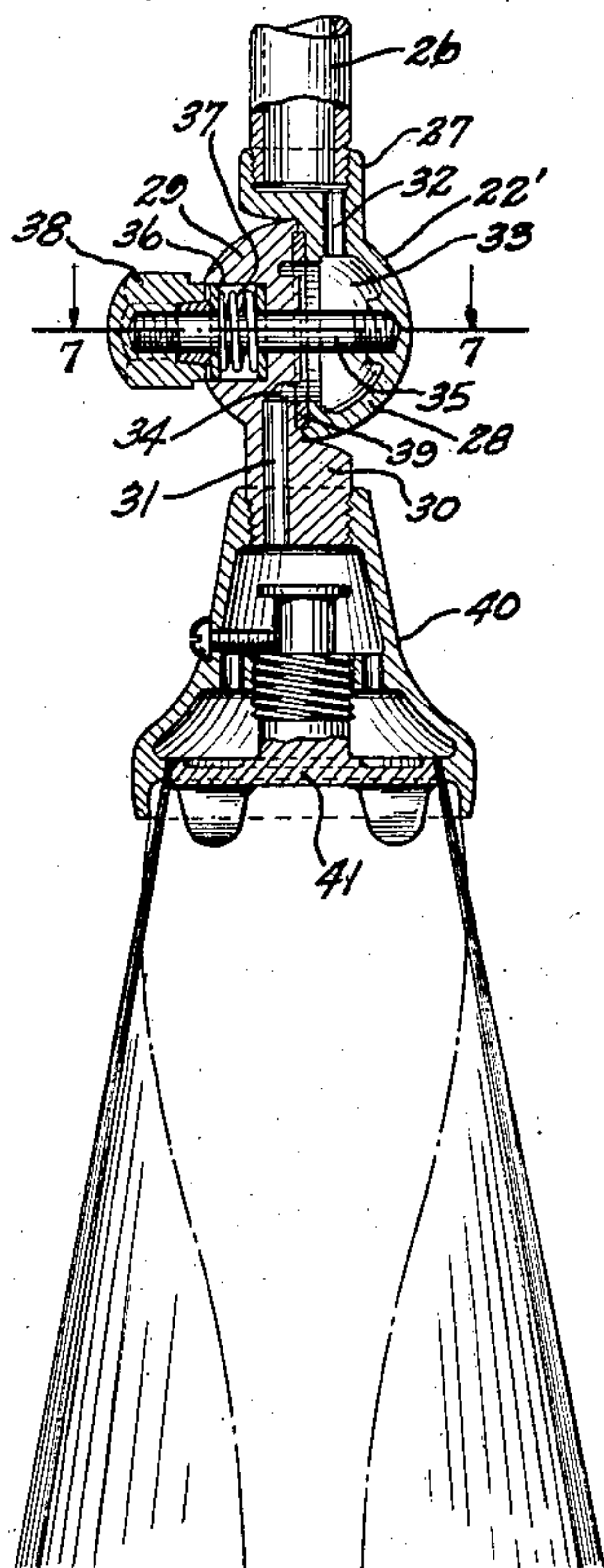


Fig. 3.

