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J. E. VOGLER ET AL

2,174,099

GARDEN HOSE REEL

Filed March 5, 1937

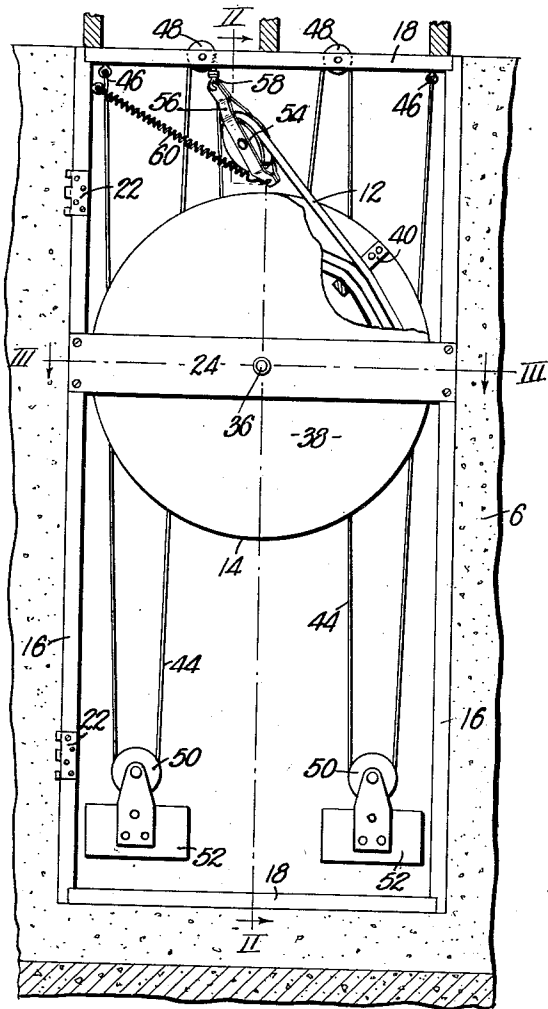


Fig. 1.

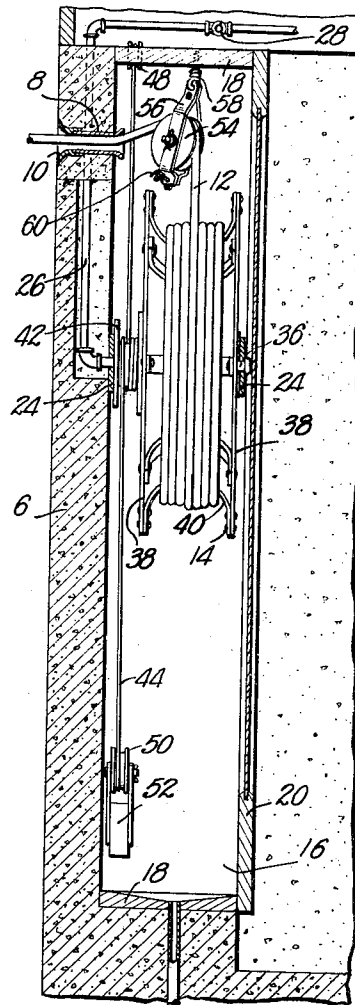


Fig. 2.

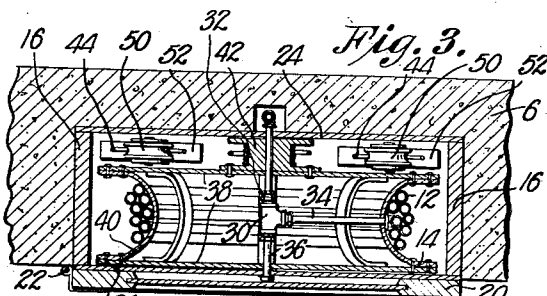


Fig. 3.

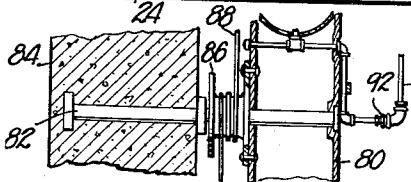


Fig. 5.

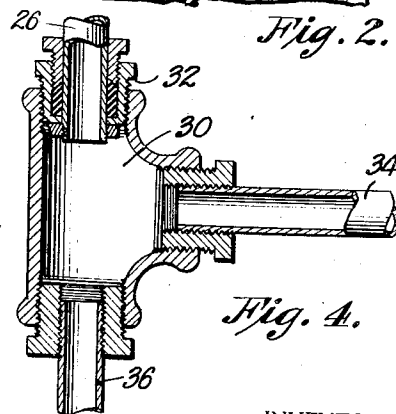


Fig. 4.

