May 25, 1943. R. L. COTTON 2,320,173

FIRE HOSE WASHER

Filed Jan. 10, 1942 2 Sheets-Sheet 1

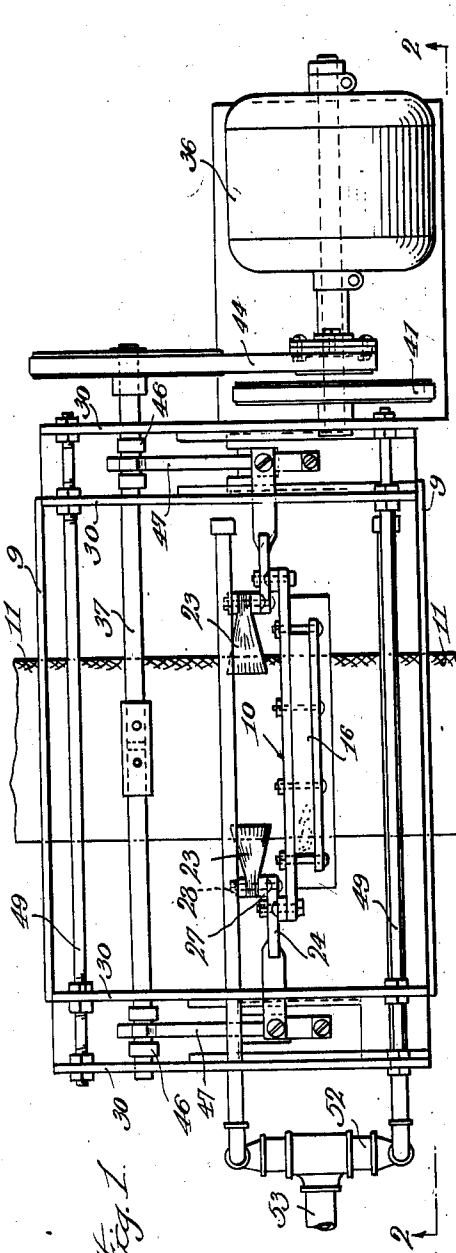


Fig. 1.

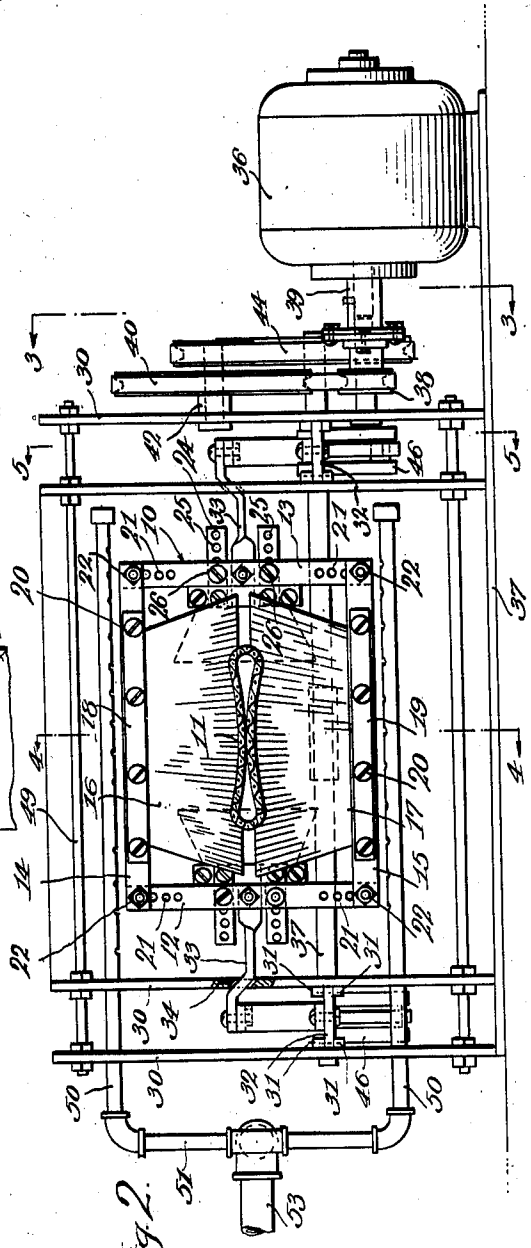


Fig. 2.

