Aug. 9, 1949. E. E. MARTIN 2,478,494

REELING MECHANISM

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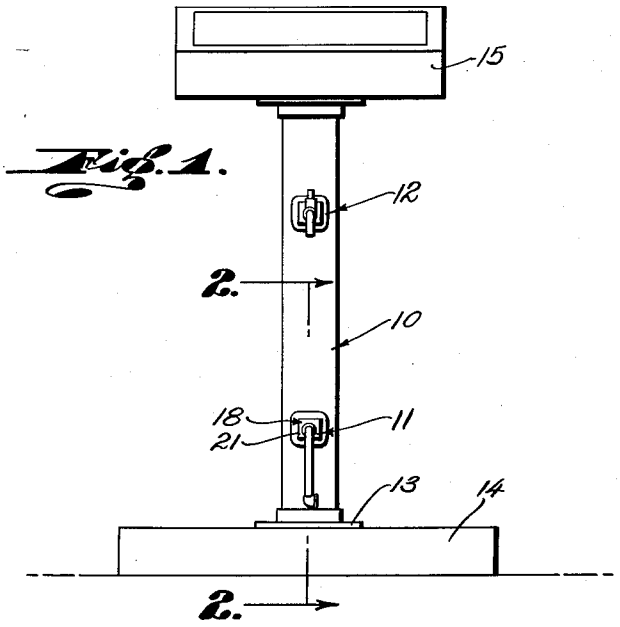


Fig. 1.

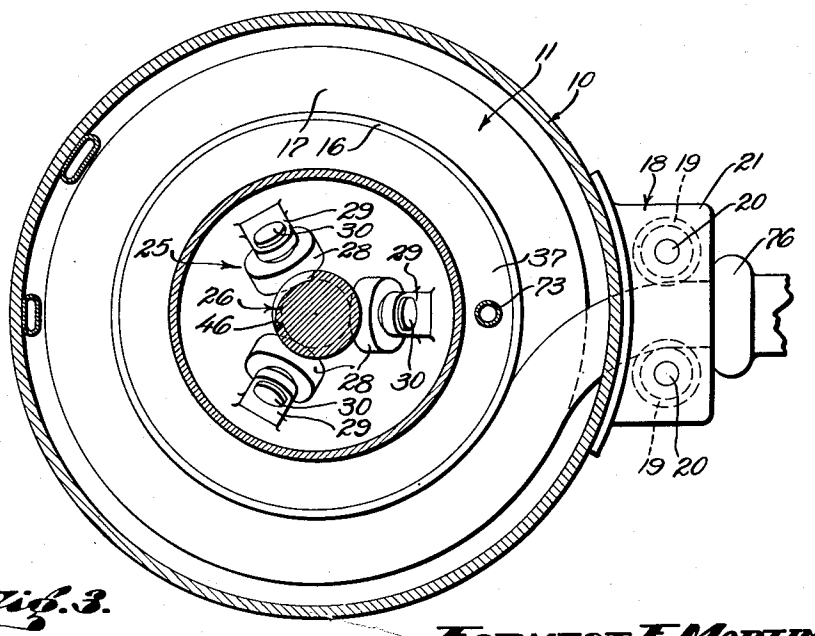


Fig. 3.

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REELING MECHANISM

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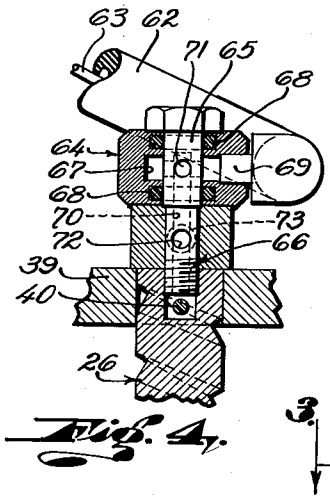


Fig. 4.

Fig. 2.

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REELING MECHANISM

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Fig. 5.

