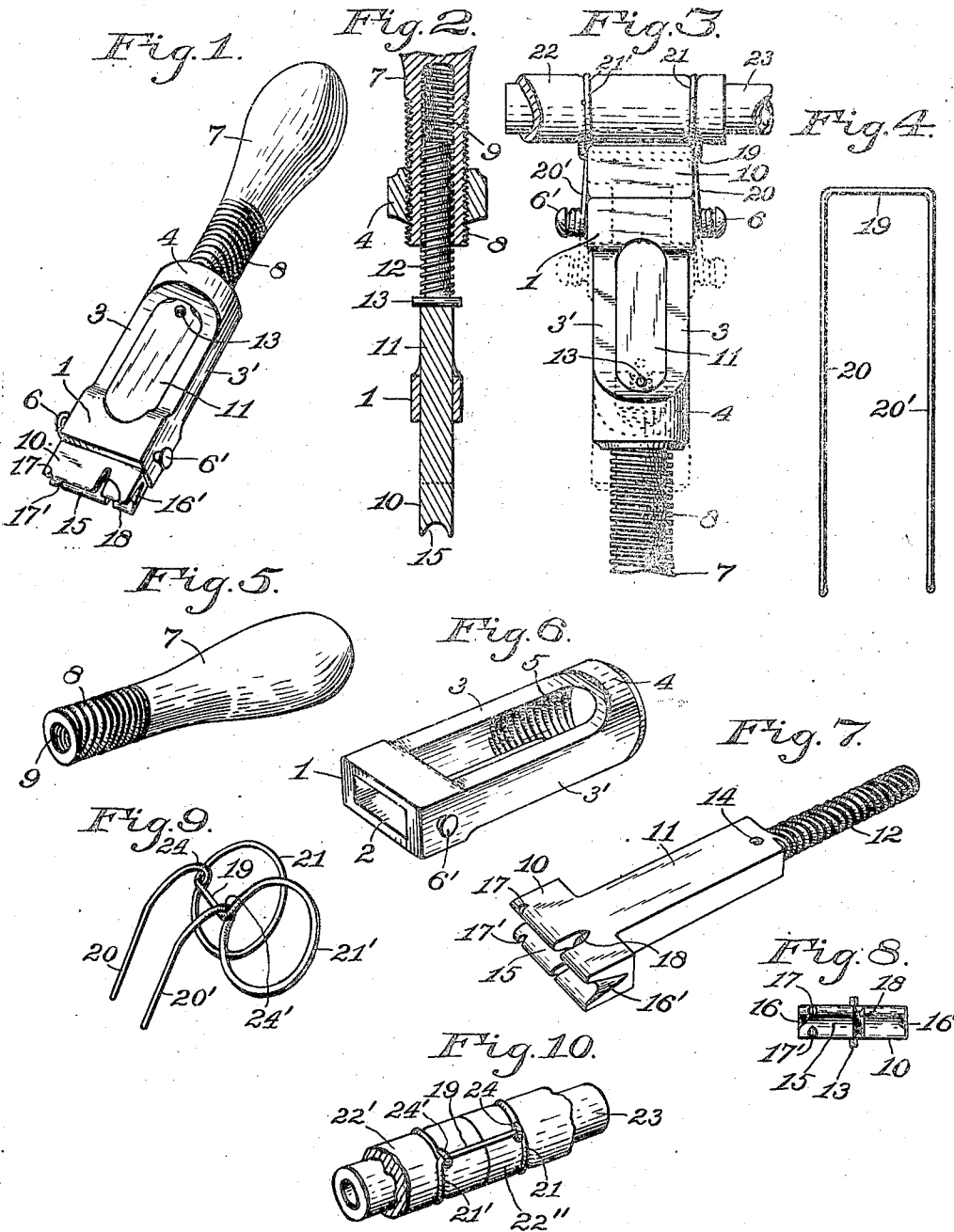


E. M. COGHLAN.
 TOOL FOR MAKING AND APPLYING WIRE CLAMPS.
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WITNESSES:

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UNITED STATES PATENT OFFICE.

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TOOL FOR MAKING AND APPLYING WIRE CLAMPS.

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To all whom it may concern:

Be it known that I, EDWARD M. COGHLAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Tools for Making and Applying Wire Clamps; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to hand tools for forming clamping devices of wire and securing them on rubber hose whereby to connect couplings or thimbles or piping to the hose, the invention having reference particularly to a tool whereby the wire may be drawn tightly about the hose to form a clamp so as to clamp the hose tightly to any metallic object, such as a pipe.

The object of the invention is to provide means whereby couplings may be securely attached to rubber hose, or whereby broken hose may be mended by clamping two parts on a nipple, a further object being to provide a relatively cheap, effective and durable and economical tool for mending hose, or for similar purposes as above mentioned.

The invention consists in a new and useful tool for making and applying wire clamps, and comprising two relatively movable main parts, one part of which is adapted to form a part of the clamp and to engage such part in operation, and the other part of the tool being adapted to have portions of the clamp wire connected thereto to draw the clamp tightly in the desired position; and the invention consists further in certain novel parts, and in the combinations and arrangements of parts, as hereinafter particularly described and defined in the accompanying claims.

