

C. HAAS.  
CASING WATER PACKER.  
APPLICATION FILED DEC. 15, 1902.

NO MODEL.

Fig. 1.

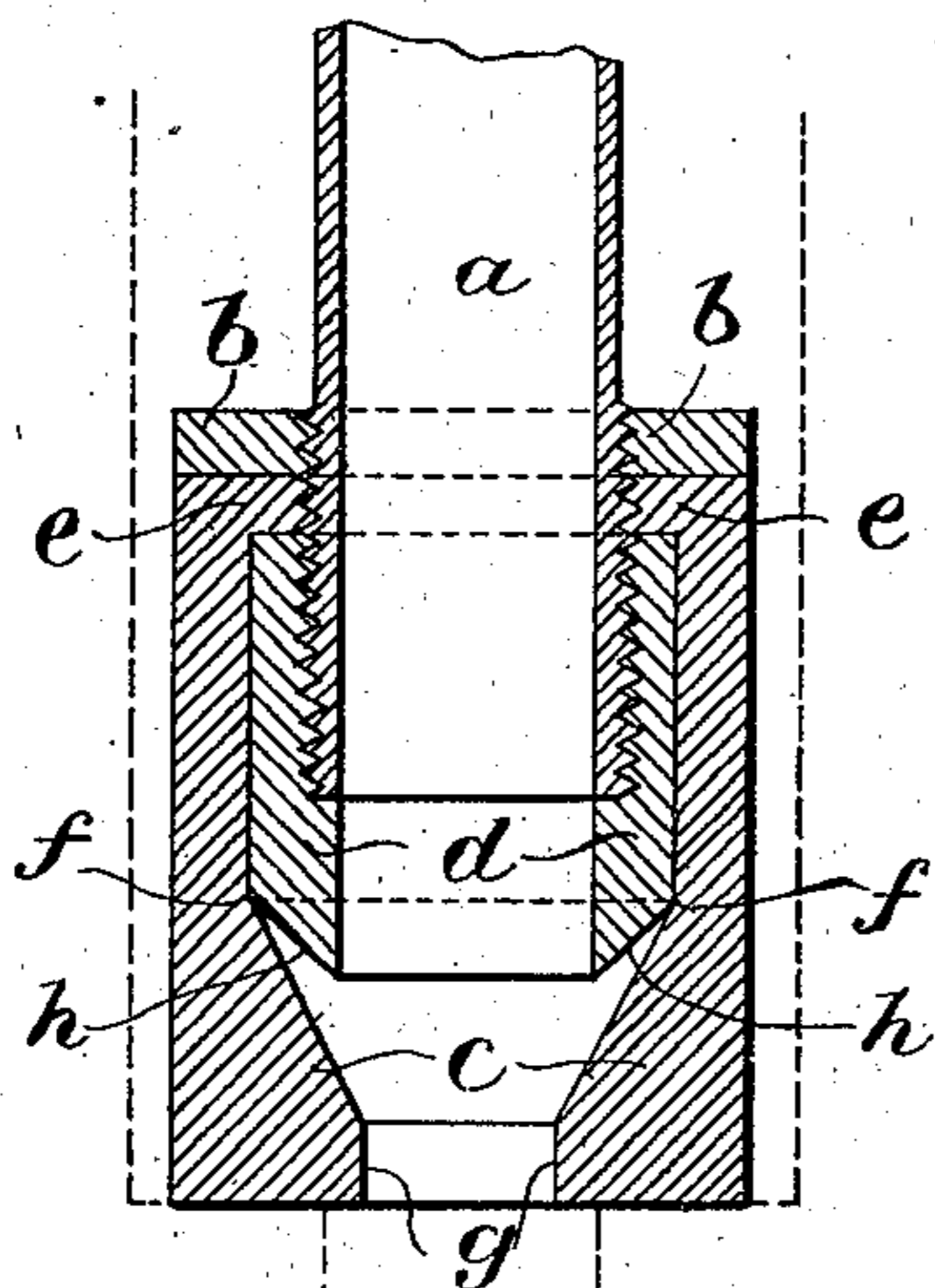


Fig. 2.