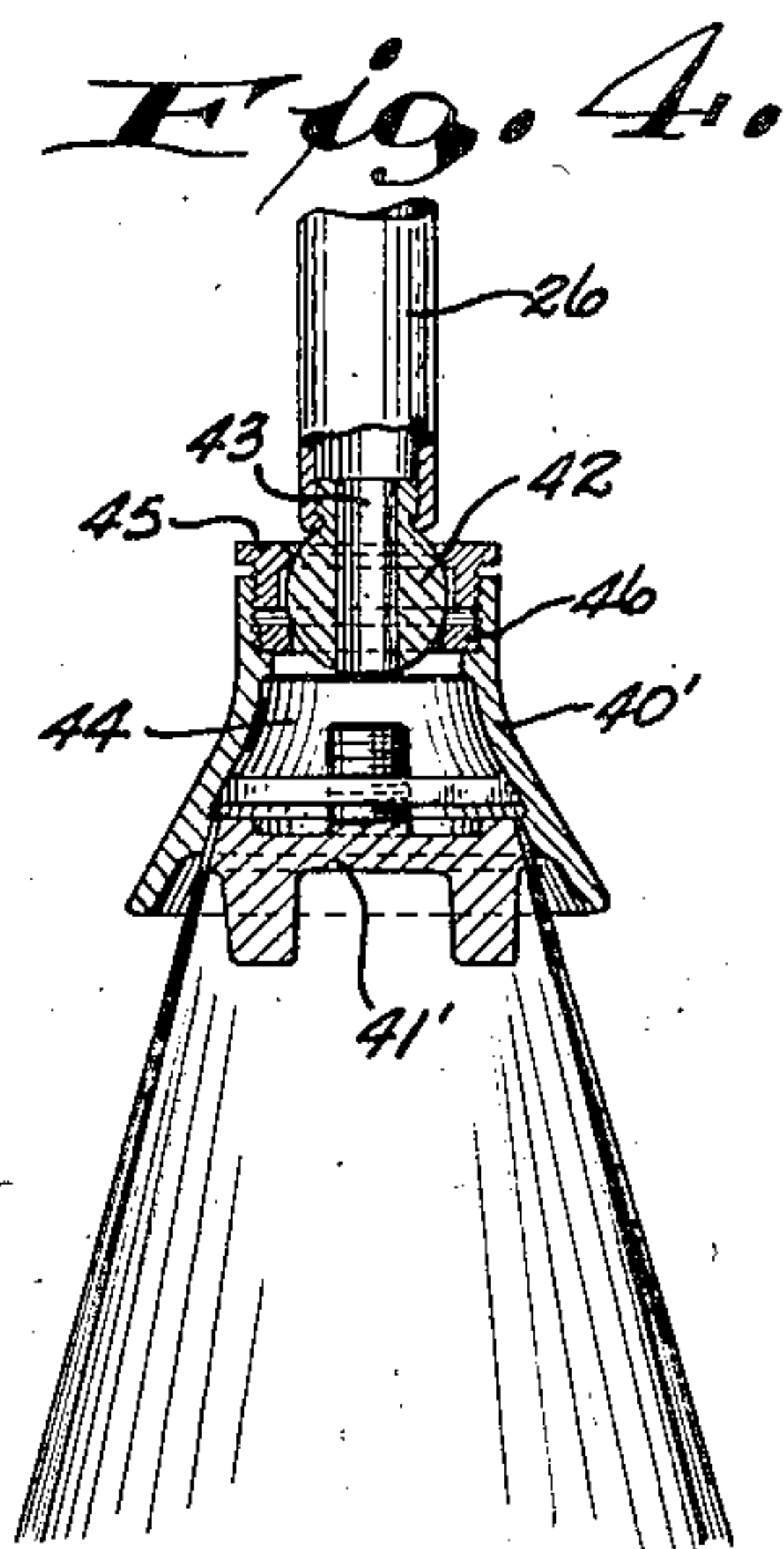
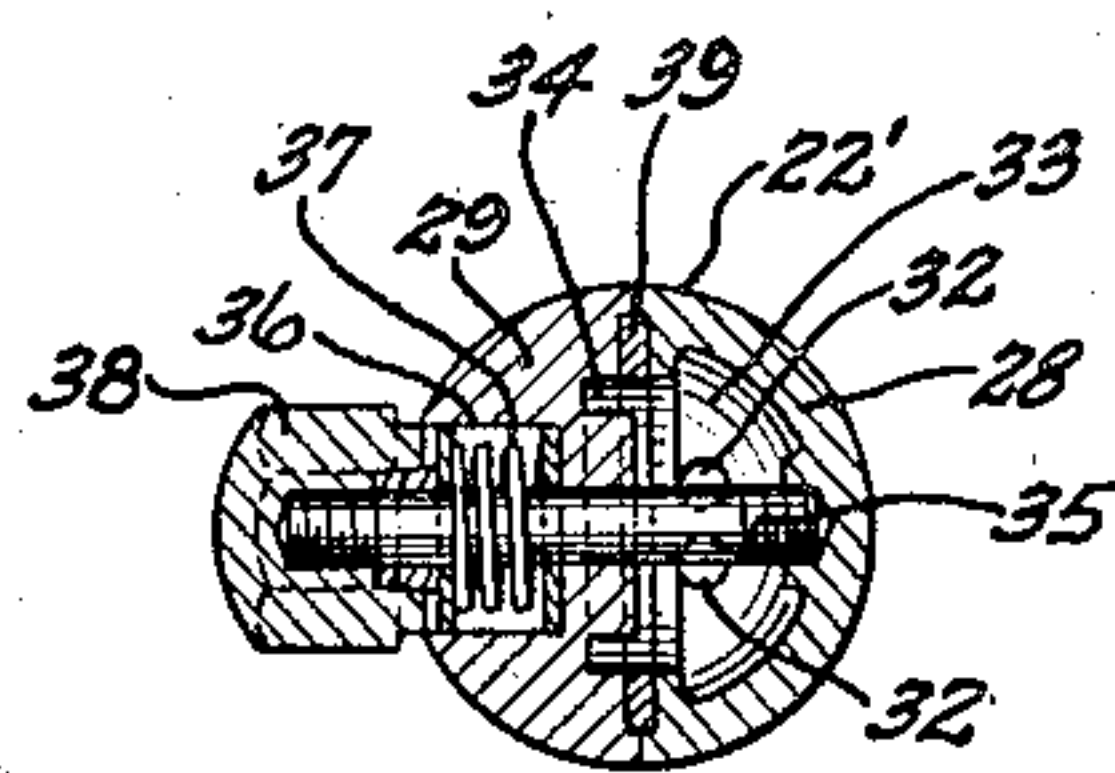


