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D. J. MACPHERSON ET AL

2,444,459

CONNECTOR

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Fig. 1.

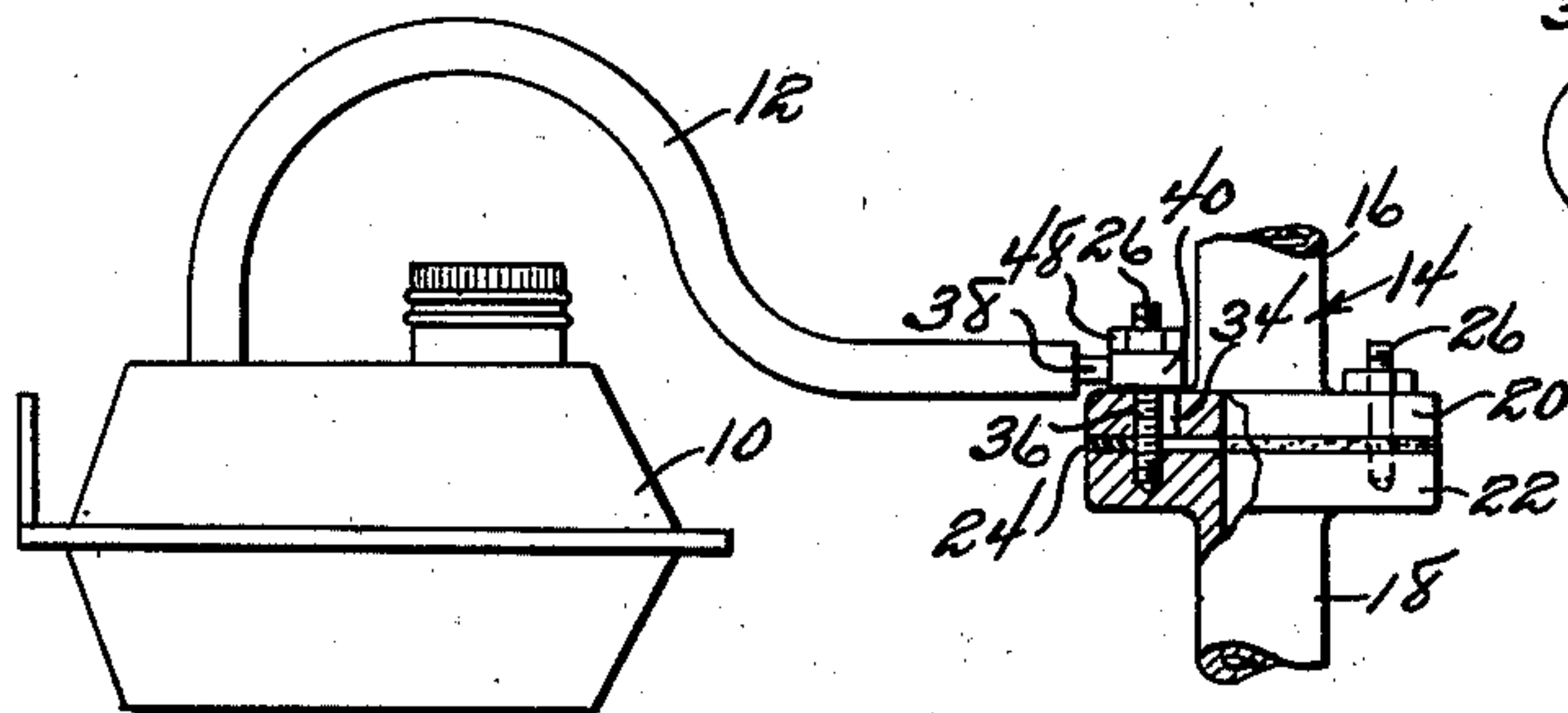


Fig. 7.

