

**Jan. 27, 1953**

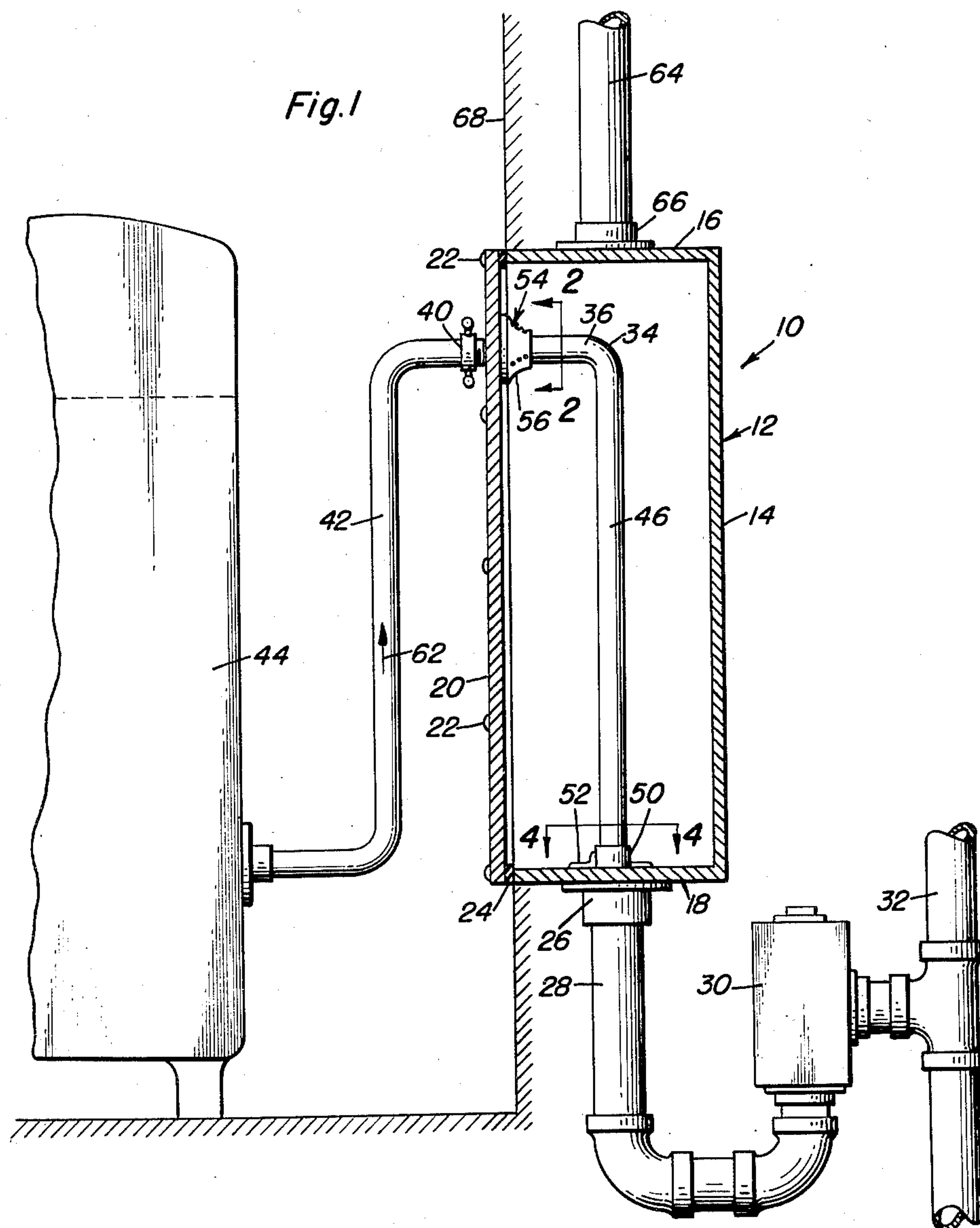
J. L. FRYE ET AL

**2,626,835**

SPRAYING HEAD

Filed Nov. 27, 1950

