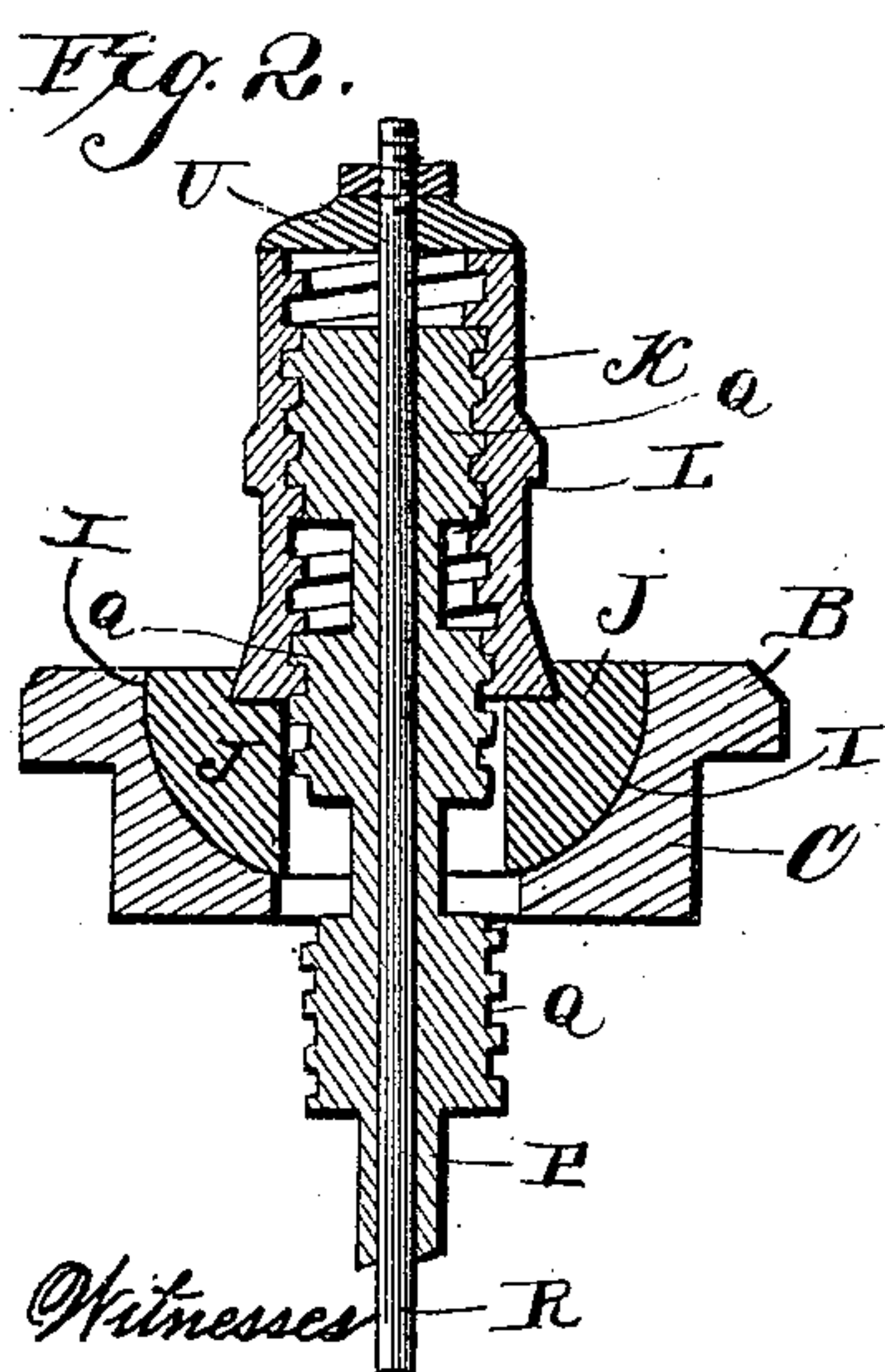