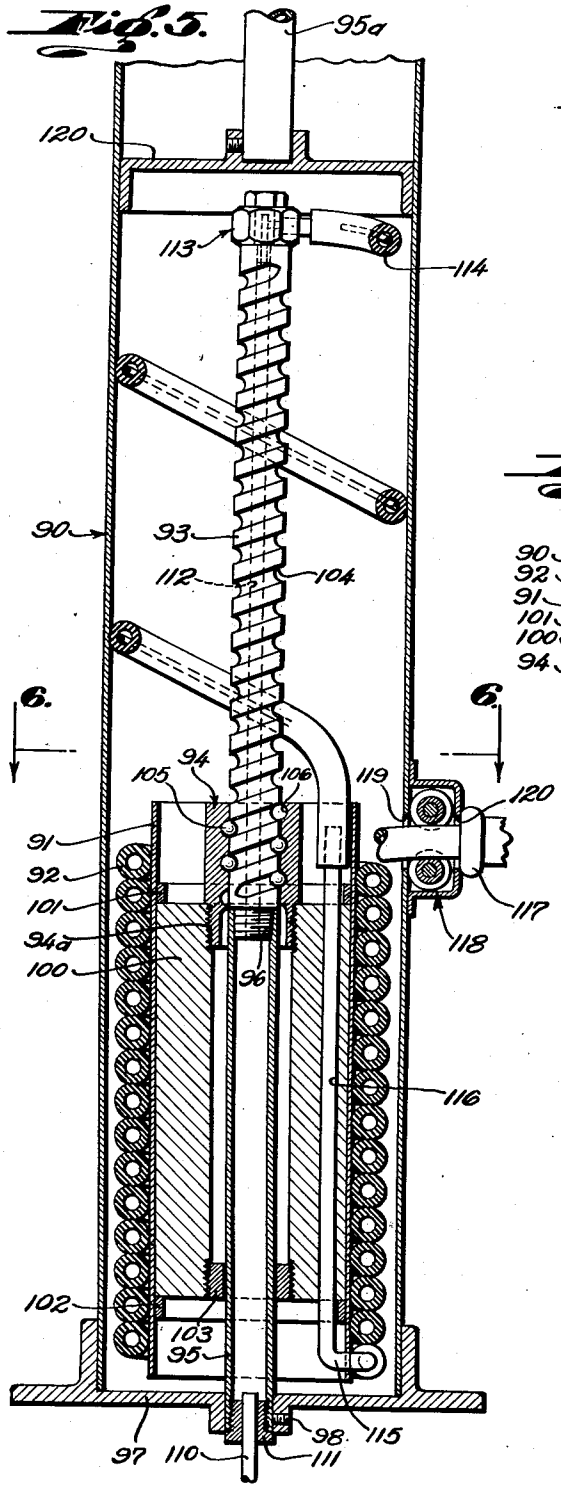


Fig. 8.

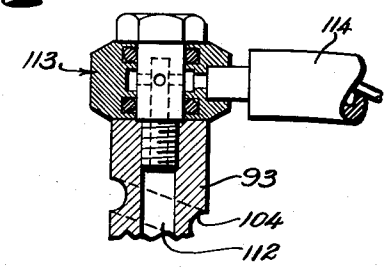


Fig. 6.

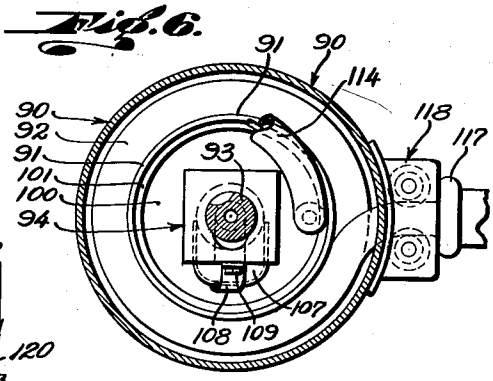
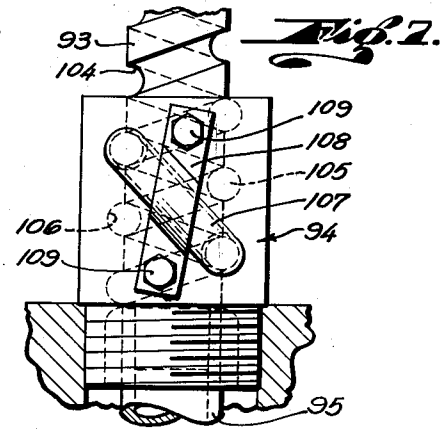


Fig. 7.



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REELING MECHANISM

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Fig. 9.

