

(No Model.)

N. W. HARTMAN.
BUCKET FOR CHAIN PUMPS.

No. 567,712.

Patented Sept. 15, 1896.

FIG. 1.

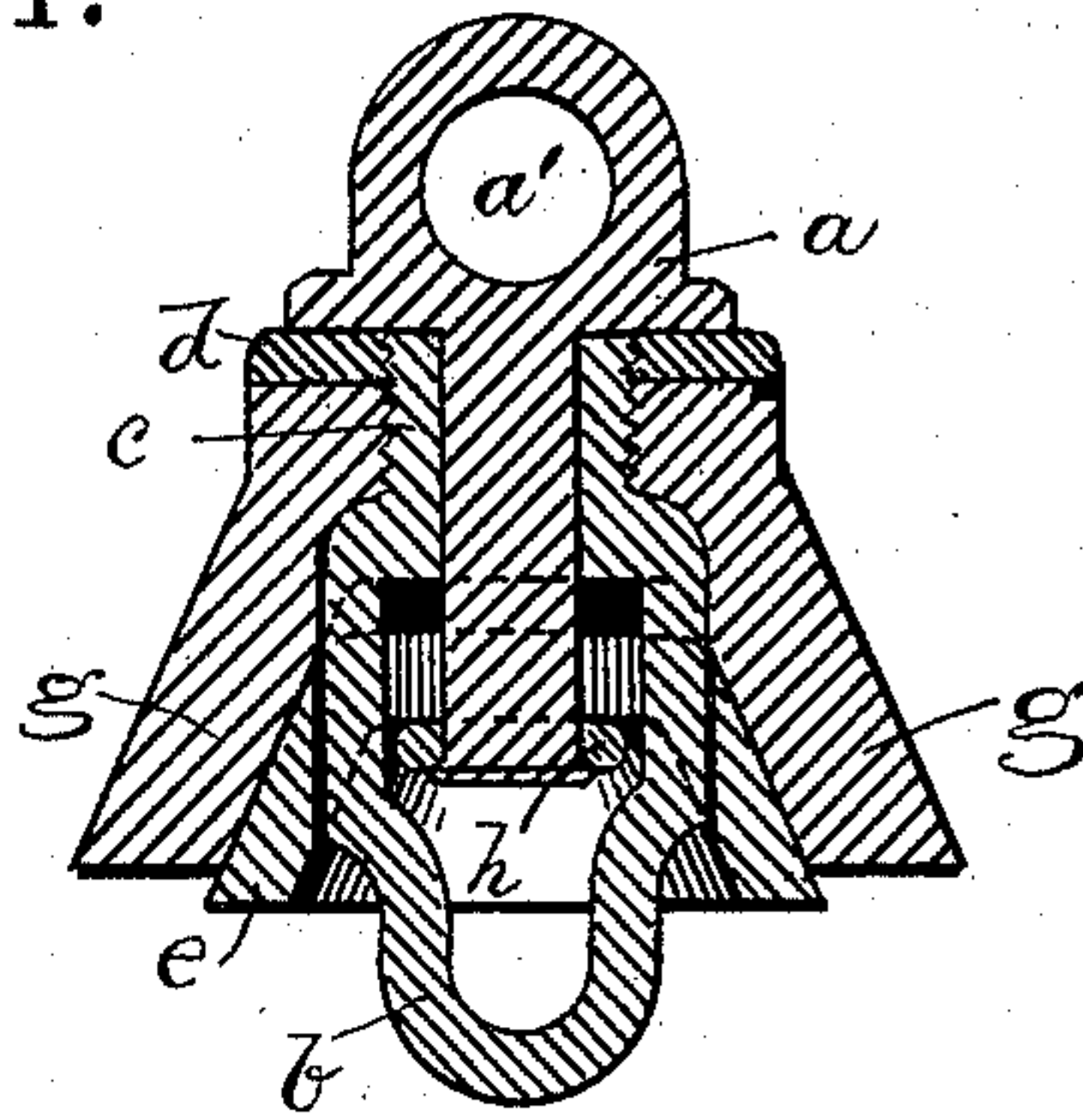


FIG. 2.