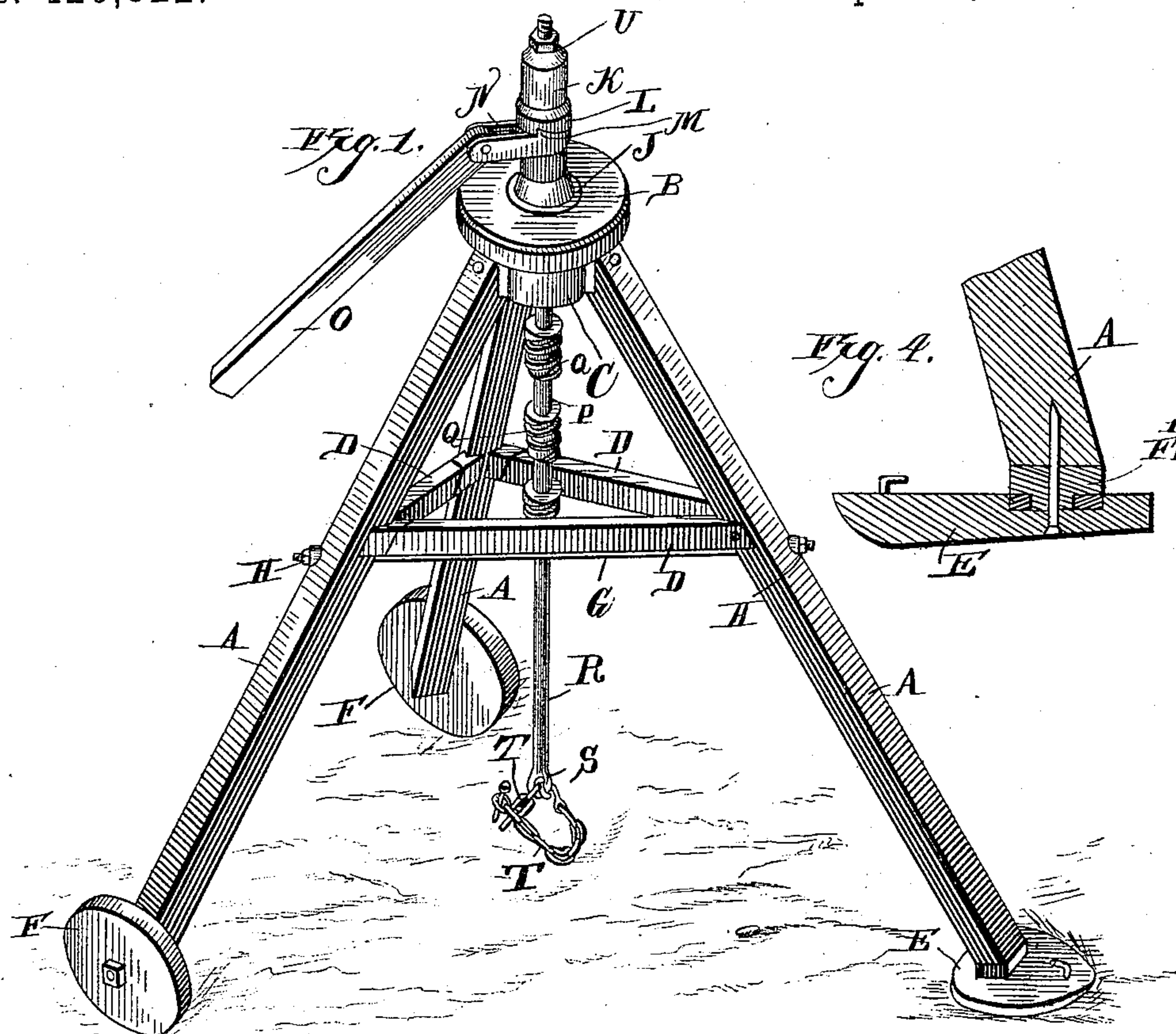