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FIRE HOSE WASHER

Filed Jan. 10, 1942 2 Sheets-Sheet 2

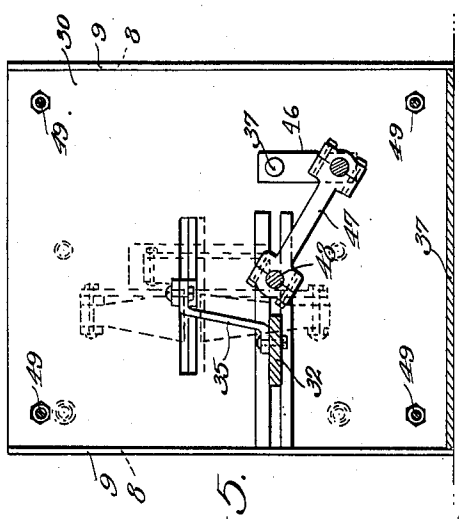


Fig. 5.

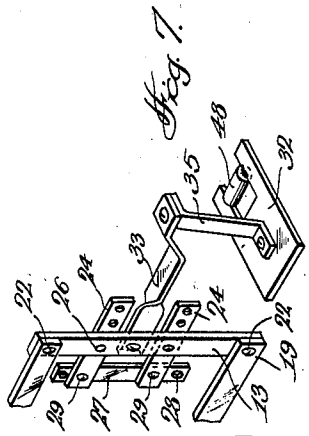


Fig. 7.

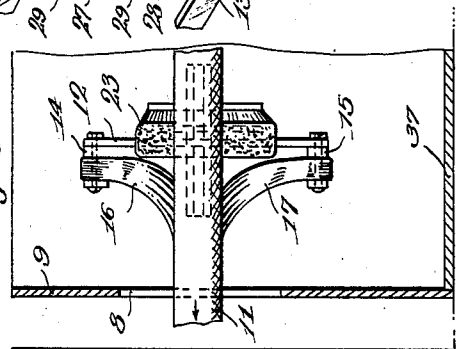


Fig. 6

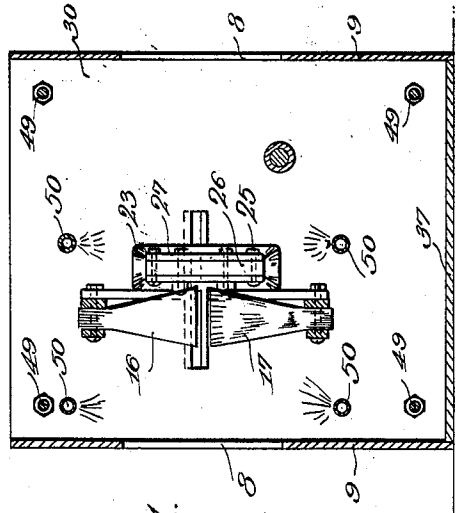


Fig. 4.

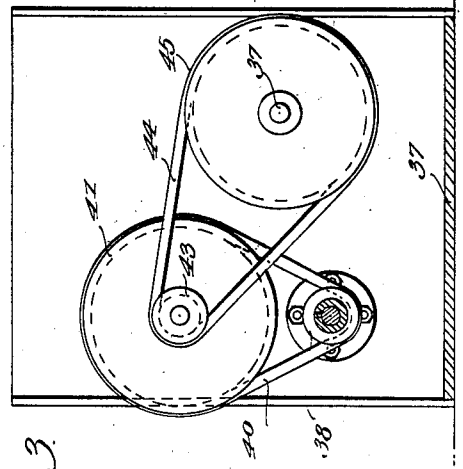


Fig. 3.

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UNITED STATES PATENT OFFICE

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FIRE HOSE WASHER

Robert L. Cotton, Holdenville, Okla.

Application January 10, 1942, Serial No. 426,353

4 Claims. (Cl. 15—40)

This invention relates to a fire hose washer and has for an object to provide a device of this character which will wash and scrub conventional fire hose of the one and one half inch type, or the two and one half inch type, either in the conventional fifty foot length or a plurality of lengths coupled together.