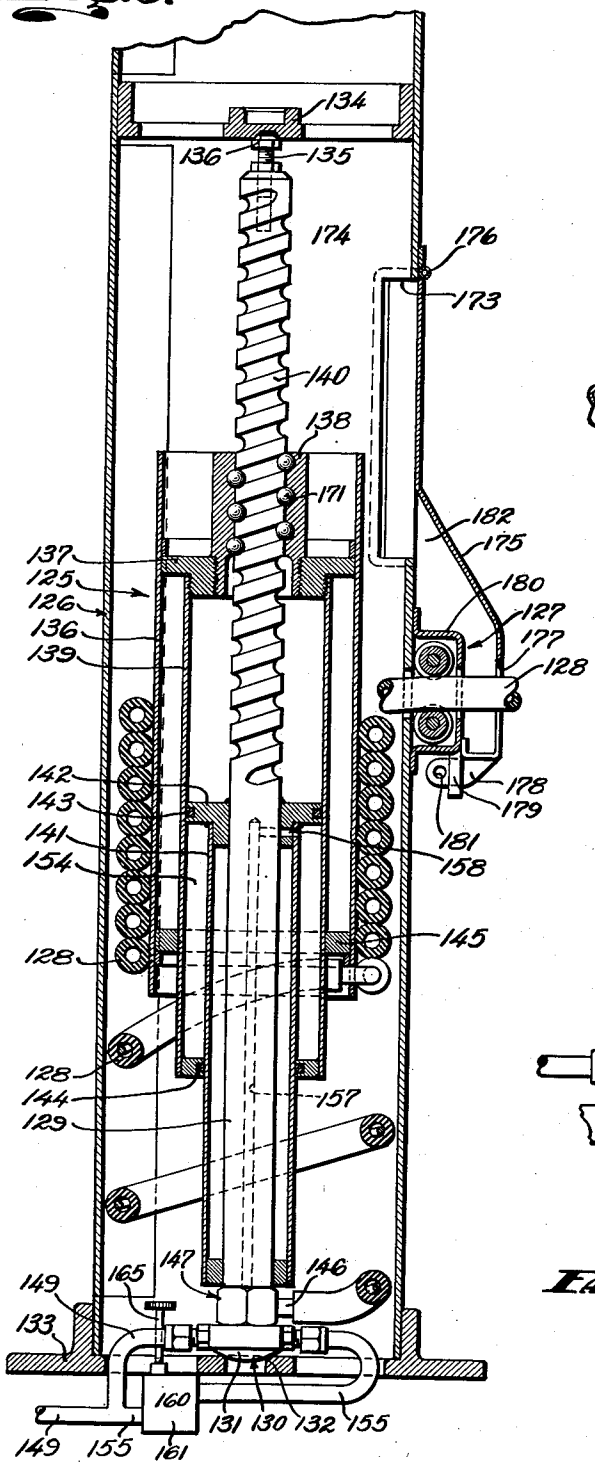


Fig. 11.

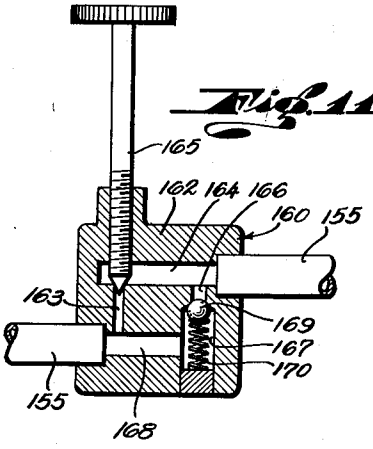
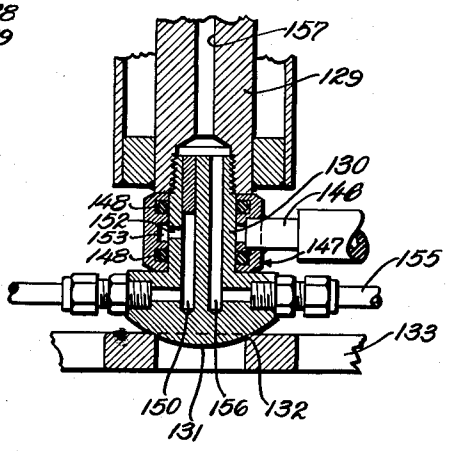


Fig. 10.



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Fig. 12.

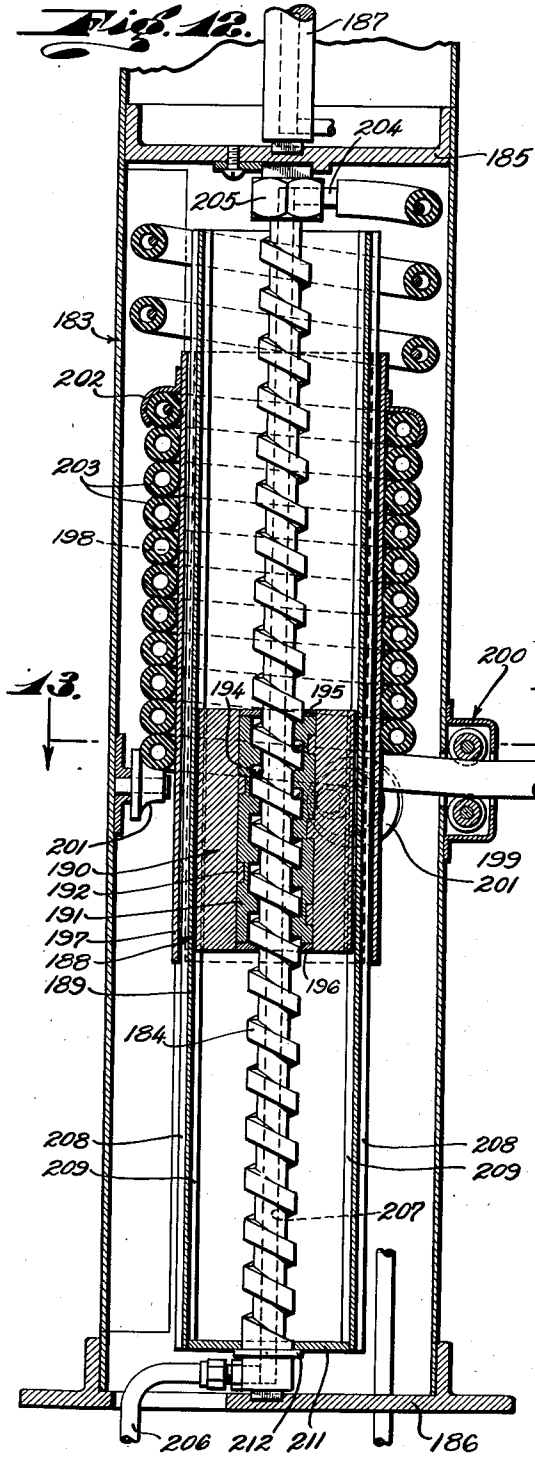


Fig. 14.

