Aug. 5, 1952 L. S. ROARK 2,606,067

ACETYLENE WELDING REEL

Filed Sept. 12, 1949 2 SHEETS—SHEET 1

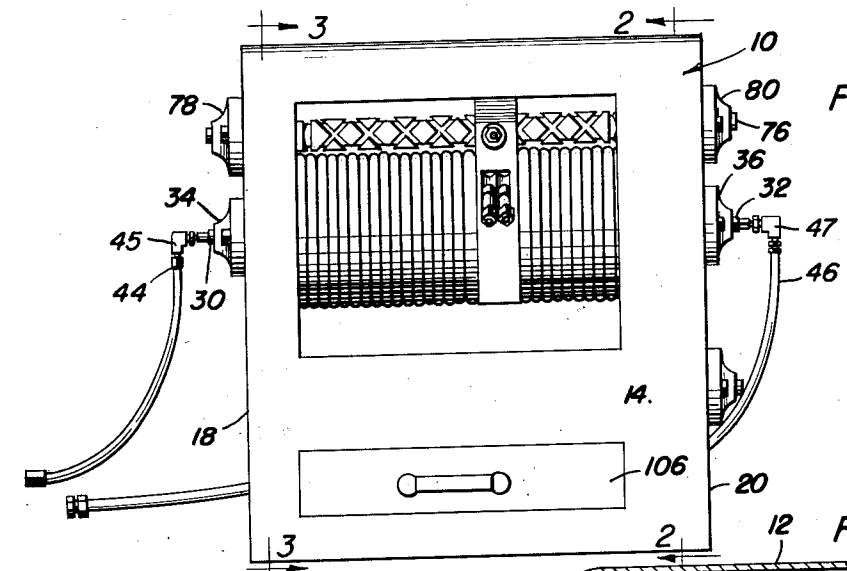

Fig. 1.

