Jan. 12, 1932. E. C. BROWN ET AL 1,840,483

MANIFOLD AND DETACHABLE SWIVEL CONNECTION THEREFOR

Filed Jan. 25, 1929 2 Sheets-Sheet 1

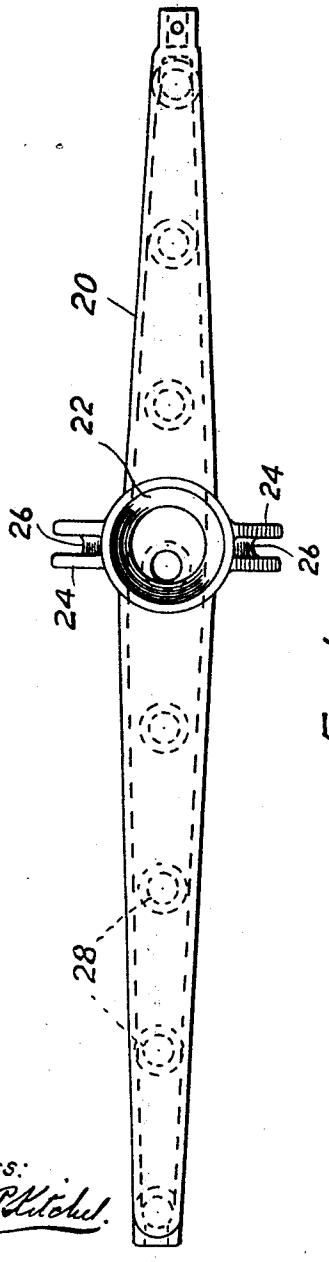


FIG. 1.

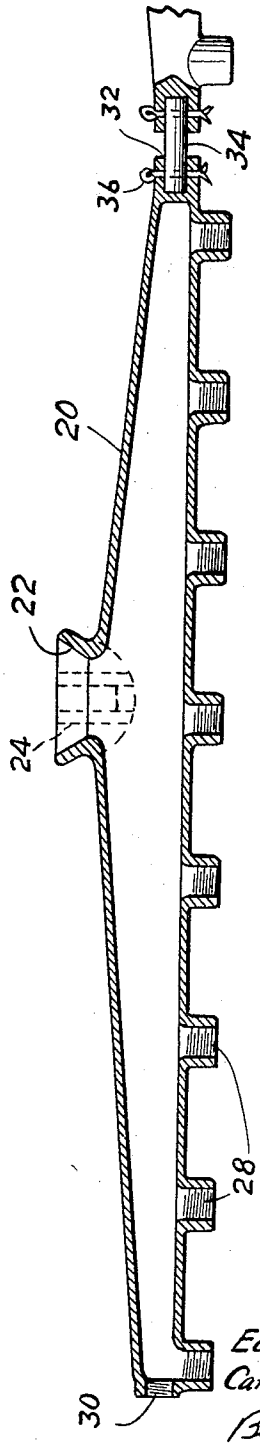


FIG. 2.

WITNESS:

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MANIFOLD AND DETACHABLE SWIVEL CONNECTION THEREFOR

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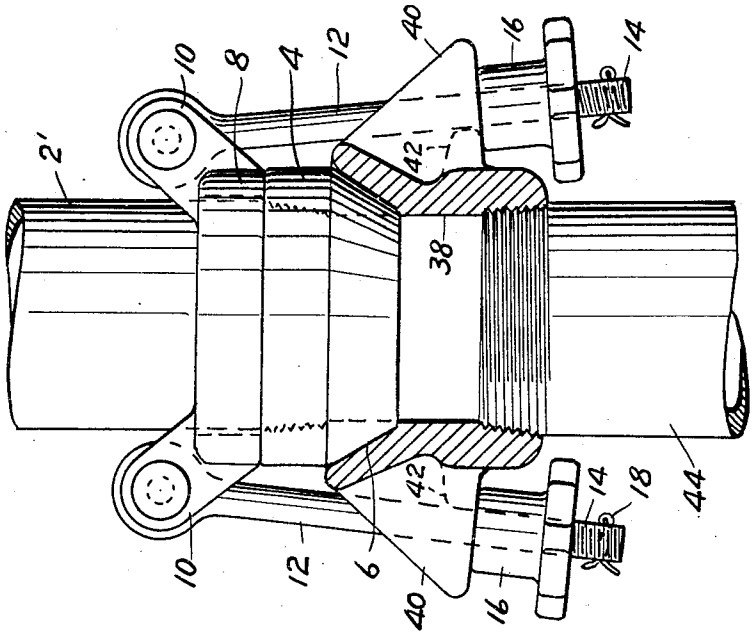


FIG. 4.