(No Model.)

J. KRUEGER.  
STUMP EXTRACTOR.

No. 426,822.

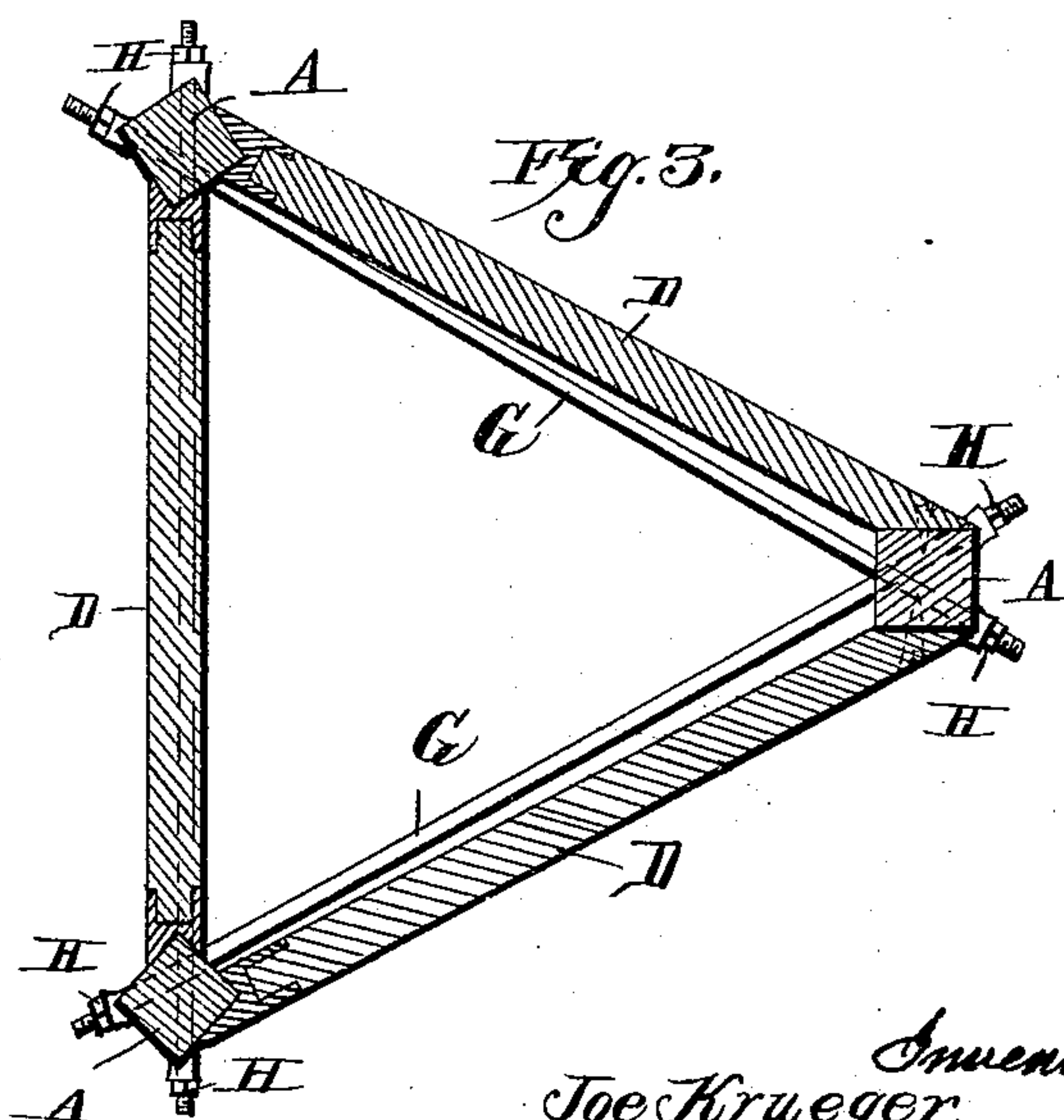
Patented Apr. 29, 1890.



Witnesses

Henry J. Dieterich

R. W. Bishop.



Joe Krueger, *Inventor*

By his Attorneys

Chas. H. Co.



# UNITED STATES PATENT OFFICE.

JOE KRUEGER, OF TWO RIVERS, WISCONSIN.

## STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 426,822, dated April 29, 1890.

Application filed May 7, 1889. Serial No. 309,851. (No model.)

*To all whom it may concern:*

Be it known that I, JOE KRUEGER, a citizen of the United States, residing at Two Rivers, in the county of Manitowoc and State of Wisconsin, have invented a new and useful Stump-Extractor, of which the following is a specification.

My invention relates to improvements in stump-extractors; and it consists in certain novel features hereinafter described and claimed.

In the drawings, Figure 1 is a side view of my improved stump-extractor. Fig. 2 is a detailed vertical section. Fig. 3 is a horizontal section to show the manner of bracing the tripod-legs. Fig. 4 is a detail view showing the runner-connection.

