May 3, 1932. J. D. HOPKINS 1,857,049

MAGNETIC AXLE PULLER

Filed Sept. 13, 1930

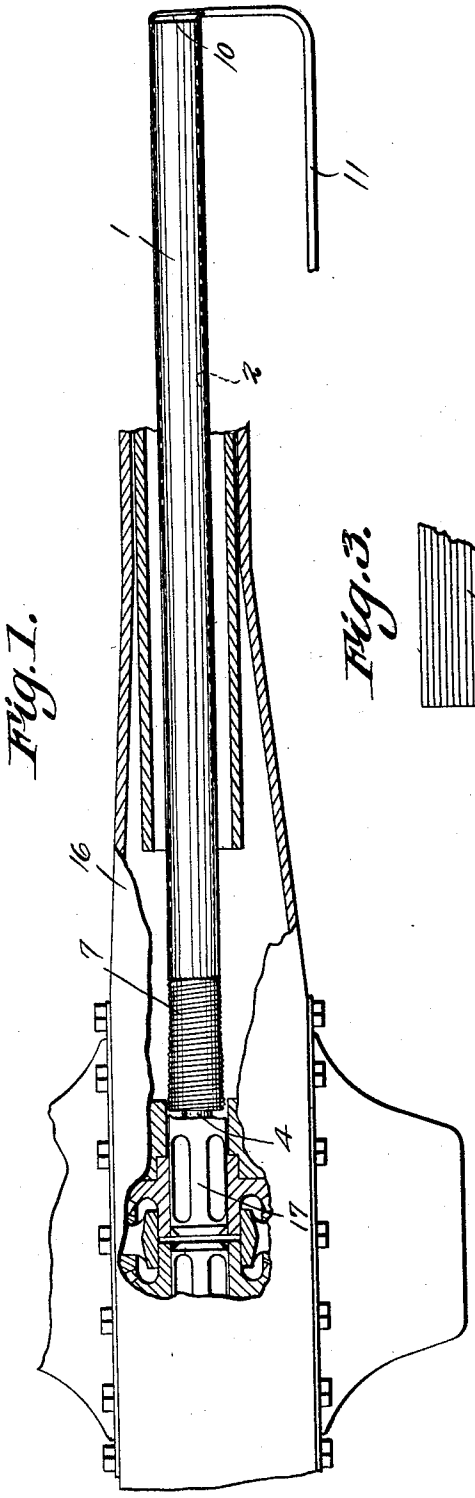

Fig. 1.

Fig. 3.

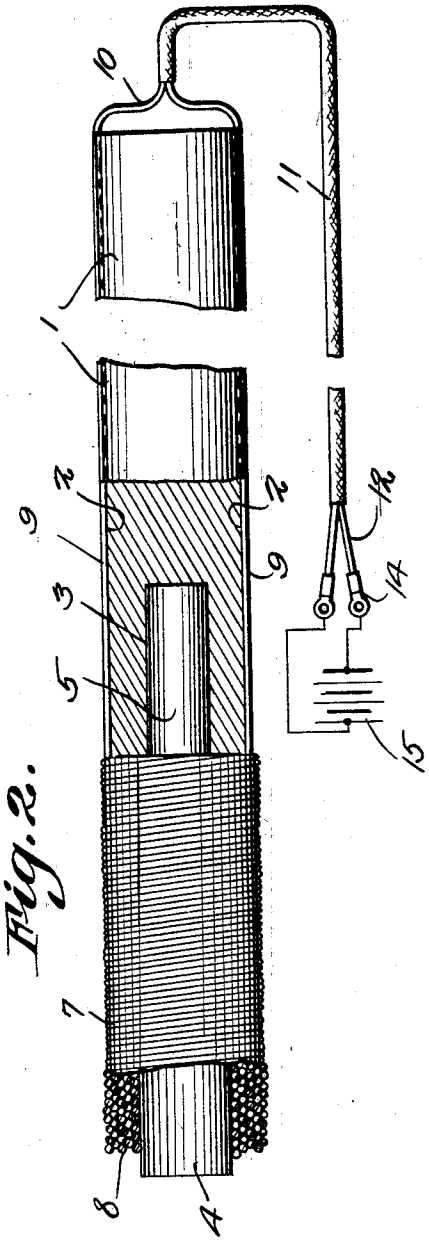

Fig. 2.