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GARDEN HOSE REEL

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1 Claim. (Cl. 299—78)

This invention relates to structure for conveniently supporting flexible conduit such as rubber hose and has for its primary object the provision of means for automatically maintaining the said hose in a wound condition upon a novelly formed drum that is conveniently and specially mounted so that the hose is always maintained accessible for use and in a properly stored condition when not in use.

Other objects of this invention include the provision of hose reel structure that is exceptionally simple to construct, inexpensive to purchase and maintain in operative order; strong and durable, not likely to get out of order and capable of effectively housing the entire hose including the drum upon which it is wound in a very limited amount of space.

Other objects of the invention will appear during the course of the following specification referring to the accompanying drawing wherein:

Figure 1 is a side elevation of a hose reel structure made to embody the present invention.

Fig. 2 is a vertical cross sectional view through the same taken on line II—II of Fig. 1.

Fig. 3 is a horizontal cross sectional view taken through the hose reel structure on line III—III of Fig. 1.

Fig. 4 is an enlarged, detailed, fragmentary sectional view through a portion of the supply pipe line to which is attached one end of the hose, and

Fig. 5 is a fragmentary, detailed sectional view through a portion of a hose reel structure made in accordance with a modified form of the invention.

It is understood that hose reel structures having physical characteristics other than those shown in the accompanying drawing might be made without departing from the spirit of the invention and scope of the claims which are appended hereto but for purpose of illustration, the preferred embodiment and one alternative structure is shown.

The installation illustrated indicates the manner in which the hose reel structure might be combined with a building which has a foundation or stone wall portion 6 provided with an outlet port 8 through which the hose may pass from the reel. This outlet port 8 is provided with a flared mouth of resilient material 10 against which the nozzle or fitting on the end of hose 12 is drawn when the hose is wound upon drum 14 and not in use.

When installing the structure in the building, a frame which comprises sides 16 and end members 18 is first built and set into a recess that may be

formed when the foundation is constructed or created therein after the building has been in use. The circumscribing frame comprising sides and ends 16 and 18 respectively is moved against wall 6 so that one side of the frame is closed thereby thus the other side of the frame is normally opened but should be closed by a door 20 that is hung upon the suitable hinges 22 to permit access to the parts of the hose reel structure when it is desired to adjust the same. Opposed bearing plates 24 bridge the space between sides 16 at each edge thereof so that suitable supports are provided for drum 14. It is clearly indicated in Fig. 3 that drum 14 is rotatably mounted within the frame which has just been described. The manner of so mounting drum 14 is novel in that a portion of supply pipe 26 is actually used as the means which directly carries drum 14. Supply pipe 26 extends from any source of liquid supply such as a water main and a stop and waste valve 28 is interposed in the line so that the water may be cut off when necessary. Supply pipe 26 extends through one bearing plate 24 and joins a T 30 through the medium of a stuffing box connection as detailed in Fig. 4. This stuffing box assembly indicated generally by the numeral 32, permits T 30 and its associated parts to rotate as supply pipe 26 remains stationary. T 30 is provided with a branch 34 that extends radially to the periphery of drum 14 and into connection with one end of hose 12. There is a short length of pipe 36 joining T 30 with bearing plate 24 opposite to the one just mentioned so that a support is provided on each side of drum 14. Obviously, while 14 is turning, pipe 36, the outer end of which is closed, will likewise turn in the bearing plate 24 wherein it is journaled.

Drum 14 is uniquely created in that its sides are made of flat disc shaped elements 38 which are joined at their peripheries by arcuate strips 40, all of which combine to form an annular trough wherein is wound the major portion of hose 12.

A spool 42 is secured to one side 38 of drum 14 as shown in Fig. 3. This spool is on the axis of rotation of drum 14 and is flanged at its ends so as to provide an annular trough for the reception of an operating cable 44. This cable 44 may be a continuous one and its ends should be anchored as at 46 to the upper end member 18 of the frame. Sheave wheels 48 rotatably mounted in slots formed in upper member 18 engage cable 44 as shown in Fig. 1 and when the cable is so threaded as illustrated and wound upon spool 42,

it will provide bights for the reception of pulley wheels 50 upon which are mounted suitable weights 52. These weights 52 are operated through the action of gravity and when hose 12 is pulled out through outlet port 8, drum 14 will turn to wind cable 44 on spool 42 and thus lift weights 52 to a point where they will lower through the urge of gravity when the hose is properly released.