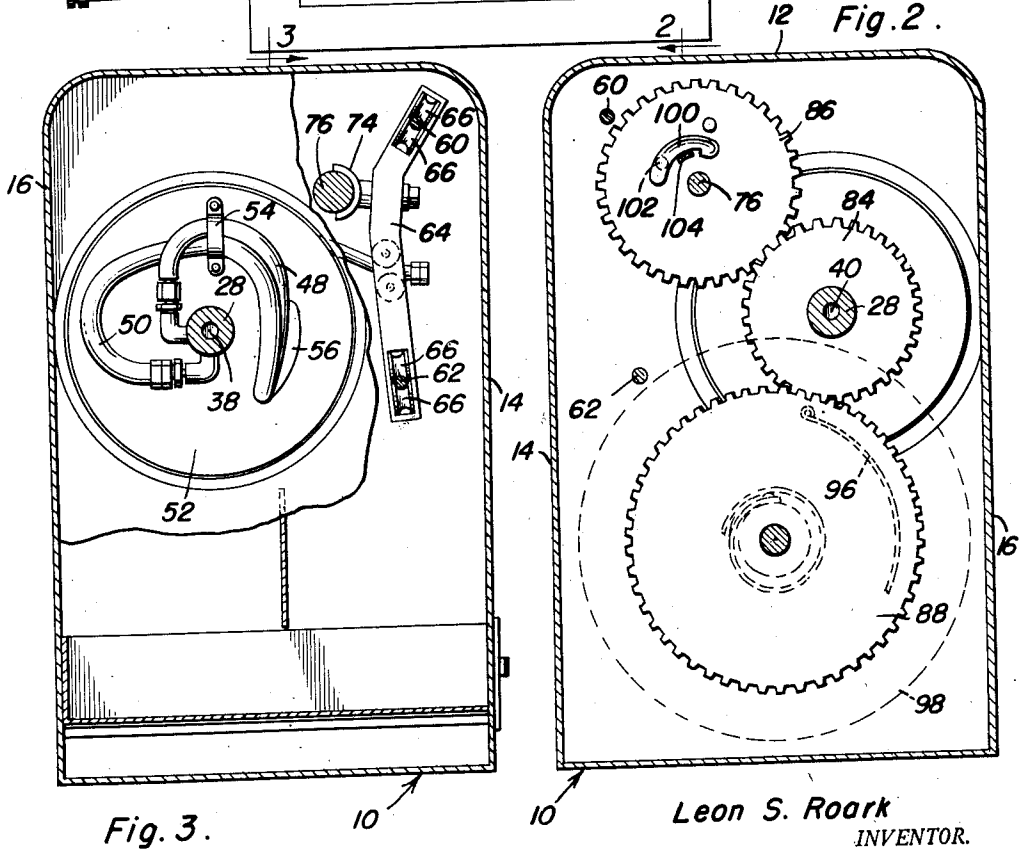

Fig. 2.

Fig. 3.

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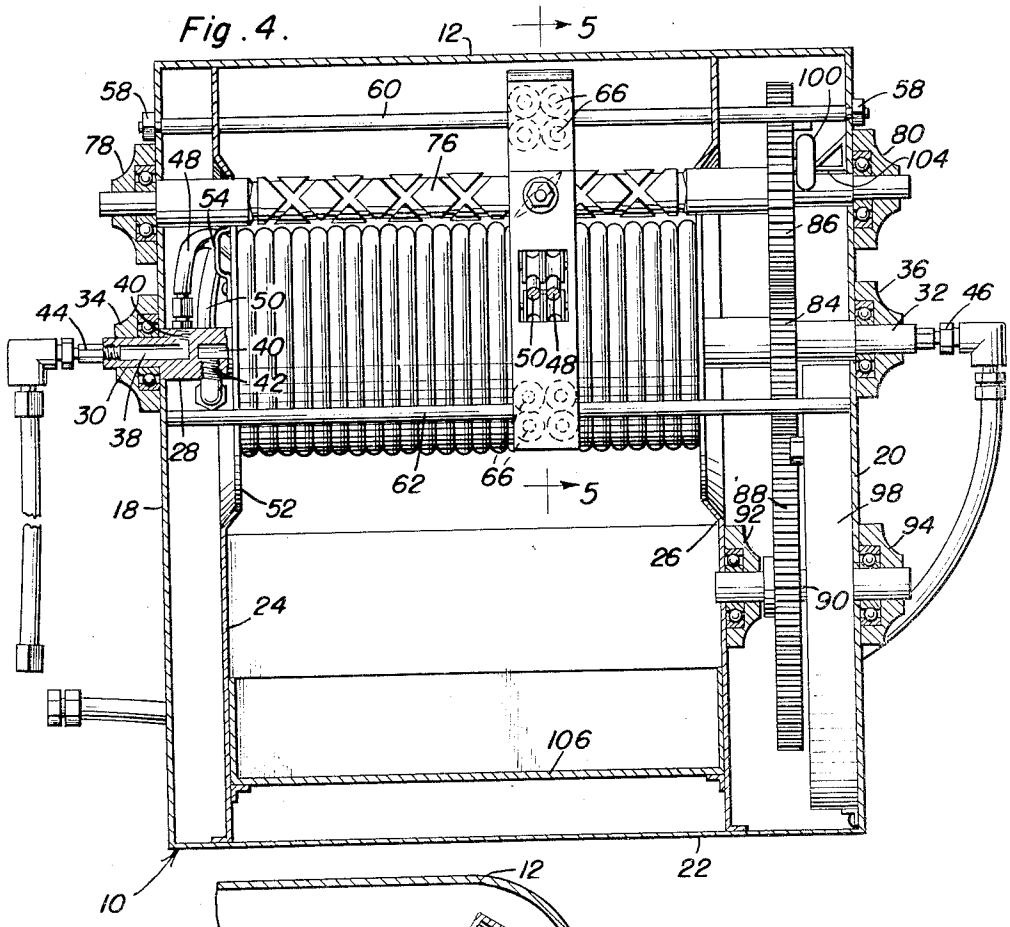
Fig. 4.