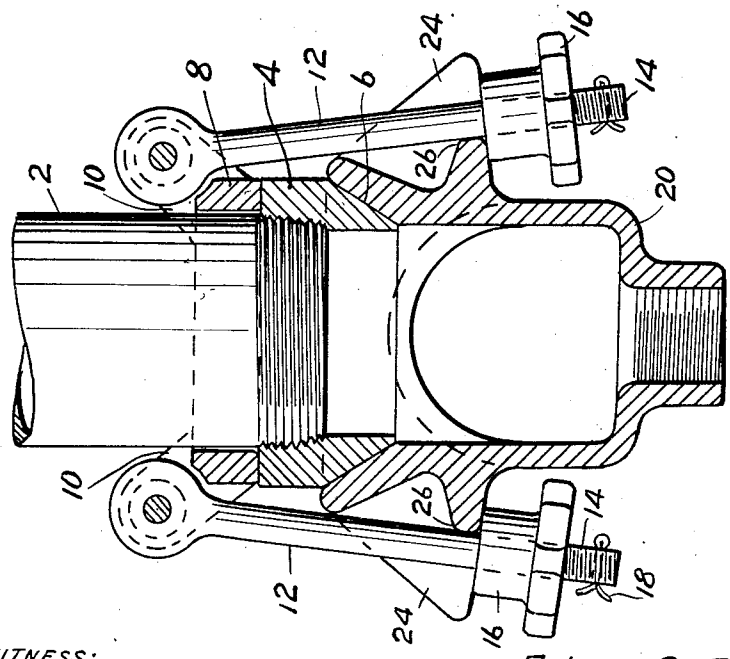


FIG. 3.

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UNITED STATES PATENT OFFICE

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MANIFOLD AND DETACHABLE SWIVEL CONNECTION THEREFOR

Application filed January 25, 1929. Serial No. 335,116.

This invention relates to a distributing manifold for an oil distributor and to a detachable swivel connection therefor.

In oil distributors of the type in common use, elongated manifolds are provided to carry the small nozzles which properly distribute the oil upon the road being sprayed. In general two of these manifolds are provided fed by pipes at opposite sides of the rear of the distributor, the manifolds being movable from side to side so as to overhang portions of the road upon which it is desired to spray oil. Heretofore these manifolds have been generally secured to the feed piping by ordinary pipe connections. Because of the size of the manifolds, it has therefore been difficult to secure them or remove them for draining, cleaning or replacement.

It is one object of the present invention to provide a detachable swivel connection for a manifold so that it may not only be free to swing to conform properly to the road being sprayed, but may also be connected and disconnected with a minimum of effort. The swivel means described are further applicable to the connection of other fluid conducting members such as flexible pipes, and the use of the swivel connection in such cases is within the scope of the present invention.

Further objects of the invention relate to the construction of the manifold itself to facilitate draining, permit attachment to patching hoses or the like, and to secure it in alignment with a companion manifold to maintain both of them in proper relative positions.

In the drawings:

Fig. 1 is a plan view of the improved manifold.

Fig. 2 is a vertical section taken longitudinally through the manifold and showing the mode of its attachment to a companion manifold.

Fig. 3 is a sectional view showing the detachable swivel connection for the manifold.

Fig. 4 is a sectional view showing the application of the detachable swivel connection to a feeding hose.

Referring first to Fig. 3, there is shown a vertical pipe 2 which is adapted to lead oil or other material being sprayed to a manifold. Threaded on the lower end of this pipe is a connecting member 4 provided with a tapered annular face 6. Loosely mounted about pipe 2 and having a bearing surface upon the top of connecting member 4, is a ring 8 provided with pairs of ears 10 in which are pivotally mounted depending bolts 12, threaded at their lower ends as indicated at 14 and carrying hand nuts 16. Cotter pins 18 are inserted through the lower ends of these bolts in order to prevent loss of the hand nuts, if the same should become accidentally loosened.

