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3,194,452

TUBE STRIPPER

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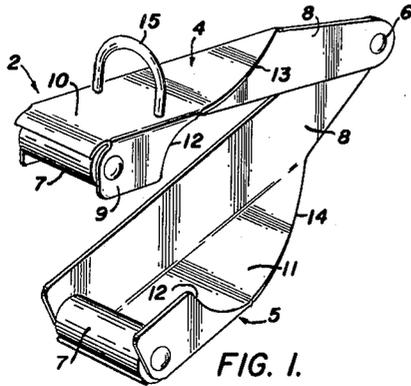


FIG. 1.

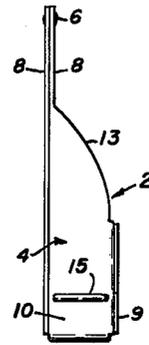


FIG. 5.

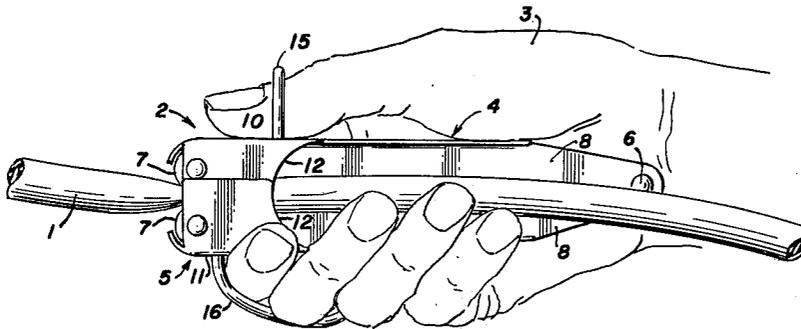


FIG. 2.

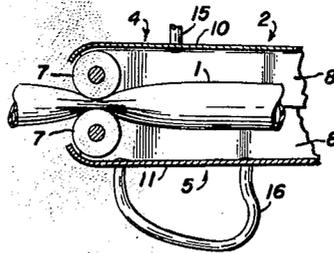


FIG. 3.

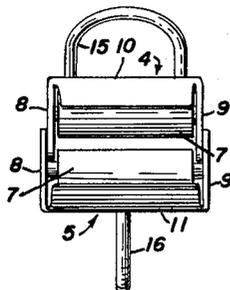


FIG. 4.

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TUBE STRIPPER

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3 Claims. (Cl. 222-407)

This invention relates to a tube stripper, and it concerns more particularly a hand tool for general use in hospitals and the like for displacing fluids from tubes.

Flexible tubes formed of rubber or other like elastic resilient material have various uses in hospitals including the intravenous injection of blood and nutrient fluids into the body of a patient and the drainage of fluids from the body.

As is well known, the flow of fluids through such tubes, when used for the purposes described, usually is by gravity, and it often occurs that such flow is slow, or the tube may become stopped or plugged, and it is necessary to strip the tube by hand to displace the contents thereof. This is usually done without disconnecting the tube or interrupting the procedures in progress by first greasing the fingers and then compressing the tube between the fingers and gradually advancing the fingers longitudinally of the tube whereby fluids are progressively displaced therefrom. Similarly, in the cleaning of flexible tubes, as well as in other operations in which such tubes are employed, it is common practice to displace fluids therefrom in the manner described.

An object of this invention is to provide a hand tool for the purpose described having mutually opposing rollers for squeezing engagement with opposite sides of a tube whereby the tube does not have to be grasped between the fingers.

Another object of the invention is to provide a hand tool as described which is characterized by its simplicity as well as its attractive appearance, and which may be fabricated inexpensively and is efficient in operation and durable in use.

The invention contemplates a hand tool for the purpose described which comprises a pair of elongated elements pivotally connected to each other at one end and adapted to be held in the hand, said elongated elements each having a roller journaled in an end portion thereof opposite its connected end, said rollers being positioned in mutually opposing relation to each other in one of their relative positions, and said elongated elements having means thereon engageable, respectively, with the thumb and fingers of said hand whereby said elongated elements are movable in opposite directions about their connected ends relative to each other in response to like movement of said thumb and fingers.

The invention further contemplates a hand tool as described in which the elongated elements comprise oppositely facing, generally channel shaped members, which may be formed of sheet metal, having two opposite side portions and connecting top and bottom portions, respectively, one of the side portions of each of the elongated elements being coextensive with the length of the elongated element and being pivotally connected to the adjacent side portion of the other elongated element, and the other of the side portions and the connecting top and bottom portions, respectively, of the elongated elements being cut away beginning at the ends thereof adjacent the connected ends of the elongated elements whereby they are progressively shorter in the direction of said other of the side portions, which is substantially less than one-half the length of said one of the side portions, so that the device is readily engageable over a tube and may be maneuvered freely relative thereto independently of whether the tube is aligned axially therewith.

The invention also contemplates a hand tool as described in which the means on said elongated elements are engageable, respectively, with the thumb and two adjacent fingers of said hand whereby said elongated elements are movable in opposite directions about their connected ends relative to each other in response to like movement of said thumb and fingers. The elements are comprised of a first wire loop arranged transversely of one of the elongated elements and extending upwardly therefrom for engagement by the thumb, and a second wire loop arranged longitudinally of the other of the elongated elements and depending therefrom for engagement with the index and second fingers of the same hand.