Fig. 5.

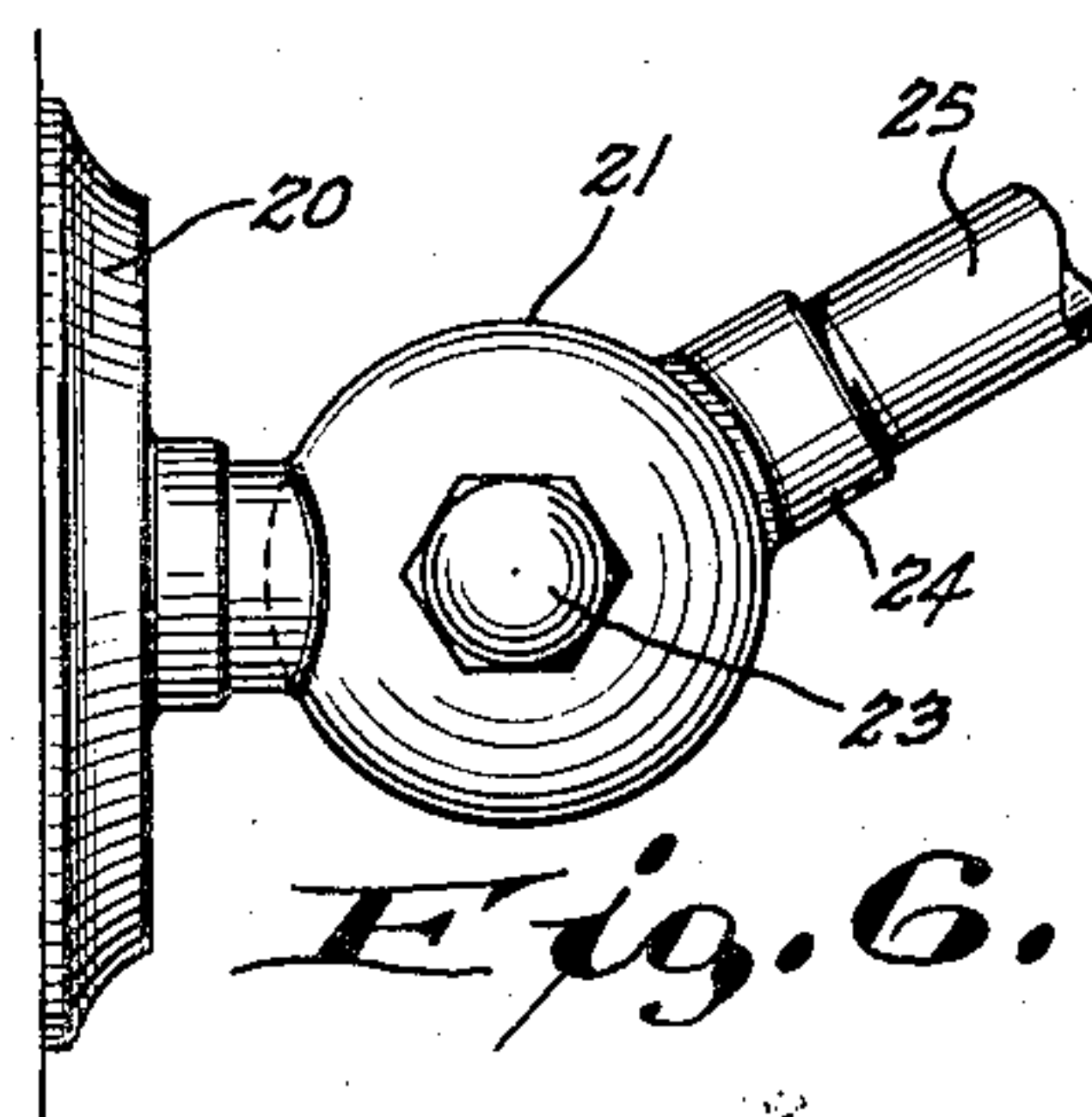


Fig. 6.

