April 19, 1960 R. BULLEN ET AL 2,933,264

HOSE DELIVERY GUIDE

Filed June 28, 1955 2 Sheets-Sheet 1

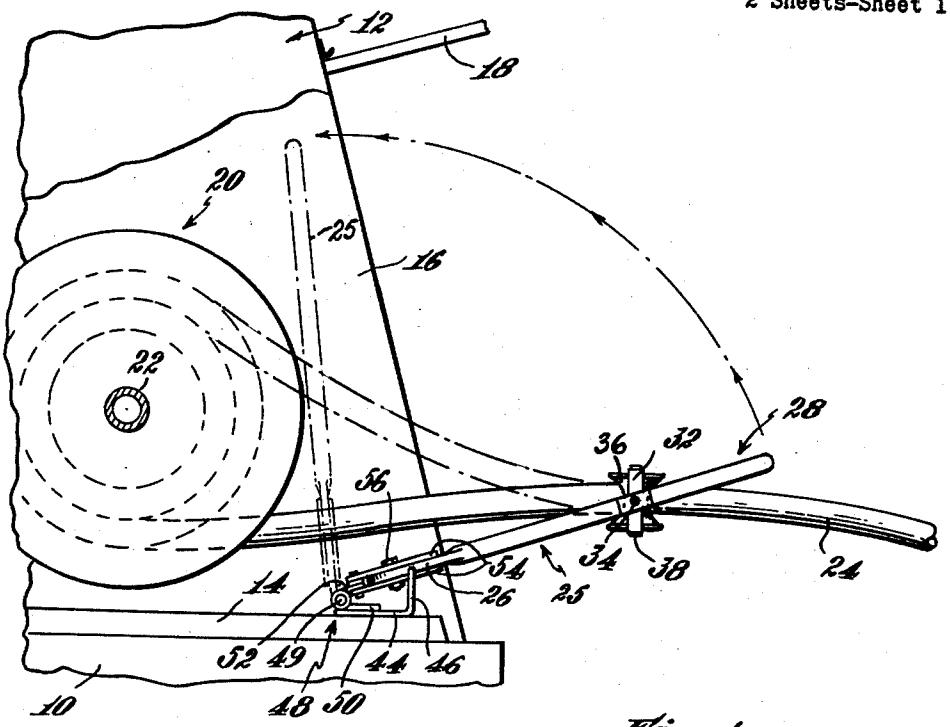


Fig. 1

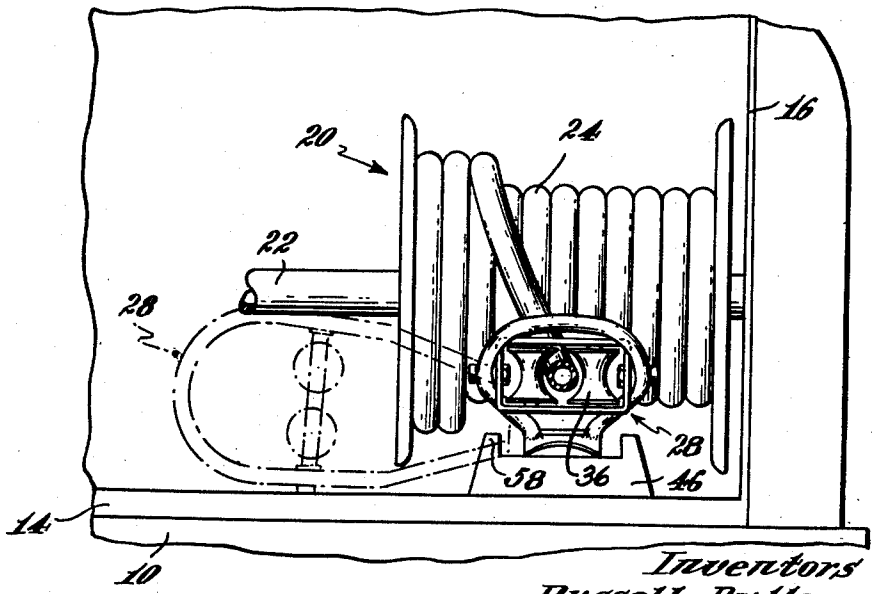


Fig. 2

Inventors
Russell Bullen
James F. Jefferson
by Roberts, Cushman & Grover
Attys

April 19, 1960 R. BULLEN ET AL 2,933,264

HOSE DELIVERY GUIDE

Filed June 28, 1955 2 Sheets-Sheet 2

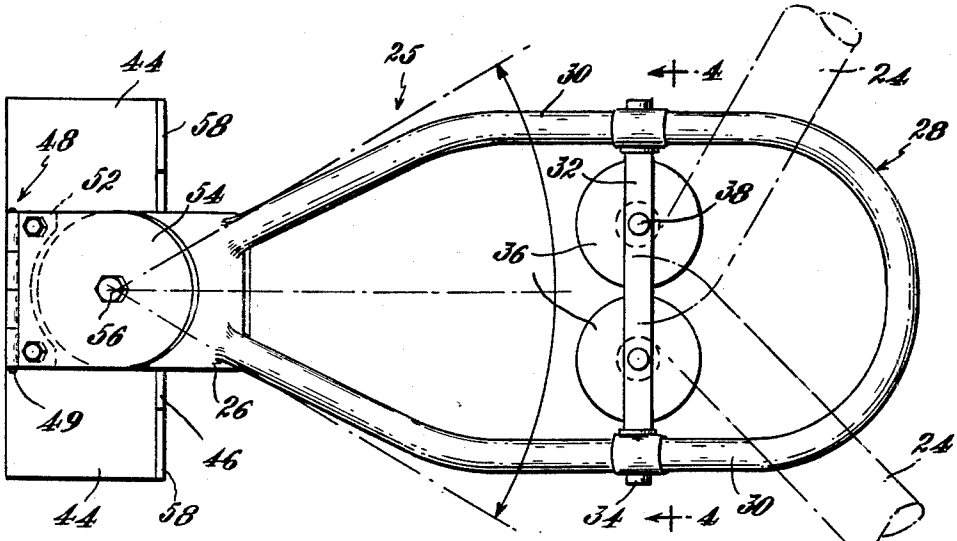


Fig. 3

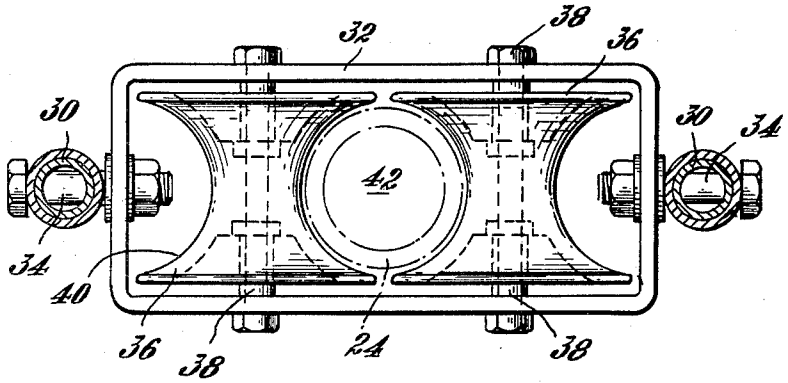


Fig. 4

Inventors
Russell Bullen
James F. Jefferson
by Roberts, Cushman & Grover
Attys

United States Patent Office 2,933,264
Patented Apr. 19, 1960

2,933,264

HOSE DELIVERY GUIDE

Russell Bullen, Cambridge, and James F. Jefferson, Bedford, Mass.

Application June 28, 1955, Serial No. 518,438

3 Claims. (Cl. 242—157.1)

This invention relates to apparatus for delivering a coiled element from a reel at an angle thereto and particularly to unwinding and winding a hollow element, such as a fuel oil hose carried by delivery trucks for delivering the oil from the truck to the customer's oil tank.

The principal objects of the invention are to provide means which will facilitate withdrawing the hose from its reel rearwardly of the truck, optionally to either side, so that deliveries may be made at both sides of the street without having to drive the truck to one side or the other, to provide means which will assist in drawing the hose rearwardly and at an angle laterally of the truck without kinking or collapsing the hose, to provide means which will reduce the frictional resistance to free movement of the hose as it is unwound at an angle to the reel and to keep it out of contact with rearwardly projecting portions of the truck, to provide means which facilitates winding the hose without assistance of the operator, and to provide means which may be a permanently attached part of the truck and may easily be moved from an inoperative stored position within the hose compartment at the rear of the truck to an extended operable position for use. Other objects are to provide a device which is very simple to construct, is easy to install on conventional trucks without modification thereof, which requires no substantial upkeep in its operation and which is durable and efficient.