Referring to the drawings, Figure 1 is a perspective view of the tool; Fig. 2, a fragmentary longitudinal sectional view of the tool; Fig. 3, a fragmentary side view of the tool placed in position for use in connection with a partially formed wire clamp that is connected to a hose; Fig. 4, a plan view of a partially formed clamp; Fig. 5, a perspective view of the combined handle and lever portion of the tool; Fig. 6, a perspective view of the main body part of the tool; Fig. 7, a perspective view of the push bar of the

tool; Fig. 8, a front view of the push bar; Fig. 9, a perspective view showing one of the clamps that may be formed by the tool, and Fig. 10, a perspective view showing the manner in which broken hose may be mended or spliced by means of the tool and clamps formed and applied thereby.

Similar reference characters throughout the drawings indicate like parts or features of construction.

The main body part of the tool, constructed substantially in accordance with the invention, comprises a guide-head 1, having a guide-way 2 therein, and two side-bars 3 and 3' formed integrally with the guide-head, and having a screw-head 4 formed on the ends thereof and provided with internal screw threads 5, the guide-head 1 having knobs 6 and 6' on the outer side of two opposite side portions thereof. A handle shaped lever 7 has external screw-threads 8 thereon that engage the screw-threads 5, so that the lever may exert force longitudinally by rotating it in screw-head 4. The lever is hollow and has screw-threads 9 therein.

The push-bar comprises a head 10, having a shank 11 that is guided in the guide-way 2, the shank having a cylindrical end portion provided with screw-threads 12 that engage the screw-threads 9 in the lever. The screw-threads 9 are different from the screw-threads 8, either being formed as right-hand threads and the other as left-hand threads, so that when the lever is rotated, so as to move it towards the guide-head 1, it will force the head 10 away from the guide-head 1. The shank 11 is provided with a stop-pin 13 that is driven tightly into a hole 14 in the shank, and the stop-pin is designed to engage the guide-head 1 to limit the movement of the push-bar. The head 10 is oblong in cross section, and has a longitudinal groove 15 in its face, and preferably has also recesses 16 and 16' in the opposite ends that extend from the groove. Also the head preferably has two notches 17 and 17' at the sides of the groove 15 near one end of the groove. In some cases, also, a relatively deep notch 18 is formed in the head 10 transversely of the groove 15 and somewhat deeper than the groove to receive the wire when it is desired to form a relatively narrow clamp.

In practical use a piece of wire is used of suitable length, and its middle portion is placed in the groove 15 to form a loop-bar

19, and the end portions 20 and 20' of the wire bent back against the ends of the head 10 that have the recesses 16 and 16' therein, so that a staple shaped loop is formed, which
 5 may be readily bent loosely about so as to form two loops 21 and 21' around a hose 22 or two parts 22' and 22'' that may be placed on a pipe, as 23, the ends of the piece of wire being drawn under the bar 19 and wrapped
 10 around the knobs 6 and 6', after which the head 10 may be advanced so as to bear against the bar 19, and then by turning handle lever 7, the push-bar and the main body part of the tool will be moved apart, resulting in
 15 forcing the bar 19 in one direction and drawing the ends of the clamp wire in the opposite direction, and when the loops or bands are drawn sufficiently tight on the hose, the tool should be moved partially
 20 about the bar 19 as on a pivot so as to form hooks 24 and 24' engaging the bar 19, after which the surplus wire of the ends 20 and 20' may be cut off and the tool released, leaving
 25 a perfectly formed and tight fitting clamp on the hose substantially as shown in Fig. 10.

If it is desired to form loops or bands closer together, the bar 19 may be formed in the groove 15 with either end portion 20 or 20' drawn through the notch or gap 18, and
 30 the tool may be operated as above described, and if a still narrower clamp is desired, the bar 19 may be formed in the notches 17 and 17' so as to extend across the groove 15, and in this case the notches will receive bar 19
 35 when applying the clamp to the hose, and the ends of the wire can be connected to the knob 6. In some cases, however, the tool may be adapted to form only the one size of clamp as shown in Fig. 3.

40 Having thus described the invention what is claimed as new, is—

1. A tool, for making and applying wire clamps, including a main body part having a guide-head on one end thereof, a push-bar
 45 guided movably by the guide-head and having a head thereon that has a longitudinal groove in the extremity thereof and also a

notch transverse to the groove, means for connecting the two ends of a wire to the body part, and means for moving the body 50 part and the push-bar relatively one to the other.

2. A tool, for making and applying wire clamps, including a main body part having a guide-head on one end and a screw-head on 55 the opposite end thereof, a combined handle and lever connected with the screw-head and movable toward or from the guide-head, a push-bar guided by the guide-head and having a grooved head thereon, the push-bar being in engagement with the handle and lever and movable thereby relatively to the body part, and means for connecting the two ends of a wire to the body part.

3. A tool, for making and applying wire 65 clamps, comprising a main body part having a guide-head and a screw-head connected together by two side bars, the guide-head having a guide-way therein and the screw-head having screw-threads therein, the body part 70 having two knobs on opposite sides thereof; a hollow combined handle and lever having external screw-threads on one end thereof engaging the screw-threads of the screw-head, the handle and lever having internal 75 screw-threads therein that differ from the external screw-threads in direction of pitch; and a push-bar having a head thereon and also a shank that is movable in the said guideway, the shank having a cylindrical 80 end portion that extends into the hollow handle and lever and is provided with screw-threads that engage the screw-threads therein, the head of the push-bar having a groove in the extremity thereof and also two notches 85 at the sides of the groove, said head having also a relatively deep notch therein arranged transversely of the groove.

In testimony whereof, I affix my signature in presence of two witnesses.

EDWARD M. COGHILAN.

Witnesses:

HARRY D. PIERSON,
 E. T. SILVIUS.