A further object is to provide a device of this character in which the hose may be fed into and between the brushes by a fireman standing at one side of the device, and may be withdrawn by a fireman standing at the opposite side, the device being so constructed that the hose may be backed and run through the device as many times as may be necessary until the hose is completely cleaned of any adhering soil.

A further object is to provide a device of this character in which the brushes are arranged in opposite pairs to wash and scrub the top and bottom sides, as well as the edges of the hose, the brushes being carried by a reciprocating frame which moves lengthwise of the hose to simulate manual scrubbing which is usually accomplished by washing fire hose with a broom or stiff brush on a concrete floor and this is a slow and tedious process.

A further object is to provide a device of this character which will be formed of a few simple strong and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a top plan view of a fire hose washer constructed in accordance with the invention.

Figure 2 is a longitudinal sectional view taken on the line 2—2 of Figure 1 showing the device in side elevation.

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 2 showing the electric motor driven belt drive for the crank shaft which reciprocates the brushes.

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 2 showing the spray pipes, brushes and inlet and outlet openings for the hose in the side plates of the device.

Figure 5 is a cross sectional view taken on the line 5—5 of Figure 2 showing the slides, guides therefor carried by the end plates, and the crank and pitman connection for reciprocating the brushes.

Figure 6 is a detailed cross sectional view showing a hose in position between the brushes.

Figure 7 is a detailed perspective view showing one of the slides connected to the brush carrying frame for reciprocating the frame longitudinally of the hose.

Referring now to the drawings in which like characters of reference designate similar parts in the various views, 10 designates an open frame through which the hose 11 is fed by two firemen standing at opposite sides of the washing machine. As best shown in Figure 2 the frame is rectangular and comprises vertically disposed end bars 12 and 13, and horizontally disposed bars 14 and 15.

Upper and lower brushes 16 and 17, see Figure 6, are secured to the upper and lower bars of the frame by clamp bars 18 and 19, see Figure 2, and the clamp bars are bolted to the frame bars as shown at 20 to permit renewal of the brushes when worn out. The brushes clean and scrub the upper and lower sides of the hose while the hose is passing between them. The brushes are adjustably secured to the frame 10 for adjustment toward or away from each other to receive various sizes of fire hose, and for this purpose vertical rows of openings 21 are provided in each end bar to interchangeably receive the upper and lower securing bolts 22 of the upper and lower bars.

Brushes 23, for cleaning the sides of the hose, see Figure 1, are adjustably secured to the end bars 12 and 13 of the frame 10 through the medium of superposed horizontally extending bars 24 which are provided with respective rows of openings 25, see Figure 2, to interchangeably receive bolts 26 passed through openings in the end bars. Each brush 23 is clamped between clamp bars 27, see Figure 4, by bolts 28 passed through the bars and the brush to permit replacement of the brush when worn out. As shown in Figure 7, the clamp bars 27 are secured to the respective superposed adjustably mounted bars 24 by bolts 29.

Side plates 9 are provided at the front and rear sides of the device, these plates being of substantially rectangular contour. The plates are provided with respective openings 8, see Figure 6, through which the hose is trained to pass between the brushes.

Pairs of substantially rectangular plates 30

are located at opposite ends of the brush carrying frame 10, see Figures 1 and 2. Horizontal guide bars 31 are fixed to the confronting faces of each pair and slide plates 32, see Figure 2, are mounted in the guides formed by the guide plates. Arms 33 are fixed to the end bars of the brush carrying frame 10 and pass through slots 34 in the innermost plates of each pair, see Figure 2. The slots incline downwardly and inwardly to prevent the water sprayed on the brushes and hose from reaching the slide plates 32. The arms 33 are fixed to uprights 35, see Figure 7, carried by the slide plates 32. When the slide plates are reciprocated the brush carrying frame 10 will be reciprocated longitudinally of the hose to carry the brushes correspondingly to effect thorough scrubbing and cleaning of the hose.