The tripod or supporting-frame consists of the legs A, which are united at their upper ends by a ring B, having a depending flange C, to which the upper ends of the legs are bolted, and they are maintained at the proper distance apart by the braces or beams D, as shown. One of the legs is provided at its lower end with a runner E, to which the draft devices are attached, and the other legs are provided with the rollers F, as shown. Just below the braces D, I arrange the tie-rods G, which pass through the legs and are provided at their ends with the nuts H, which are turned up against the legs so as to secure the tie-rods firmly in place.

The ring B at the upper end of the tripod is provided with a concave inner surface I, in which I arrange the cup or bearing J, having a convex outer surface, so that the lifting-screw can vibrate freely as the stump is extracted, and thereby reduce the strain on the draft-animals. Upon the upper side of this cup J, I provide the hollow spindle K, which rests on the said cup and is provided with internal screw-threads, as shown most clearly in Fig. 2. On its outer side this spindle is provided with the vertical shoulders L, and the said shoulders are engaged by vertical shoulders or teeth M on a stirrup N, secured to the inner end of the sweep O and passing around the said spindle. When the machine is in use, the sweep is raised so as to hold the stirrup in engagement with the spindle by means of the shoulders described, so that as the sweep is rotated the spindle will be oper-

ated. After the stump has been raised the stirrup is disengaged from the spindle and will fall to the lower end of the same, so as to allow the spindle to rotate in a reverse direction and permit the lifting-screw to be lowered.

The lifting-screw P is arranged in the hollow spindle K, and is provided at regular intervals with threaded enlargements Q, which engage the internal threads of the hollow spindle. The lifting bar or rod R is secured rigidly in the lifting-screw and projects beyond the ends of the same, as shown, its lower end being provided with an eye S, to which the chains T, adapted to be passed around the stump, are secured. The lifting-bar is provided at its upper end with a cap U, which by contacting with the upper end of the hollow spindle prevents the lifting-bar passing downward from the spindle.

When the spindle is rotated, the screw P and rod R are drawn upwardly and the cap U is lifted above the spindle. The enlargements Q pass one by one through the spindle and above, and a rod or cross-bar can be inserted between the lower end of any one and the upper end of the spindle to hold the stump suspended at any desired height.

From the foregoing description it is thought that the operation and advantages of my improved stump-extractor will be readily understood. When it is desired to extract the stump, the machine is drawn to a position over the stump, the chains T are passed around the stump and securely fastened, after which the sweep is carried around the tripod, so as to rotate the hollow spindle, and thereby cause the lifting-screw to rise and consequently extract and raise the stump. When the stump has been raised, it can be carried to a distant point to be cut up; or it may be disengaged from the machine and the screw caused to descend, so that another stump may be extracted.

My machine is composed of few parts, so that it can be manufactured at a small cost, is simple in its operation, and is strong and durable.

The runner E (see Fig. 4) is pivoted to the leg and held by a casting E'. The arrangement of rollers on two of the legs and the pivoted runner on the other leg insures the proper guiding of the stump-extractor when in transit.



Having thus described my invention, I claim—

1. In a stump-extractor, the combination, with the frame and the internally-threaded spindle, of the lifting-rod R and the screw P thereon, said screw being composed of separate enlargements Q, successively passing through the spindle when the latter is rotated, substantially as and for the purpose set forth.
2. The combination of the hollow spindle having vertical shoulders on its outer side, the lifting-screw mounted in the spindle, the sweep, and the stirrup secured to the sweep and passing around the spindle and provided with vertical shoulders on its upper edge adapted to engage the shoulders on the spindle, as set forth.
3. The improved stump-extractor comprising the tripod, the ring at the upper end of the

tripod, having a concave inner surface, the cup seated on said concave surface, the spindle rising from the cup and having diametrically-opposite vertical shoulders on its outer side, the sweep, the stirrup secured to the sweep and having vertical shoulders adapted to engage the vertical shoulders of the spindle, the screw passing through and mounted in the spindle, the lifting-bar secured rigidly within the screw and provided with grappling devices at its lower end, and the cap secured to the upper end of the lifting-bar, as specified.

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

JOE KRUEGER.

Witnesses:

LOUIS C. SENGLAUB,  
JOHN CULOUPEK.