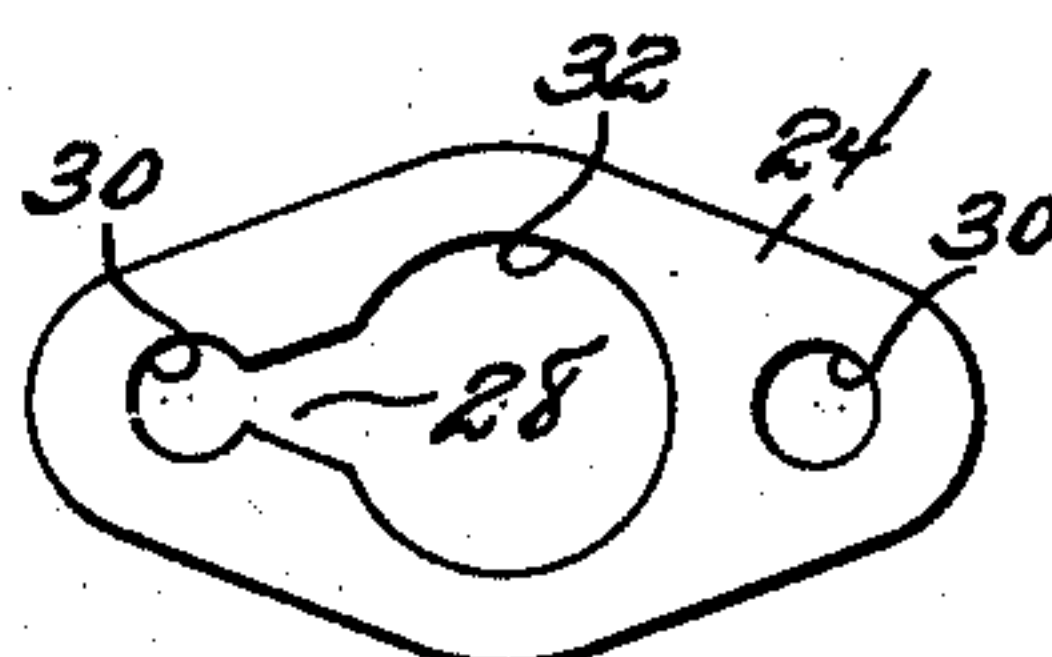


Fig. 2.

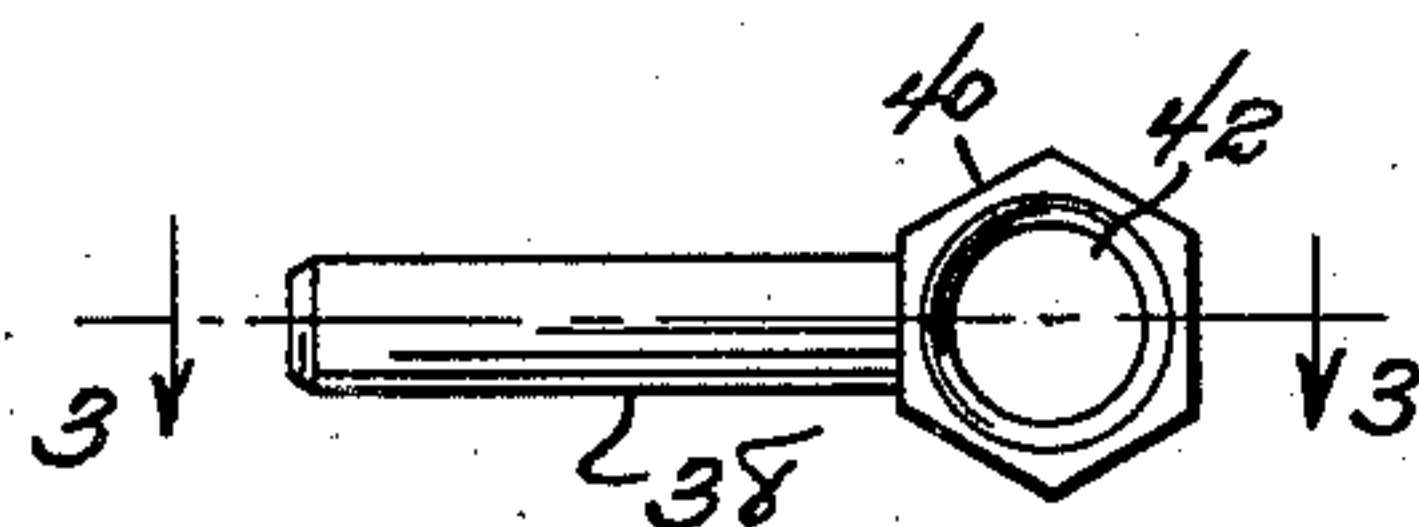


Fig. 3.

