Dec. 8, 1936. J. A. JENSEN 2,063,843

ROTARY FLUID CONDUCTING HOSE REEL CONSTRUCTION

Original Filed Sept. 9, 1933 2 Sheets-Sheet 1

FIG. I.

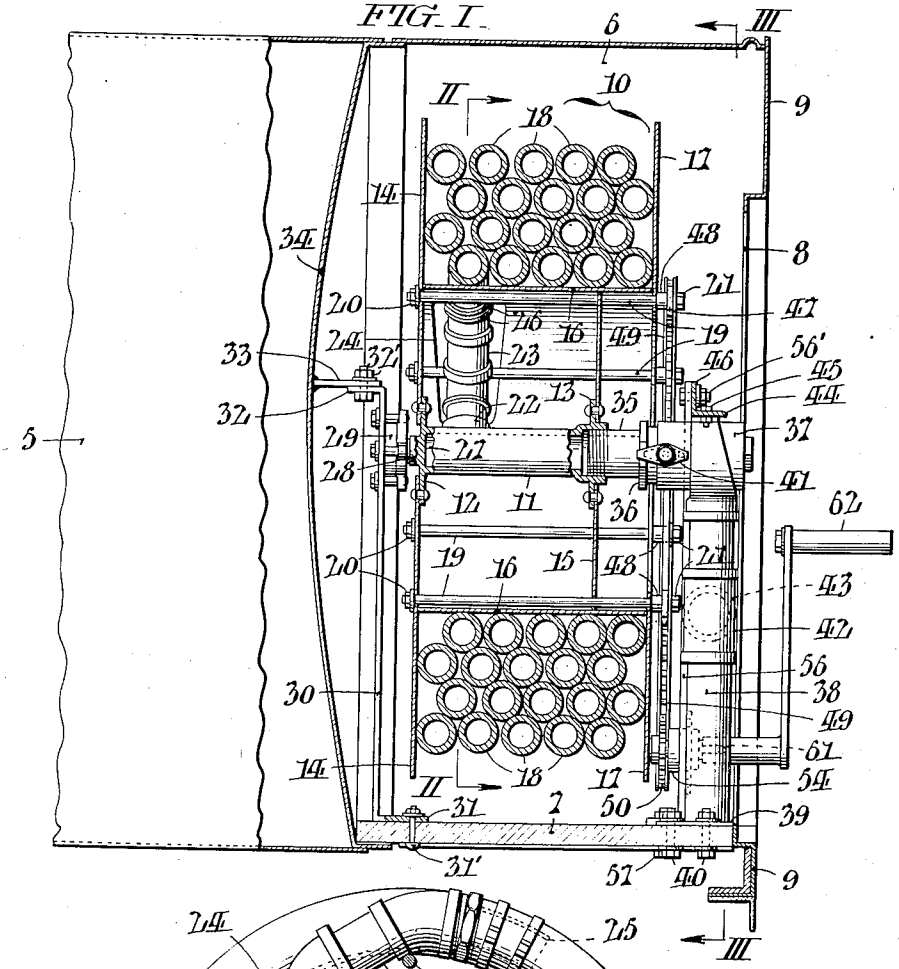
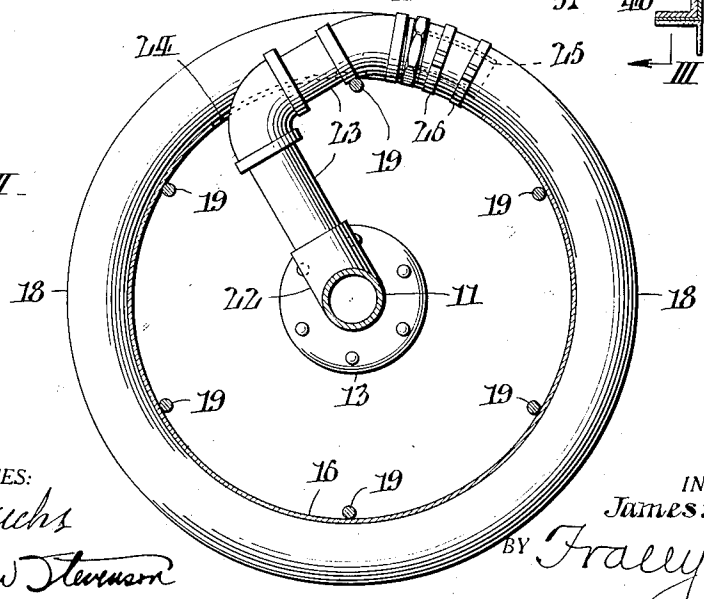


FIG. II.