The relation between drum 14 and the other parts of the hose reel structure and outlet port 8 should be as shown in Fig. 2. When such is the case the invention contemplates the employment of a pulley 54 that is carried in a bracket 56 secured to member 18 by a swivel 58. A spring 60 having one end anchored to a part of the frame and the other end secured to the bottom of swingable bracket 56 serves to quickly withdraw pulley 54 and its associated structure from the operative position with respect to hose 12 when the operator releases the outward pull which he normally exerts upon the hose. Such release may occur when but a short length of the hose is in use and there is an outward pull thereon less than enough to extend spring 60. Obviously there must be a few pounds pressure exerted upon the hose to hold pulley and hose in operative relation when the hose is being reeled in. When there is less force exerted on the hose beyond pulley 54 than there is exerted by reel 14 behind said pulley, pulley 54 will be moved out of engagement with the hose by spring 60 and bracket 56 will be drawn against hose 12 to prevent drum 14 from winding the hose thereon.

When hose 12 is drawn against bracket 56, it is out of contact with the groove of pulley 54 and a gripping effect is established which holds the hose in a stationary condition. The pull imparted to hose 12 by weights 52 through drum 14 maintains this relation between the hose and the pulley structure so long as hose 12 is in use and the operator desires such relationship. The hose may be attached to a sprinkler and left without fear of its being accidentally withdrawn. When the operator wishes to reel in the hose, an outward pull sufficient to equalize the force on the hose on each side of the pulley, will seat the hose in the groove of the pulley and it may be fed back into port 8 and onto drum 14.

If a shorter length of hose is desired beyond port 8 than is in use at any given time, the operator need only exert an outward pull, allow the hose to be drawn onto drum 14 until the shorter length is left beyond port 8, and then quickly release the equalizing force to permit spring 60 to draw pulley 54 out of engagement with hose 12 and to a position where bracket 56 engages the hose to preclude further movement.

As an example of the wide range of possibilities contemplated by this invention reference is made to Fig. 5 which shows a modified form of a hose reel structure but which incorporates all of the broader principles in mind. In this form drum

80 is rotatably mounted upon a rigid shaft 82 anchored in a wall 84 and a spool 86 receives cables 88 in the same manner as before mentioned. In this instance water supply pipe 90 is introduced on the axis of rotation of drum 80 and a stuffing box 92 interposed to permit rotation of drum 80 and the parts of the supply pipe which are rigid thereto.

The size of weights 52 may be altered to accommodate hose of various lengths and materials from which the parts of the hose reel structure are made should be altered to suit conditions. Where it is desired to build hose-handling equipment having no association with a building, separate housing means may be presented somewhat in the nature of the frame herein described. Also drum 14 may be suspended from over head by suitable brackets and in event the drum is hung directly upon an outside wall no housing need be used unless found appropriate.

While the preferred embodiment and one modified form of the invention has been illustrated and described, it is understood that such changes and modifications might be made as fairly fall within the scope of the invention and confines of the appended claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

In a hose reel structure of the character described, a housing forming a chamber having an outlet port through one side near the top thereof for the passage of the hose; a drum rotatably supported within the chamber below the port with its axis of rotation extending horizontally and transversely of the housing; means for constantly exerting force on the drum tending to rotate the same in one direction; a loop-shaped bracket having its uppermost portion secured to the top of the housing adapted to support the loop for free swinging movement within the housing above the drum and spaced inwardly from the said outlet port; a pulley rotatably carried within the loop of the bracket; and a spring connecting the lowermost portion of the loop to the housing, the hose having the portion thereof between the drum and outlet port extended over the pulley and through said loop-shaped bracket whereby said portion of the hose is angular, said spring being disposed to draw the bracket against the angular portion of the hose and the hose out of engagement with the pulley to overcome the force tending to rotate the drum in one direction and thereby secure the hose against accidental movement, said force tending to rotate the drum in one direction being insufficient to extend the spring to move the pulley into engagement with the hose, said hose being drawn into engagement with the pulley for movement thereover only when additional force is exerted on the hose by the operator.

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