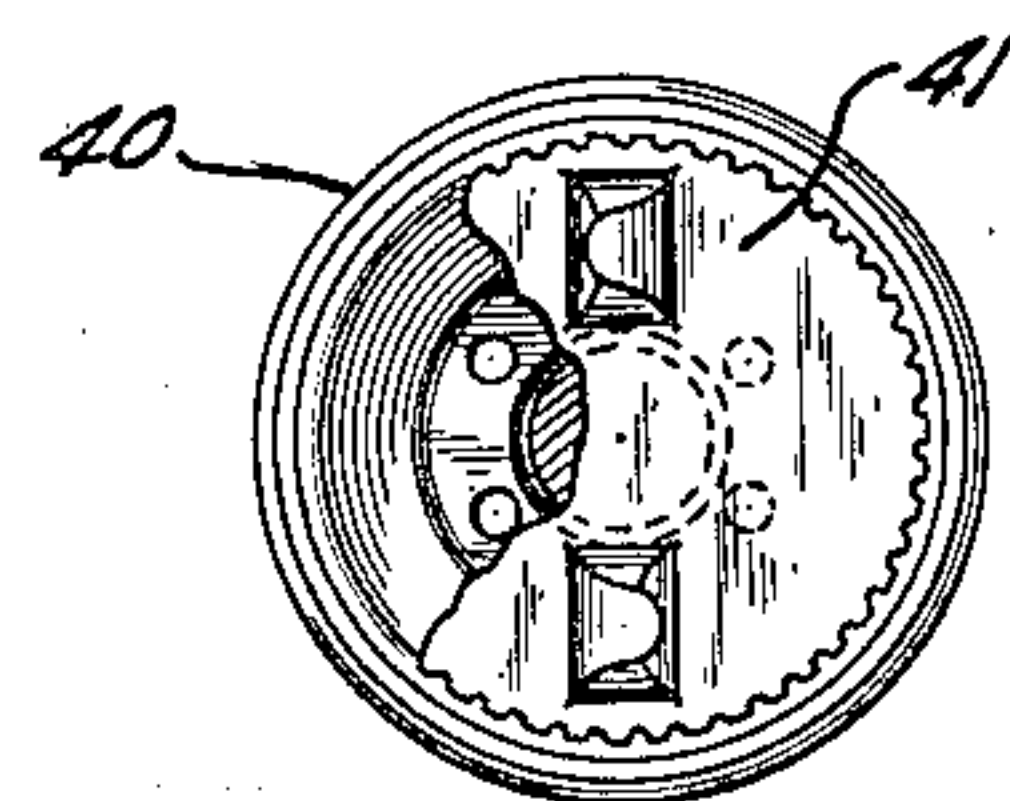


Fig. 7.

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UNITED STATES PATENT OFFICE

PLUMBING FIXTURE

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9 Claims. (Cl. 4—148)

many positions and at various elevations, to suit the position and convenience of the user.

Still another object of the invention is to provide a plumbing fixture which can be adjusted and manipulated very simply and rapidly without the use of tools.

Other specific objects of the invention are to provide an adjustable, multiple-purpose fixture of the character described which is simple in construction, which may be conveniently installed, assembled, or dismantled, which is inexpensive to manufacture, and which is highly effective and efficient in operation.

The above and other objects and advantages will be apparent from the following detailed description.

A clear conception of the several embodiments of the improvement and of the mode of constructing, manipulating and operating devices constructed in accordance therewith may be had 20 by referring to the drawing accompanying and forming a part of this specification, in which like reference characters designate the same or similar parts in the various views.