The invention also contemplates a hand tool as described having means for spacing said rollers a predetermined distance apart in their advanced positions relative to each other whereby excessive squeezing of a tube passed between said rollers is avoided.

The invention will be readily understood by referring to the following description and the accompanying drawing, in which:

FIGURE 1 is a perspective view of the tube stripper embodying the invention as seen from the top, one end, and one side thereof, showing the elongated members in their retracted positions relative to each other preparatory to receiving a flexible tube between the rollers thereof.

FIGURE 2 is a side view showing the tube stripper as held in the hand with the elongated members in their advanced positions relative to each other and with the rollers thereof in squeezing engagement with opposite sides of a flexible tube.

FIGURE 3 is a fragmentary longitudinal sectional view of the tube stripper as illustrated in FIGURE 2.

FIGURE 4 is a front end view; and FIGURE 5 is a top plan view.

Referring to FIGURE 2 of the drawing, the numeral 1 designates generally a flexible tube which may be formed of rubber or other like elastic, resilient material, and the numeral 2 indicates generally a tube stripper embodying the invention, as hereinafter described, which is shown in its operative position relative to the flexible tube 1. The numeral 3 indicates generally a hand in which the tube stripper 2 is held.

As shown in FIGURE 1 and FIGURES 3 to 5, the tube stripper 2 comprises a pair of elongated elements 4, 5 which are pivotally connected to each other at one end, as at 6. The elongated elements 4, 5 each have a roller 7 journaled in an end portion thereof opposite its connected end 6. The rollers 7 may be resiliently surfaced, not shown.

The elongated elements 4, 5 consist of oppositely facing, generally channel shaped members, which may be formed of sheet metal, having two opposite side portions 8, 9 and connecting top and bottom portions 10, 11, respectively.

One of the side portions 8 of each of the elongated elements 4, 5 is coextensive with the length of the elongated element and is pivotally connected to the adjacent side portion 8 of the other elongated element and the other of the side portions 9 and the connecting top and bottom portions 10, 11, respectively, of the elongated elements 4, 5 are cut away, as at 12, 13, 14, beginning at the ends thereof adjacent the connected ends 6 of the elongated elements 4, 5 whereby they are progressively shorter in the direction of said other of the side portions 9, which is substantially less than one-half the length of said one of the side portions 8, so that the tube stripper 2 is readily engageable over a flexible tube such as the flexible tube 1, in the retracted positions of the elongated

elements 4, 5 relative to each other as illustrated in FIGURE 1, and may be maneuvered freely relative thereto, as shown in FIGURE 2, to displace fluids therefrom, independently of whether the flexible tube is aligned axially therewith.

The elongated elements 4, 5 have means thereon engageable, respectively, with the thumb and two adjacent fingers of a hand such as the hand 3 whereby the elongated elements 4, 5 are movable in opposite directions about their connected ends 6 relative to each other in response to like movement of said thumb and fingers.

A first wire loop 15 is arranged transversely of one of the elongated elements 4 and extends upwardly therefrom for engagement by the thumb, and a second wire loop 16 is arranged longitudinally of the other of the elongated elements 5 and depends therefrom for engagement with the index and second fingers of the same hand.

As shown best in FIGURE 4, the end of one of the elongated elements 4 opposite its connected end 6 is relatively narrower than the adjacent end of the other of the elongated elements 5 and the depending opposite side portions 8, 9 abut the shaft of the lowermost roller 7 whereby the rollers 7 are spaced a predetermined distance apart in their advanced positions relative to each other, so that excessive squeezing of a flexible tube such as the flexible tube 1 passes between the rollers 7 is avoided.

The invention is not limited to the exemplary construction herein shown and described, but may be made in various ways within the scope of the appended claims.

What is claimed is:

1. A hand tool for use in displacing fluids from flexible tubes, said tool comprising a pair of elongated elements adapted to be held in the hand, said elongated elements each having a transverse roller journaled in an end portion thereof opposite its connected end, said rollers being positioned in mutually opposing relation to each other in their operating position, and said elongated elements having means whereby they are movable in opposite directions about their connected ends relative to

each other in response to like movement of said thumb and fingers, the elongated elements consisting of oppositely facing, generally channel shaped members having two opposite side portions and connecting top and bottom portions, respectively, one of the side portions of each of the elongated elements being coextensive with the length of the elongated element and being pivotally connected to the adjacent side portion of the other elongated element, and the other of the side portions and the connecting top and bottom portions, respectively, of the elongated elements being cut away beginning at the ends thereof adjacent the connected ends of the elongated elements whereby they are progressively shorter in the direction of said other of the side portions so that the device is readily engageable over a tube and may be maneuvered freely relative thereto independently of whether the tube is aligned axially therewith.

2. The structure of claim 1, and wherein said means whereby said elongated elements are movable in opposite directions about their connected ends relative to each other in response to like movement of said thumb and fingers comprise a wire loop arranged transversely of one of the elongated elements and extending upwardly therefrom for engagement by the thumb, and a second wire loop arranged longitudinally of the other of the elongated elements and depending therefrom for engagement with the index and second fingers of the same hand.

3. The structure of claim 2, and means for spacing said rollers a predetermined distance apart in their advanced positions relative to each other whereby excessive squeezing of a tube passed between said rollers is avoided.

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