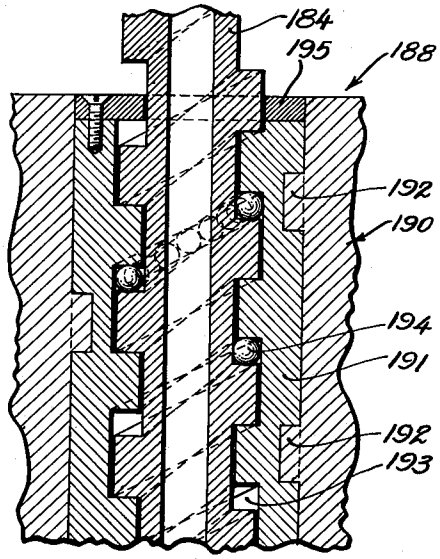
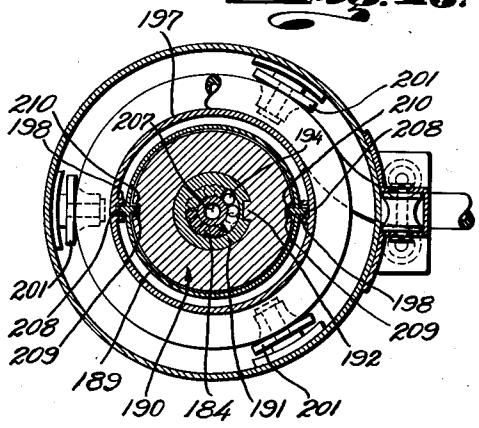


Fig. 13.



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Patented Aug. 9, 1949 2,478,494

UNITED STATES PATENT OFFICE

2,478,494

REELING MECHANISM

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Application November 17, 1947, Serial No. 786,418

10 Claims. (Cl. 299—78)

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This invention relates generally to mechanisms for reeling flexible lines, and has to do particularly with an improved service station reeling assembly characterized by its adaptability for accommodation within spaces and locations which, together with the functional qualities of the mechanism, render it superior to the conventional types heretofore used. While various features of the invention are applicable to the reeling of flexible lines in general, a major adaptation of the invention is for service station use, and accordingly, will be described herein as illustrative.

Various proposals, some of which have been put into practice, have been made for reeling hose in a manner permitting the hose to be payed out to whatever length needed, and acting to rewind the hose as it is released. A common type of reeling unit is one requiring accommodation within a pit that must be dug a considerable distance below the ground surface. Other types have been proposed for installation above the ground, but have not achieved a particular or outstanding success, for various reasons unnecessary to relate in detail. My general purpose is to provide an improved reeling mechanism capable of accommodation within limited dimensions, whether above or below the ground surface, and which because of its structural and functional characteristics, will permit its installation at locations and within housings or standards (which may serve other purposes) to which the conventional mechanisms are not practicably useable.

Structurally, the invention contemplates reeling mechanism comprising a hose carrier subject to rotation and axial bodily movement during its hose withdrawal and winding operations, in a manner permitting maintenance of a tangential take-up of the hose, and if desired, at a substantially fixed location. As will appear, different means may be employed for exertion of an axial force on the drum, as and for the purposes stated. In accordance with one form of the invention, such axial displacement is effected by exertion against the drum of fluid pressure, preferably air pressure, the effect of which, together with proper angularity of the drum and shaft connection, produces longitudinal travel, and consequent rotation of the drum in a hose winding direction. Instead of so actuating the drum by fluid pressure, other applied force may be used, as a gravitation force created by, in effect, adequately weighting the drum.

Concerning its more specific aspects, the invention may employ a drum or other hose carrier

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having a threaded connection with a stationary support, the angularity of the connection being such as to impart axial movement to the rotating drum while permitting free withdrawal and even take-up of the hose. Thus the drum has what may be termed floating characteristics, and is characterized and distinguished from the conventional reeling units, by the capacity of the drum for longitudinal axial movement in response to a longitudinal, as distinguished from rotationally applied force.

The invention has various additional features and objects, such as the methods of connecting the floating drum with stationary parts such as the water or air supply lines, the relationship between the hose coils and thread angularity permitting maintenance of the hose take-off at a substantially fixed location, and other details, all of which will be understood most readily and to best advantage, from the following description of certain illustrative embodiments shown by the accompanying drawings, in which:

Fig. 1 is a front elevation of a standard embodying two hose reeling units and supporting a cash box;

Fig. 2 is an enlarged fragmentary vertical section taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged transverse section taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary vertical section taken on line 4—4 of Fig. 2;

Fig. 5 is a view similar to Fig. 2 illustrating a modified form of the invention;

Fig. 6 is a transverse section taken on line 6—6 of Fig. 5;

Fig. 7 is an enlarged fragmentary side elevation of the nut illustrated in Fig. 5;

Fig. 8 is an enlarged vertical section of the swivel connection on the upper end of the screw;

Fig. 9 is a view similar to Fig. 2 illustrating a variational form of fluid pressure actuated winding drum;

Fig. 10 is an enlarged cross-sectional view showing the bottom fitting assembly in Fig. 9;

Fig. 11 is an enlarged sectional view showing the air control valve of Fig. 9;

Fig. 12 is a view similar to Fig. 9 illustrating an additional variational form of the invention employing gravitational force for movement of the winding drum;

Fig. 13 is a cross-section taken on line 13—13 of Fig. 12; and

Fig. 14 is a fragmentary enlarged sectional view showing the nut and screw relationship in Fig. 12.

The form of the invention illustrated in Figs. 1 to 4 of the drawings includes a tubular standard 10 housing a pair of hose reeling units 11 and 12 arranged in vertical alinement. The standard 10 is provided with a base 13 adapted to be supported on the usual service station island 14, at a location rendering conveniently accessible the hoses as well as a cash box 15 which may be carried by the housing.