The hose reel is customarily mounted on a horizontal support constituted by the floor within a hose compartment at the back end of the truck, closer to one side than the other, and it is usual to park the truck with that side parallel to the side of the street to which a delivery is to be made. In accordance with this invention, to facilitate delivery of the oil to either side of the street without prearranging the truck an arm is mounted on the support rearwardly of the reel so as to project rearwardly from the storage compartment to clear the same and on the arm near its free end there is mounted an antifriction element through which the hose may be drawn and guided either to one side or the other. Preferably, the arm is supported in an upwardly inclined position and the antifriction element is free to turn on a horizontal axis substantially at right angles to the longitudinal axis of the arm so that it is free to tilt with respect to the arm to assume the angle at which the hose is drawn off and to permit the hose to be drawn laterally beneath the arm without contact therewith. The antifriction element is preferably a pair of spools which are free to turn on their own axes so as to have rolling contact with the hose passing between them. The arm is pivotally fastened to the floor of the compartment for swinging movement in an arc from one side to the other, which swinging movement is limited by spaced stops to approximately 30° at either side of a perpendicular. Preferably the arm is retractable from its extended position for storage in the compartment and this is afforded by additionally pivoting the arm for swinging movement in an arc, the plane of which is perpendicular to both the floor of the compartment and the

axis of the reel. By movement of the arm about the second pivot it may be swung from its rearwardly extending, operative position into the compartment for storage and when in the compartment about the first pivot laterally to a prone positon in contact with the floor of the compartment.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

Fig. 1 is a side elevation of the storage compartment at the rear end of an oil truck showing the hose reel arranged for delivery of the hose from its bottom or top side;

Fig. 2 is a fragmentary rear view of the storage compartment with the closure member swung open;

Fig. 3 is a plan view of the hose delivery member shown in operative position; and

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 3.

Referring to the drawings, Fig. 1, there is shown the rear part 10 of an oil truck chassis and the reel storage compartment 12 which has a floor 14, spaced parallel lateral walls 16, a top (not shown) and an open back. A closure member 18 for the compartment is herein shown as swung upwardly to permit withdrawal of the hose.

A hose reel 20 is mounted within the compartment for rotation on a horizontal axle 22 parallel to the floor and to the back of the truck and preferably near one side of the compartment. A hose 24 is wound on the reel and may be withdrawn therefrom according to its winding, either from the underside of the reel as shown in full lines in Fig. 1, or from the top side of the reel as shown in dot and dash lines in Fig. 1.

In accordance with the invention a hose guide 25 is mounted on the floor 14 rearwardly of the reel to assist in drawing the hose rearwardly from its compartment and laterally to either side of the truck without contact with the rearwardly projecting portions of the truck. This guide has an arm 26 and a flat elongate loop 28 which provides spaced parallel legs 30 (Fig.3). A rectangular frame 32 (Fig. 4) is mounted between the legs 30 of the loop 28 on bolts 34 extending through the legs so that the frame is free to turn within the loop about the longitudinal axes of the bolts. The legs 30 are preferably reinforced at the places where the bolt holes are made for receiving the bolts 34 by welding sleeves to the legs. Suitable washers and nuts are placed on the inner ends of the bolts to keep them in place. A pair of spools 36 are mounted within the carrier frame 32 on spaced parallel bolts 38, the axes of which are at right angles to the axes of the bolts 34. The surfaces 40 of the spools are concave and cooperate at their adjacent sides to provide a circular opening 42 between them corresponding substantially in diameter to the outside diameter of the hose.

The arm 26 is fastened to the floor 14 by an anchor plate 44 which has at one edge a perpendicular flange 46 and at its other edge a hinge member 48 including a pintle 49 and leaves 50 and 52. The leaf 50 is welded or otherwise made fast to the anchor plate 44 while the leaf 52 is free to swing about the hinge pintle 49 and has fastened to it a pair of spaced plates 54, between which the end of the arm 26 is pivotally held by a bolt 56. The axis of the hinge pintle 49 is spaced from and parallel to the axis of the reel so that it is horizontal while the axis of the bolt 56 is at right angles thereto.

