March 10, 1953 J. A. JENSEN 2,631,063

HOSE REEL

Filed July 24, 1948 2 SHEETS—SHEET 1

FIG. 2.

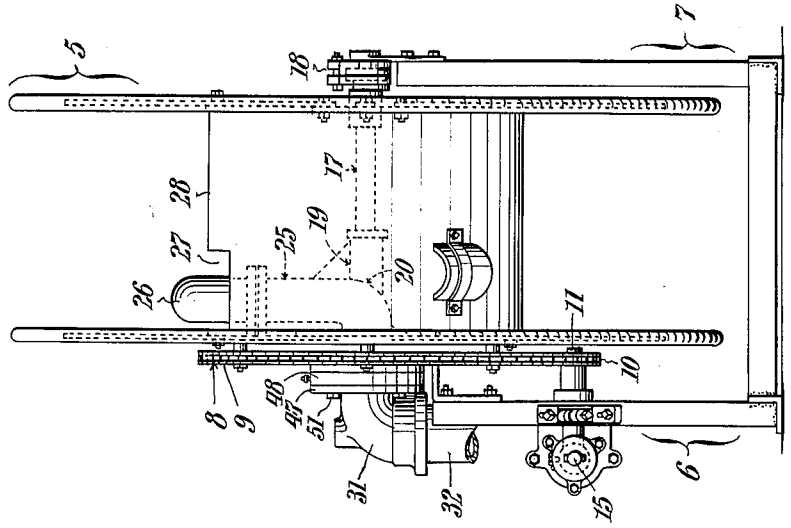
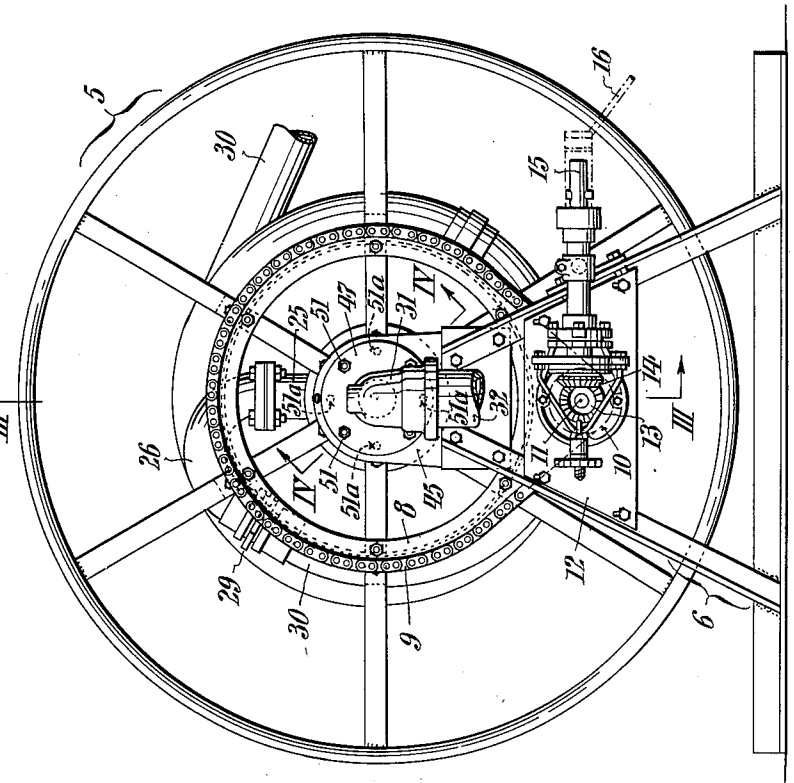


FIG. 1.



