

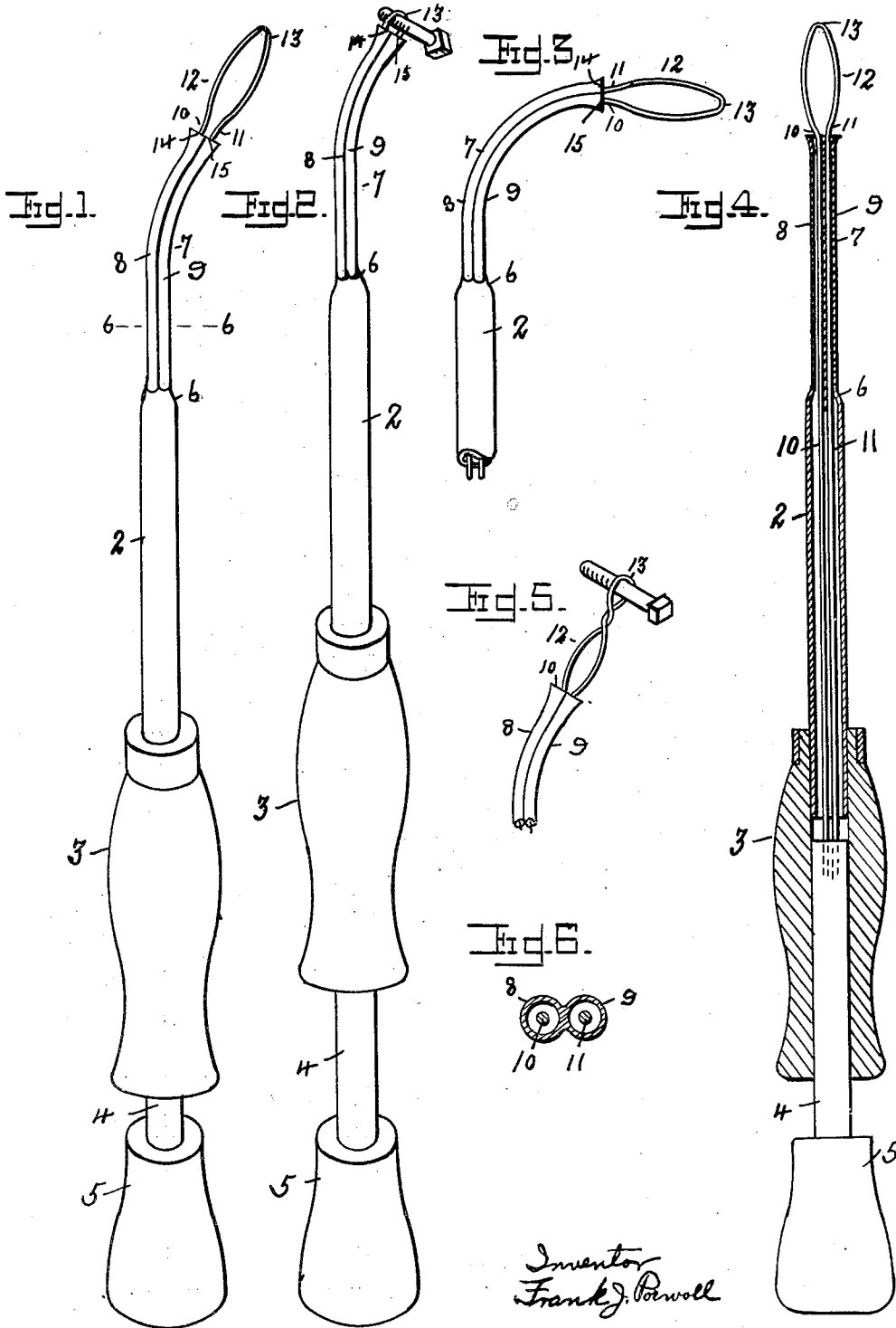
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EXTRACTOR

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UNITED STATES PATENT OFFICE

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EXTRACTOR

Application filed September 6, 1927. Serial No. 217,831.

This invention relates to an extracting device and has for its object to provide means for extracting small articles from enclosures difficult to get at.

Another object of the invention is to provide an extractor including a spring loop, means for contracting said loop, and means for twisting the loop around an article.

With the foregoing and other objects in view I have invented the device illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of my extractor;

Figure 2 is a similar view, shown contracted upon an article;

Figure 3 is a similar view showing the flexed position of certain parts of the device;

Figure 4 is a longitudinal sectional view of the device;

Figure 5 is a perspective view, partly broken away, showing the extractor loop twisted;

Figure 6 is a transverse section, enlarged, on the line 6—6 of Figure 1.

Like reference characters indicate like parts throughout the following specification and in the several views in the drawings in which 1 indicates an extractor consisting of a tube 2 having a handle 3 fixed to one end thereof, and an operating shank 4 telescopically mounted within the handle and having a terminal knob 5. Fixed to the outer end 6 of the tube 2 is a flexible member 7 provided with a pair of separate tubular passages 8 and 9, through which the arms 10 and 11 of the spring wire loop member 12 extend and the terminals of which are attached to the inner terminal of the tube 4; the loop end 13 of the member 12 normally projects a desired distance beyond the terminals 14 and 15 of the tubes 8 and 9, but may be retracted within said tubes by pulling outwardly upon the handle 5. The member 7 forming the tubes 8 and 9 is formed preferably of soft copper, or other flexible tubing in order that it may be closed or bent to get into any desired close quarters, such as, for instance, a transmission casing, a cylindrical crank case or other part of a motor, or any other place difficult to reach into which a bolt, nut or other

article being worked with might accidentally drop. In such cases, the device is projected into the enclosure from which it is desired to extract an article, and the article engaged by the loop 13, after which the handle 5 is pulled outwardly until such article is positively secured to the extractor, which is then removed.

In some cases, it is essential to tie the article being removed, and in an instance of this kind, the article may be thus secured by turning the handle 5, causing the loop 13 to twist upon such an article, as illustrated in Figure 5.

The improved device will also be found useful for extracting electric wires which are otherwise inaccessible.

Having now described my invention, that which I claim to be new, and desire to protect by Letters Patent, is:

1. An extracting device including a contractible wire loop, a pair of tubes through which the wire operates, said tubes being curved, and a relatively large tube into which said tubes converge, a handle for the large tube, and means within said handle through which said loop may be operated.

2. An extracting device including a contractible wire loop, a pair of tubes through which the wire operates, said tubes being curved, and a relatively large tube into which said tubes converge, a handle for the large tube, means within said handle through which said loop may be operated, said means consisting of a slidable shank to which the ends of said wire are fixed.

3. An extracting device including a contractible wire loop, a pair of tubes through which the wire operates, said tubes being curved, and a relatively large tube into which said tubes converge, a handle for the large tube, means within said handle through which said loop may be operated, said means consisting of a slidable shank to which the ends of said wire are fixed, said shank projecting beyond said handle and a knob on its outer end.

4. A device of the character described comprising a relatively large tube terminating in a pair of relatively small tubes, a wire

threaded through all of said tubes and means for drawing said wire within said tubes.

5 5. A device of the character described comprising a relatively large tube terminating in a pair of relatively small tubes, a wire threaded through all of said tubes and means whereby said wire may be drawn within said tubes, said wire being doubled upon itself to form a loop projecting beyond the terminal of said tubes.

10 6. The combination as set forth in claim 5, said tubes having flaring outer terminals.

In testimony whereof I affix my signature.

FRANK J. PORWOLL.

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