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FIG. III.

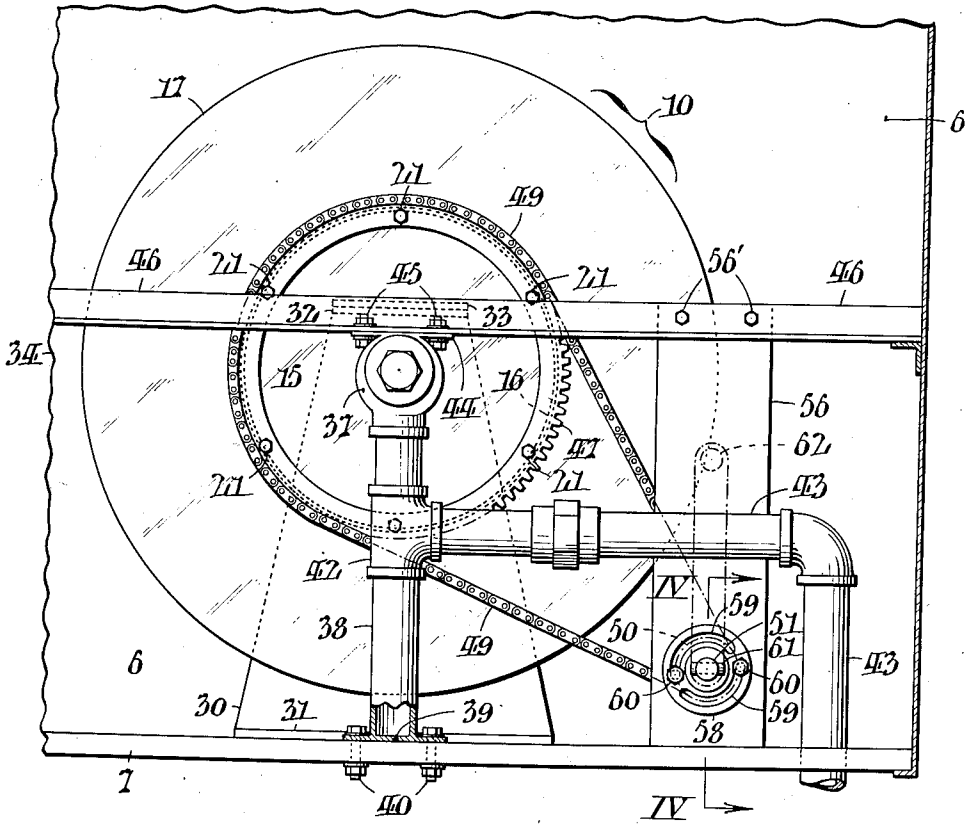
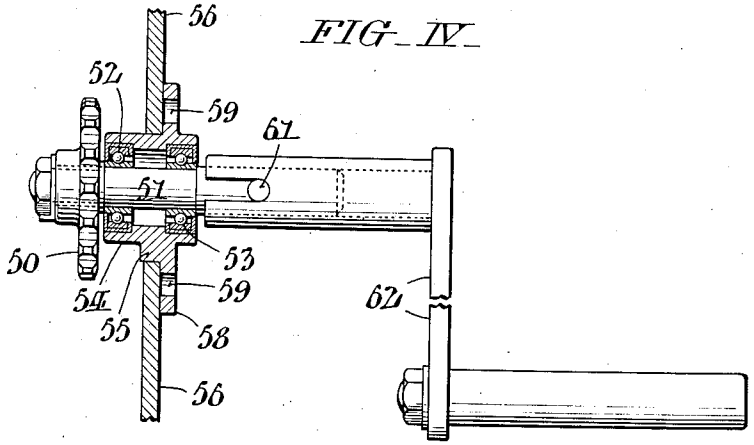


FIG. IV.



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2,063,843

ROTARY FLUID-CONDUCTING HOSE REEL CONSTRUCTION

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Original application September 9, 1933, Serial No. 688,797. Divided and this application October 18, 1934, Serial No. 748,816

6 Claims. (Cl. 299—78)

This invention relates to rotary fluid-conducting means and is a division from my co-pending application for a patent, Serial Number 688,797, filed September 9, 1933, allowed July 31, 1934, and which subsequently matured into U. S. Patent No. 1,992,750, dated February 26, 1935.

The present subject-matter, while applicable generally, is adapted more particularly to rotary fluid-conducting hose reels such as used on tank vehicles employed in the delivery of gasoline, oils, and other fluids.