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Patented May 3, 1932 1,857,049

UNITED STATES PATENT OFFICE

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MAGNETIC AXLE PULLER

Application filed September 13, 1930. Serial No. 481,749.

This invention aims to provide a simple but effective means whereby broken parts of axles, or anything else, may be fished out of an inaccessible place, thereby rendering it unnecessary for the operator to tear down an elaborate mechanism, simply for the purpose of removing a broken piece.

It is within the province of the disclosure to improve generally, and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 shows in side elevation, a device constructed in accordance with the invention, parts being broken away, the structure being in the position of use;

Figure 2 is a longitudinal section, wherein parts are in elevation, portions being broken away;

Figure 3 is a fragmental elevation showing a modification.

In carrying out the invention, I provide a handle 1, preferably of circular cross-section, and of any desired length. The handle 1 may be made of wood, fiber, rubber or any other insulating substance. The handle 1 is supplied with superficial longitudinal grooves 2, which extend the whole length of the handle 1. In the forward end of the handle 1 there is a socket 3.

The numeral 5 designates a core of less diameter than the handle 1 and preferably of circular cross-section. The core 4 has a reduced end 5 which is mounted in the socket 3 of the handle 1 and is secured therein, the rear end of the core abutting against the forward end of the handle 1. The core 4 is made of soft iron so that it can be magnetized readily, and if desired, the core may be composed of a plurality of small iron wires 6, laid side by side and compacted into a cylinder, as indicated in Figure 3 of the drawings.

About the core 4 is formed the body of a coil 7 which abuts against the forward end of the handle 1. The end 8 of the coil 7 is set back a little from the end of the core 4, so that the end of the core 4 will project and protect the end 8 of the coil 7.

The terminals 9 of the coil 7 extend backwardly along the grooves 2 of the handle and are secured in the said grooves. At the rear end of the handle 1, the terminals 9 of the coil 7 converge, as shown at 10, and are encased in a flexible tubular sheath 11, from which the ends of the termianls 9 emerge, as shown at 12 in Figure 2. The terminals of the coil are connected by any suitable means 14 with the poles of a battery 15, or any other source of electrical energy.

It will be understood that when the coil 7 is energized, the core 4 will act as a magnet, attracting and holding any objects capable of being attracted and held by a magnet. The structure may be used for a wide variety of purposes. Thus it may be introduced into the axle 16 of a motor vehicle, to remove a broken part, shown at 17. A mechanic will find many other uses for the device.

Having thus described the invention, what is claimed is:

A magnetic fishing tool characterized by ease of assembly, and comprising a rod-like handle and a coil, the coil comprising a core and a winding that forms a body about the core, the inner end of the core projecting beyond the inner end of the body, the winding being formed into a cable beyond the outer end of the handle, and that portion of the winding that is between the cable and the body being in the form of a loop, the handle having a socket in its inner end, and oppositely-disposed straight grooves on its outer surface, the loop being capable of being opened laterally, so that the handle can be placed within the loop, and the side portions of the loop being engaged in the grooves of the handle, with said end of the core mounted in the socket of the handle, the inner end of the handle being of substantially the same

area and diameter as the body, and being in abutment with the inner end of the body, to protect the inner end of the body: the projecting inner end of the core, and the socket, being arranged concentrically with respect to the handle and the body, which construction, coupled with the fact that the body and the handle, are of the same diameter, facilitates the mounting of the side portions of the loop in the grooves.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JAMES DAUGHERTY HOPKINS.