The lower hose reeling unit 11 includes generally a drum 16 carrying a coiled supply of hose 17 adapted to be withdrawn from the housing 10 through a stationary hose guide 18. The drum 16 is mounted in the standard for both rotational and axial movement to permit the hose to be withdrawn tangentially through the fixed location of the guide. The guide 18 typically includes two pairs of rollers 19 arranged on vertical and horizontal axes 20 within a housing 21 secured to the front side of the standard. An opening 22 in the guide housing registers with an opening 23 in the standard for freely passing the hose.

The drum 16 is mounted in the standard for rotational and axial movement by a nut and screw mechanism characterized by its capacity for permitting endwise bodily movement of the drum in response to force applied axially or longitudinally thereof. In Figs. 1 to 4 of the drawings the mechanism is shown to include a nut 25 stationarily mounted in the standard 10, and a screw 26 carrying the drum and cooperating with the nut for rotational and axial movement relative thereto. The nut 25 is shown typically to include three rollers 28 carried on the upper ends of equally spaced arms 29 by supporting pins 30. The rollers 28 are in vertically stepped relation in correspondence with the angularity of the helical thread on the screw. The several arms 29 are carried by a head 31 on the upper end of a guide tube 32. The lower end of the tube is connected with the base plate 13 of the standard through an attaching ring 33. The tube 32 is attached to the head 31 by a welded or other joint at 34, and is connected to the ring 33 by a set screw 35.

The drum 16 is moved axially in the standard 10 as the hose is withdrawn from and taken up by the drum. The nut and screw mechanism causes the drum to move axially as the drum rotates, and fluid pressure acting between the nut and drum, in a take-up direction, causes the drum to rotate through the cooperation of the stationary rollers with the thread on the screw, to subsequently wind the hose onto the drum. Referring to Fig. 2, the drum is carried on a shell or cylinder 36 through a ring 37 located at its upper end and a similar ring 38 at its lower end. The upper end of the cylinder 36 is connected with the screw 26 by plug 39 secured to the screw and cylinder by a pin 40 extending diametrically therethrough. The lower ring 38 is provided with a flange 41 cooperating with the supporting tube 32 to guide the lower end of the drum.

The head 31 at the upper end of the guide tube 32 carries in its groove 43 an O-ring 42 forming a fluid seal against the cylinder 36. Flange 41 of the ring 38 at the lower end of the drum 16 similarly carries in its groove 45 an O-ring 44 which seals against the tube 32. Thus the space between the guide tube 32 and cylinder 36 forms an annular chamber 47 sealed at its opposite ends.

The screw 26 extends through an opening 46 in the head 31 to be received in an inner guide tube 48 and a bottom head 49 slidably engaging the

tube 48. The upper end of the latter is attached to the head 31 at 50 by welding or the like, and its lower end is connected with ring 33 by a spaced ring 51 welded or otherwise attached to tubes 32 and 48 to form a fluid tight joint.

Fluid pressure is supplied to the chamber 47 from a supply line 52 connected to the lower end of guide tube 48 by a fitting 53 threaded into a plug 54. A partition 55 adjacent the plug 54 in the lower end of the tube, forms a receiving chamber 56. Lateral ports 57 in the tube put the receiving chamber in communication with the annular passage 58 formed between tubes 32 and 48. Ports 59 formed in the upper end of the supporting tube 32, put the chamber 47 in communication with the passage 58. Fluid pressure thus is supplied to the chamber 47 from the supply line 52 by way of the receiving chamber 56, ports 57, annular passage 58, and ports 59, to subject the drum to an axial force which imparts rotation thereto by the cooperation of the stationary nut with the threads on the screw.

Fluid, e. g. air, is supplied to the hose 17 from line 60 which enters the standard 10 through the base plate 13 and has a flattened portion 61 to give clearance between the pipe and hose. The supply line 60 extends to a point above the upper end of the drum 16, and a spiral hose 62, containing a wire 63 for maintaining its spiral formation, connects the upper end of the line with a swivel head 64. The spiral flexible connection 62 between line 60 and the swivel head permits axial movement of the cylinder 16, while the swivel head permits free rotation of the drum relative to the head and flexible connection 62.

The swivel head 64 is carried on a stem 65, threaded in the upper end of the screw 26 at 66, and has an annular passage 67, sealed at opposite sides by a pair of O-rings 68, in communication with the flexible connection by a nipple 69. The stem 65 is provided with a central port 70 extending axially into the stem from its lower end. Lateral ports 71 in the upper end of the stem put the annular passage 67 in communication with the axial port 70, and lateral ports 72 put the axial port 70 in communication with a tube 73 extending from the upper end of the screw, through ring 37, to the ring 38 at the lower end of the drum 16. The lower end of the tube 73 is received in an opening 74 in the ring 38, and a nipple 75 in communication with the opening 74 connects with the inner end of the hose 17, thus putting the hose in communication with the air supply. The outer end of the hose carries the usual bumper 76 engageable with housing 21 of the hose guide 18 to limit inward movement or take-up of the hose.

The relationship between the diameter of the hose and the pitch of the thread on the screw 26 determines the space between the hose coils on the drum 16. If the diameter of the hose is equal to the pitch of the screw, the hose will lay in coils in close proximity, as illustrated in the drawings. The angle of the thread on the screw is an important factor in that it must be sufficiently great to cause the drum to rotate by a force applied axially thereof.

