

No. 658,062.

Patented Sept. 18, 1900.

H. R. HARDENBURG.

CASING SPEAR.

(Application filed June 18, 1900.)

(No Model.)

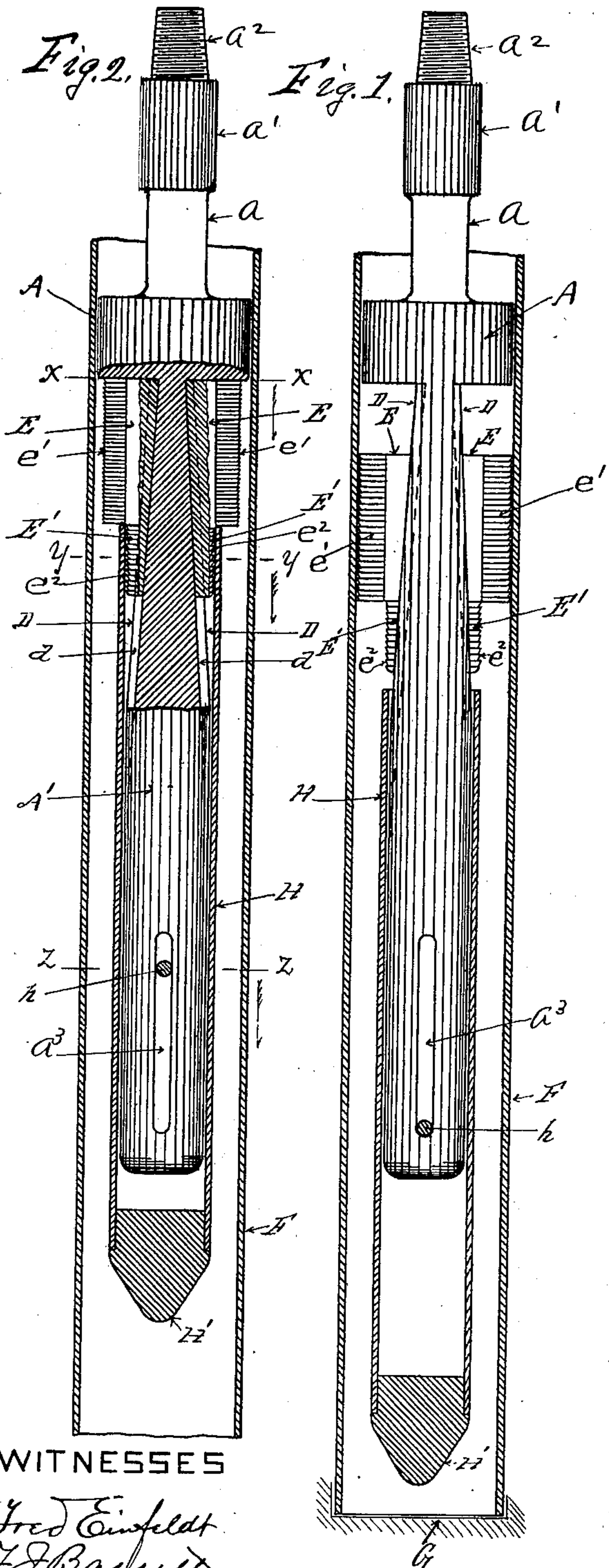


Fig. 3.