The primary object of this invention is to provide an improved hose-reel construction having a tubular spindle and associated extension whereby ready connection can be effected with a fluid-flow conducting support therefor.

Another object is to provide a hose-reel of the type referred to with improved means whereby it is rotatable to wind-up the hose.

Other objects and advantages will appear as the nature of the invention is better understood from the following description, when read in conjunction with the accompanying drawings; said invention essentially consisting in the features of construction, combination and arrangement of parts substantially as claimed.

In the drawings:

Fig. I is a fragmentary view, partly in side elevation and partly in longitudinal section, of a tank vehicle rear end portion including the improved hose-reel construction of this invention.

Fig. II is a cross section, taken as indicated by the arrows II—II in Fig. I.

Fig. III is a vertical cross-section, taken as indicated by the arrows III—III in Fig. I; and,

Fig. IV is a detail section, drawn to a larger scale, taken as indicated by the arrows IV—IV in Fig. III.

Referring more in detail to the drawings, the rear end section of a tank vehicle, such as commonly used to deliver gasoline, oils and other liquids, is comprehensively designated by the reference numeral **5**; said section having appended thereto a conventional utility compartment **6**, with a wooden floor **7**, and an access opening **8** in its back wall **9**.

The hose-reel, with which the instant invention is specially concerned, is designated comprehensively by the numeral **10**, and shown in Fig. III as occupying the right-hand side of the utility compartment **6**. The hose-reel **10**, it will be seen, comprises a hollow tubular spindle **11** which, adjacent its opposite ends is provided with circumferential flanges **12** and **13**. To the flange **12** is riveted, or otherwise secured, a discous inner end head **14** for the reel **10**; and to the other flange **13** is similarly attached an annular diaphragm **15**, which is preferably peripherally welded to the inside surface of the drum component **16**, of the reel **10**, and thus serves to maintain the latter in exact axial relation to the spindle **11**. The outer end head **17** that extends inwardly of the reel **10** forms in conjunction with the drum compoent **16**, to which it is also preferably welded, and the inner end head **14**, a circumferential channel within which are confined the superposed convolutions of the hose **18** wound on said reel, the several reel parts being rigidly united by a number of circumferentially-arranged longitudinal stay-rods **19**, passing through circumferentially-spaced holes in the end head **14** and that portion of the head **17** projecting inwardly of the drum, having clamp nuts **20**, **21**, on their screw-threaded opposite ends.

Proximate the inner flange **12**, the tubular spindle **11** is formed with a radial boss **22**, for a pipe connection **23** which projects through an opening **24**, in the drum component **16**, of the reel **10**, and terminates at the outer surface of said drum component in a nipple **25**, whereto the hose **18** is connected by a plurality of clamp bands **26**, see Fig. II.

The reel tubular spindle **11** is integrally closed-in at its inner end **27** and provided with a shouldered trunnion **28**, which is supported for free rotation in a self-aligning ball-bearing (not shown) that is housed in a casing **29**, having an axial boss which fits in a corresponding opening in a suitable standard **30**, fashioned from sheet metal; said standard being secured by a foot flange **31** and bolts **31'**, Fig. I, to the utility compartment floor **7**, and at its top by a lateral flange **32** and bolts **32'** to a bracket piece **33** projecting from the back wall **34** of the tank **5**.

The tubular spindle **11** is provided at its outer end with an extension **35** which is preferably connected by a packing-gland **36** into an elbow fitting **37**, at the upper end of a suitable hollow standard **38**, extending upwards from the utility compartment floor **7**, and secured thereto by a base flange **39**, and bolts **40**. A locking finger **41** serves to secure the gland **36** at the proper adjustment, while the pipe standard **38** has an interposed T **42**, whereinto connects a branch pipe **43** that leads to the main drain pipe (not shown) of the tank **5**. In order to ensure absolute rigidity in the pipe standard **38**, the elbow-fitting **37** at its top embodies an apertured flange **44** whereby it is attached, as by bolts **45**, Fig. III, to an angle iron

beam 46 extending transversely of the utility compartment 6.