As thus pivotally supported the arm 26 and hence its loop 28 may be stored in an upright position within the reel compartment, as shown in dot and dash lines in Fig. 1, resting against the coiled hose after the hose has been wound onto the reel or it may be swung laterally about the axis of the bolt 56 to the position shown in dot and dash lines in Fig. 2 so that it rests prone on one edge against the floor of the compartment. To place the

guide in its operative position it is swung rearwardly from the upright position shown in Fig. 1 and downwardly until it has contact with the flange 46, the upper edge of which supports the arm in an upwardly and rearwardly inclined position. In this rearwardly extending position the arm may be swung from side to side about the axis of the bolt 56 and in order to limit this lateral movement the upper edge of the flange 46 is notched to provide at its ends a pair of spaced upstanding limit stops 58—58. The spacing of the limit stops 58 is such that the angular movement of the arm in its rearwardly inclined position is substantially 60°, that is 30° at either side of a perpendicular. Angular movement of the arm is provided to lessen the bending of the hose as it is drawn to one side or the other side of the vehicle.

In its rearwardly extending position the spool carrier 32 is free to turn about the axes of the bolts 34, which axes are substantially horizontal and are parallel both to the axis of the hinge pintle 49 and to the axis of the reel. Tilting or turning movement of the spool carrier permits it to assume the angle at which the hose is drawn off and further permits drawing the hose from the spools beneath the legs so as not to have frictional contact with them.

The primary function of the hose guide is to support the hose far enough behind the storage compartment and rear end of the truck so that when it is drawn laterally it will not rub against portions of the truck and further to minimize frictional resistance to movement of the hose as it is drawn rearwardly and laterally to make it easier to withdraw the hose and to eliminate danger of wear and the danger of kinking. Another important advantage is that during rewinding the device guides the hose back onto the reel so that the operator does not have to drag the hose to a position behind the reel and hold it there in order for it to wind on the reel without kinking, twisting or catching on some part of the truck. While the device is designed primarily for use with a rearwardly open hose reel compartment it can, of course, be used for guiding the unwinding of a hose from any compartment where it is desirable to draw it outwardly therefrom and then laterally whether the compartment be on a vehicle or whether it be part of a stationary installation; hence the invention is not intended to be limited to mobile apparatus.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

We claim:

1. In combination with a support and a horizontal hose reel mounted thereon, an arm, means pivotally supporting the arm on the support for pivotal movement about axes at right angles to each other for movement

in elevation and from side to side, a secondary support spaced from the pivoted end of the arm for holding the arm inclined upwardly from the support, spaced stops carried by the secondary support limiting sidewise swinging of the arm to approximately 60°, and a pair of spools mounted on the arm near its free end for rotational movement about their own axes and bodily movement about a horizontal axis lying in the plane of their axes.

2. In combination with a support and a horizontal hose reel mounted thereon, an arm, means pivotally supporting the arm on the support for pivotal movement about axes at right angles to each other, one of which is spaced from and parallel to the axis of the reel, whereby the arm may be swung about said axis from an elevated inoperative position to an outwardly projecting operative position, a secondary support for holding the arm in a position inclined upwardly from the support, said arm being swingable from side to side on the secondary support about another of its axes, and a pair of spools, means mounting said spools on the arm, said mounting means including means supporting said spools for turning movement about their own axes and, means supporting said spools for pivotal movement about a horizontal axis at right angles thereto, said arm when elevated to its inoperative position being swingable about said other axis to a prone position in contact with the support for storage substantially parallel to the axis of the reel.

3. In combination with a hose reel storage compartment having a supporting floor on which is mounted a hose reel and a rear opening through which the hose may be drawn from the reel, an arm, means hingedly supporting the arm on the floor rearwardly of the reel for swinging movement within the compartment in an arc about a vertical axis, the plane of which is perpendicular to the floor and parallel to the axis of the reel and additional swinging movement rearwardly about a horizontal axis through the opening in an arc, the plane of which is perpendicular to both the floor, and to the axis of the reel, and an antifriction guide element carried by the arm and movable therewith to a position extending rearwardly from the compartment clear of its lateral walls, said antifriction guide being free to turn on a horizontal axis.

References Cited in the file of this patent

UNITED STATES PATENTS

1,849,483	Erwin	Mar. 15, 1932
1,856,140	Shirley et al.	May 3, 1932
2,422,353	Hitt	June 17, 1947
2,556,937	O'Keefe	June 12, 1951
2,591,770	Benner	Apr. 8, 1952
2,738,143	Hannay	Mar. 13, 1956