The manifold is indicated generally by the numeral 20. Referring to Figs. 1 and 2, it will be seen that the manifold is provided at its top with an intake opening 22 which is internally tapered to conform to the tapered surface 6 against which it is adapted to engage in a liquid tight manner. Ears 24 are provided at the front and rear of the manifold adjacent the opening 22 as indicated in Figs. 1 and 3. These ears are slotted and joined near their inner ends by webs 26.

When it is desired to secure the manifold to pipe 2, intake opening 22 is brought into engagement with the tapered surface 6. Bolts 12 are then swung into the slots in ears 24 and hand nuts 16 tightened against the lower surfaces of the ears, thus drawing ring 8 and the manifold relatively toward each other and tightly engaging the inner surface of the intake opening with surface 6. To remove the manifold, it is merely necessary to slightly loosen nuts 16 and swing the bolts outwardly, when the manifold will drop from the connections. If it is desired to swing the manifold relatively to pipe 2, hand nuts 16 are loosened and ring 8 and the manifold will swing as a unit about connecting member 4, ring 8 having a bearing on the upper surface thereof and the inner surface of opening 22 swinging about the annular tapered surface 6.

The manifold itself is preferably constructed of aluminum in order to secure the advantage of lightness and to facilitate casting. This manifold is provided at its bottom with threaded openings 28 into which nozzles of the usual type may be secured. A threaded opening 30 at one end of the manifold permits of securing thereto additional

manifold extensions or sections and also hose, if it is desired to secure patching hose at this point.

The opposite end of the manifold is provided with a cored hole 32 adapted to receive a short rod section 34 which is secured therein by means of a cotter pin 36 passing transversely through aligned holes in the manifold and the rod. The opposite end of the rod is similarly provided with a hole and is arranged to be secured in like manner to a second companion manifold. By this arrangement the two manifolds will be held accurately in alignment so that, by reason of the flexible piping and the swivel connections, they may be moved as a unit from side to side of the distributor to conform to the contour of the road.

In Fig. 4 there is illustrated the use of the detachable swivel connection in connecting a loading hose 44 to a feed pipe 2′. In this device a head 38 is threaded upon the upper end of the hose pipe 44 and is provided with a tapered opening adapted to tightly engage the tapered surface 6 of connection 4 which is carried on the lower end of the pipe 2′. Head 38 is provided with ears 40 similar to ears 24 and similarly slotted. Webs 42 extend across the inner ends of the slots and, like webs 26, limit inward movement of bolts 12. The process of engagement of the hose 44 to pipe 2′ is precisely similar to that of the manifold with pipe 2 and will be clear from the foregoing explanation of that process. The construction shown in Fig. 4 is particularly adapted to fill the oil distributor from a tank car or the like from which hose 44 leads, pipe 2′ being connected to the suction side of the distributor pump, as shown in our co-pending application Ser. No. 335,115 filed Jan. 25, 1929.

What we claim and desire to protect by Letters Patent is:—

1. A detachable swivel connection adapted to secure a fluid conducting member to a pipe or the like, comprising a connecting member carried by the pipe and having an annular tapered surface, a ring having a bearing on said connecting member and surrounding the pipe, said fluid conducting member having a tapered surface adapted to be brought into fluid tight contact with the said annular tapered surface, and means arranged to draw the ring and fluid conducting member towards each other to bring the tapered surfaces into contact comprising a plurality of bolts pivoted on one and having nuts adapted to engage ears on the other.

2. A detachable swivel connection adapted to secure a fluid conducting member to a pipe or the like, comprising a connecting member carried by the pipe and having an annular tapered surface, a ring having a bearing on said connecting member and surrounding the pipe, said fluid conducting member having a tapered surface adapted to be brought into fluid tight contact with the said annular tapered surface, and means arranged to draw the ring and fluid conducting member towards each other to bring the tapered surfaces into contact comprising a plurality of bolts pivoted on one and having nuts adapted to engage ears on the other, said ears having outwardly opening slots therein and the bolts being pivoted about axes extending transversely of the planes of the slots whereby the bolts may be entered into or removed from the slots by swinging movement.

In testimony of which invention, we have hereunto set our hands, at Kennett Square, Pa., on this 21st day of January, 1929.

EDWIN C. BROWN.
CARL G. A. SCHMIDT, Jr.