June 27, 1933. E. MARKS 1,915,632

HOSE WINDER

Filed Feb. 2, 1931

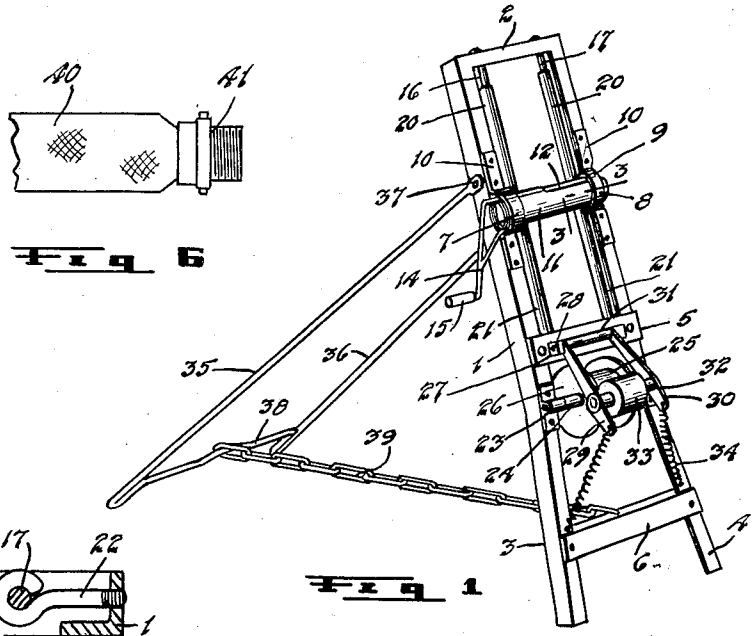


Fig 1



Fig 6

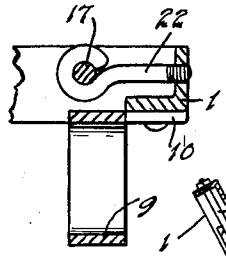


Fig 3

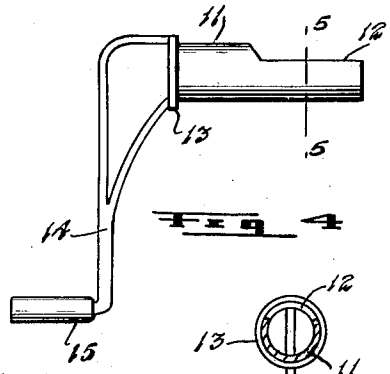


Fig 4

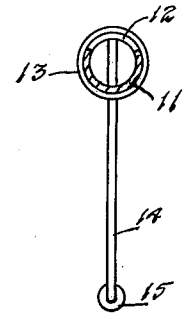


Fig 5



Fig 2

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# UNITED STATES PATENT OFFICE

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## HOSE WINDER

Application filed February 2, 1931. Serial No. 512,840.

The invention relates to improvements in hose winders and an object of the invention is to provide a simply constructed inexpensive and durable device for winding hose such as fire hose and arranged such that the end of the hose can be quickly attached to the winding drum, the drum easily and manually turned and the hose as it is wound fed to the drum between pressure rollers provided.

A further object is to provide a novel winding drum constructed so that the hose connection at the end of the hose can be easily and quickly attached to the drum, the arrangement being such that the hose connection at such time is contained within the drum so that it will not interfere with the subsequent winding of the successive layers of hose around the drum.

A further object of the invention is to provide guide rollers for holding the sides of the hose coil as it is being wound onto the drum.

A still further object is to associate with the drum a pair of rollers between which the hose is passed to the drum, the rollers applying pressure on the hose so that it is flattened as it is wound.

A further object is to provide the frame of the device with legs which can be folded for storage purposes.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:—

Fig. 1 is a perspective view of the device.

Fig. 2 is a vertical sectional view centrally through the same.

Fig. 3 is an enlarged detailed sectional view at 3—3, Figure 1.

Fig. 4 is an enlarged detailed side view of the winding drum.

Fig. 5 is a cross sectional view at 5—5, Figure 4.

Fig. 6 is a plan view of one end of the hose and showing the hose connection.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The frame 1 of the winder is formed from a suitable length of bar iron bent to provide an upper cross head 2 and equal length side legs 3 and 4 extending therefrom, the lower ends of the legs being diverged slightly to give a good bearing area. More or less centrally of their length, the legs are connected by a cross bar 5 of angle iron cross section and towards the lower ends, they are connected by a similar cross bar 6.