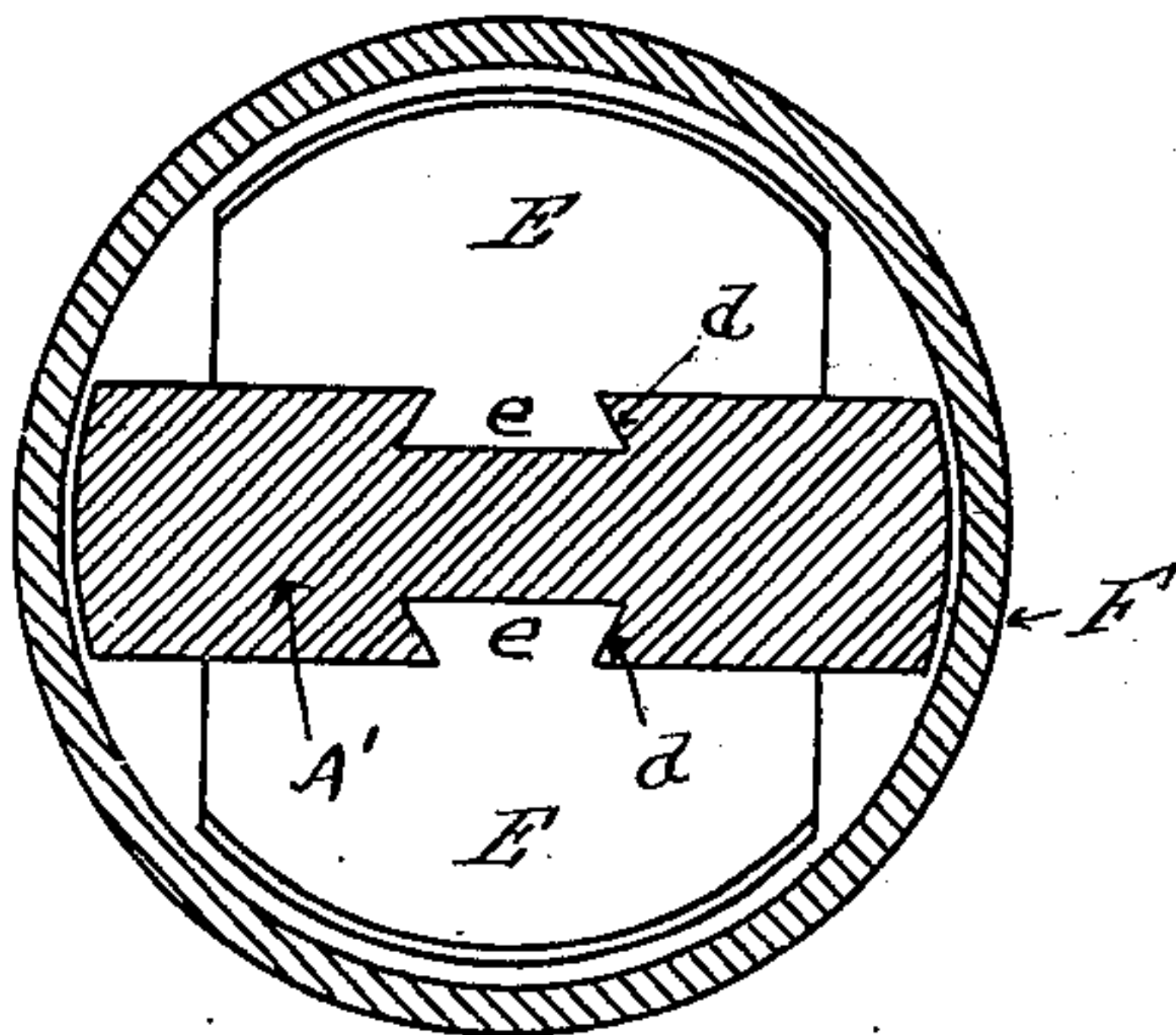


Fig. 4.