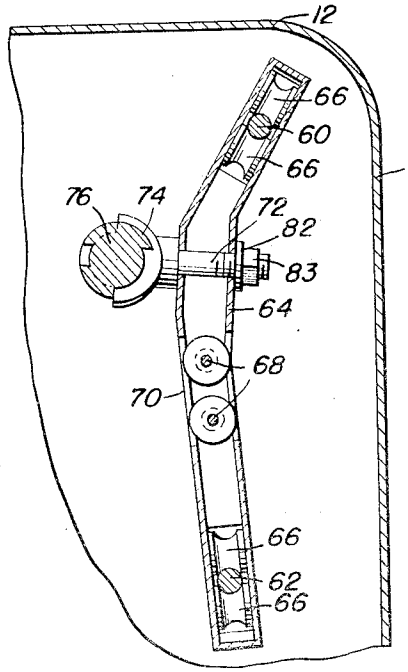


Fig. 5.

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2,606,067

ACETYLENE WELDING REEL

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Application September 12, 1949, Serial No. 115,220

1 Claim. (Cl. 299—78)

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This invention relates to automatic hose reels, and more particularly to a novel mechanism for reeling hoses used in acetylene torch welding.

An object of this invention is to provide a mechanism for symmetrically reeling hoses for an acetylene torch upon a drum which is compactly cased in a weatherproof housing which may be secured or mounted on the wall of a shop, mounted on a truck, installed in the engine room of a ship, or placed in any other convenient location.

A further object of the invention is to provide means for quickly adjusting the hoses of an acetylene torch as to length so that the operator does not have an excessive amount of hose which may become entangled with the welder, with other hoses, or other objects on the floor where the work is being performed.

Still another object is to provide means for reducing the amount of hose on the floor adjacent the work in order to minimize the danger of the hose being cut by a moving object, thus reducing the danger of fire.

These, together with the various ancillary objects of the invention as will later become apparent as the following description proceeds, are attained by this acetylene welding reel, a preferred embodiment of which has been illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a front elevational view of the acetylene welding reel to be henceforth described;

Figure 2 is a vertical sectional view as taken along line 2—2 in Figure 1;

Figure 3 is another vertical sectional view, as taken along line 3—3 in Figure 1;

Figure 4 is an enlarged vertical sectional view of the invention, showing the operating mechanisms in their proper positions, with the body portion being shown in section; and

Figure 5 is a vertical sectional view as taken along line 5—5 in Figure 4 and showing in detail the guide means comprising one element of the present invention.

With continued reference to the accompanying drawings, wherein like reference numerals designate similar parts throughout the various views, numeral 10 is used to generally designate the housing for the acetylene winding reel comprising the present invention. Within the outer housing 10 which comprises a top 12, front 14, rear 16, side walls 18 and 20, and a bottom 22 is an inner housing comprising side walls 24 and 26.

A drum shaft 28 having reduced end portions

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30 and 32 extends between the side walls 18 and 20 with the reduced portions 30 and 32 being rotatably mounted within bearing retainers 34 and 36. A first longitudinally extending bore 38 is drilled into the shaft 28 and a transverse aperture 40 is also drilled into the shaft in communication with the bore 38. The bore 38 and aperture 40 are suitably internally threaded. A much longer bore 41 is also drilled in the shaft 28 and it is in communication with a recess 42 drilled in the shaft. The bore 41 and the recess 42 are likewise internally threaded to receive suitable connectors. The bore 38 does not communicate with the bore 41 but extends almost to it.

An oxygen supply conduit 44 having a swivel mounting 45 is screwed into threaded engagement with the threaded bore 38 of the shaft 28. Likewise an acetylene supply conduit 46 having a swivel mounting 47 is screwed into threaded engagement with the bore 41 at the other end of the shaft. An oxygen delivery welding hose 48 is secured to the recess 40 in threaded engagement thereon. Threaded within the aperture 42 is another hose 50 for delivery of acetylene to the welding torch. A drum 52 is rigidly secured to the shaft 28. By means of screws or the like a holding strap 54 is secured to the drum 52, and the hoses 48 and 50 are passed beneath the holding strap through the slot 56 in the end wall of the drum and then reeled symmetrically and orderly onto the drum.