Midway between the cross bar 5 and the head 2, the frame is provided with a pair of opposing bearings 7 and 8, the bearings being in the form of rings or circular bands 9 supported by side lugs 10 permanently bolted to the legs 3 and 4. The winding drum 11 is hollow and is rotatably carried by the bearings 7 and 8 and is formed from a short length pipe having the ends open and a portion of the face thereof cut away to provide a lengthwise extending open ended slot 12. It will be observed that the width of the slot is somewhat less than the internal diameter of the drum, the purpose of which will be later apparent.

A circular band 13 is permanently secured in any suitable manner to the non-slotted end of the drum and this band carries the crank 14 fitted with the hand grip 15 for winding purposes. When the drum is being inserted in the bearings, the band 13 strikes the bearing 7 and limits the final position of the drum. Obviously the inserted winding drum can be withdrawn endwise to free the slotted end thereof from the bearing 8.

Between the head 2 and the bar 5, I locate a pair of spaced lengthwise extending bolts 16 and 17 which are carried by the latter parts and on each bolt, I locate rotatably two relatively small central rollers 18 and 19 and two relatively long end rollers 20 and 21, the rollers being positioned behind the winding drum. The rods are reinforced centrally of their length by eye bolts 22 carried by the frame and having the eyes receiving the rods and entered between the rollers 18 and 19 in each instance.

In a location somewhat below the cross bar 5, I secure similar opposing bearings 23 to the legs and these support rotatably a

cross shaft 24 on which I mount a relatively large roller 25 having relatively deep end flanges 26. The bar 5 carries opposing lugs 27 supporting a cross rod 28 and on the ends of the rod, I mount a pair of similar swinging arms 29 and 30 which are held in spaced relation by an intervening relatively small diameter roller 31 rotatably mounted on the rod.

The outer ends of the arms support a cross shaft 32 which carries a further roller 33. The arms pass to the outer sides of the flanges 26 and the roller 33 rides the roller 25 being continuously pressed towards the same by coiled springs 34 connected to the ends of the arms and to the lower ends of the legs 3 and 4. Folding legs 35 and 36 are pivotally attached to the upper part of the frame at 37 and are connected by a cross piece 38 which is in turn tied to the bar 6 by a flexible member such as a chain 39, the chain limiting the out swung position of the folding legs.

This device is utilized for winding hose such as fire hose and I have shown a short length of hose 40 in Figure 5 of the drawing, the end of the hose being provided with the well known type of metallic hose connection 41.

When the device is to be used for winding a length of hose, it is set up in the position as best shown in Figure 1 and the hose connection is first passed between the rollers and then to the drum and the hose connection is attached to the drum by first end shifting the drum to withdraw the slotted end thereof from the bearing 8, then entering the hose connection into the drum through the open end thereof and sliding it endwise there within and finally re-entering the slotted end of the drum in the bearing 8. The internal diameter of the drum is designed so that it will receive the hose connection and the width of the slot made in the drum is such that after the connection has been entered, it cannot withdraw through the slot. It will here of course be understood that the hose extends outwardly through the slot when the connection is entered in the drum and that the hose will be placed in a position substantially midway of the length of the drum.

It is an easy matter to pass the hose connection between the rollers as one has simply to raise the arms against the pressure of the springs 34. The arrangement above provided makes it a very easy matter to connect the hose to the winding drum after it has been passed through the rollers and subsequently one winds the hose on the drum by turning the crank 14. The hose as it winds will be flattened and guided to the winding drum by the rollers and the wound hose on the drum will be guided at the edges by the rollers 18, 19, 20 and 21.

Obviously the hose can be readily removed from the device by pulling the extending end thereof to unwind it from the drum.

What I claim as my invention is:—

1. In a device for winding hose provided at one end with a metallic hose connection, suitably supported opposing stationary bearings, a hollow winding drum rotatably carried by the bearings and endwise shiftable there within to permit of the withdrawal of one end of the drum from one of the bearings, said drum having the latter end open and being of sufficient internal diameter to admit, in the withdrawn position thereof, the hose connection and having a lengthwise extending slot in communication with the open end aforesaid, the said slot receiving the hose and being of a width to prevent the escape of the hose connection therethrough.

2. In a hose winder, an inclined open centered main frame, folding legs attached to the frame and supporting the same in its inclined position, a winding drum crossing and carried by the upper part of the frame, spaced parallel hose guiding rollers contained within the frame and engageable with the edges of the hose wound on the drum, a flanged hose guiding roller mounted on the lower part of the frame and parallel to the winding drum and a pressure roller overlying the former roller, said rollers being designed to receive therebetween the hose fed to the drum.

Signed at Sioux Lookout this 26th day of November, 1930.

EARL MARKS.