H. HARRIS.

Improvement in Devices for Extracting Broken Tools from Oil-Wells.

No. 129,661. Patented July 23, 1872.

Fig: 1.

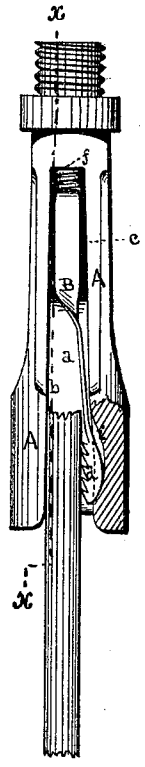
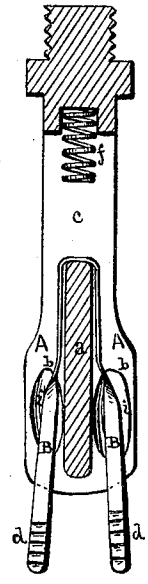


Fig: 2.



WITNESSES

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IMPROVEMENT IN DEVICES FOR EXTRACTING BROKEN TOOLS FROM OIL-WELLS.

Specification forming part of Letters Patent No. **129,661**, dated July 23, 1872.

SPECIFICATION.

I, HART HARRIS, of Tidioute, in the county of Warren and State of Pennsylvania, have invented an Improved Extracting-Tool for Oil-Wells and Artesian Wells, of which the following is a specification:

My invention relates to the construction of a special tool for the withdrawal of the "jars" or links used in the drilling or boring of oil-wells, when these "jars" are broken and lost in the bore of the well, or for the recovery and withdrawal of similar broken tools, which are apt to rest against the sides of the bore, and which cannot well be caught by a tubular grappling-tool. It consists of a tool having a body cylindrical at its lower end, and thence tapering slightly to its upper end, formed with a solid center or core, and with lateral grooves wide enough and deep enough to receive the tool to be recovered, in which are fitted elastic "wickers" or jaws connected at their upper ends through a transverse slot in the upper ends of the grooves, the heads of the "wickers" or jaws being confined in inclined seats or recesses until sprung by the broken tool or piece to be caught thereby.

In the accompanying drawing, Figure 1 is an elevation of my improved extracting-tool, illustrating it when it has taken hold of a broken rod to withdraw it; and Fig. 2, a longitudinal section of the tool in line *x x* of Fig. 1, illustrating the jaws when entirely released.

A is the body of the tool, technically termed a "socket." It is made with a cylindrical base of a diameter to fit the bore of the well, and tapers smaller upwardly, as illustrated in the drawing. The center of this "socket" is left solid, as shown at *a*, Fig. 2, but it is deeply grooved longitudinally on opposite sides, as shown at *b b*, to receive the end of the rod, "jar," or other tool broken off and left in the bore, and which it is desired to remove. The upper ends of these grooves are connected by a transverse slot, *c*. B B are elastic "wickers" or "reins" playing one in each of the grooves *b b*, and connected together at their upper ends through the slot *c*, as shown in Fig. 2. The lower ends of these wickers are armed with serrated griping-jaws *d d*, so turned as that their faces shall be parallel to a diametric plane taken through the socket and their edges outward. The rear face of each jaw is inclined or made wedge-shaped, and a correspondingly wedge-shaped or inclined recess, *i*, is formed in the side of each groove, as shown in Figs. 1 and 2, to receive it. A seat is formed in the upper end of the slot *c* to receive the upper end of a spiral spring, *f*, inserted therein to bear upon the upper end of the "wickers" when these last are elevated and set to engage the tool to be extracted. The wickers are so proportioned in length as that when elevated so that their jaws shall fit back into the recesses *i i* their upper ends shall compress the spiral spring *f* closely into its seat. The recesses *i i* are of such depth as that when the jaws are fitted back therein the grooves or elongated recesses *b b* will be left clear and open to their full width at that point. The slot *c* is of such length as that when the wickers and jaws are released the latter will pass down below the end of the socket, as shown in Fig. 2.

The upper end of the socket is threaded, as shown in the drawing, for connection with the working and driving rods in the usual manner.

In using this tool, the wickers are forced up (compressing the spring *f*) until the jaws *d d* slip back into the recesses *i i*, when they are secured in place by inserting small blocks or wedges of wood between either jaw and the opposite face of the groove or elongated recess *b*, in which it plays. After being thus "set" the tool is lowered into the bore of the well until it strikes the broken "jar" or other piece to be extracted. It is then driven down thereon until the piece, passing into one groove or the other, will loosen and displace the block confining the jaws, which, under the operation of the spring *f*, will be forced downward, and because of their inclined faces be forced inward upon the piece, clamping it tightly, as illustrated in Fig. 1. If now it be found desirable to free the socket, the jaws may, by continued blows upon the socket, be gradually forced down below its lower end, as shown in Fig. 2, and thus be entirely released from the object which was grasped thereby.

I claim as my invention—

1. A "socket" or extracting-tool, constructed, as herein described, with a solid center and with longitudinal grooves or wicker-seats formed in the sides thereof, substantially as and for the purpose herein set forth.

2. In combination with the subject-matter of the preceding claim and with a slotted aperture in said socket, the connected wickers B B, working in the longitudinal grooves *b b* of the socket, substantially as and for the purpose herein set forth.

HART HARRIS.

Witnesses:

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