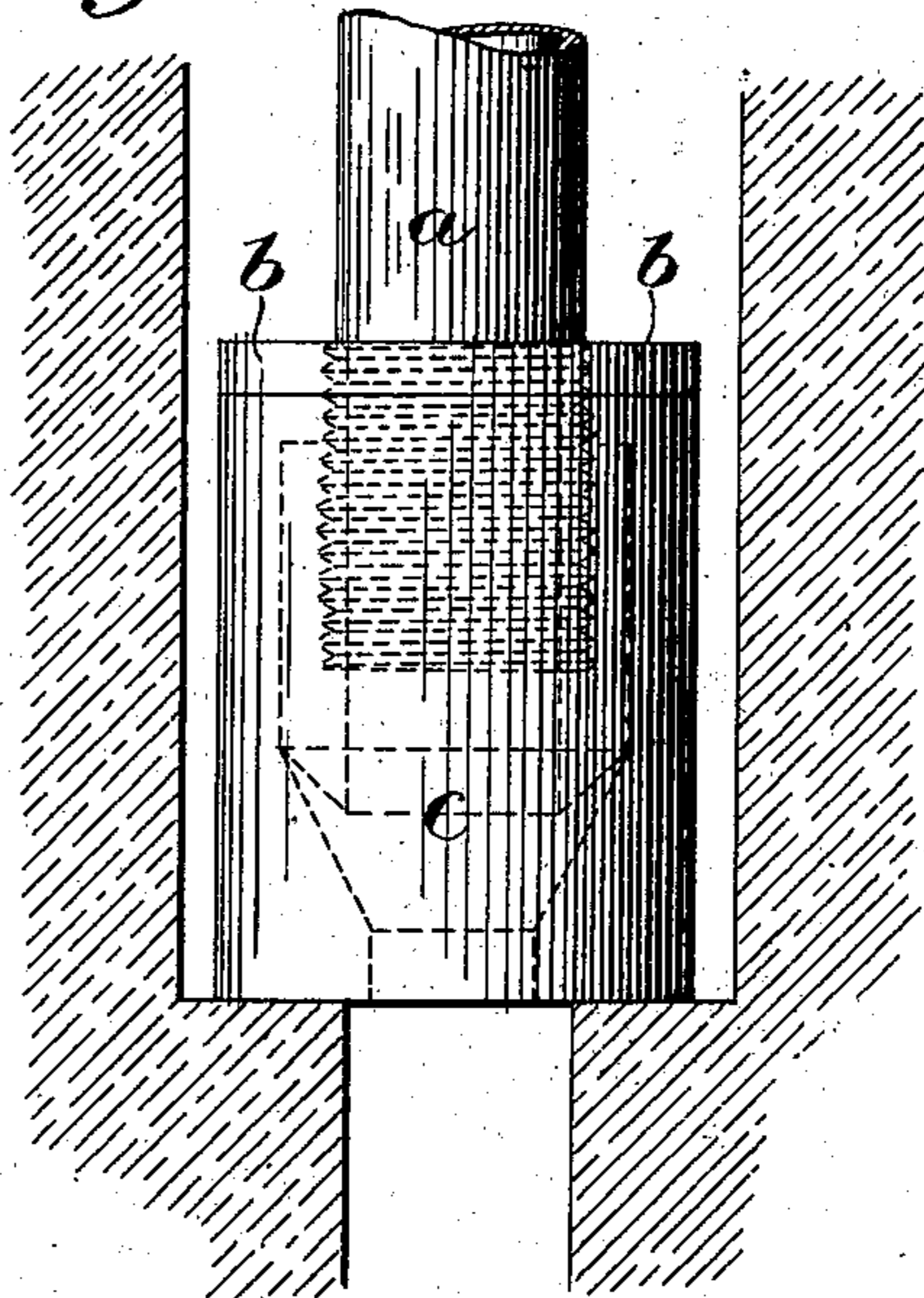


Fig. 3.