Suitably bolted or otherwise secured as at 58 are a pair of stabilizer rods 60 and 62 positioned in front of the drum 52, rod 60 somewhat above and rod 62 somewhat below the drum. A hose guide 64 is slidably positioned on the rods 60 and 62, and is designed to move freely along them. The guide 64 is supported upon each of the rods by four rollers 66, two above and two below each of the transverse rods 60 and 62. Another set of four rollers 68 is positioned within the guide 64 with their axis of rotation at right angles substantially thereof to the axis of rotation of the rollers 66. The hoses 48 and 50 pass through an aperture 70 in the guide 64 and between the upper and lower rollers of the set of rollers 68. The hose guide 64 is adapted to move transversely across the machine as a level winder and has attached to it as by bolt 72 a half nut 74. The half nut 74 engages the traversing shaft or screw 76 which has both a right hand and a left hand groove connecting at either end to allow the half nut to turn or swivel in order to apply more than one layer of hose to the drum.

The screw 76 is journaled in the side walls 18 and 20 of the housing by means of bearing retainers 78 and 80. A flat washer 82 is used to minimize friction between the half nut 74 which is mounted as a swivel on the body of the guide and held thereto by the nut 83.

Secured to the shaft 28 is a gear 84 which drives a gear 86 secured to the screw 76. The gear 84 is in turn driven by a gear 88 secured to a drive shaft 90 which is journaled in retainer bearings 92 and 94 attached to the side walls 20 and 26 of the outer and inner housings respectively. The motor shaft 90 is driven by a motor spring 96 the outer end of which is anchored securely to the spring housing 98. The inner end of the spring motor is of course attached to the motor shaft 90.

The hose can be held at a desired length by means of a centrifugal dog 100, which is mounted on the gear 86 by means of a pin 102. The centrifugal dog 100 selectively catches on stop 104 which is mounted on the housing wall 20. To reel out or unwind the desired amount of hose, the operator has only to move the hose to the desired length and then relax the hose slowly, thereby allowing the centrifugal dog to engage the stop, which will maintain the hose at the desired length by preventing the rotation of the gear 86. To wind in or reel the hose, the operator has only to pull it slightly forward. Then quickly relaxing the tension on it, which will throw the centrifugal dog clear of the stop, and allow the spring motor to drive the gear 88 and in turn the gears 84 and 86.

As may be desired, in the lower portions of the housing 10 a drawer 106 may be emplaced for reception of tools or spare parts.

Since from the foregoing, the construction and advantages of this acetylene welding reel is readily apparent, further description is believed to be unnecessary.

However, since numerous modifications and equivalents will readily occur to any one skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, except as required by the scope of the appended claim.

Having described the invention, what is claimed as new is:

A welding hose reel comprising a body portion, a drum shaft extending through said body portion, a drum on said drum shaft, a pair of non-communicating longitudinal bores extending inwardly from each end of said shaft, a pair of non-communicating transverse apertures in said shaft intersecting the inner ends of said longitudinal bores, a pair of rods extending through said body portion, supply means connected to said longitudinal bores, delivery means connected to said transverse apertures, guide means holding said delivery means in predetermined relationship to said drum, said guide means being slidable along said rods, a screw shaft extending through said body portion, said guide means engaging said screw shaft, a drive gear journaled in said body portion, means for driving said drive gear in said body portion, an idler gear secured on said drum shaft, said idler gear engaging said drive gear, a driven gear on said screw shaft engaging said idler gear, and centrifugal catch means selectively maintaining said screw shaft and said driven gear in a desired position, said catch means including a dog pivotally secured to said driven gear, and a stop member on said body portion, said dog selectively engaging said stop member.

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