Referring to Fig. 1, the standard 10 contains a second winding unit 12 for accommodation of a water hose, and which may be identical in construction and operation to the above described form. In Fig. 2 the water supply line 80 for the unit 12 is shown to extend upwardly through the base 13 in a manner similar to the air line 60 for the dispensing unit 11.

In operation, the air hose 17 is withdrawn through the hose guide 18 causing a counterclockwise rotation of the drum 16 and consequent axial movement by engagement of screw 26 with the stationary nut 25. The hose is permitted to be withdrawn since the fluid in chamber 47 is free to back up in the system, or be compressed in the event air is used. Upon release of the tension on the hose 16, the pressure in the chamber 47 exerts on the drum and screw attached thereto an axial force causing the nut rollers to travel the screw thread and in so doing, to axially displace and rotate the drum in a winding direction.

The form of the invention illustrated in Figs. 5 to 8 is essentially similar to the above described embodiment and has the same mode of operation except for replacing the fluid pressure application by a gravity responsive take-up, and direct connection of the nut with the drum for rotational and axial movement, while the screw remains stationary.

Referring to Fig. 5 the housing 90 contains a winding drum 91 and a hose 92 wound thereon. The drum is mounted for rotational and axial movement on a stationary screw 93 through the ball bearing nut 94. Screw 93 is connected with a guide tube 95 by thread connection 95 at its lower end, tube 95 being connected with the housing 90 through the base plate 97 by a set screw 98. Nut 94 is connected with the drum 91 through a weight element 100 by the threaded connection 94a retained in place by spaced rings 101 and 102. A ring or bearing 103 is threaded into the lower end of the weight element to stabilize the lower end of the drum during its movements on the guide tube 95.

Screw 93 is provided with a helical race 104 for receiving one-half of each ball 105 in the nut 94. The nut carries a complementary helical ball race 106 receiving the other half of each ball 105, and carries also a tube 107 for by-passing the balls from one end to the other of their helical travel. Tube 107 is retained in place by a strap 108 secured to the body of the nut by spaced screws 109. Rotation of the nut relative to the screw causes the balls to roll up or down in the race on the nut, depending on the direction of its rotation, and the by-pass tube returns the balls from one end to the other of the race.

Fluid is supplied to the hose 92 from line 110 connected with the guide tube 95 by an adapter fitting 111, and from the tube through an axial port 112 in the screw 93. A swivel head 113 at the upper end of the screw, identical to the swivel head described above, is in communication with the port in the screw. Fluid from the swivel head 113 is conducted through a flexible connection 114 attached to a tube 115 extending through an opening 116 in the weight element. The lower end of the tube 115 is directly connected to the inner end of the hose 92, and the outer end of the hose carries the usual fitting 117 for dispensing the fluid. The swivel head 113 permits the drum to rotate while the screw remains stationary, and the flexible coupling 114 permits the drum to move axially on the screw, while maintaining a fluid connection between the supply line 110 and the hose. The hose passes outwardly through a guide 118 attached to the outside of the standard 90 and through registered openings 119 and 120 in the standard and the hose guide body, respectively.

At a point above the upper end of the stationary screw 93, a partition 121 within the housing 90 carries a second guide tube 95a for a second reeling unit, not shown.

The operation of the unit just described is identical with the unit of the first form, except that the drum is actuated by gravitational, instead of fluid pressure applied force. The weight element 100 forms an effective connection between the drum 91 and the nut 94, and at the same time adds sufficient weight to the drum to cause its rotation and take-up of the hose, each time the hose is withdrawn from the housing 90.

It is important to have sufficient inclination in the thread to assure rewinding of the hose on the drum, when a predetermined axial force is applied for a given load or resistance to turning of the drum. The resistance to turning of the drum may be overcome by increasing the axial force applied, up to a point where the axial force tends to lock the nut on the screw and from this point on it is necessary to increase the angle of the thread. Therefore the pitch angle of the thread is governed by the resistance to turning of the drum and the force to be applied axially thereof.

Fig. 9 illustrates a further variational form of the invention, related to the embodiment of Fig. 2, in that the fluid pressure is employed to effect relative axial movement of a screw shaft and winding drum, but with the screw in this instance held against axial movement Here the winding drum assembly 125 is contained within the vertical housing 126 carrying the roller guide arrangement 127 for passage of the hose 128. The housing contains the screw shaft 129 into the lower end of which is screwed a fitting 130 having a convex bottom portion 131 seating at 132 on the housing base plate 133. The upper end of the shaft is held to the support 134 by a screw 135 threaded into the shaft, the screw head fitting within the support recess 136. The screw 135 affords a simple method of retaining the winding drum screw 129 in fixed position between its bottom seat at 132 and the support 134, while permitting, by the loosening of screw 135, quick and easy dismounting and removal of the entire screw shaft and winding drum assembly.

The winding drum comprises a shell 136 containing a fixed head 137 to which is attached the nut 138 and the depending cylinder 139. Hose 128 is wrapped about the drum in continguous turns having the previously described relation to the pitch of the screw threads 140. The lower portion of the screw shaft carries a guide tube 141 attached to a head 142 fixed to the shaft and having an appropriate fluid seal engagement at 143 with the cylinder 139. The lower end of the latter has a sliding fluid seal engagement at 144 with the guide tube 141. The drum shell 136 and cylinder 139 are mutually supported by a ring 145 placed between them.