2 SHEETS--SHEET 1



**Jason L. Frye**  
**Jason W. Frye**  
**INVENTORS**

BY *Charles A. O'Brien*  
*and Harvey B. Jacobson*  
Attorneys

Jan. 27, 1953

J. L. FRYE ET AL  
SPRAYING HEAD

2,626,835

Filed Nov. 27, 1950

2 SHEETS—SHEET 2

Fig. 2

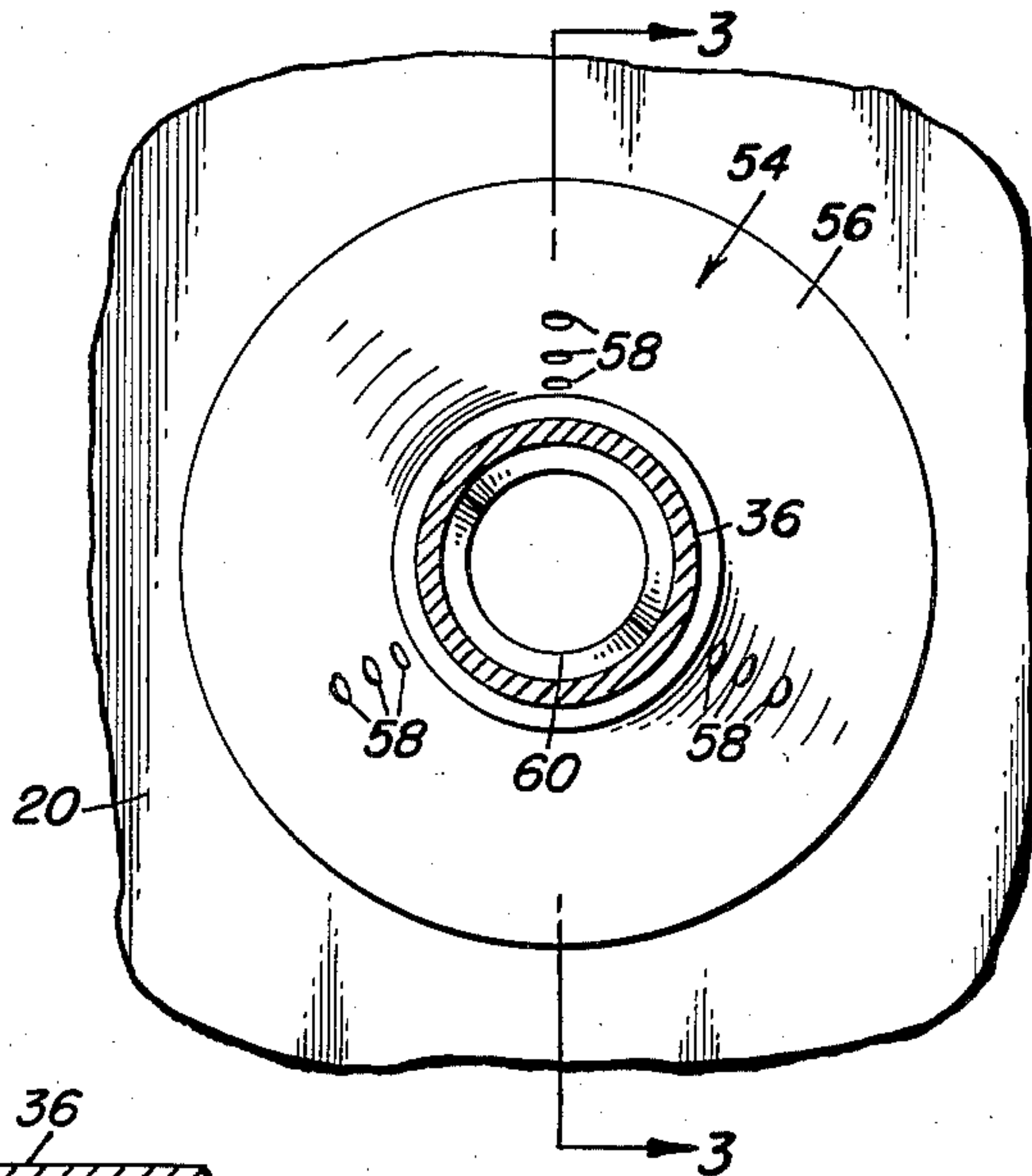


