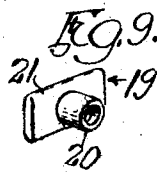
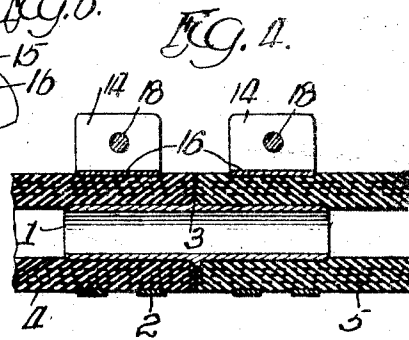
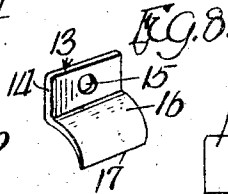
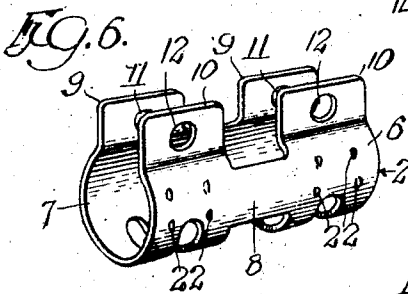
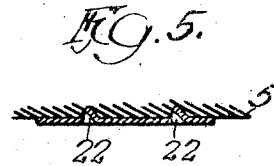
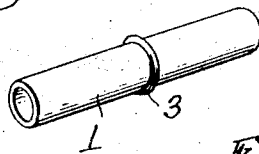
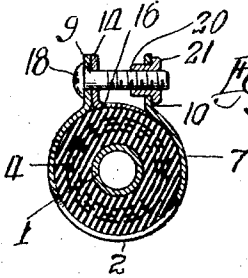
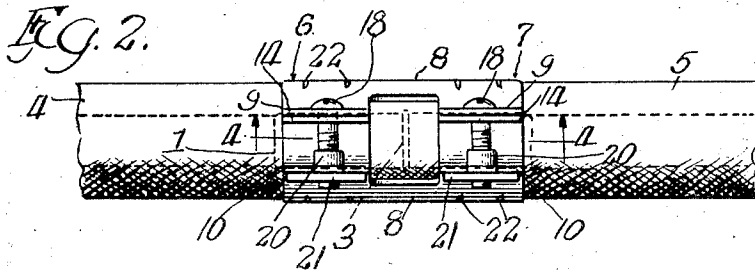
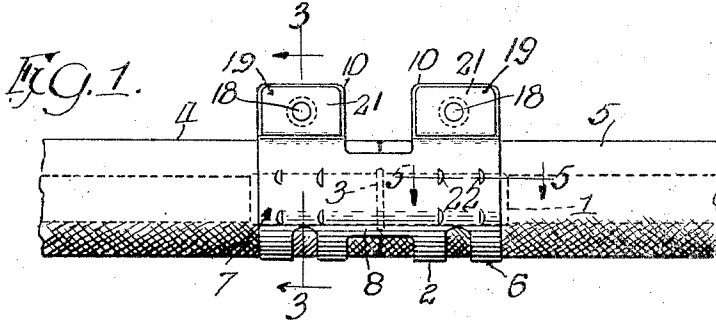


A. LEVEDAHL.
HOSE MENDER.
APPLICATION FILED JULY 30, 1919.

1,382,840.

Patented June 28, 1921.



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UNITED STATES PATENT OFFICE.

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HOSE-MENDER.

1,382,840.

Specification of Letters Patent. Patented June 28, 1921.

Application filed July 30, 1919. Serial No. 314,375.

To all whom it may concern:

Be it known that I, AXEL LEVEDAHL, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented new and useful Improvements in Hose-Menders, of which the following is a specification.

This invention relates to improvements in hose menders.

10 In the use of hose for air, water, or steam, it frequently happens that the hose is damaged at one or more points in its length and becomes leaky, rendering the entire hose length unfit for further use. Instead of discarding the entire length of hose so damaged, 15 which would be expensive, the damaged portion of the hose is usually repaired by a mender, as by cutting the hose in two at the place of damage or injury and connecting the two severed ends by a mender. The object of my invention is to provide a mender for such purpose and one that will effectively serve the purpose intended and yet be simple and inexpensive in its construction 25 and permit it to be attached readily and easily about the portions of the hose to be mended. Other and further objects of the invention will appear from the following specification, taken in connection with the accompanying drawings, in which—

30 Figure 1 is a side elevational view of a hose mender constructed in accordance with my invention and shown applied about two hose sections at their meeting ends, for mending the same;

35 Fig. 2 is a top plan view of the parts shown in Fig. 1;

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 1;