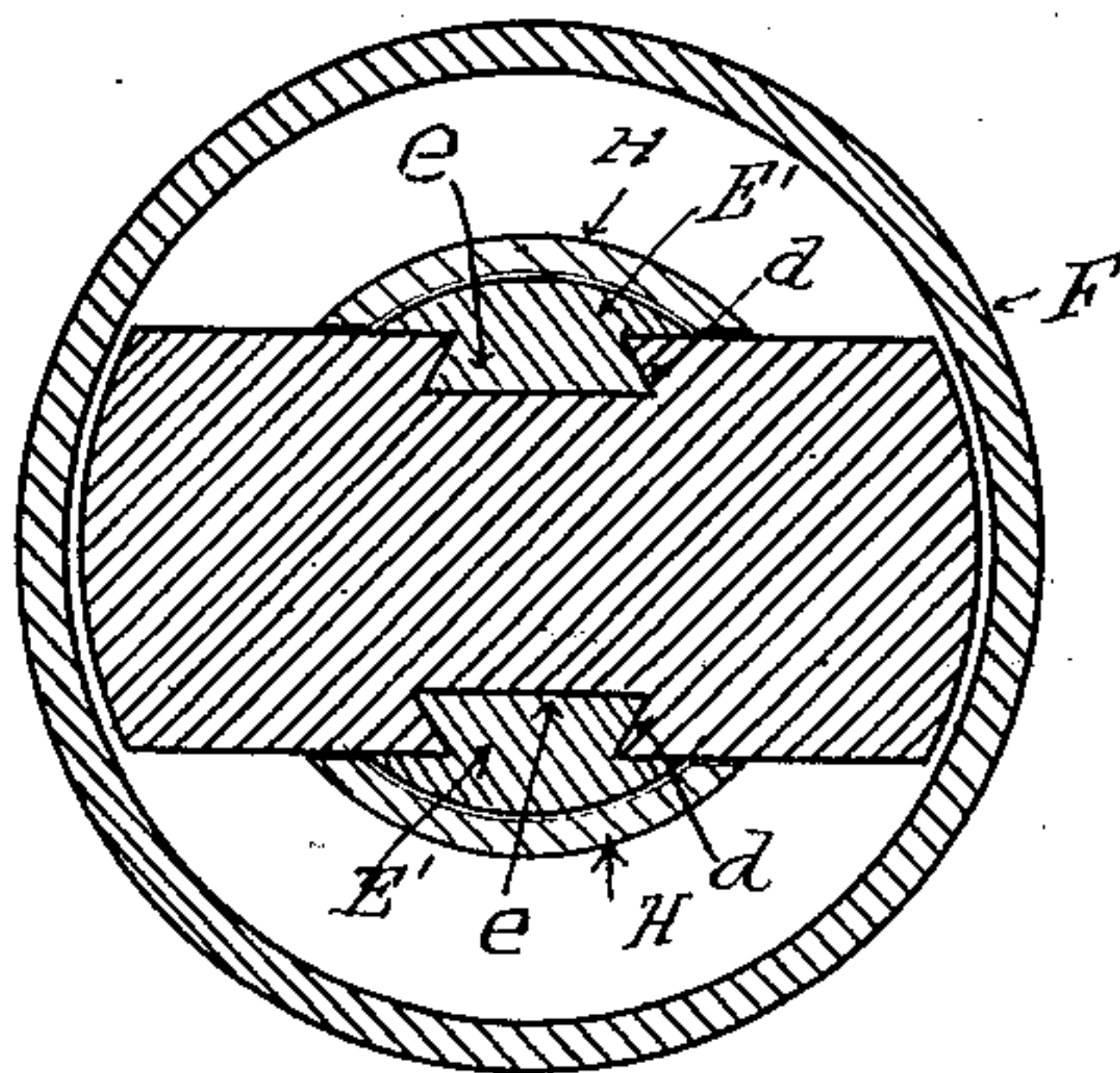
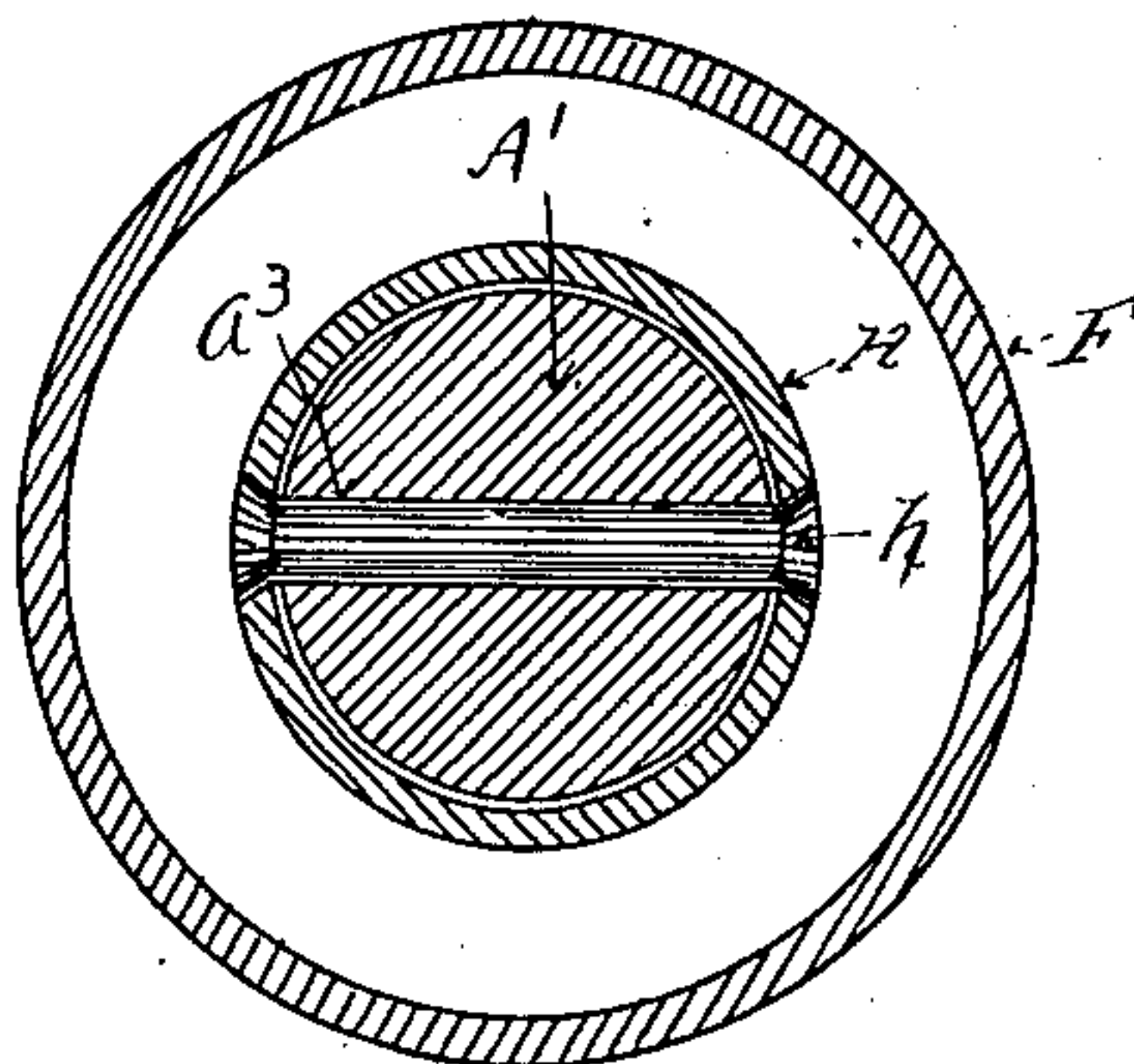