Leading from the bottom of the drum, the hose 128 has an open spiral extent having a connection 146 with a sleeve 147 packed at 148 about the fitting 130, and rotatable with the hose and drum assembly. Air is supplied to the hose from line 149 by way of passage 150, port 152 and annular groove 153 in the sleeve 147, the groove being in constant communication with the hose connection 146. Air pressure is communicated from line 149 to the cylinder chamber 154 by way of branch line 155, passage 156, the screw shaft bore 157 and the lateral port 158.

Line 155 contains an air control valve 160 comprising a body 162 containing passages 163 and 164, through which the air flows under control

of the needle valve 165. Air flow through the bypass bores 166, 167 and 168 is controlled by a check valve 169 normally seated by the spring 170. At this point it may be mentioned that if desired, a similar control valve 160a may be installed in line 52 of the previously described form shown in Fig. 2.

In operation, assuming the parts to be positioned as illustrated in Fig. 9, withdrawal of the hose 128 causes the drum and cylinder assembly to turn upwardly on the screw shaft 129, rotation of the nut 138 being facilitated by ball bearings 171 accommodated for return movement as previously described with reference to Fig. 7. During upward movement of the cylinder 139, air is displaced from chamber 154 through the shaft bore 157 and line 155 past the check valve 169. Upon release of the hose, air pressure communicated through line 155 past the needle valve 165 to chamber 154 forces the cylinder and drum assembly downwardly on the screw, causing the drum to rotate and rewind the hose. Needle valve 165 may be set to deliver air to the chamber 154 at a rate sufficiently high to permit an even progressive take-up of the hose, but without employing continuously the maximum available pressure. In other words, the magnitude of the continuously effective pull on the hose may be regulated by adjustment of the needle valve.

Provision is made in the Fig. 9 form of the invention, for accommodation of the outer nozzle end (not shown) of the hose 128 within the housing 126, at such time as the service station may be closed and the hose therefore is to be rendered inaccessible. The housing contains an opening 173 through which the free end of the hose may be put into the compartment 174, the opening being closed by a cover 175 hinged to the housing at 176. Opposite the guide 127, the cover has a hose passing opening 177, below which the cover may carry any suitable means for locking it to the housing. As illustrative, the cover is shown to carry a lug 178 which may pass through a bifurcation 179 on the guide housing 180, to permit insertion of a padlock through the lug opening 181. As illustrated, sufficient clearance exists at 182 inside the cover 175, to permit passage of the nozzle end of the hose into the compartment 174.

The final variational form of the invention illustrated in Figs. 12 to 14, resembles the embodiment of Fig. 5 in that the winding drum is actuated by gravitational force, but in this instance by way of a nut element movable axially of both the shaft and drum. Here housing 183 contains the screw shaft 184 engaging and confined against rotation between the support 185 and base 186, the support being adaptable also to carry a second screw shaft 187 where the housing is to contain two winding drum assemblies. The shaft carries a nut 190 which may comprise a cylindrical body of lead or other heavy material having sufficient weight to displace the winding drum, as will presently appear. The nut proper comprises a sleeve 191 interlocked at 192 to the lead and containing screw threads having at 193 sufficient clearance from the shaft threads for accommodation of the ball bearings 194. The nut or its thread length may be sufficient to permit travel of the balls within the thread extent, during the range of travel of the nut. Expulsion of the balls is prevented by retaining rings 195 and 196.

The winding drum may comprise an open end cylinder 197 carrying spaced internal spline ribs 198 extending the full length of the drum. Entering through the guide 200, the hose passes over the spirally arranged rollers 201 carried on the inside of the housing 183, and winds about the drum. At the top, the hose leaves the drum in engagement with the segmental circular drum-carried guide 202, inclined in accordance with the pitch of the turns 203, the hose thence being spiraled above the drum to a connection at 204 with fitting 205 on the screw shaft. Air is supplied to the hose from line 206 through the shaft bore 207 and fitting 205.

Rotation is transmitted from the drum to the nut, or vise versa, by way of a key sleeve 189 carrying diametrically opposed splines 208 received between the drum carried ribs 198. The sleeve carries a second pair of splines 209 received within grooves 210 extending longitudinally within the nut surface. In the broad contemplation of the invention, the splines 208 and 209 may be disposed or mounted in any suitable manner permitting full range of relative movements of the nut and drum. Typically, the splines are shown to be carried by the sleeve 189 which is substantially co-extensive with the nut travel and may be supported by the bearing of its closed bottom 211 on the screw shaft flange 212.

As illustrative of an actual construction for winding a 5/8 inch hose, the nut 190 may be 5 inches in length, traveling within a range of 19 inches, the distance between fitting 205 and the bottom shaft flange 212. The drum length may be about 9 inches, indicating that depending upon the length of hose wound upon or removed from the drum, the nut 190 may travel out of and beyond either end of the drum as it approaches extreme positions corresponding to the limits of winding on or withdrawal of the hose from the winding drum.