40 Fig. 4 is a longitudinal sectional view taken on line 4—4 of Fig. 2;

Fig. 5 is a fragmentary longitudinal sectional view taken on line 5—5 of Fig. 1;

45 Fig. 6 is a perspective view of the outside shell or clamp;

Fig. 7 is a perspective view of the inside shell or core; and

50 Figs. 8 and 9 are perspective views, respectively, of one of the filler pieces and clamp nuts of the mender.

A hose mender of my invention comprises two main parts, an inside shell or core 1 and an outside shell or clamp 2. The core 1 is tubular in form, has a passage therethrough, 55 is made in one piece, and is provided mid-

way of its ends with an outwardly projecting, annular rib 3. The core 1 on opposite sides of said rib 3 is cylindric and smooth so that it may be readily inserted into the hose ends 4, 5 and be withdrawn therefrom with 60 little effort and without injury to the hose, the rib 3 serving to gage the depth that the core 1 penetrates the hose ends.

The outside shell or clamp 2 is tubular in form and is made in one piece and of sheet 65 metal and is provided at the ends thereof with end clamps 6, 7 split longitudinally and connected together by side portions 8, 8 of the shell extending lengthwise thereof between the clamps. The shell 1 is curved to fit the 70 contour of the hose ends to which it is applied, and the split ends of the clamps 6, 7 are bent outward to provide flanges 9, 10 having aligned holes 11, 12. For each clamp 6, 7 there is a separate filler piece 13 having 75 the same width as the clamp body, made of sheet metal, and bent to have an end flange 14 with a hole 15. The remaining portion 16 of the filler piece extends laterally from its flange 14 at the base thereof and has its edge 80 17 thinned approximately to a knife edge to slide readily between the body of the clamp and the hose. For clamping the outer shell 2 about the hose ends and the latter about the core 1, each clamp 6, 7 is provided with 85 a clamp screw 18 inserted through the hole 11 in the flange 9 and the hole 15 in the filler piece 13 when the latter is between the flanges 9, 10. The threaded end of the screw 18 engages a nut 19 having a cylindric projection 20 inserted through the enlarged hole 12 in the flange 10 and extending toward the flange 9 and meeting the screw between the 90 flanges, thereby requiring the use of a relatively short screw, and having a long screw-threaded surface the projection allows the screw to draw up parallel. The head 21 of the nut is rectangular and bears flatwise 95 against the outer side of the flange 10 and has such dimensions that it engages against the body of the clamp at the base of the flange 10 and is held from turning with the screw 18. 100

The hose mender shown and described is used in the following manner. When a 105 length of hose has been injured or damaged at any point in its length, due to any cause whatever, and leaks, the hose is cut in two at such point and the severed ends separated sufficiently to permit the core 1 to be inserted 110

into the same. The hose ends are moved toward each other over the core 1 until they abut at the rib 3. After the core has been applied to one hose end, say the one 4, the outer shell 2 is applied over such hose end with the clamp 7 about the same and the opposite clamp 6 extending beyond the same to receive the hose end 5, which is inserted into the clamp 6 over the core 1. Thus there is a clamp about each hose end and on opposite sides of the meeting ends of such parts, the side portions 8, 8 connecting the end clamps together and extending across the meeting ends of the hose sections and preventing slippage of one relatively to the other. The filler pieces 13 are then inserted in place, one into each clamp 6, 7, and the clamp screw 18 and nut 19 applied to draw the outer shell 2 tightly about the hose sections to compress the same about the core 1, which is retained in the sections. As the core 1 extends sufficiently beyond the abutting ends of the hose sections 4, 5, the joint between the two is made fluid tight and the damaged hose thus repaired and in condition for further use.

The end clamps 6, 7 being connected by the portions 8, 8, the outside clamp is in one piece and requires but a single clamp screw for each end clamp. The filler pieces 13, 13 complete the contour of the clamps between the flanges 9, 10 and permit a continuous circumferential pressure to be placed on the hose sections in tightening of the clamp screws, and, further, place a pressure evenly divided and of the width of the clamp body between the flanges 9, 10 and the hose sections under the screw. Moreover, the end flange 14 in engaging the flange 9 and bearing at its base against the hose section prevents the flange 9 from being bent outwardly by the clamp screw when the latter is screwed up.

For holding the outside clamp 2 against movement on the hose sections 4, 5, I provide each of the end clamps 6, 7 with a plurality of barbs 22, 22, the set for each clamp extending toward the opposite clamp so that the barbs extend in opposite directions and hold the outer shell against movement in either direction. Said barbs are formed by forcing portions of the metal of the clamps inwardly.

While I have shown and described in detail one form of hose mender embodying the features of my invention, yet it is of course to be understood that the details of construction and arrangement of parts shown may be variously changed and modified without departing from the spirit and scope of my invention.