For turning the reel 10 to wind-up the hose 18, there is secured to the outer side of the drum head 17, by means of the clamp nuts 21, a toothed annulus 47 with interposed spacers 48, said annulus being coordinated by means of a sprocket chain 49 with a drive pinion 50. This drive pinion 50 is secured on a stub-shaft 51 rotatively supported by spaced ball bearings 52, 53, Fig. IV, within a cylindric casing 54; said casing having an eccentric portion 55 which engages an opening in an upright plate 56 secured at its top, as by bolts 56', to the angle beam 46, and at the bottom by bolts 57, Fig. I, to the floor 7 of the utility compartment 6. The bearing casing 54 is, moreover, formed with a circumferential flange 58, having a pair of eccentric slots 59, coaxial with the eccentric portion 55, for passage of attaching bolts 60, Fig. III, that engage through the upright plate 56. By loosening the bolts 60, it will be evident that, through cooperation between the eccentric slots 59 and said bolts, any slack developing in the sprocket chain 49 may be readily taken-up, when necessary, and the bearing casing 54 afterwards re-set by again tightening-up the bolts 60. At its outer end the stub-shaft 51 is provided with a cross-key 61, for application of a removable crank-handle 62, whereby the reel 10 may be rotated, in an obvious manner.

From the foregoing it is thought the merits and advantages of my improved reel construction will be apparent without further explanation herein; but attention is directed to the fact that, by providing the tubular spindle with the extension 35 rotating within the gland 36, said extension is relieved of the strains that would be likely to develop rapid wear; and, also, that by constructing the bearing supports for the reel 10, as herein set forth, said reel can be installed in close quarters while accommodating a considerable length of hose.

Having thus described my invention, I claim:

1. In a hose reel of the type described, a drum component, a unitary spindle having one end embodying a blank surrounding flange with an axially-projecting trunnion and a circumferential flange adjacent the spindle other end, a diaphragm rigidly attached between the circumferential flange and the drum inner surface to maintain said parts in axial relation, a discous end head secured to the spindle end-surrounding flange and permanently closing in that end of the drum component, an annular discous head secured to the drum other end and extending inwardly thereof, and a series of circumferentially-spaced longitudinal stays rigidly bracing the parts aforesaid inwardly of the drum component, means affording journal support for the hose reel, and drive means on one end of the drum component whereby the hose reel may be rotated.

2. In a hose reel of the type described, a drum component, a unitary tubular-spindle therefor having one end closed-in and embodying a surrounding flange with an axially-projecting trunnion and a circumferential flange adjacent the spindle open end, an annular diaphragm rigidly secured between the circumferential flange and peripherally to the drum inner surface to maintain said parts in exact axial relation, a discous end head secured to the spindle end-surrounding flange and the drum component to permanently close-in the latter thereat, an annular discous head permanently secured to the drum opposite end and extending inwardly thereof, a series of circumferentially-spaced longitudinal stay rods bracing the parts aforesaid interiorly of the drum component, means affording journal support for the hose reel, and an annular gear on one end of the drum component whereby the hose reel may be rotated.

3. In a hose reel of the type described, a drum component, a tubular-spindle therefor of substantially less length, said spindle having its one end closed-in to provide a surrounding-flange and an axially-projecting shouldered trunnion, a circumferential flange adjacent the spindle open end, an annular diaphragm permanently secured between the circumferential flange and the drum inner surface to maintain said parts in exact axial relation, a discous end head similarly secured to the spindle end-surrounding flange and the planarly related end of the drum component to close in the latter thereat, an annular head permanently secured to the drum component open end and extending inwardly thereof, said heads jointly providing an intervening channel for the hose wound on the drum component, a series of circumferentially-spaced stay rods with clamping means at their ends rigidly bracing the parts aforesaid interiorly of the drum component, said rods affording attachment at one end of the reel for a toothed annulus and intervening spacers, means providing journal support for the hose reel, and drive mechanism coordinated with the toothed annulus whereby the reel may be rotated.

4. The combination of claim 3 wherein the drive mechanism includes a sprocket chain coactive with the toothed annulus and a pinion having its shaft journaled in a stationary support having capacity for eccentric adjustment, and detachable means whereby the pinion is rotatable to effect winding of hose onto or off the reel aforesaid.

5. The combination of claim 3 wherein the hose reel hollow spindle has a radial hollow connection with a suitable nipple projecting through an opening of the drum component for attachment of the hose.

6. In a fluid-conducting hose reel of the type described, comprising a sheet-metal drum component, a unitary tubular spindle of less length than the drum component having its outer end closed-in to provide a surrounding flange with an axially projecting trunnion and also embodying a circumferential flange adjacent the spindle open end, an annular diaphragm permanently secured intermediate the circumferential flange and the drum inner surface to maintain said parts in exact axial relation, a discous end head permanently secured to the spindle end-surrounding flange and the planarly-related drum component end to permanently close in the latter thereat, an annular head permanently secured to the drum component open end and extending inwardly thereof, and a series of circumferentially-spaced longitudinal stays bracing the parts aforesaid interiorly of the drum component.

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