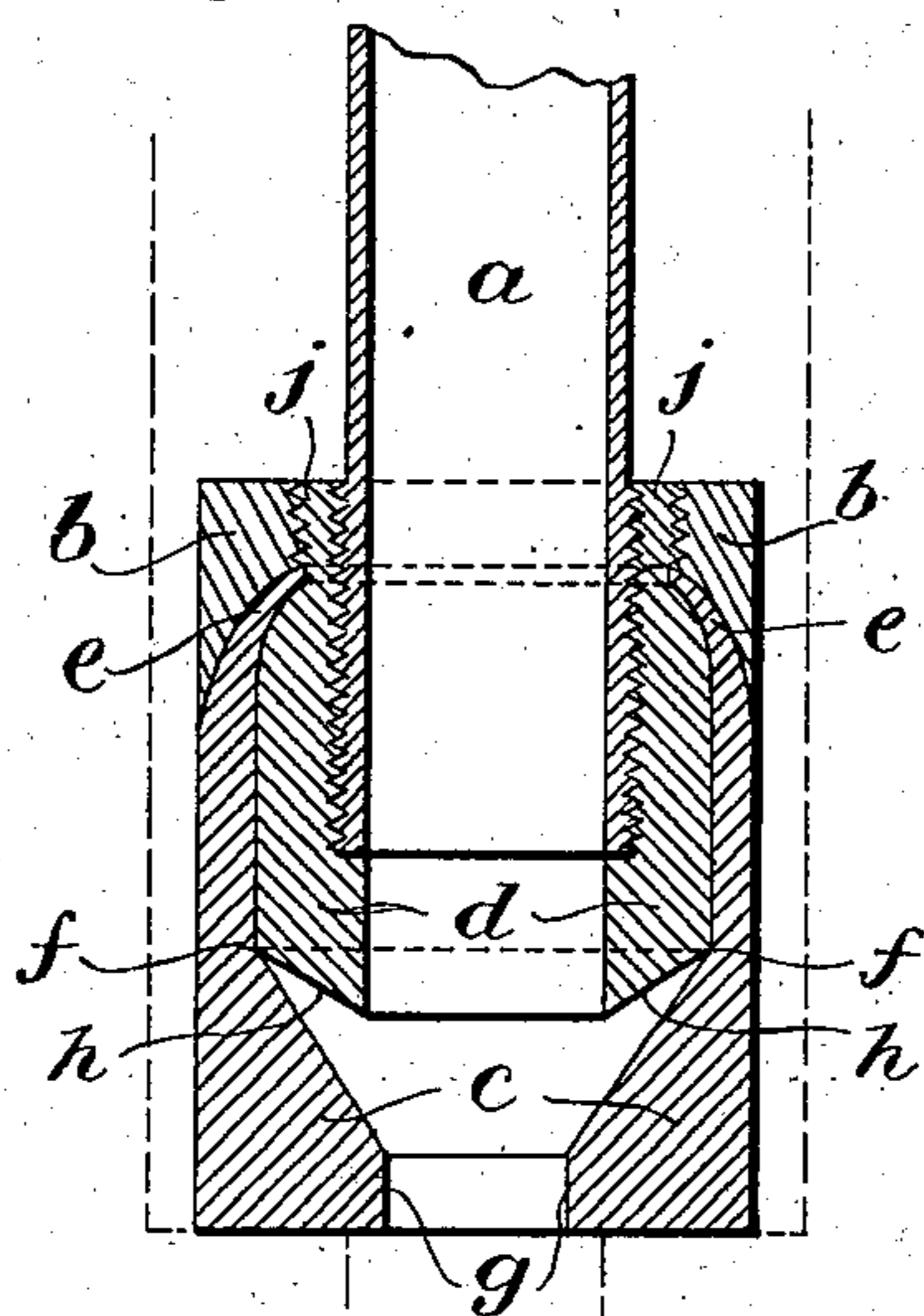