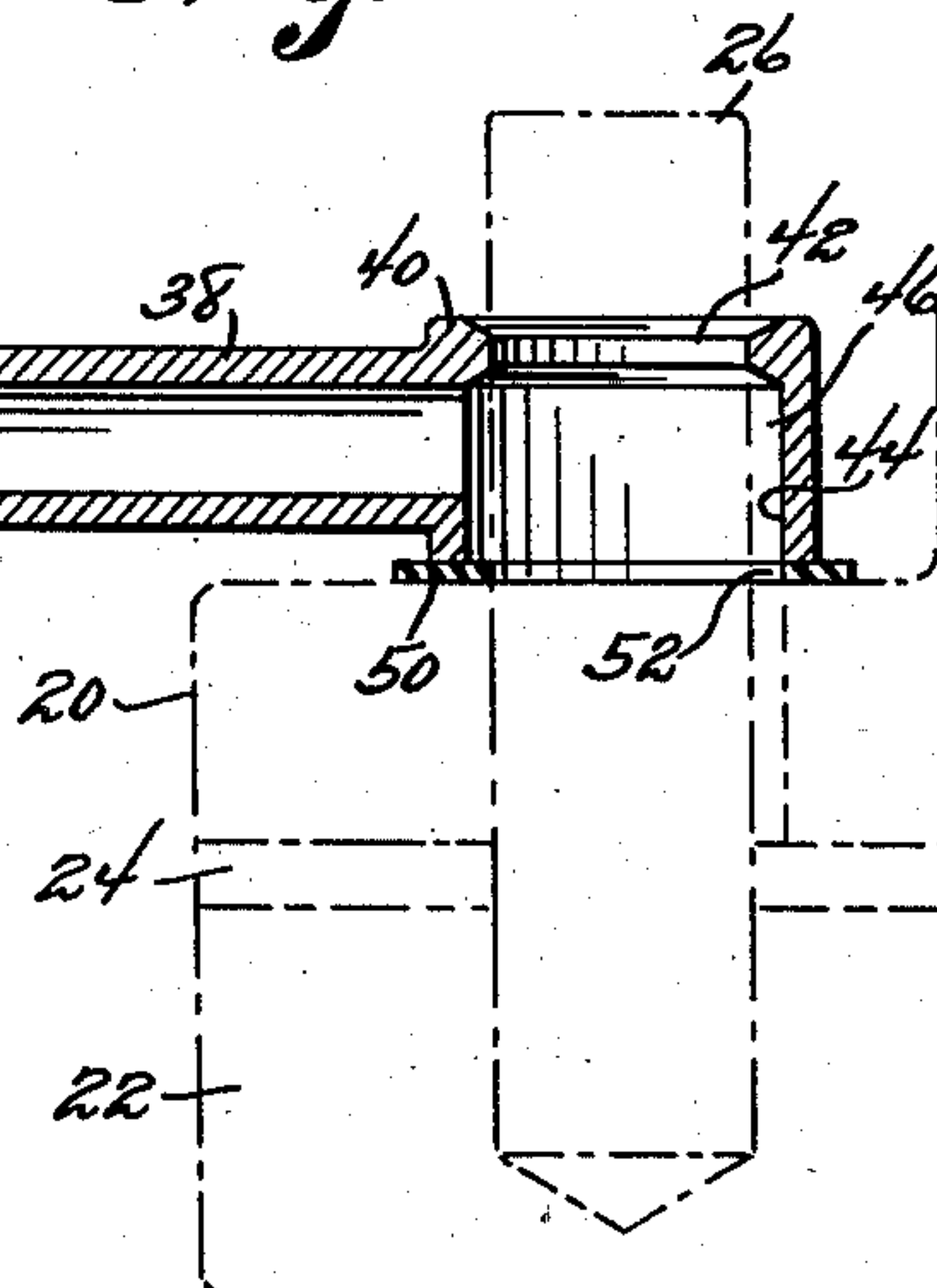


Fig. 4.

