Oct. 14, 1969 J. McLOUGHLIN ETAL 3,471,885

HYDRO DRIVEN HOSE WASHER AND WINDER

Filed June 15, 1966 2 Sheets-Sheet 1

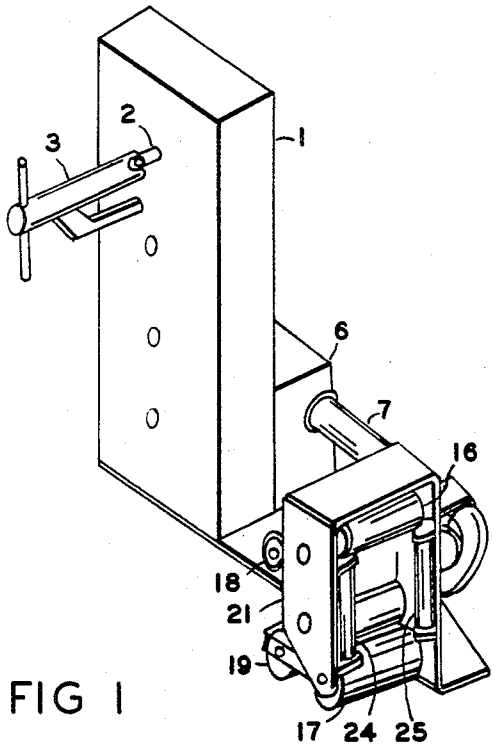


FIG 1

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HYDRO DRIVEN HOSE WASHER AND WINDER

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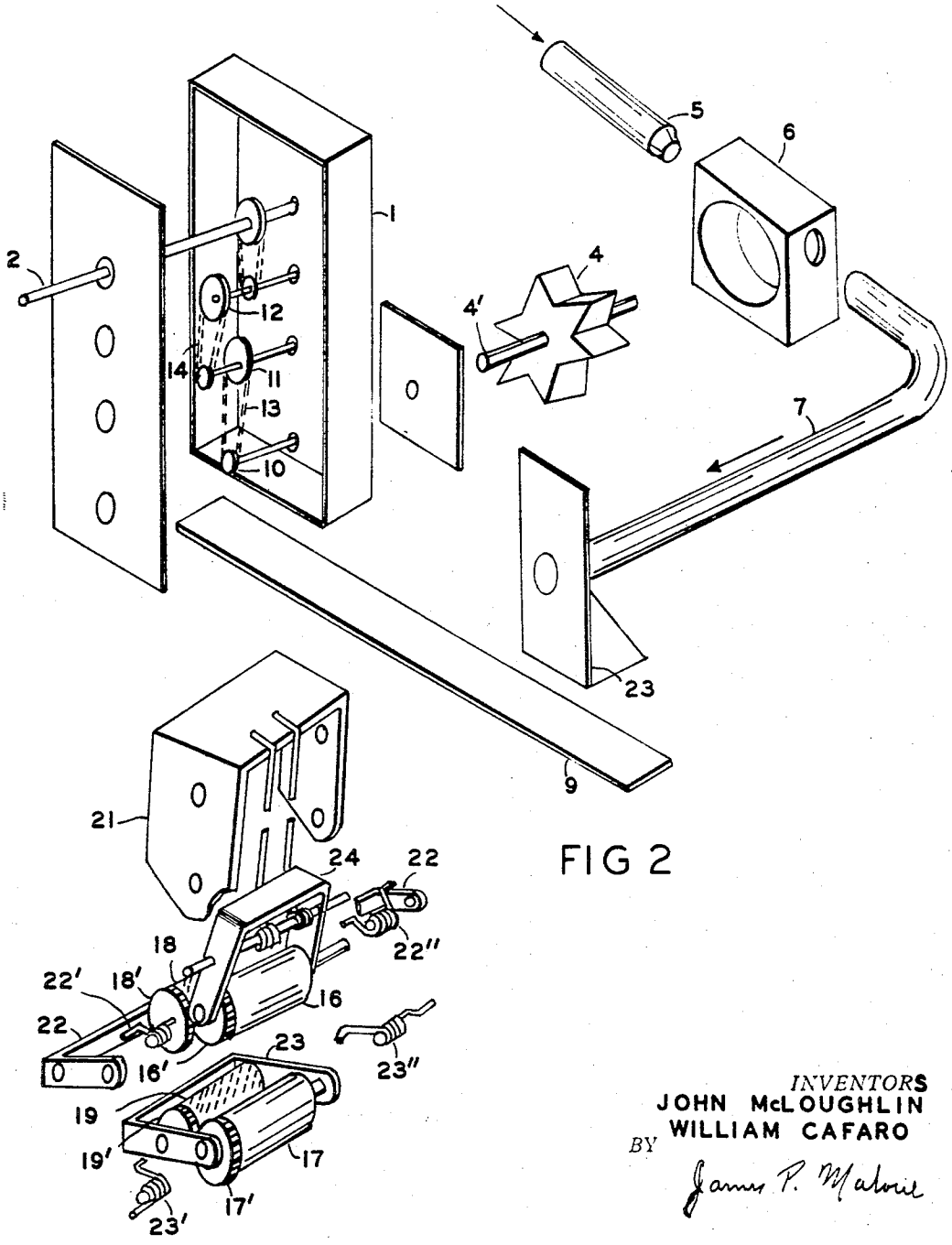