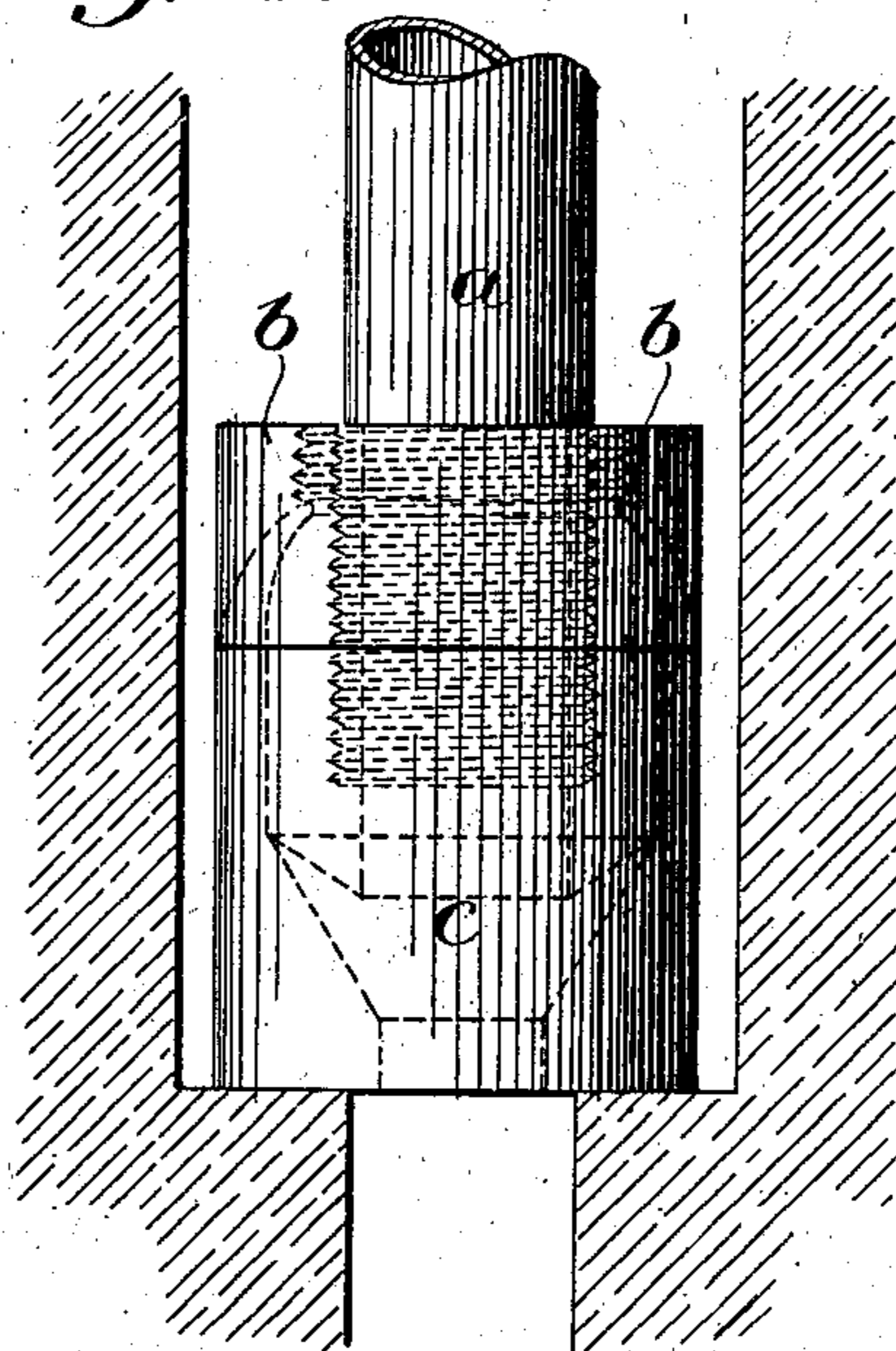


