(No Model.)

W. WILSON.

FISHING TOOL.

No. 583,317. Patented May 25, 1897.

Fig. 1.

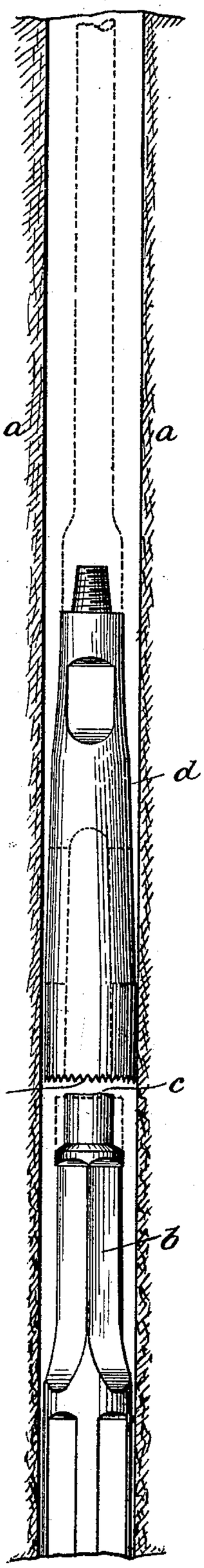


Fig. 2.

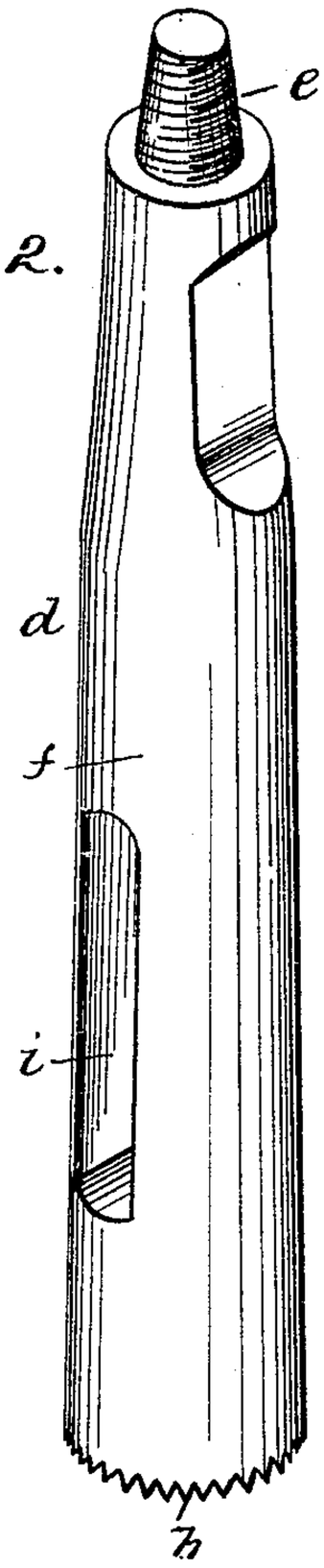
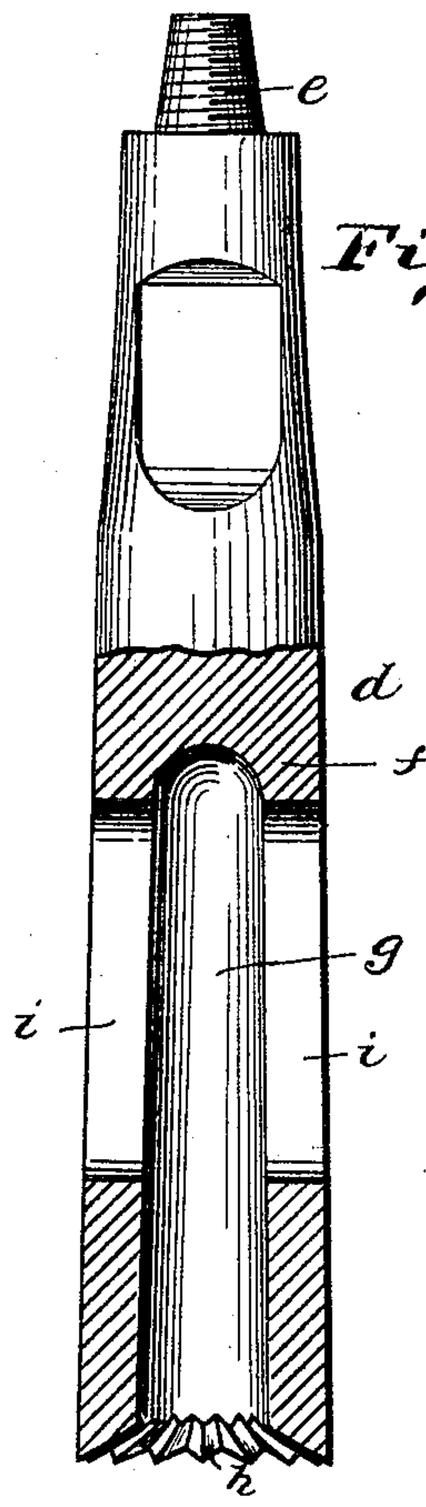


Fig. 3.