FIG 2

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HYDRO DRIVEN HOSE WASHER AND WINDER

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U.S. Cl. 15—40 4 Claims

ABSTRACT OF THE DISCLOSURE

A portable simultaneous hose washing and winding means which is operated by a water driven motor and having a spindle rotatably mounted on said frame, a hose clamp mounted on said spindle, a water wheel motor connected to drive said spindle, and hose washing means comprising a plurality of brushes rotatably mounted on said frame, and a pipe connected from said motor to said brushes to conduct the exhaust water from said motor to said brushes.

This invention relates to means for washing and winding fire fighting hoses for instance after they have been used at a fire.

More particularly, the invention relates to portable hose washing and winding means which is adapted to be operated by a water driven motor.

The hose used to fight fires are of the type which are folded flat when not in use and they are generally wound up. When the hoses are used they generally become dirty due to being pulled through the streets and debris at the scene of the fire. It is desirable to clean the hoses as soon as convenient before the dirt dries into the surface of the hoses. Generally, there is a great traffic congestion at the scene of the fire so it is difficult to get the hoses wound up and cleaned.

One of the difficulties with this type equipment is providing the necessary power for portable equipment. It is desired that the equipment be portable in order to facilitate the operation. If the washing and winding equipment were mounted on the fire truck, it would be necessary to maneuver the fire truck into a convenient location for laying out the hose to use the winding apparatus and this is generally difficult or impossible, when in woods, thicket, etc. Otherwise, it is feasible in ordinary conditions.

One of the main problems with this equipment is to provide the necessary power in portable units. The use of electrical motors is not desirable since they are heavy and furthermore the necessary electricity is not always available. Furthermore there is abundance of water involved in the operation which may cause short circuiting in the electrical components.

The present invention provides a portable washing and winding device which is driven by a water motor which is connected up to the nearest fire hydrant or other sources of water which has been used in the fire. The exhaust water is fed to the washing mechanism where the hose is fed through the self powered counter rotating brushes.

Accordingly, a principal object of the invention is to provide new and improved hose winding means.

Another object of the invention is to provide new and improved hose winding and washing means.

Another object of the invention is to provide new and improved hose winding and washing means using a water power motor.

Another object of the invention is to provide new and improved portable washing and winding means for fighting fires using exhaust water to wash the hose.

These and other objects of the invention will be apparent from the following specification and drawings of which:

FIGURE 1 is a perspective view of the embodiment of the invention.

FIGURE 2 is an exploded perspective view of the embodiment of FIGURE 1.