WITNESSES

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FIG. 3

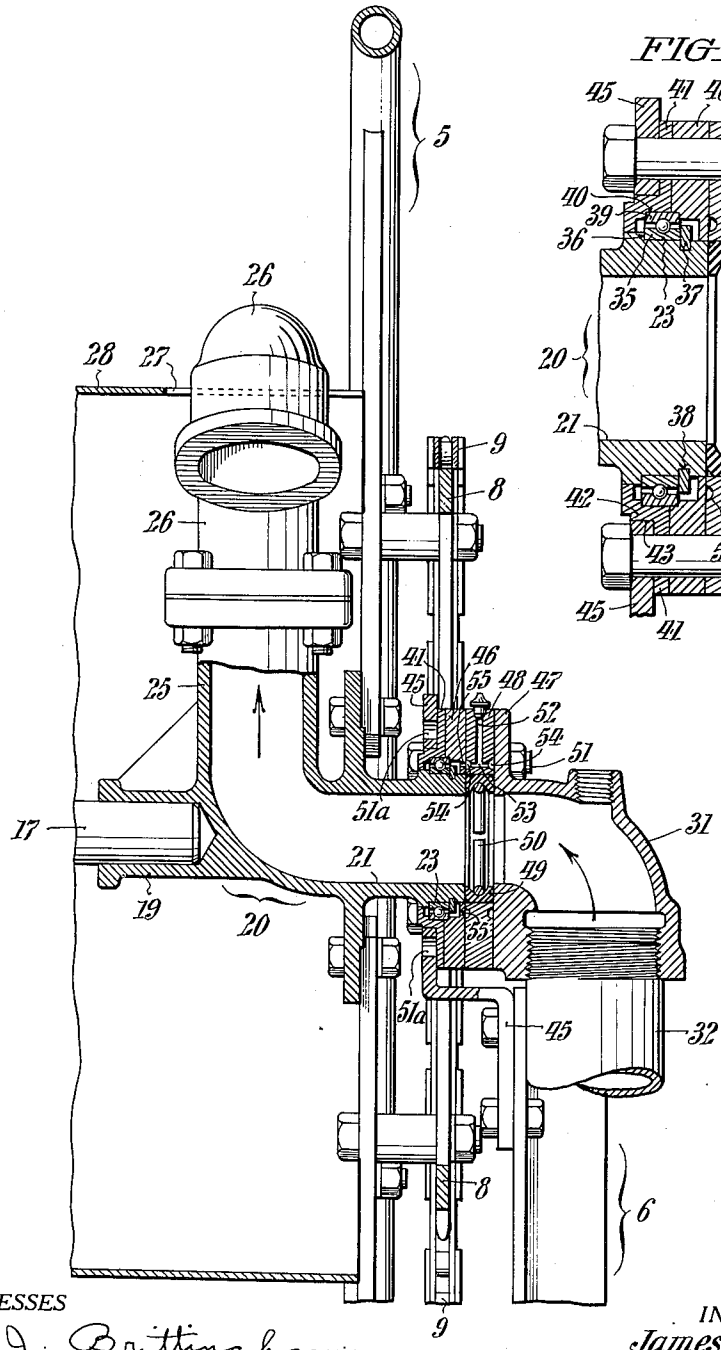


FIG. 4

WITNESSES

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UNITED STATES PATENT OFFICE

2,631,063

HOSE REEL

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Application July 24, 1948, Serial No. 40,519

2 Claims. (Cl. 299—78)

1

This invention relates to hose reels. More specifically, it is concerned with hose reels of the type disclosed in U. S. Patent No. 2,348,692 granted to me on May 9, 1944, intended for use on commercial vehicles such as are ordinarily employed in the delivery of gasoline, fuel oils and other liquid commodities. In reels of the kind referred to, the liquid is conducted through a stationary fitting connected to a conduit which leads from a supply tank on the vehicle, and which is in direct communication with a hollow trunnion of the reel having a radial branch whereto one end of the hose is attached.

One of the aims of my invention is to insure, in such a reel structure, against fluid leakage between the revolving trunnion and the stationary fitting without imposition of appreciable resistance to the free turning of the reel. This objective is realized in practice as hereinafter more fully set forth, through provision of an anti-friction bearing having an internal circumferential recess for lodgment of a ring gasket with means for automatically expanding it both circumferentially and laterally so as to bear snugly against the contiguous ends of the trunnion and the stationary fitting.

A further aim of my invention is to so construct a reel structure of the indicated sort, that the bearing can be quickly and easily disassembled in part for convenience of replacing the gasket when it has become worn.

Another object is to provide for ready lubrication of the relatively movable parts of the reel bearing as well as for the sealing gasket.

In a reel structure having the foregoing attributes and wherein the stationary fitting is in the form of an elbow, it is a further aim of my invention to provide for securing said fitting in various positions around the bearing for convenience of connecting the conduit which may be disposed at different angles depending upon the location of the reel in respect to the tank on the vehicle.

Fig. 1 is a view in side elevation of a hose reel conveniently embodying my present invention.

Fig. 2 is an end elevation of the reel as seen from the right of Fig. 1.

Figs. 3 and 4 are fragmentary views in section taken as indicated respectively by the angled arrows III—III and IV—IV in Fig. 1.

