Model.)

J. HART.

TOOL FOR EXTRACTING DRILL RODS, &c., FROM WELLS.

No. 431,890. Patented July 8, 1890.

Fig. 1.

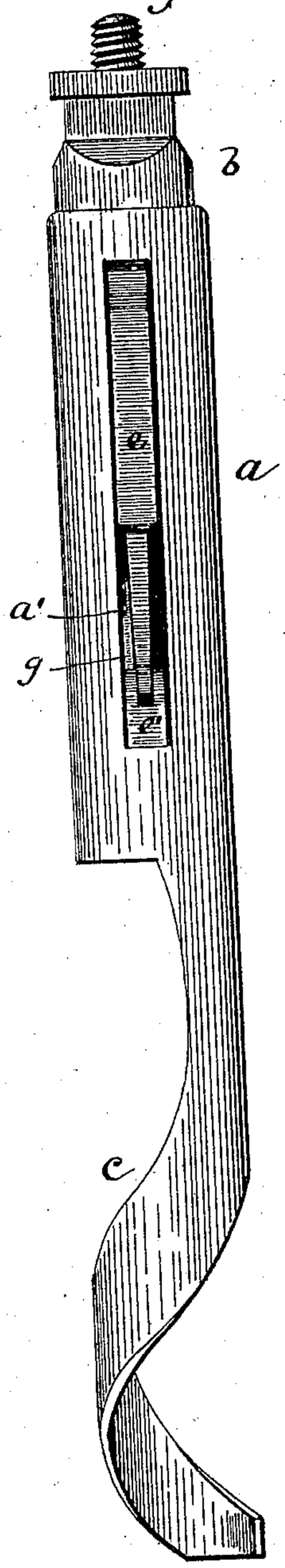


Fig. 2.

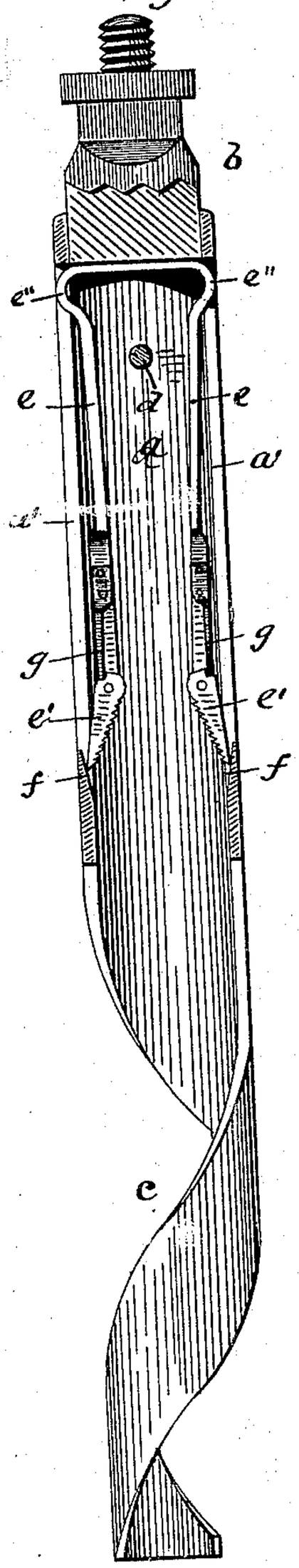
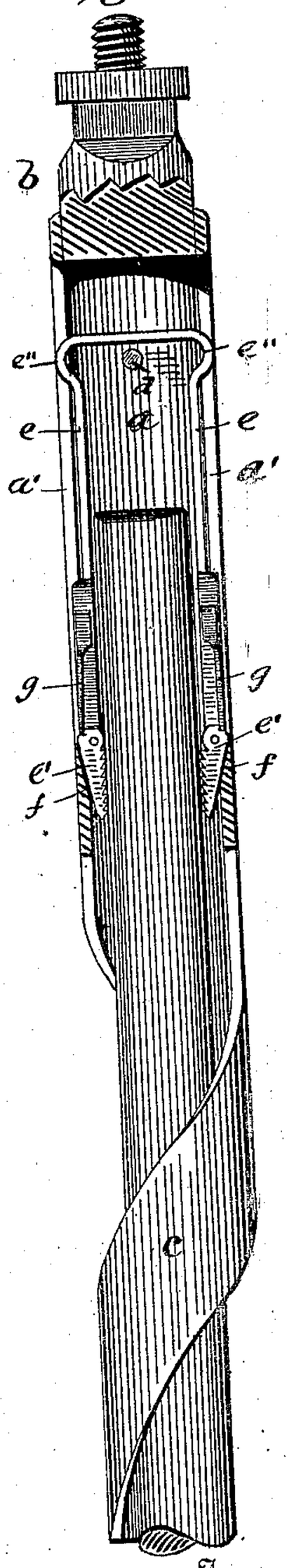


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES HART, OF SOUTH STRABANE, PENNSYLVANIA.

