(No Model.)

# F. M. UHLER.

## GRAPPLE.

No. 358,132. Patented Feb. 22, 1887.

Fig. 1.

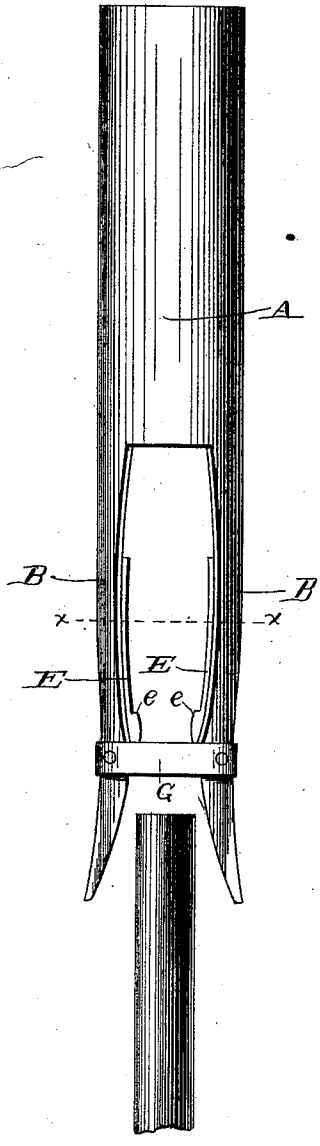



Fig. 4.

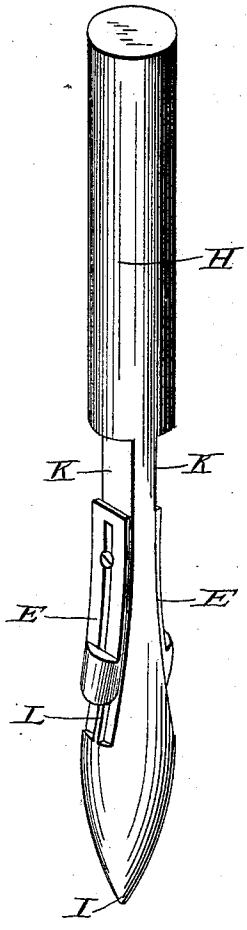



Fig. 2.

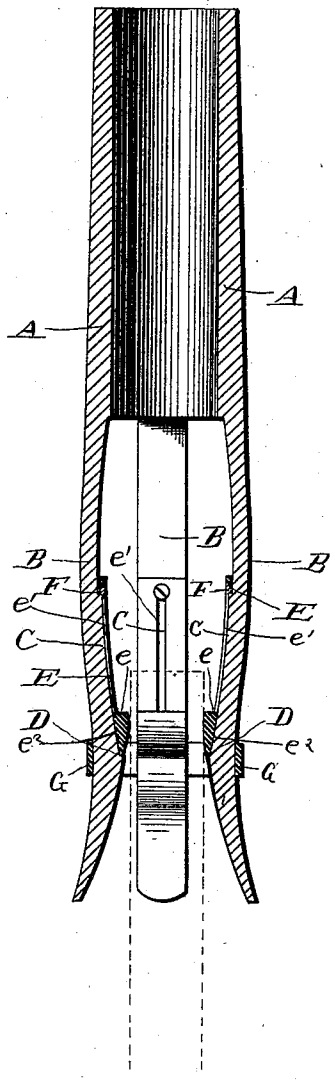
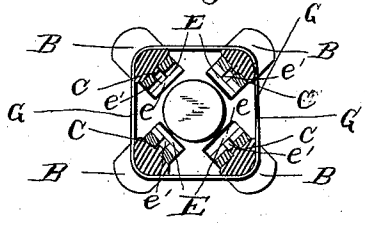



Fig. 3.




Witnesses

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# UNITED STATES PATENT OFFICE.

FRANCIS M. UHLER, OF WANO, KANSAS.

## GRAPPLE.

SPECIFICATION forming part of Letters Patent No. 358,132, dated February 22, 1887.

Application filed July 29, 1886. Serial No. 209,460. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS M. UHLER, a citizen of the United States, residing at Wano, in the county of Cheyenne and State of Kansas, have invented a new and useful Improvement in Grapples, of which the following is a specification.

