Jan. 5, 1937. C. E. WIESSNER 2,066,598

PULLING TOOL OR IMPLEMENT

Filed April 29, 1935

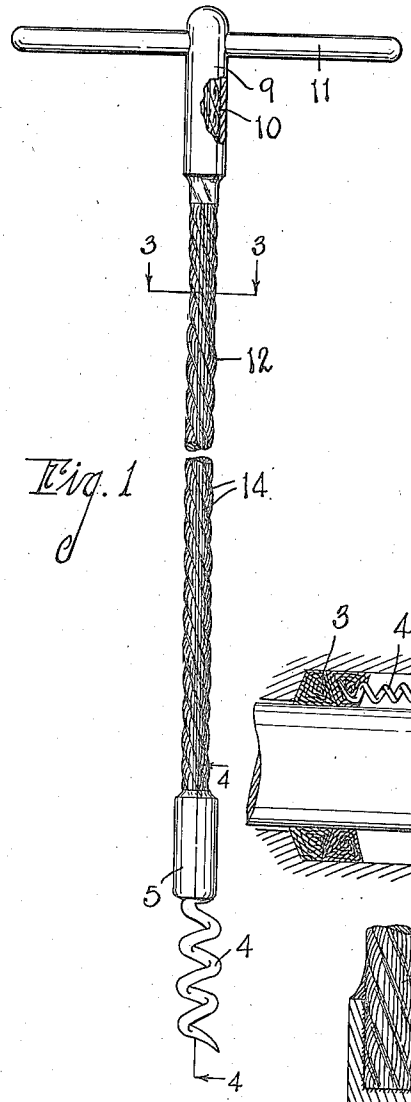


Fig. 1

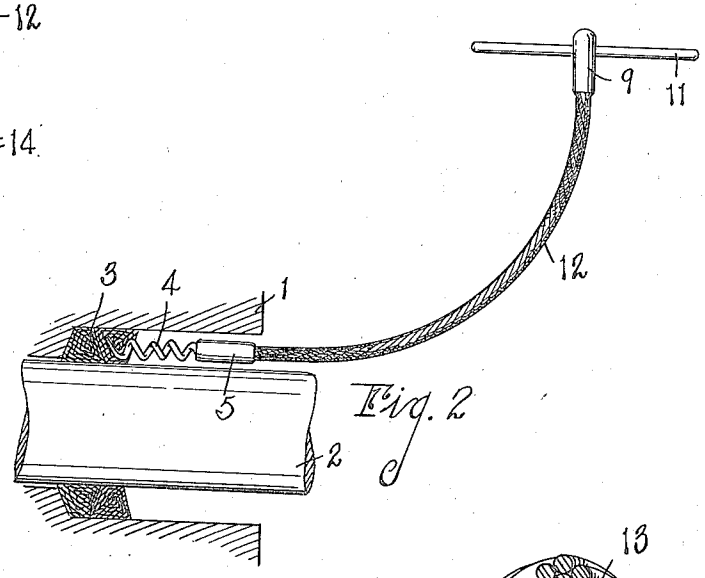


Fig. 2

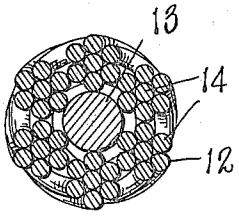


Fig. 3

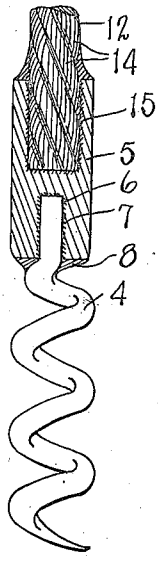


Fig. 4

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PULLING TOOL OR IMPLEMENT

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Application April 29, 1935, Serial No. 18,859

1 Claim. (Cl. 81—8.1)

The main objects of this invention are:

First, to provide a pulling tool or implement which is well adapted for the removal of packings from packing boxes or glands and which is capable of standing very severe strains, and at the same time is compact and easily manipulated.

Second, to provide a pulling tool or implement having a flexible handle shaft which permits manipulating the tool from various positions—one which cannot kink or buckle and is capable of sustaining substantial end thrust.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claim.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary plan view of my improved pulling tool.

Fig. 2 is a fragmentary view illustrating one method of using the tool or one use for which the tool is well adapted.

Fig. 3 is an enlarged sectional view on line 3—3 of Fig. 1.

Fig. 4 is an enlarged detail view partially in section on line 4—4 of Fig. 1.

In the accompanying drawing, 1 represents a packing box, 2 the pack shaft and 3 a packing. My improved tool comprises a spiral bit 4 preferably having a right-hand twist or lead. The bit is provided with a shank 5 having a socket 6 at its inner end. The bit is fixedly secured in the socket by brazing therein, as indicated at 7, the fillet of brazen material being indicated at 8.

The handle 9 is provided with a socket 10 corresponding to the socket 6 and has a cross grip or hand-piece 11. The shaft of the handle designated generally by the numeral 12 comprises a center rod 13 preferably of steel or other resilient material, and a multi-strand spirally twisted cable, the strands 14 of which are disposed in interentwined contacting relation and spirally disposed about the rod. The spirals of these cable strands are left-hand spirals. The ends of the shaft, that is, the ends of all the cable strands and the rod are disposed in the sockets of the handle and the shank and fixedly secured therein by brazing, as indicated at 15, or by other suitable means, it being desired that the ends of each of the multi-wire cable strands shall be fixedly secured in the sockets. The center core 13 prevents shortening of the shaft under twisting stress and consequently prevents any buckling or kinking.

While the spirals of the multi-strands are preferably left-hand spirals, it will be understood that this would depend upon the twist pitch or lead of the bit; that is, if it had a left-hand twist, the twist of the cable should be a right-hand twist so that when the handle is rotated to force the bit into the work, the rotation tends to wind the cable strands tighter around the core instead of tending to unwind them.

In the preferred embodiment, the center rod is formed of tempered spring or resilient material and the strands are also formed of tempered wire, the strands being preformed or brought into spiral form before they are assembled into the cable. This greatly increases the tensile strength in the presence of torque and aids the cable to return to its original form after being flexed or distorted in use.

As stated, the core prevents collapsing of the cable strands and buckling or opening even when manipulated in bent or distorted form, as shown in Fig. 2. The core also provides means for imparting end thrust so that a substantial pressure may be exerted to start the bit and force it into the work. Frequently, the packings become very hard and considerable effort is required to force the bit into the same.

My improved tool is capable of a very great variety of uses although especially designed by me for the removal of packings from packing boxes.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

In an implement of the class described, the combination of a bit, a handle, and a flexible handle shaft having its ends fixedly secured to said bit and handle and comprising a flexible center rod, and a spirally twisted multiple strand cable composed of spirally twisted strands disposed in entwining coacting relation and spirally disposed about and in supporting contacting relation with each other and with the center rod so that said flexible handle shaft is capable of bending and at the same time transmitting longitudinal and torsional stresses from the handle to the bit without kinking or lost motion due to opening or displacement of the strands relative to each other or to the center rod.

CHRISTOPHER E. WIESSNER.