I claim as my invention:

1. The combination with two hose sections having meeting ends, of a mender, comprising an inside core removably in-

serted into said hose sections at their meeting ends and having a rib for gaging the depth that the core penetrates the hose sections, the portions of the core between its ends and the rib being straight and smooth and free from projections, clamping means consisting of tubular clamps split longitudinally and applied about the hose sections on opposite sides of their meeting ends, each clamp having its ends at the line of severance bent outward to provide flanges, and means for tightening each clamp about its hose section, comprising a nut applied against one of the flanges of each clamp and having an internally threaded portion extending inwardly therethrough toward the opposite flange, and a clamp screw inserted through the last named flange and engaging the threaded portion of said nut.

2. The combination with two hose sections having meeting ends, of a mender, comprising an inside core removably inserted into said hose sections at their meeting ends and having a rib for gaging the depth that the core penetrates the hose sections, the portions of the core between its ends and the rib being straight and smooth and free from projections, clamping means consisting of tubular clamps split longitudinally and applied about the hose sections on opposite sides of their meeting ends and connected by parts extending between the same and across the meeting ends of said hose sections, each clamp having its ends at the line of severance bent outward to provide flanges, and means for tightening each clamp about its hose section, comprising a nut applied against one of the flanges of each clamp and having an internally threaded portion extending inwardly therethrough toward the opposite flange, and a clamp screw inserted through the last named flange and engaging the threaded portion of said nut.

3. The combination with two base hose sections having meeting ends, of a mender, comprising an inside core removably inserted into said hose sections at their meeting ends and having a rib for gaging the depth that the core penetrates the hose sections, the portions of the core between its ends and the rib being straight and smooth and free from projections, an outside tubular shell split longitudinally and provided at its ends with clamps applied about the hose sections on opposite sides of their meeting ends and integrally connected together by portions of the shell extending between the clamps and across the meeting ends of said hose sections, each clamp having its ends at the line of severance bent outward to provide flanges, and means for tightening said shell about said hose sections, comprising a nut applied against one of the flanges of each clamp and having an internally

threaded portion extending inwardly there-
through toward the opposite flange, and a
clamp screw inserted through the last named
flange and engaging the threaded portion
5 of said nut

4. In a hose mender, an outside tubular
shell made in one piece and having clamps
at the ends thereof, connected together by
portions of the shell between said clamps,
10 each clamp being split longitudinally and
having the ends of the same at the line of
severance bent outward to provide two
flanges, a separate filler piece removably in-
serted between each set of two flanges and
15 having a body portion extending between
said flanges at the bases thereof for complet-
ing the contour of the clamp between said
flanges, an end flange engaging against one
of said two flanges, and fastening means for
25 engaging the two flanges and filler piece
of each clamp, comprising a nut applied
against the outside of one flange and hav-
ing a threaded portion extending inwardly
through said flange toward the opposite
25 flange and through the end flange of the
filler piece, and a clamp screw inserted
through the last named flange of the clamp
and engaging the threaded portion of said
nut.

30 5. In a hose mender, an outside tubular
shell made in one piece and having clamps
at the ends thereof, connected together by
portions of the shell between said clamps,
each clamp being split longitudinally and
35 having the ends of the same at the line of
severance bent outward to provide two
flanges, a separate filler piece removably in-
serted between each set of two flanges and

having a body portion extending between
said flanges at the bases thereof for com- 40
pleting the contour of the clamp between
said flanges, an end flange engaging against
one of said two flanges, and fastening means
for engaging the two flanges and filler piece 45
of each clamp, comprising a nut applied
against the outside of one flange and having
a threaded portion extending inwardly
through said flange toward the opposite
flange and through the end flange of the 50
filler piece, and a clamp screw inserted
through the last named flange of the clamp
and engaging the threaded portion of said
nut, each clamp having inwardly projecting
barbs adapted to engage a hose section.

6. In a hose mender, an outside tubular 55
shell made in one piece and having clamps
at the ends thereof, connected together by
portions of the shell between said clamps,
each clamp being split longitudinally and
having the ends of the same at the line of 60
severance bent outward to provide two
flanges, and fastening means for engaging
the two flanges of each clamp, comprising a
nut applied against the outside of one flange
and having an internally threaded portion 65
projecting inwardly through said flange to-
ward the opposite flange, and a clamp screw
inserted through the last named flange and
engaging the threaded portion of said nut,
said shell being cut partially away between 70
the clamps and also in that portion of each
clamp opposite to the flanges thereof.

In testimony that I claim the foregoing
as my invention I affix my signature this
26 day of July, A. D. 1919.

AXEL LEVEDAHL.