Referring to the figures, the invention generally comprises a frame **1** which has a spindle **2** rotatably mounted thereon. A hose clamp **3** is mounted on the spindle **2**. The clamp is of the type which is adapted to grip the hose behind the hose coupling and the clamp is secured to the spindle **2** by means of a connecting pin or other equivalent means. The spindle is adapted to be driven by means of a water motor through a speed ratio step down gear or chain arrangement.

The motor comprises a casing **6** in which is rotatably mounted a water wheel **4**. The water input to the wheel is fed through the nozzle **5** connected to the casing **6** and impinges on the wheel **4** blades causing the shaft **4'** to rotate. The exhaust water is fed through the pipe **7** flushing on to the hose prior and after the washing means where the hose is scrubbed with a plurality of driven brushes as will be explained.

The motor output of shaft **4'** is connected to the spindle **2** by means of the speed ratio step down gear or chain drive comprising the rotatably mounted sprockets **10**, **11**, **12**, etc. which are connected by means of the chains **13**, **14**, etc. A high mechanical advantage is therefore obtained which provides the necessary torque for winding up the hose with a minimum of water pressure.

The hose washing means generally comprises rubber rollers **16**, **17**, which are rotatably mounted on brackets **22**, **23**, pivotally connected to the holder **21** and a pair of brushes **18**, **19** rotatably mounted on the same brackets and geared to the rubber rollers by gears **16'**, **17'**, **18'** and **19'** so as to rotate the brushes oppositely to the hose movement. Suitable side mounting guides **24**, **25**, FIGURE 1, are preferably provided.

The spring loaded bracket **22** is pivotaly mounted on bracket **24** which is pivotally connected and spring loaded to the holder **21**. Spring loaded bracket **23** is pivotally connected to holder **21** and spring loaded up by springs **23'** and **23''**. Spring loaded bracket **22** is spring loaded down by springs **22'**, **22''**. Bracket **24** is spring loaded down by spring **24'**. There is sufficient movement between the rollers to permit passage of the hose end coupling.

The pipe or hose **7** is connected to supply the exhaust water before and after the brushes. If desired a Y-connection may be made to provide a separate water supply for the upper and lower brushes.

The water motor of the present invention has separate utility by itself for instance, it may be used to drive a foam generator, cutting saws or drill or any other utility apparatus. These tools are quite useful in fire fighting since there is always high pressure water power available and there is no danger of electrical short circuiting.

The motor and transmission frame may be made out of light weight aluminum so that the complete apparatus weighs only a relatively few pounds and is easily carried in one hand.

Since the apparatus is light, it may be anchored by someone standing on the base plate **9**. If desired, the apparatus may be mounted on a stand or vehicle.

Many modifications may be made by those who desire to practice the invention without departing from the scope thereof which is defined by the following claims.

We claim:

1. Simultaneous hose winding and washing means comprising,

a portable frame,

a spindle rotatably mounted on said frame,

a hose clamp mounted on said spindle,

a water wheel motor connected to drive said spindle, hose washing means comprising,

a brush means including a plurality of brushes rotatably mounted on said frame,

and a pipe connected from said motor to said brushes to conduct the exhaust water from said motor to said brushes.

2. Apparatus as in claim 1 where in said brush means includes a pair of friction rollers adapted to be driven by said hose and counter-rotating gear means connecting said rollers and said rotary brushes.

3. Apparatus as in claim 1 wherein said motor is connected to said spindle through a high ratio step down gear arrangement.

4. Apparatus as in claim 1 having an extending base plate member so that the operator can stand on the base plate to steady the apparatus.

References Cited

UNITED STATES PATENTS

589,559	9/1897	Carey	15—40
663,282	12/1900	Kress	15—40
2,315,085	3/1943	Churchward	242—86
2,320,173	5/1943	Cotton	15—40
2,607,360	8/1952	Young	134—122
2,989,980	6/1961	Cullen et al.	242—86 XR

FOREIGN PATENTS

471,918	3/1951	Canada.

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