The organization herein illustrated is generally similar to that disclosed in my patent hereinbefore referred to, in that it comprises a horizontal axis reel 5 which is rotatively supported by standards 6 and 7. Bolted to one side of the reel is a sprocket ring 8 which, through a chain

2

9, is connected to a sprocket pinion 10 on a transverse shaft 11 having rotative support in a mounting 12 affixed to the standard 6. Through a pair of intermeshing miter gears 13 and 14, shaft 11 is in turn connected to a longitudinally extending operating shaft 15 arranged for application, to its distal end, of an actuating crank handle 16. Also as in the patent supra, one trunnion 17 of the reel is in the form of a short shaft which is journalled in a bearing 18 at the top of standard 7. The inner end of shaft 17 is fixedly engaged in the socket boss 19 of a hollow elbow 20 whereof the horizontal branch 21, see Fig. 3, constitutes the other trunnion of the reel and is journalled in a bearing 23 at the top of standard 6. To the radial branch 25 of elbow 20 is bolted another elbow 26 whereof the outer end extends through a clearance opening 27 in the core drum 28 of reel 5. As shown in Fig. 1, the outer end of elbow 26 is disposed tangentially of the drum 28 and is provided with a coupling 29 for connection of the hose 30 which is normally wound upon the reel. The trunnion branch 21 of the elbow 20 is in axial alignment with the outlet end of a terminal fitting 31 of a pipe or conduit 32, which fitting is likewise in the form of an elbow. The fitting is stationarily supported, in a manner later on explained, with its inner end in threaded engagement with conduit 32 which extends from a tank or other supply source of the liquid (not shown) on the delivery truck.

In accordance with my present invention, I employ a bearing 23 of the ball type with its inner race 35, see Fig. 4, held in position between an external circumferential stop shoulder 36 on the trunnion branch 21 of elbow 20 and a split retaining ring 37 sprung into an external circumferential groove 38 in said branch. The outer race 39 of bearing 23 is engaged in an internal circumferential recess 40 of an apertured disk 41 having an axial boss 42 which engages into the circular opening 43 of a bracket 45 bolted to the top of the standard 6. A retaining disk 46, abutted against disk 41, serves, in conjunction with the latter, to hold outer race 39 of the bearing 23 in place. The outer face of the disk 46 is flush with the end of the trunnion branch 21 of elbow 20 as shown, and interposed between it and the corresponding face of the flange 47 of elbow 31 is an annular spacing member 48. It is to be noted that the internal diameter of the spacing annulus is made somewhat less than the bores of the elbow 20 of fitting 31, and lodged in the circumferential recess thus formed is a sealing gasket 49 of rubber or other compressible material having an

internal V groove in which a split spring ring **50** is disposed. By the action of this spring ring **50**, the gasket **49** is expanded circumferentially and laterally for maintenance of a fluid tight seal between the end of the rotating trunnion branch **21** of elbow **20** and the face of flange **47** of the stationary fitting **31**. As best shown in Fig. 4, the parts **41**, **46**, and **48** are clamped between the bracket **45** and the flange **47** of fitting **31** by four headed screw bolts **51** whereof the shanks pass through aligning holes in said parts. It is to be noted from Fig. 1 that bracket **45** is provided with eight holes **51***a*, the other parts **41**, **46**, **47** and **48** having but four. Due to this arrangement, the fitting **31** can be set in different positions around the bearing in Fig. 1 to suit the conduit **32** which may extend at different angles depending upon the location of the reel relative to the tank on the vehicle.

For the lubrication of bearing **23**, spacing member **48** is provided with a radial oil ingress duct **52** which, through a crosswise passage **53**, communicates with annular grooves **54** in the opposite faces of said member. From one of the grooves **54** the oil passes by way of small ports **55** in annulus **46** directly to the balls of bearing **23**. Due to the construction just described, supply of oil to the bearing **23** and the gasket **49** will be assured even if spacing member **48** should be reversed in position in being assembled with the other parts of the structure.

Having thus described my invention, I claim:

1. In a hose reel structure, a reel having a hollow tubular trunnion with a radial branch for connection thereto of one end of the hose; a supporting bracket with a clearance opening for projection of the trunnion therethrough; a retaining plate for a ball bearing in which the trunnion is journalled, said plate being abutted against the outer face of the bracket and being flush with the end of the trunnion; a terminal fitting for a stationary pipe having an annular flange around its outlet end in coaxial relation with the trunnion; a spacing annulus interposed between the outer face of the plate and the confronting face of the flange of the terminal fitting, the opening in said annulus being larger in diameter than the aligned flow passages in the trunnion and the fitting, with consequent formation of a concentric internal recess; a ring gasket of resilient material lodged in said recess; and headed securing elements with their shanks passing continuously through prelocated registering apertures in the bracket, in the bearing retaining plate, in the spacing annulus and in the flange of the pipe terminal fitting.

2. A hose reel structure according to claim 1, wherein, for the purpose of bearing lubrication the opposite faces of the spacing annulus are provided with annular grooves which are connected by a crosswise passage in communication with a radial oil ingress duct extending to the periphery of said member and wherein ports through the retaining plate in line with the grooves of the spacing annulus lead to the balls of the bearing.

JAMES A. JENSEN.

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