Fig. 1 is a fragmentary sectional view through 25
a bathtub and adjoining wall and floor portions
and showing the improved fixture installed, at
its inner end, within the tub, there being broken
line showings of various positions of adjustment
of the fixture: 30

Fig. 2 is a similar view only showing the inner end of the fixture installed above the tub;

Fig. 3 is an enlarged sectional view through the upper or outer joint member and the discharge head, with the regulating disc in one position of adjustment and showing the resulting form of the discharged spray of water;

Fig. 4 is an enlarged sectional view of a modified form of upper or outer joint member and a modified form of discharge head associated therewith;

Fig. 5 is an end view of the discharge head of Fig. 3 with a portion of the disc broken away;

Fig. 6 is an enlarged side view of the inner joint member and the mounting plate therefor; 45 and

Fig. 7 is a transverse sectional view taken on line 7—7 of Fig. 3.

While the invention has been shown herein as being specifically applied to a bathtub, it will be apparent that the novel features are more generally applicable to other types of receptacles, containers, sinks, and the like.

Referring now more particularly to the drawing, it will be apparent that by way of illustra- 55

5 A general object of the invention is to provide a unitary, adjustable plumbing fixture mounted adjacent a tub or receptacle and adjustable to position the discharge head at a considerable elevation above the receptacle, or with-
10 in or adjacent the receptacle, or positionable throughout a range between said limits, the device serving the purpose of multiple fixtures and requiring but a single set of control valves (or a mixing valve).

15 A further object of the invention is to provide
a fixture of the character described in which the
discharge head is universally adjustable for di-
recting the discharge therefrom in various di-
rections relative to the receptacle, and in which
20 the head may be arranged for manipulation to
convert the discharge from a stream or jet to
a spray, and vice versa.

In co-pending applications Serials #27,957, filed June 22, 1935, and 1,754, filed January 1, 1935, issued August 13, 1935, as patent #2,011,446, there are disclosed fixtures of the same general type as in the present invention, only said prior fixtures were designed to meet requirements against back-siphoning, which necessitated the location, or limited the disposition of the discharge heads to a position above the top of the tub or receptacle. These prior fixtures could not, therefore, be set with the discharge head or nozzle within the receptacle for the purpose of directing the jet or spray upwardly relative to the body of a person seated within the receptacle. Said prior fixtures, therefore, confined movement of the head to the longitudinal plane of the receptacle, because the head was of necessity kept above the receptacle walls.

The present invention is not concerned with the problem of back-siphoning and aims at the provision of a fixture which permits the discharge head to be brought down into the confines of the receptacle for a wide range of adjustment including directing the same upwardly or horizontally.

Another specific object of the invention is to provide a unitary adjustable fixture for wash receptacles wherein the head is adjustably carried by the outer end of an adjustably mounted, sectional conduit in which the sections of the conduit are also adjustably joined, whereby the entire fixture is susceptible of being adjusted and disposed relative to the receptacle in a great

tion the improved fixture is shown as being associated with a conventional bathtub 8, of the "built-in" type, and the adjoining end wall portions of the room wherein the tub is installed are represented by the numerals 9 and 10 respectively. The tub is provided with the usual bottom drain opening 11. Hot and cold water pipes 13 and 14, shown schematically, extend from a source (not shown) and are concealed rearwardly of the wall 9, and within said pipes are hot and cold water control valves 15 and 16 operated by valve rods and handles 17 and 18 projecting exteriorly of the wall 9 a suitable distance above the tub. In lieu of the separate valves and valve handles, it is obvious that a conventional form of mixing valve may be used, if desired. The hot and cold water pipes merge into a single pipe 19 which is extended through the wall. In Fig. 1 said pipe is extended through the wall portion 10 and through the end of the tub. It may be inconvenient to extend said pipe through the tub and Fig. 2 illustrates an arrangement wherein the pipe 19 is extended through the wall portion 9 immediately above the tub.

A bracket plate 20 embraces the outwardly projecting portion of the pipe 19, and said plate is secured to the outer surface of the wall 9. The bracket plate carries a lower knuckle joint member designated generally by the numeral 21. Said knuckle joint member is similar in construction to other knuckle joint members 22 and 22' used in the assembly, one being shown in detail in Figs. 3 and 7 and to be described fully hereinafter. The term "knuckle joint" as used herein and in the claims, is intended to cover any joint which allows relative angular movement between adjacent portions of two pipe or conduit sections, or between a pipe or conduit section and an adjacent structure. Suffice it to say that the joint member 21 is composed of two relatively movable sections having flat engaging surfaces and pivotally held together by a pin 23. The end of the pipe 19 which is embraced by the bracket plate 20 opens into a hollow reservoir within the joint member 21, and through certain ports water is discharged into a boss 24 into which is threaded the inner end portion of an elongated, rigid, tubular connection 25. The other end portion of said connection 25 is threaded into a boss 24' on the joint member 22.