Fig. 3

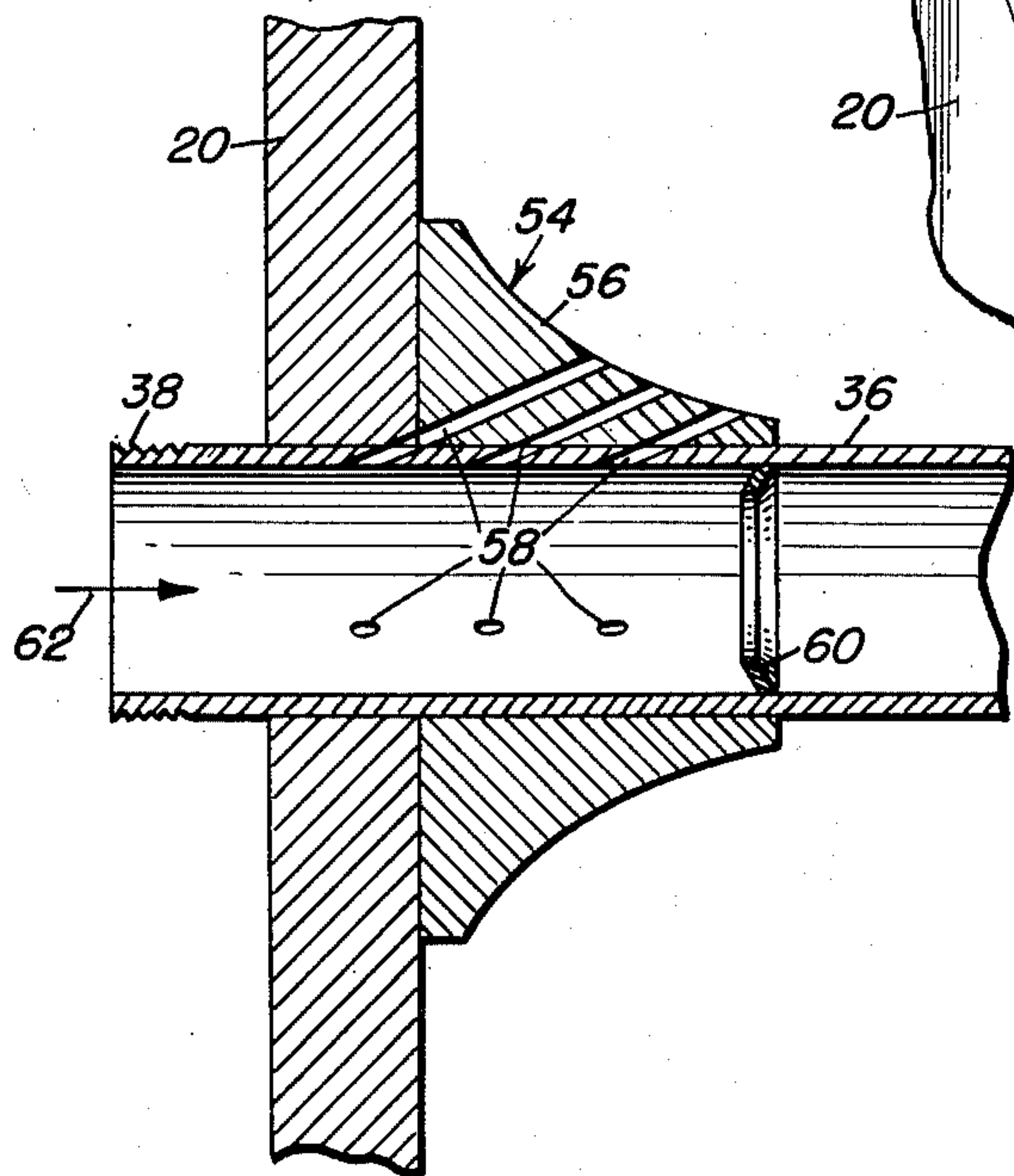


Fig. 4

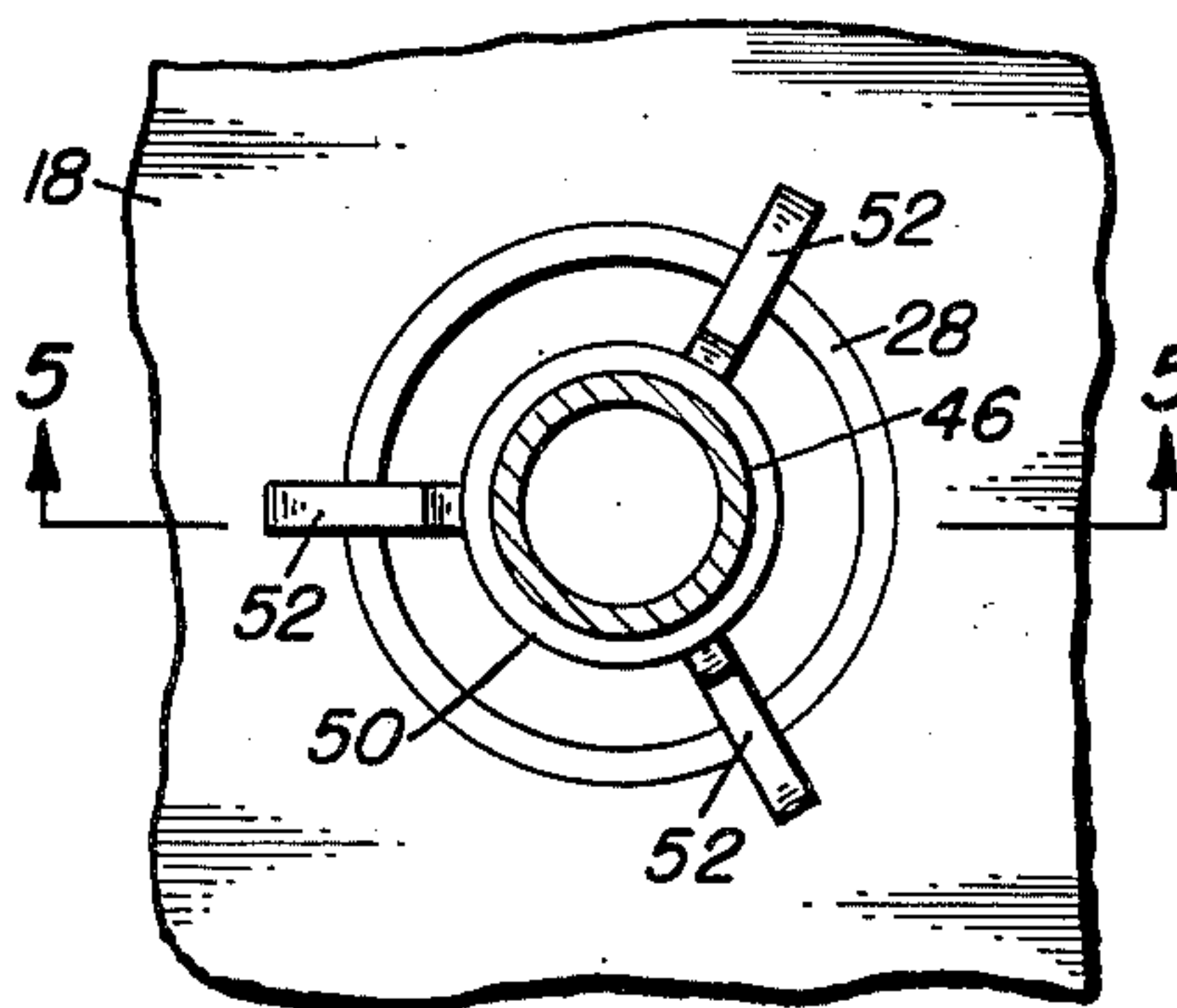
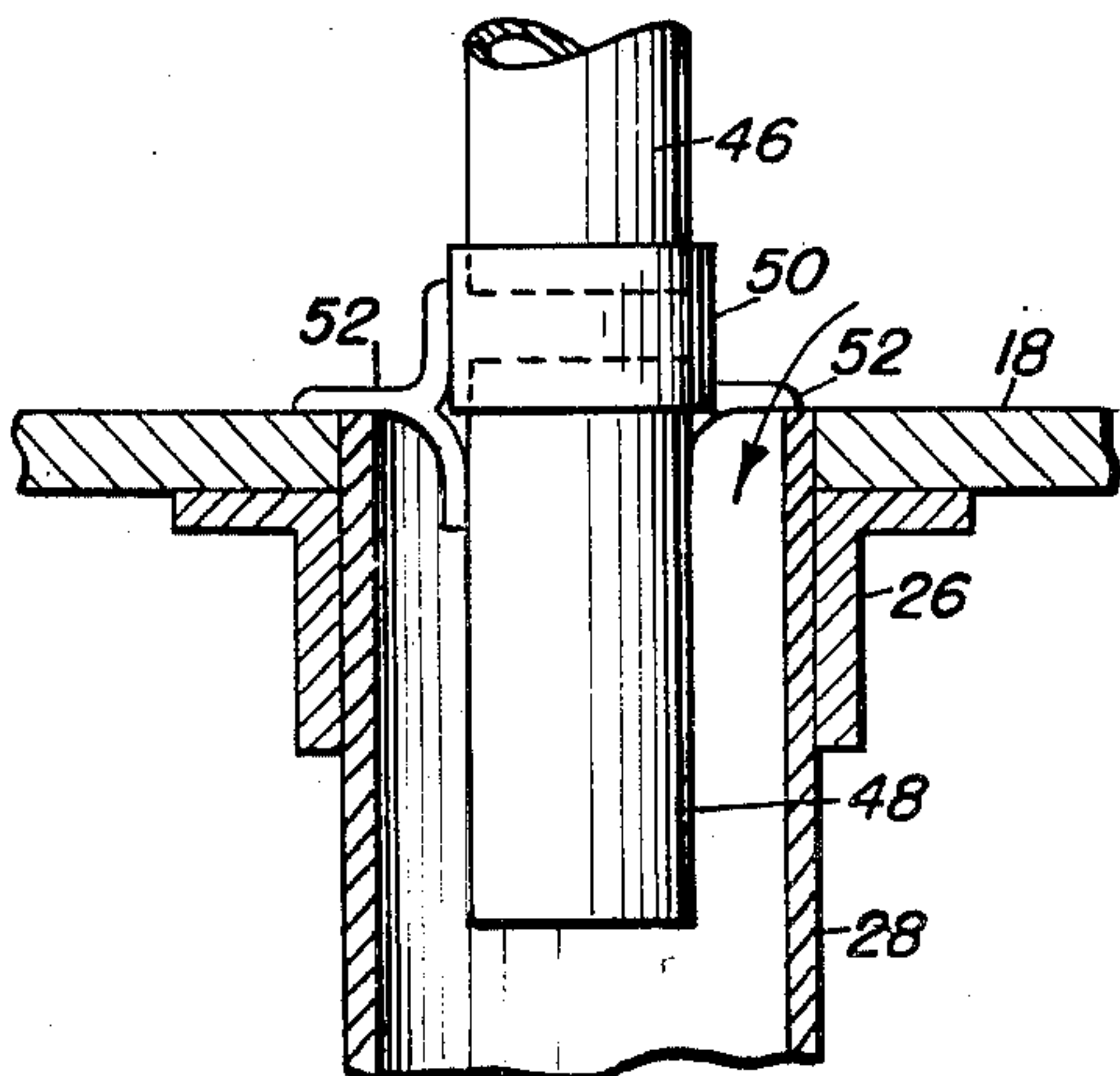