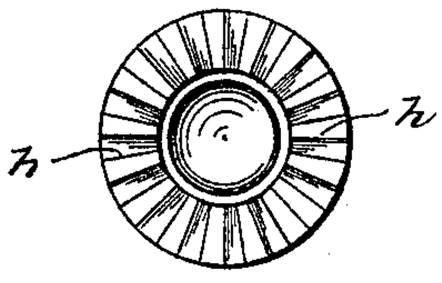


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM WILSON, OF CARNEGIE, PENNSYLVANIA.

FISHING-TOOL.

SPECIFICATION forming part of Letters Patent No. 583,317, dated May 25, 1897.

Application filed April 20, 1896. Serial No. 588,435. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WILSON, a resident of Carnegie, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Fishing-Tools; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to implements to facilitate the recovery of metal tools from oil-wells.

The drill-bits, drill-jars, and other tools used in drilling oil and Artesian wells as generally constructed are made of forged iron or steel and provided with screw-shanks at their ends adapted to engage with each other or with a socket attached to the drilling-rod. These shanks are smaller in their general dimensions where they join the body of the drill-bit than the main body of the bit, and the constant jar caused by the falling of the drill bit and tools on the rock through which it passes in the drilling operation causes crystallization at the point where the shank joins the main body and eventually results in so weakening it that it breaks off at this point, leaving the bit in the well and causing a complete stoppage of the work of drilling until it is "fished out." A like result of course occurs where the drilling-tools are defective as to materials or workmanship. The fracture generally leaves a flat surface, and the drill-bit or other tool practically fills the bore of the well, so that it becomes a difficult problem to obtain means for making an attachment to the drill-bit that will be sufficiently strong to enable it to be withdrawn.

The object of my invention is to provide for so shaping the upper end of the tool so lodged in the well that it may be more readily drawn therefrom.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a vertical section of a well, showing the implement in operation upon the broken drill-bit, the dotted lines showing the original shape of the bit before the reaming operation took place. Fig. 2 is a perspective view of the implement. Fig. 3 is a sectional view showing the opening in the side of the implement for the escape of the cuttings. Fig. 4 is an end view showing the cutting-faces.

Like letters indicate like parts in each of the figures.

The wall of the well is shown at *a*. The drill-bit or other tools for drilling are represented at *b* in Fig. 1 with the shank (which engaged the rope-socket, shown at *c*) broken off.

The implement *d* is made of steel or any other suitable material, but is preferably forged in one piece, as shown in the drawings, and consists of a threaded shank portion *e*, of a size to suit the rope-socket of the rope used in drilling the well; the drill-jars, to which the implement may be directly connected, if desired, or other means for raising or lowering it; of the main body portion *f*, of suitable weight and proportions, and may be slightly tapering, and the central hollow bore *g*, which it will be readily seen must be large enough to admit the shank which it is desired to form upon the broken drill-bit. At the lower edge of the implement are the series of radial V-shaped cutting edges *h*, formed on the inwardly-beveled base.

The lower end of the implement carrying the cutting edges may be made separate from the body portion for purposes of tempering or renewing and may be attached to the implement in any suitable way, if desired.

In the walls of the implement at *i* there are openings to permit the cuttings made by the implement as they accumulate in the central bore of the same to work out to the space between the tapering body and the wall of the well.

By lifting the implement through the attachment with the rope-socket and by the ordinary machinery employed in drilling said implement is raised and lowered in such a way as to strike the end of the broken drill-bit, and by a succession of blows a shank is formed upon the broken drill-bit, whereby means are provided for the attachment of a clamp or other device to withdraw the drill-bit from the well.

What I claim as my invention, and desire to secure by Letters Patent, is—

An implement to facilitate the recovery of metal tools from oil-wells, comprising an up-

wardly-tapering hollow body, having a series of radial V-shaped cutting edges formed on its inwardly-beveled base, and openings formed in its walls for the escape of cuttings to the space between the tapering body and the walls of the well, substantially as set forth.

In testimony whereof I, the said WILLIAM WILSON, have hereunto set my hand.

WILLIAM WILSON.

Witnesses:
ROBT. D. TOTTEN,
ROBERT C. TOTTEN.