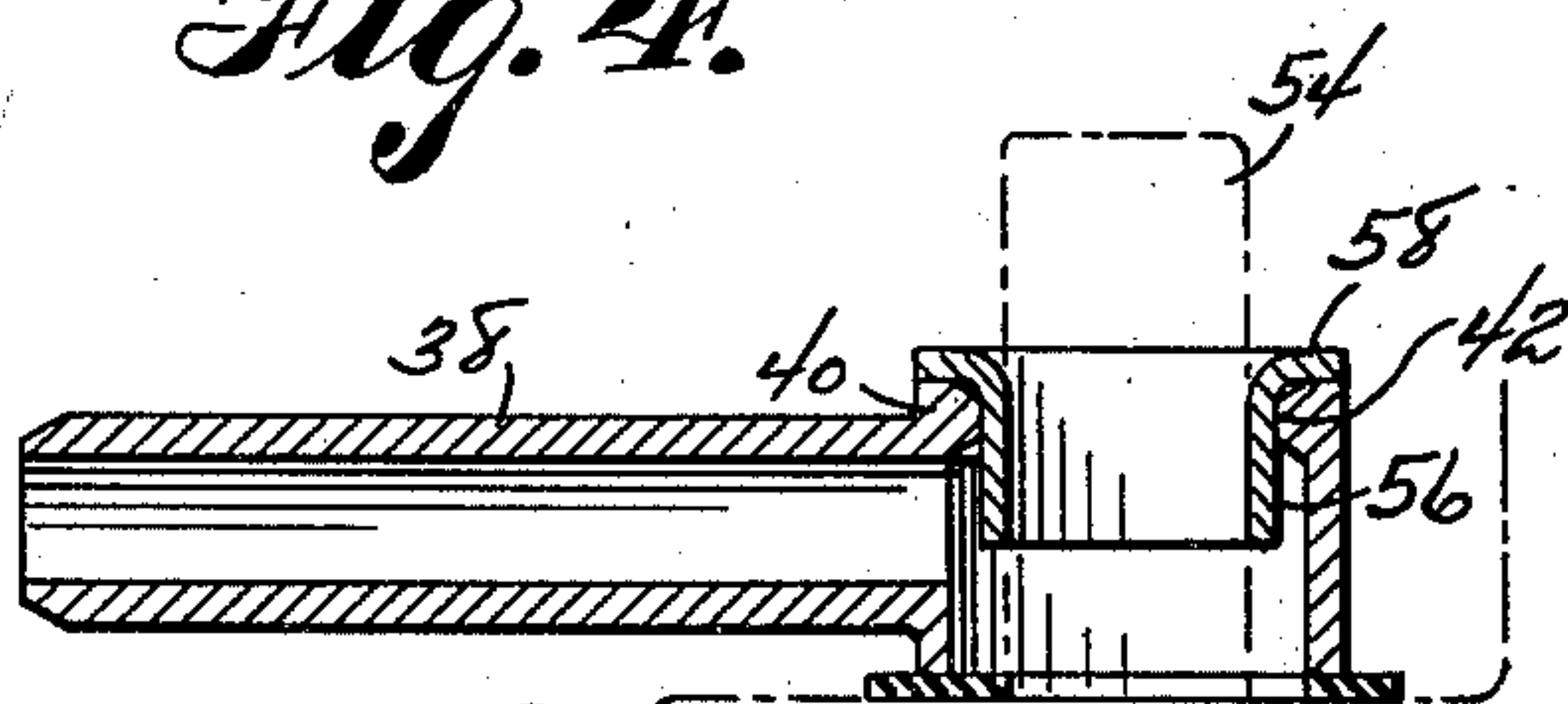


Fig. 5.