As the hose is pulled from the housing, the resultant drum rotation is transmitted by the key sleeve 189 to the nut 190, causing the latter to travel upwardly along the screw shaft. With the drum supported on rollers 201 by way of the hose turns 203 and the guide 202, the drum moves downwardly as the hose is pulled out from the bottom of the turn series. Upon release of the hose the weighted nut travels down the screw shaft, sleeve 189 transmitting its rotation to the drum and turning the latter in a hose winding direction. As will be understood, the drum is progressively elevated as the hose turns are added at the bottom.

I claim:

1. A flexible line reeling unit comprising an annular winding drum movable longitudinally of an axis in response to force applied to the drum in the direction of said axis, means extending inside the drum and positioned about and progressively movable along said axis to exert force against the drum substantially uniformly about and in the direction of said axis, and a mounting supporting the drum for such movement and comprising a connection which translates longitudinal movement of the drum into rotational movement thereof.

2. A flexible line reeling unit comprising an annular winding drum movable longitudinally of an axis in response to force applied to the drum in the direction of said axis, means positioned about and progressively movable along said axis to exert force against the drum substantially uniformly about and in the direction of said axis, a mounting supporting the drum for such move-

ment and comprising a connection which translates longitudinal movement of the drum into rotational movement thereof, said connection including a screw shaft alined with said axis, and a nut traveling the screw and movable with the drum, the pitch of the screw threads being sufficiently great that the drum moves longitudinally of said axis in response to the force of said exerting means.

3. A flexible hose reeling unit comprising an annular winding drum movable longitudinally of an axis in response to force applied to the drum in the direction of said axis, a hose carried by the drum, means positioned about and progressively movable along said axis to exert force against the drum substantially uniformly about and in the direction of said axis, a mounting supporting the drum for such movement and comprising a connection which translates longitudinal movement of the drum into rotational movement thereof, a fluid supply pipe, and a flexible conduit rotatable with the drum for connecting said pipe with the drum-carried hose, said conduit being deflectible in accordance with the axial movements of the drum.

4. A flexible hose reeling unit comprising an annular winding drum movable longitudinally of an axis in response to force applied to the drum in the direction of said axis, a hose carried by the drum, means positioned about and progressively movable along said axis to exert force against the drum substantially uniformly about and in the direction of said axis, a mounting supporting the drum for such movement and comprising a connection which translates longitudinal movement of the drum into rotational movement thereof, a fluid supply pipe, a swivel fitting connected to said pipe, and a flexible conduit connected to said swivel fitting and to the drum for supplying fluid to the drum-carried hose, said conduit being rotatable with the drum and being deflectible in accordance with the axial movements of the drum.

5. A flexible hose reeling unit comprising a vertically extending tubular housing, an annular hose-carrying drum extending coaxially with and inside the housing, said drum being movable longitudinally of the housing and drum axis in response to force applied to the drum in the direction of said axis, means positioned centrally within the housing about said axis in proximate relation to and in alinement with the drum for exerting force uniformly about and in the direction of said axis against the drum to move the drum longitudinally of the axis, and a mounting supporting the drum for such movement and comprising a connection which transmits longitudinal movement of the drum into rotational movement thereof.

6. A flexible hose reeling unit comprising a vertically extending tubular housing, an annular hose-carrying drum extending coaxially with and inside the housing, said drum being movable longitudinally of the housing and drum axis in response to force applied to the drum in the direction of said axis, means extending inside the drum and exerting a force in the direction of said axis against the drum to move the drum longitudinally of the axis, and a mounting supporting the drum for such movement and comprising a connection which transmits longitudinal movement of the drum into rotational movement thereof.

7. A flexible line reeling unit comprising an annular winding drum movable longitudinally of an axis in response to force applied to the drum in the direction of said axis, a heavy mass extending inside the drum and positioned about and progressively movable along said axis to exert force against the drum substantially uniformly about and in the direction of said axis, and a mounting supporting the drum for such movement and comprising a connection which translates longitudinal movement of the drum into rotational movement thereof.

8. A flexible line reeling unit comprising an annular winding drum movable longitudinally of an axis in response to force applied to the drum in the direction of said axis, fluid pressure actuated means extending inside the drum and positioned about and progressively movable along said axis to exert force against the drum substantially uniformly about and in the direction of said axis, and a mounting supporting the drum for such movement and comprising a connection which translates longitudinal movement of the drum into rotational movement thereof.

9. A flexible hose reeling unit comprising a vertically extending tubular housing, an annular hose-carrying drum extending coaxially with and inside the housing, said drum being movable longitudinally of the housing and drum axis in response to force applied to the drum in the direction of said axis, a heavy mass positioned centrally within the housing about said axis in proximate relation to and in alinement with the drum for exerting force uniformly about and in the direction of said axis against the drum to move the drum longitudinally of the axis, and a mounting supporting the drum for such movement and comprising a connection which transmits longitudinal movement of the drum into rotational movement thereof.

10. A flexible hose reeling unit comprising a vertically extending tubular housing, an annular hose-carrying drum extending coaxially with and inside the housing, said drum being movable longitudinally of the housing and drum axis in response to force applied to the drum in the direction of said axis, fluid pressure actuated means positioned centrally within the housing about said axis in proximate relation to and in alinement with the drum for exerting force uniformly about and in the direction of said axis against the drum to move the drum longitudinally of the axis, and a mounting supporting the drum for such movement and comprising a connection which transmits longitudinal movement of the drum into rotational movement thereof.

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