Fig. 5



Jason L. Frye  
Jason W. Frye  
INVENTORS

BY *Alfred A. O'Brien*  
and *Harvey B. Jacobson*  
Attorneys



## UNITED STATES PATENT OFFICE

2,626,835

## SPRAYING HEAD

Jason L. Frye, Denison, and Jason W. Frye,  
Fort Worth, Tex.

Application November 27, 1950, Serial No. 197,744

1 Claim. (Cl. 299—104)

1

This invention relates to new and useful improvements and structural refinements in disposal apparatus for liquid waste, and the principal object of the invention is to provide apparatus of the character herein described, which may be conveniently and effectively employed in homes, factories, restaurants, etc., for highly sanitary disposal of waste liquid from washing machines, dishwashers, ice boxes, and the like.

Some of the advantages of the invention reside in its simplicity of construction, in its efficient and highly sanitary operation, and in its adaptability for economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a side elevational view of the invention connected for operation, the housing of the invention being shown in section;

Figure 2 is a fragmentary sectional view, on an enlarged scale, taken substantially in the plane of the line 2—2 in Figure 1;

Figure 3 is a fragmentary sectional view, taken substantially in the plane of the line 3—3 in Figure 2;

Figure 4 is a fragmentary sectional view, taken substantially in the plane of the line 4—4 in Figure 1, on an enlarged scale; and

Figure 5 is a fragmentary sectional view, taken substantially in the plane of the line 5—5 in Figure 4.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a waste liquid disposal apparatus which is designated generally by the reference character 10 and embodies in its construction a vertically elongated housing 12 including a lateral wall 14, a top end wall 16, a bottom end wall 18 and a flat side wall portion 20 which constitutes a removable cover plate and is secured to the housing by suitable screws 22. A perimetric gasket 24 is provided between the cover 20 and the housing to prevent leakage.