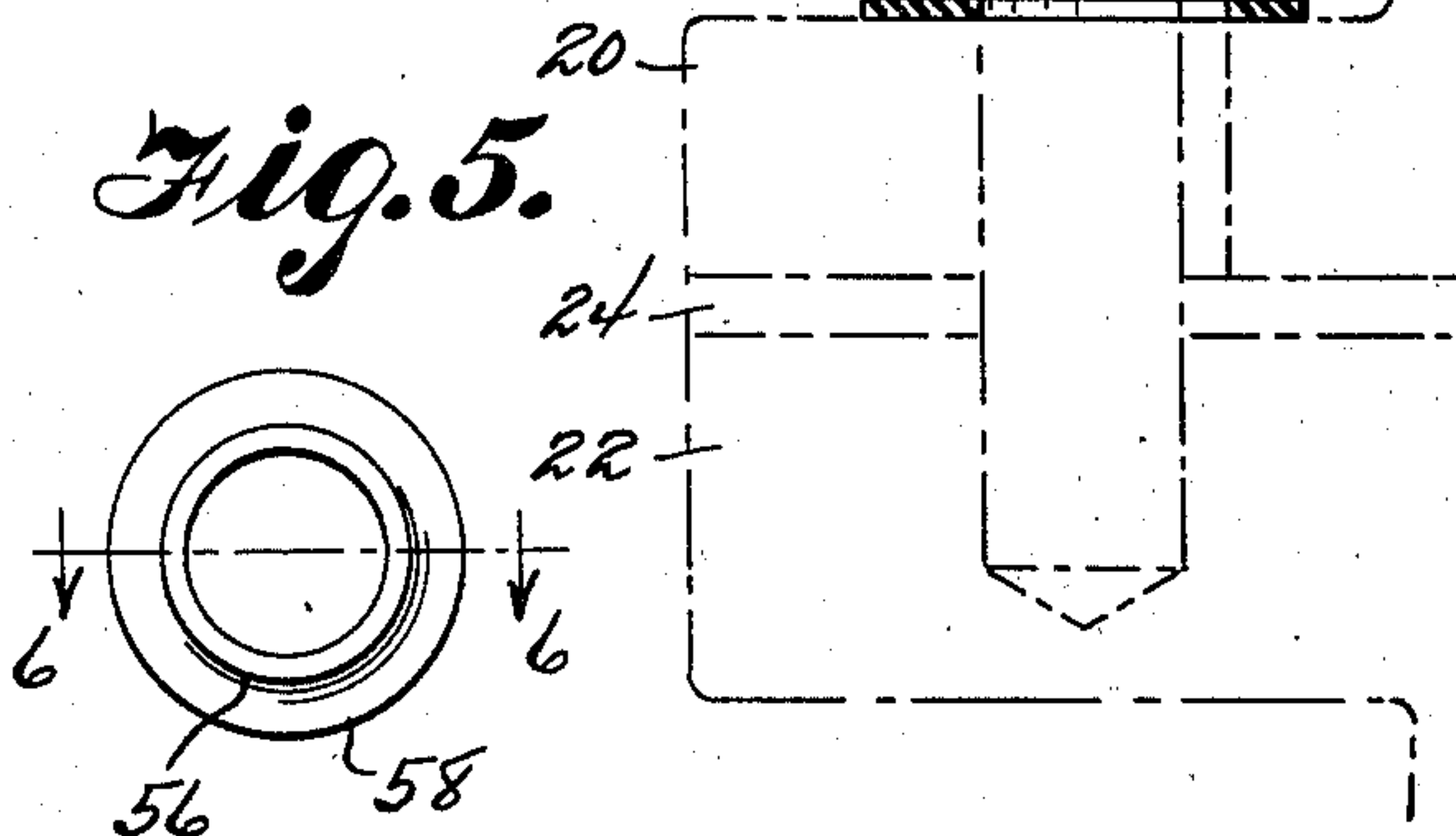
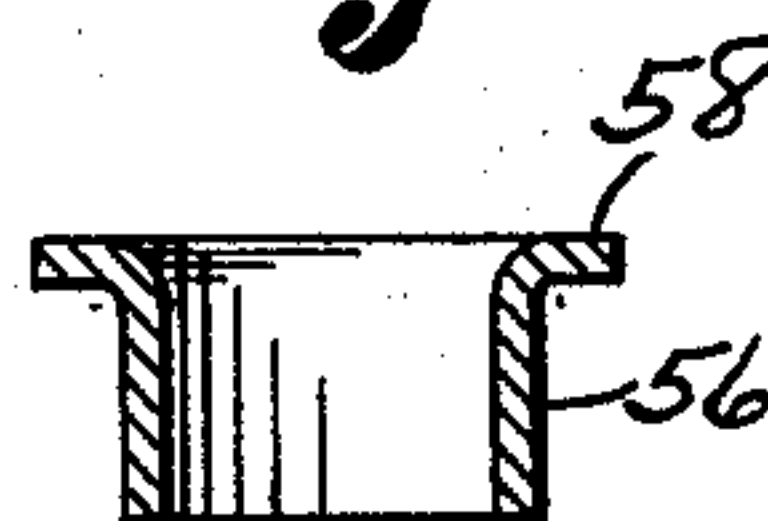


Fig. 6.