Adapted to connect and coact with the tubular connection 25 is another elongated rigid, tubular connection 26. The inner end portion of this connection is threaded into a boss 25 also on the joint member 22, the connection 25 and the boss being in communication with the reservoir portion of the joint member 22 for water passage purposes. Obviously this structure forms a two-section jointed conduit. The entire conduit may be moved or adjusted on the joint member 21 and the outer conduit section 26 may also be moved or adjusted on the joint member 22 and relative to the conduit section 25. The outer end portion of the connection or conduit section 26 is threaded into a boss 27 on the joint member 22'.

With special reference to Figs. 3 and 7, it will be observed that the joint member 22' includes a substantially semi-spherical section 28 which is integral with the boss 27. Said section 28 has a flat face which is in engagement with a flat surface on a complementary semi-spherical section 29, the latter section having an integral, externally threaded stem 30 provided with an interior

duct 31. There is a pair of ducts 32 in the section 28 establishing communication with the tubular member 26, at one end; and said ducts, at their other ends, open into a chamber 33 in said section 28. Said chamber is complementary to a smaller chamber 34 in the section 29 which communicates with the inner end of the duct 31. The sections 28 and 29 are pivotally held together by a pivot pin 35 extended through a central portion of the section 29 and threaded into a portion of the section 28. Within a recess 36 in the section 29 and surrounding a portion of the pin 35 there is a tension spring 37. The spring is seated against the inner face of an adjustment cap 38 on the outer end of the pin, and said cap may be turned in either direction to vary the tension of said spring. Adjacent the meeting portions of the flat faces of the sections 28 and 29, disposed in suitable recesses, is a sealing ring or washer 39 to prevent leakage between said sections. As previously mentioned, the joint member 22', just described, may be exactly similar in construction to the joint members 21 and 22, the only difference being that the tension springs employed in the members 21 and 22 may be of different degrees of strength and tension than that employed in the member 22'.

Threaded onto the outer end portion of the stem 30 is a spray-spout or discharge head indicated generally by the numeral 40. Said discharge head is similar in construction and operation to that shown and described in co-pending application Serial #27,957, filed June 22, 1935. The disc 41 in said head may be manipulated to cause water to be discharged in the form of an annular, diverging shower spray, or in the form of a substantially solid jet or stream, as desired.

In Fig. 4 a slight modification is illustrated. The outer end portion of the conduit section 26 has secured therein a cylindrical portion of a ball member 42. The ball member has a port 43 therethrough establishing communication between the member 26 and the inner chamber 44 of a discharge head 40'. The head is substantially universally movable on the ball 42 and relative to the member 26 and is adjustably held on said ball by a gland 45 and a ring 46 engaging different portions of the ball member and in threaded engagement with internal, inner end portions of the discharge head. The discharge head 40' is of the type shown and described in U. S. Patent #2,011,446, and by manipulation of a disc 41' the form of the discharged water can be regulated.

Obviously, the joint member 21 permits movement of the conduit section 25 relative to the support, the joint member 22 permits movement of the conduit section 26 relative to the section 25, and the joint member 22' (or the form of joint shown in Fig. 4) permits movement of the head member relative to the conduit section 26. By this arrangement a great variety of positions of the apparatus may be attained, as appears from the full and broken line showings in Figs. 1 and 2.

The flow of water through the apparatus is as follows: Assuming that both of the valves 15 and 16 are opened, water flows from the pipes 13 and 14 into the pipe 19 and mixes therein, as well as in the subsequent connections. From the pipe 19 the water flows through the joint member 21 and into and through the conduit section 25. At the outer end thereof the water

passes through the joint member 22 and then into and through the conduit section 26. At the end of this conduit section the water passes through the outermost joint member and into and through the discharge head, from whence it is discharged as a spray or jet.