My invention relates to an improvement in grapples for raising pipes or rods from Artesian, oil, or driven wells; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is an elevation of my grapple adapted to engage a rod. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a transverse section taken on the line *x x* of Fig. 1. Fig. 4 is an elevation of a modified form of my grapple adapted to engage a tube in a driven or other well.

A represents a vertical socket or head, which is provided with depending arms B, the lower ends of which are curved or flared outwardly, so as to make an inverted-funnel-shaped opening between the lower ends of the arms, and thus adapt them to readily engage the upper end of a rod when the apparatus is lowered in the well. On the inner sides of the arms B are made vertical central tongues, C, and at the lower ends of the said tongues are formed shoulders D. The inner sides of the arms B incline inwardly toward each other at their lower portions to the shoulders D, as shown.

E represents a series of gravity-catches, which are provided at their lower ends, on their inner sides, with shoulders *e*, forming barbs, and the shanks of the said catches are provided with vertical central slots, *e'*. At the lower ends of the said slots, and communicating therewith, are vertical grooves $e^2$, which receive the tongues C on the inner sides of the depending arms, and thus adapt the catches to move vertically on the inner sides of the arms and guide the said catches on the said arms. Set-screws F pass through the slots *e'* and enter the arms B from the inner sides thereof at the upper ends of the tongues C, and thus secure the gravity-catches to the arms while permitting the former to slide freely up or down. The upward movement of the catches is limited by the shoulder formed at the lower end of the vertical socket A, and the downward movement of the gravity-catches is limited by the shoulders D.

G represents a strap, which passes around the outer sides of the arms B, so as to prevent the lower ends of the said arms from diverging.

The operation of my invention is as follows: When a rod becomes lost in the well, the grapple is lowered therein until the lower ends of the arms B strike upon the upper end of the rod, and by reason of the outwardly-flaring form of the lower ends of the arms the upper end of the rod is directed between the arms, and as the grapple is lowered thereon the catches E strike against the said rod and move vertically on the inclined sides of the arms from the rod, and thus permit the upper ends of the latter to extend up between the arms for a considerable distance. The descent of the grapple is then arrested, and the catches E, by their own gravity, slide downwardly on the inclined sides of the arms B, and the shoulders or barbs at the lower ends of the said catches bear against the upper end of the rod and embrace the same and clamp it firmly between them. The grapple is then raised, and the friction of the heads of the catches against the sides of the rod causes the catches to be forced still farther downwardly on the inclined sides of the arms, and thus wedge tightly against the sides of the rod, so as to prevent the grapple from losing its hold upon the rod, and as the grapple is elevated the rod is raised with it, as will be very readily understood.

In Fig. 4 I show a modified form of my invention, in which I substitute a vertical head or bar, H, for the socket A, and provide the lower end of the said head or bar with a point, I, to adapt it to readily enter the upper end of a tube in the well. Opposite sides of the head or bar, near the lower end of the same, are flattened, as at K, and inclined outwardly toward their lower end, and provided with guiding-tongues L, corresponding to the tongues C of the before-described grapple. Gravity-catches E, of the same construction as those previously described, are secured on the inclined flattened sides of the head or bar, and

move vertically thereon. When the sharpened lower end, I, enters the upper end of the lost tube, the catches E are raised until the lower end of the head or bar enters the tube for a suitable depth, and when the descent of the said head or bar is arrested the catches E move downwardly by their own gravity and cause the shoulders or barbs at their lower ends to impinge tightly against the inner side of the tube, and thereby lock the head or bar firmly thereto, and the tube is then raised by elevating the grapple, as previously described.

Having thus described my invention, I claim—

The combination of the head or socket having the inclined sides provided with the vertical guiding-tongues and the shoulders at the lower ends of the said tongues, and the vertically-movable catches fitted on the inclined sides, and having the vertical slots to receive the guiding-tongues and the shoulders or barbs at their lower ends, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANCIS M. UHLER.

Witnesses:

R. M. JAQUA,

J. B. CALIFF.