TOOL FOR EXTRACTING DRILL-RODS, &c., FROM WELLS.

SPECIFICATION forming part of Letters Patent No. 431,890, dated July 8, 1890.

Application filed April 24, 1890. Serial No. 349,394. (No model.)

To all whom it may concern:

Be it known that I, JAMES HART, a citizen of the United States, residing at South Strabane, in the county of Washington and State of Pennsylvania, have invented certain new and useful improvements in Tools for Extracting Drill-Rods, &c., from Wells, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved device; Fig. 2, a vertical longitudinal sectional view of the same, and Fig. 3 a similar view showing its application.

The invention is designed to provide a simple and efficient device for extracting tools or rods from oil-wells; and it consists in certain novel features of construction, that will be fully hereinafter described, and pointed out in the claims appended.

In the drawings annexed, *a* designates a tube provided with diametrically-opposite slots *a' a'*, which run longitudinally thereof. The upper end of the tube *a* is closed by a plug or cap *b*, which is provided with a screw to enable it to be attached to a suitable operating-rod. Formed integrally with the tube and projecting from its lower end is a spirally-formed tongue or extension *c*. Within the tube is a pair of depending spring-arms *e e*, which are connected together at their upper ends and have pivotally connected to their lower ends the depending gripping-jaws, the adjacent faces of which are serrated to better grip the tool or rod. The lower pointed ends of these jaws are kept pressed normally outwardly against the inclined portions *f f*, formed on the interior of the tube, by means of flat steel springs *g*, secured to the spring-arms *e*, the lower ends of these springs pressing the upper ends of the jaws slightly inwardly.

To retain the springs *e e* in the tube, a transverse bar *d* is passed between them, and to prevent the springs being twisted or dislocated bulges or projections *e''* are formed on their upper ends and adapted to work in the vertical slots *a'* in the tube.

The parts are shown in their normal positions in Figs. 1 and 2 of the drawings.

The device is attached to a suitable rod and inserted in the well and forced down to where the tool or rod to be withdrawn is. Then by turning or rotating it slightly the spiral extension *c* will engage the tool and straighten it and direct it properly into the mouth of the tube *a*, as is obvious. As the device is forced down the tool-rod will pass between the pivoted jaws and the springs *e e* and force them apart sufficiently to permit the rod to pass upward. The rod passes up about as far as the cross rod or bar *d*, when the operator begins to withdraw the device, whereupon both the jaws *e'* will be forced automatically and positively against the tool by the inclined portions *f f*, and securely clamp and hold the same during its withdrawal, as shown in Fig. 3.

The device is extremely simple and durable and efficient in operation. The spiral extension is an essential feature, as it will enable the tool-rod to be straightened in case it is leaning against the side of the well, and directed into the clutches in the tube, whereas formerly no means have been provided for straightening up the rod, and consequently many wells have been abandoned on account of the inability to remove the rods or tools. The pivoted clutches or jaws are advantageous, also, in that they not only serve to direct the end of the rod properly between the spring-arms, but also to positively and simultaneously clutch the rod upon opposite sides in such a manner that the greater the resistance the rod offers in withdrawing it the more positively and firmly will these jaws grip it, as is evident.

Having thus fully described my invention, what I claim is—

1. The combination of a tube, means for automatically clutching a tool within said tube, and an extension *c*, formed integral with the lower end of said tube and constructed in a spiral shape from one end to the other, substantially as described.

2. The combination of a tube open at its lower end, the spring-arms in said tube, depending clutches *e' e'*, pivoted to the lower ends of the said arms, springs secured to the said arms and holding the lower ends of the jaws outward against inclined faces *f f*, formed on the interior of the tube, and the extension *c*, formed on the lower end of the tube and spirally shaped, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES HART.

Witnesses:
JENNIE LYON,
ELLA LYON.