The bottom wall 18 of the housing 12 is provided with a flange 26 in which is secured the upper end portion of a downwardly extending waste outlet duct 28, the latter communicating through the medium of a conventional trap 30 with a suitable drain pipe 32.

A waste liquid transmitting tube 34 includes a

2

horizontal upper end portion 36 which enters the upper end portion of the housing 12 through the cover 20 and is screw threaded at the outer end thereof as at 38 for connection by a suitable coupling 40 to a pipe 42 leading from a washing machine, dishwasher, ice box, or the like, 44 which is to be serviced by the disposal apparatus.

The tube 34 also includes a downturned, vertical continuation 46 of the portion 36, the portion 46 extending longitudinally in the housing 12 and terminating at its lower end in a tubular extension 48 which is secured to the portion 46 by a sleeve 50.

The tubular extension 48 is disposed in diametrically spaced relation within the upper end portion of the outlet duct 28 and is sustained in a centralized position therein by a plurality of keepers 52. These keepers rest on the bottom end wall 18 of the housing 12 and supportably engage the sleeve 50 as well as the extension 48, as is best shown in Figure 5.

The horizontal portion 36 of the tube 34 is provided with a spraying head which is designated generally by the reference character 54, this consisting of a substantially frusto-conical flange 56 which is secured to the tube portion 36 in abutment with the inner surface of the cover plate 20, while a plurality of obliquely extending spraying orifices 58 are drilled through the flange 56 and through the tube 36 so that the interior of the tube 36 may communicate with the interior of the housing 12.

A liquid flow retarding annulus 60 is secured in the tube portion 36 at the inner end of the flange 56, that is, inwardly of the orifices 58, and when in operation, waste liquid passes through the pipe 42 in the direction of the arrow 62 and enters the spraying head 54, the flow of that liquid will be retarded by the annulus 60 so that a certain portion of the liquid will be discharged under pressure through the orifices 58, resulting in a spraying action of the liquid in the upper portion of the housing 12 and subsequent gravitation thereof to the bottom end wall 18 and through the space between the extension 48 and the outlet duct 28 into the outlet duct and, through the trap 30, into the drain pipe 32.

However, that portion of the liquid which is not sprayed through the orifices 58, will pass through the annulus 60 and downwardly through the tube portion 46 and the extension 48 into the outlet duct 28 wherein it will mix with the liquid drained downwardly from the spraying head 54.

The liquid draining from the housing 12 into the duct 28 will create a certain amount of as-



3

pirating action at the lower end of the extension 48, while the spraying action itself will cause a certain amount of aeration within the housing, thus affording an escape for odoriferous substances from the waste liquid.

The odoriferous substances which are so released are automatically discharged from the housing 12 through a vent pipe or stack 64 which is connected by a flange 66 to the top end wall 16 of the housing and which communicates at its upper end with the atmosphere.

As is best shown in Figure 1, the entire apparatus 10 is preferably mounted or concealed within a wall 68, so that it does not detract in terms of space and appearance from the room in which the machine 44 itself is positioned.

It is believed that the advantages and use of the invention will be clearly understood from the foregoing disclosure and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

Having described the invention, what is claimed as new is:

In a spraying head, the combination of a pipe for conducting liquid under pressure, a substan-

4

tially frustoconical flange secured to an intermediate portion of said pipe with its relatively large end facing upstream of the liquid flow, said flange and said pipe being provided in circumferentially spaced radial planes with rows of spraying orifices, the orifices in each row having straight parallel axes divergent from the axis of the pipe in the direction of liquid flow, each orifice extending from the inner wall of the pipe to the outer wall of the flange, and flow retarding means provided in the pipe substantially at the small end of said flange.

JASON L. FRYE.  
JASON W. FRYE.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
759,731	Miller	May 10, 1904
2,127,715	Bonner	Aug. 23, 1938
2,389,005	Sebald	Nov. 13, 1945
2,428,045	Sharp et al.	Sept. 30, 1947
2,494,067	Snowden et al.	Jan. 10, 1950
2,539,344	Carraway	Jan. 23, 1951

#### FOREIGN PATENTS

Number	Country	Date
534,904	Germany	Mar. 6, 1927