For reciprocating the brush carrying frame 10 an electric motor 36 is mounted on a base plate 37 to which the side plates 9 and end plates 30 are secured. The speed of the motor is stepped down and transmitted to a crankshaft 37 through the medium of a small pulley 38 on the motor shaft 39, the small pulley being connected by a belt 40, see Figure 3, to a large pulley 41 carried by a stub shaft 42 which is secured to one of the end plates 30 and which is equipped with a small pulley 43 which is connected by a belt 44 to a large pulley 45 on the crankshaft 37. The crankshaft is equipped with cranks 46 which are located between the respective pairs of the end plates 30, see Figure 1, and the cranks are connected by pitmans 47 to wrist pins 48, see Figures 5 and 7, on the respective slide plates 32.

Superposed pairs of tie bolts 49, see Figures 1 and 4, connect the pairs of end plates 30 together.

Superposed pairs of spray pipes 50 extend through the end plates 30 at one end of the device and are located on opposite sides of the upper and lower brushes 16 and 17, see Figure 4. Each pair of spray pipes is connected at one end to a vertically disposed pipe 51, see Figure 2. The vertically disposed pipe 51 is connected to the end of a horizontally disposed pipe 52, see Figure 1, and this pipe is connected to a supply pipe 53 for supplying water in the form of jets or sprays to both the hose and the brushes simultaneously.

Since the operation of the parts has been described as the description of the parts progressed it is thought that the invention will be fully understood without further explanation.

What is claimed is:

1. A fire hose washer comprising a vertically disposed open frame through which the hose being washed passes, said frame having upper, lower and end bars, brushes for cleaning the sides of the hose carried by the upper and lower bars of the frame, brushes for cleaning the edges of the hose carried by the end bars of the frame, means for adjusting the brushes of each pair toward or away from each other to effect proper contact of the brushes with the hose, plates located at opposite ends of the brush carrying frame, horizontal guides carried by the plates, slide plates mounted in the guides, uprights on the slide plates, arms secured to the end bars of the brush carrying frame midway their ends and engaged through slots in the plates and fixed to the uprights on the slide plates, means for reciprocating the slide plates to reciprocate the brush carrying frame longitudinally of the hose, and water spray pipes disposed on opposite sides of the upper and lower brushes for supplying water to both the hose and the brushes during reciprocation of the brushes.

2. A fire hose washer comprising a vertically disposed open frame through which the hose being washed passes, said frame having upper, lower and end bars, end plates having inclined slots located at opposite ends of the frame, horizontal guides on the plates, slide plates mounted in the guides, arms connected to the end bars of the frame projecting through said inclined slots in the plates for supporting the frame for reciprocatory movement on the plates, the slots preventing water used in the washer from reaching the slide plates, uprights carried by the slide plates connected to the outer ends of the arms for reciprocating the frame when the slide plates are reciprocated, means for reciprocating the slides plates, brushes for cleaning the edges of the hose carried by the end bars of the frame, brushes for cleaning the sides of the hose carried by the upper and lower bars of the frame, and water spray pipes disposed on opposite sides of the last named brushes for supplying water to both the hose and the brushes.

3. A fire hose washer, comprising a rectangular fixed open frame through which a hose may pass, side plates carried by the frame, a brush carrying frame mounted within the open frame and having end bars, horizontally and vertically disposed brushes carried by the brush frame, means whereby the brushes may be adjusted, horizontal guides on the side plates of the open frame, slide plates mounted in the guides, means for operating said slide plates, upwardly and inwardly extending arms carried by the slide plates and passing through downwardly inclined slots in the side plates and connected to end bars of the brush carrying frame midway their ends, and means for supplying fluid upon the brushes from above and below the brush carrying frame.

4. A fire hose washer, comprising a rectangular fixed open frame through which a hose may pass, side plates carried by the frame, a brush carrying frame mounted within the open frame, horizontally and vertically disposed brushes carried by the brush frame, means for adjusting said brushes, horizontal guides on the side plates of the open frame, slide plates mounted in the guides, means for operating said slide plates, upwardly and inwardly extending arms carried by the slide plates and passing through downwardly inclined slots in the side plates and connected to the brush carrying frame midway its ends, and means for supplying fluid to the brushes.

ROBERT L. COTTON.