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CONNECTOR

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1 Claim. (Cl. 285—130)

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Our invention relates to internal combustion engines, particularly means for introducing moist air, lubricated fumes and the like into the combustion chamber or fuel passage immediately adjacent thereto, and has among its objects and advantages the provision of an improved fume connection.

In the accompanying drawings:

Figure 1 is a view illustrating our invention applied to the usual conduit leading from the carburetor to the intake manifold of an automotive vehicle engine.

Figure 2 is a top view of the connection.

Figure 3 is an enlarged sectional view along the line 3—3 of Figure 2.

Figure 4 is a view similar to Figure 3 but illustrating the invention applied to a situation employing small studs for connecting the sections of the conduit.

Figure 5 is an end view of a sleeve insert such as is employed in Figure 4.

Figure 6 is a sectional view along the line 6—6 of Figure 5, and

Figure 7 is a face view of a reconstructed gasket.

In the embodiment of the invention selected for illustration, Figure 1 illustrates a tank 10 which may be employed as a container for fume generating materials to be introduced into the internal combustion engine. A conduit 12 leads from the tank 10 to the fuel conduit 14 which leads from the carburetor to the intake manifold of the engine.

The present invention is not concerned with the specific construction and function of the tank 10, in that the conduit 12 may be employed for introducing various types of vapor and lubricated fumes into the engine. Our invention is concerned with the specific structure which facilitates connection of the tank 10 with the fuel conduit 14.

In Figure 1 the conduit 14 comprises the usual sections 16 and 18. These sections are respectively provided with flanges 20 and 22 between which a gasket 24 is interposed. Bolts or studs 26 clamp the flanges 20 and 22 and the gasket 24 into a unitary structure. Figure 7 illustrates the gasket 24 as being cut out at 28 to provide communication between one of the stud receiving openings 30 and the large opening 32 which conforms to the inside diameter of the sections 16 and 18. A groove 34 is cut in the flange 20 to provide a passage paralleling and communicating with the stud receiving opening 36 for one of the studs 26. This groove has communication with the passage 28.

A short tube 38 is inserted in the hose or con-

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duit 12 and has a head 40 formed at one end thereof and provided with an annular flange 42 fitting snugly about the stud 26, with the head provided with a bore 44 of larger diameter than the stud so that the space 46 about the stud has communication with the tube 38. Thus the tube 38 has communication with the groove 34 and the passage 28, so that the fumes or vapors may pass from the tube 12 to the section 18 of the conduit 14 for delivery to the fuel mixture in close proximity to the combustion chamber or the intake manifold of the engine. The head 40 is firmly clamped into fixed relationship with the flange 20 through tightening of the nut 48, and a sealing washer 50 may be introduced between the head and the flange 20, which washer should have a passage 52 registering with the groove 34.

We make use of the stud opening in the flange 20 as a means of introducing the added materials to the fuel mixture. It is a relatively easy matter to disconnect the flanges 20 and 22 and cut the gasket 24 and enlarge the stud opening. Figure 3 illustrates the type of head employed in connection with studs of the larger diameters, such as three-eighths of an inch. In some engines, smaller studs are employed such as five-sixteenths of an inch diameter.

Figure 4 illustrates such a stud at 54, with a sleeve 56 inserted in the annular flange 42 to constitute a filler. This sleeve has a flange 58 engaging the end of the body 40 to be fixedly clamped thereto when the stud nut is tightened.

Without further elaboration, the foregoing will so fully explain our invention, that others may, by applying current knowledge, readily adapt the same for use under various conditions of service.

We claim:

A means for introducing extraneous matters such as moist air and the like into a sectional conduit having bolted flanges and a gasket between the flanges, comprising a hollow head having a tube extending at right angles therefrom centrally of the periphery thereof and communicating with a source of moist air or the like, said head arranged about one of the bolts, a bore in said head of larger internal diameter than the bolt, an annular flange on the head at the upper marginal edge of the bore, and the lower marginal edge of the head being sealed between the bolt and the flange, the space between the bore and the bolt having communication with a passage formed alongside of the flange bolt holes and said passage communicating with the fuel conduit through a passage formed in the gasket between the bolt hole and the passage, and a filler sleeve in the head be-

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tween the flange thereon and the nut on the bolt
and clamped by the nut.

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