Fig. 4.



Witnesses.

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## UNITED STATES PATENT OFFICE.

CHARLES HAAS, OF AUSTIN, TEXAS.

## CASING WATER-PACKER.

SPECIFICATION forming part of Letters Patent No. 730,257, dated June 9, 1903.

Application filed December 15, 1902. Serial No. 135,276. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES HAAS, well-drilling engineer, of the city of Austin, county of Travis, and State of Texas, have invented certain new and useful Improvements in Casing Water-Packers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention consists of an improved water-packer for Artesian wells.

The casing water-packer hitherto used for petroleum-oil wells is simply made of a steel shoe or collar, tapering at its lower extremity and is liable to make its way into and crush the rock with the pointed ends, and thereby gradually clog the well with the crumbled earth. Moreover, the pointed ends being easily worn off must often be substituted by new ones.

The object of my invention is to provide against these defects, and it not only can effectually prevent the water coming into the well, but also can prevent the crumbling of the rock.

My device consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings.

In the drawings, Figure 1 is a longitudinal section of a packer embodying my improvement. Fig. 2 is a side view of a packer represented in the well. Fig. 3 is a longitudinal section of a modified form of packer. Fig. 4 is a side view of said modified form of packer.

Similar characters indicate corresponding parts in the views.

A is a casing or pipe threaded at its lower end, as shown in the drawings, with which is engaged a steel ring or washer *b*, then a collar *c*, made of gum or other elastic substances, and, finally, the steel shoe or collar *d*. As shown in the drawings, the gum collar *c* is externally cylindrical in shape, the upper extremities of which are provided with the flange *e*, while internally it tapers at the parts *f* and forms the opening *g*. The steel shoe or collar *d* is also externally cylindrical in shape to fit to the inside of the gum collar *c*. The upper part of its inner bore is threaded, while the lower extremities of the shoe, as indicated

by letter *h*, taper, the degree of its tapering less acute, however, than that of the tapering inside of the gum collar.

In a modified form of a packer, as shown in Fig. 3 and Fig. 4, the steel ring *b* and washer *b* and gum collar *c'* are secured on steel shoe or collar *d* instead of casing or pipe *a*. Consequently shapes are not similar with those aforementioned, and the upper extremities of the inner sides of the steel ring or washer *b* are provided with threads, and its lower parts taper, as shown in the drawings, while the upper extremities of the gum collar *c* bend toward the inner parts, as shown in the drawings, and are so made as to fill the space between the tapering parts of the inner sides of a ring *b* and the shoulders of steel shoe *d*. The shape of the outside of a steel shoe *d* differs also from that aforementioned—*i. e.*, the outside of its upper extremities *j* is provided with threads and its shoulders taper, so as to fit to the upper parts of a gum collar *c*.

The operation of this invention is very simple. When casing or pipe is pressed, the lower parts of the gum collar *c* are pushed sidewise toward the walls of the well, and thus prevent the water coming in from the side walls. With the lower extremities of the steel shoe or collar tapering inside the gum will not be pressed inward. The pointed extremities of the gum collar will not come in direct contact with the rock. The work of pumping oil can therefore be carried on easily without any danger of crushing the rock and clogging the well with the debris.

The operation of the modified form of my invention, as shown in Fig. 3 and Fig. 4, is not different than that of the leading form. In this modified form the steel shoe *d* is directly secured on the casing or pipe *a* and therefore can easily be removed. Moreover, the shoulders of a gum collar being broader than other one has one more advantage in its being tightly fastened by a steel ring *b* and a steel shoe *d*.

Having thus particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A water - packer, comprising a pipe, a

steel shoe at the extremity of said pipe, an elastic collar around said shoe, and a ring engaging the pipe and the collar.

2. The combination in a water-packer of a  
5 collar made of suitable elastic material having a flanged upper extremity, a central bore through said collar tapered at the lower end, a steel shoe adapted to fit said central bore of  
10 said collar and having a tapering lower extremity, and a ring adapted to engage the flanged upper extremity of said elastic collar.

3. In a water-packer, the combination of a pipe provided with a threaded extremity, a steel shoe engaging said extremity and hav-

ing a tapered lower end, an elastic sleeve en- 15  
gaging said shoe and extending somewhat below the same having a tapered bore at the lower end and a flange adapted to engage the pipe at the upper end, and a washer engaging said pipe and abutting against said 20  
flange.

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

CHARLES HAAS.

Witnesses;

L. WALDMAN,  
E. HANUSCH.