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

HOWARD R. HARDENBURG, OF SAGINAW, MICHIGAN.

CASING-SPEAR.

SPECIFICATION forming part of Letters Patent No. 658,062, dated September 18, 1900.

Application filed June 18, 1900. Serial No. 20,683. (No model.)

To all whom it may concern:

Be it known that I, HOWARD R. HARDENBURG, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Casing-Spears; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to improvements in casing-spears for removing casing from oil or other Artesian wells.

I construct my improved casing-spear with a sliding section adapted to contact with the bottom of the well when the casing-spear is moved down thereto and which operates to force the jaws of the spear upward, so as to detach them from the inside of the casing and allow the spear to be withdrawn therefrom.

The features of this invention are hereinafter set forth and described, and illustrated in the accompanying drawings, in which—

Figure 1 shows a vertical section of my improved casing-spear in shape to engage the casing to be withdrawn. Fig. 2 shows a like view of the same after the casing-spear has been brought into contact with the bottom of the well. Fig. 3 is a cross-section of the same on the line xx in Fig. 2. Fig. 4 is a cross-section of same on the line yy in Fig. 2. Fig. 5 is a cross-section of same on the line zz in Fig. 2.

In the drawings thus illustrating my invention the body of the casing-spear consists substantially of a head A , above which there is a square shank a , adapted to receive a wrench, and above the shank a there is a collar a' and a nipple or pin a^2 , adapted to be screwed into a tool or rope socket. From the head A there is a downwardly-projecting stem A' . On opposite sides of the upper end of the stem A' it is cut away, so as to form inclined surfaces DD , in which are dovetail grooves $d d$, and upon these inclined surfaces DD , I place jaws EE , provided with tongues $e e$, adapted to fit into and slide up and down in the

grooves $d d$. These jaws EE are provided with peripheral teeth e' , adapted to engage the inside of a well-casing F , and as the body of the tool is raised the jaws EE slide downward upon the inclines DD on the stem, so as to tighten the jaws EE firmly against the inside of the casing and operate as the tool is raised to withdraw the casing from the well.

Over the lower part of the stem A' there is a sleeve H , adapted to slide up and down thereon. This sleeve H is prevented from becoming detached from the stem A' by a rivet h , which passes through a slot a^3 in the stem A' and limits the vertical travel of the sleeve H . On the lower ends of the jaws EE there are extensions $E' E'$ of such size as will enter the upper end of the sleeve H , which are provided with peripheral teeth e^2 , adapted to engage the inside of the sleeve H when it is pushed upward into the position shown in Fig. 2 and retain it in that position, so as to hold the jaws EE out of contact with the inside of the casing F and permit the withdrawal of the tool from the well. This is accomplished by moving the casing-spear downward in the casing until the bottom H' of the sleeve H strikes the bottom G of the well, which operates to force the sleeve H upward upon the stem A , carrying the jaws EE with it until the reduced portions E' of the jaws E enter the upper end of the sleeve H , which then interlock therewith, and the tool can then be withdrawn from the well.

The operation of this device is so obvious that further description thereof is deemed unnecessary.

I have thus shown and described my invention, so as to enable others to construct and operate the same; but I do not desire to confine myself to the exact construction shown, as it is obvious that the same may be considerably modified without departing from the spirit of my invention.

Therefore what I claim as new, and desire to secure by Letters Patent of the United States, is—

The combination in a casing-spear, of a body comprising a screw-threaded nipple a^2 , a head A , and a stem A' having inclined surfaces DD on opposite sides thereof, jaws EE having reduced portions $E' E'$ on the lower ends thereof

and sliding in dovetailed grooves in said inclined surfaces D D, serrations *e'* on the peripheries of said jaws, and a sleeve H sliding vertically on the stem A' so that when raised
5 it operates to raise the jaws E E and passes over the reduced portions E' E' thereof, substantially as and for the purpose set forth.

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

HOWARD R. HARDENBURG.

Witnesses:

JOHN FORESTER,
E. E. THORNTON.