With the improved apparatus installed as shown, a minimum of fittings and parts are required and they are conveniently located relative to the tub or receptacle. The sectional and jointed conduit provides for a great range and variety of positions for the discharge head for various purposes. If the device is to be used as a shower bath it may be adjusted similarly to the full line showings in the drawing and may be disposed or swung to the proper elevation for the person using the apparatus. For shampooing or showering other portions of the body, the device may be manipulated to other intermediate positions. A person may stand in the receptacle or be seated exteriorly of the receptacle and lean over the same. It is also possible, as illustrated in broken lines, to position the discharge head within the lower portion of the receptacle for directing a jet or spray upwardly relative to a person seated in the receptacle. With the conduit section 25 turned upwardly and the conduit section 26 turned downwardly, the device may be used to fill, rinse or flush out the receptacle, and for these purposes the head may be moved around on its joint member.

The apparatus is of particular advantage and is inexpensive to manufacture and install in that it eliminates one complete set of valves and spout necessary in the former combination spray and spout installation. The adjustability of the two-part-conduit relative to the support, and the adjustability of the conduit sections relative to one another and the head relative to the conduit gives a wide range of movement and many convenient dispositions for multiple bathing and washing purposes. While the improved plumbing fixture has been shown and described herein as being specifically applied to a receptacle in the form of a bathtub, it is the intent to have that term whenever employed herein, cover other types of wash receptacles. The entire structure is unique and attractive in appearance, may be very easily and conveniently adjusted and manipulated, and has demonstrated its practicability in actual use.

It should be understood that it is not desired to limit the present invention to the exact details of construction shown and described, for various modifications within the scope of the claims may occur to persons skilled in the art.

What is claimed as the invention is:—

1. A plumbing fixture, comprising a support adjacent a receptacle, a discharge head, and an elongated, sectional conduit between the head and the support and pivotally connected to the latter, the discharge head and the outer end of the conduit being swingable from an elevated position over the receptacle and remote therefrom to a position within the receptacle.

2. A plumbing fixture, comprising a support adjacent a receptacle, a discharge head, and an elongated, sectional conduit between the head and the support and pivotally connected to the latter, the sections of the conduit being rigid, the discharge head and the outer end of the conduit being swingable from an elevated position over the receptacle and remote therefrom to a position within the receptacle.

3. A plumbing fixture, comprising a support

adjacent a receptacle, a discharge head, and an elongated, sectional conduit between the head and the support and pivotally connected to the latter, the sections of the conduit being rigid and connected by joint members permitting pivotal movement of one conduit section relative to the adjacent section, the discharge head and the outer end of the conduit being swingable from an elevated position over the receptacle and remote therefrom to a position within the receptacle.

4. A plumbing fixture, comprising a support adjacent a receptacle, a discharge head, and elongated movable and intermediately jointed means for supporting said head for disposition throughout a range, one limit point of which is considerably above and the other limit point of which is within the receptacle, said jointed means being pivotally connected to the support.

5. A plumbing fixture, comprising a support adjacent a receptacle, a discharge head, and elongated movable means for supporting said head for disposition throughout a range, one limit point of which is considerably above and the other limit point of which is directly adjacent the receptacle, said elongated means being formed of rigid conduit sections, and joint means between adjacent ends of said sections, said elongated means being pivotally connected at its inner end to said support.

6. A plumbing fixture, comprising an elongated tubular member formed of rigid sections movably connected together and movably supported at one end adjacent a receptacle, and a discharge head movably carried by the other end portion of the tubular member, the elongated member being movable and bendable to position the discharge head throughout a range, one limit point of which is considerably above and the other limit point of which is directly adjacent a receptacle.

7. A plumbing fixture, comprising a support adjacent a receptacle, a discharge head, and an elongated conduit between the head and the support and pivotally connected to both of the same, the conduit being formed of a pair of pivotally connected sections, the head and the outer conduit section being swingable throughout a plane longitudinally of the receptacle from an elevated position over the receptacle and remote therefrom to a position directly adjacent the receptacle.

8. A plumbing fixture, comprising a support adjacent a receptacle, a discharge head, and an elongated conduit between the head and the support and pivotally connected to both of the same, the conduit being formed of a pair of pivotally connected sections, the head and the outer conduit section or the head and both conduit sections being swingable throughout a plane longitudinally of the receptacle to dispose the head above the receptacle and remote therefrom, within the receptacle, or in intermediate positions between said limits.

9. A plumbing fixture, comprising a joint member mounted on a support adjacent a wash receptacle, another joint member pivotally carrying a discharge nozzle, a pair of elongated rigid conduit members interposed between said joint members, and another joint member interposed between the adjacent ends of said conduit members, the innermost conduit member being movable on its joint member relative to said support.