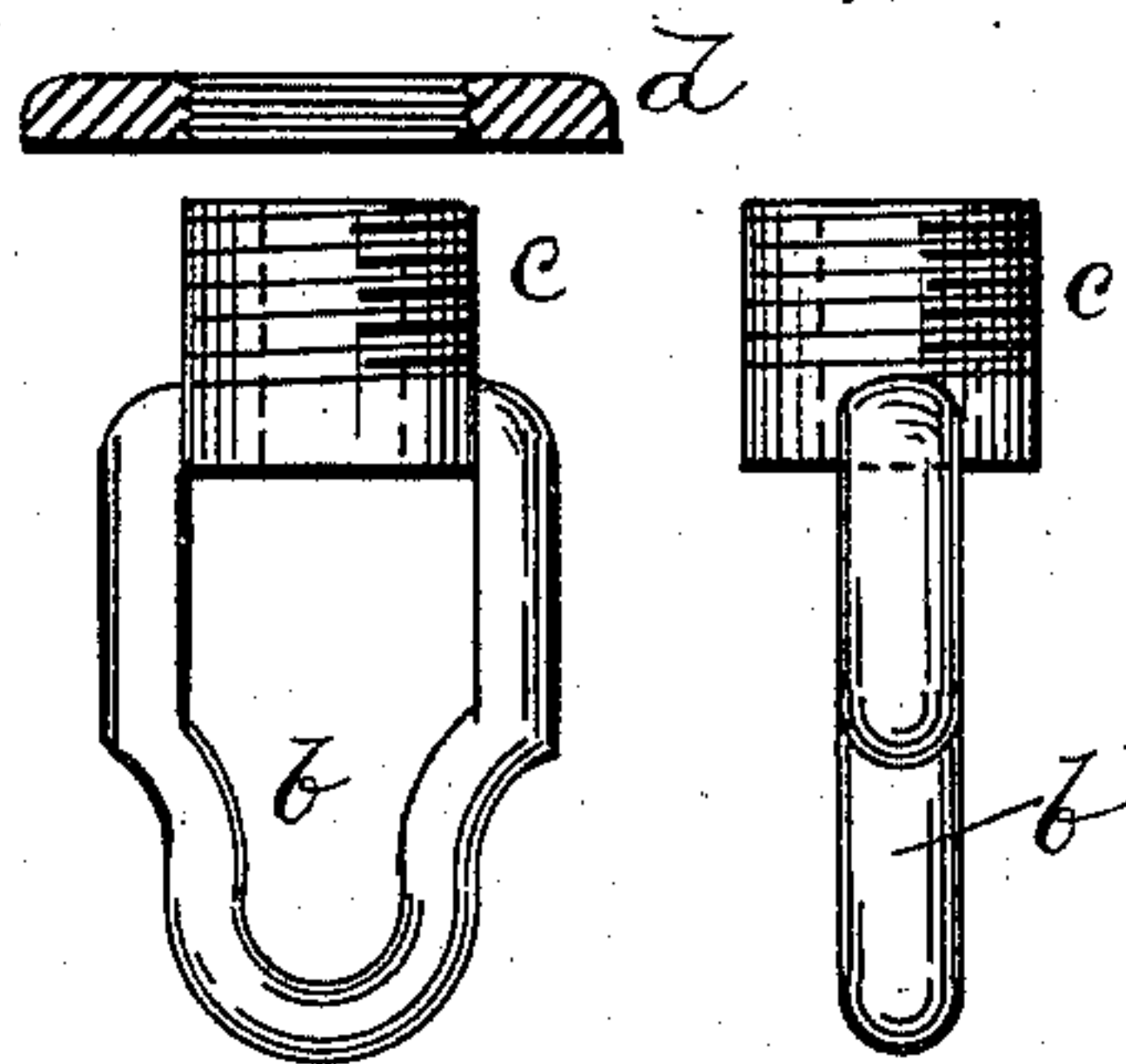


FIG. 3.

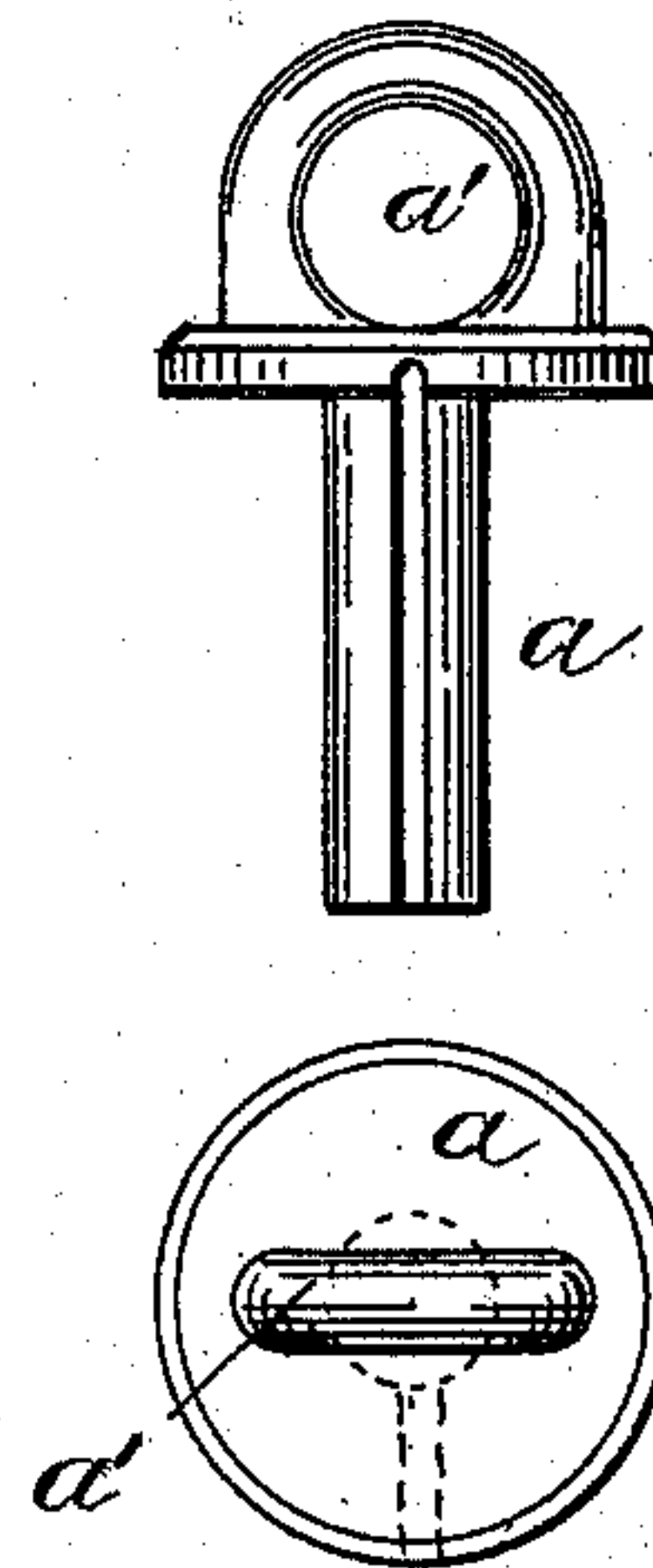
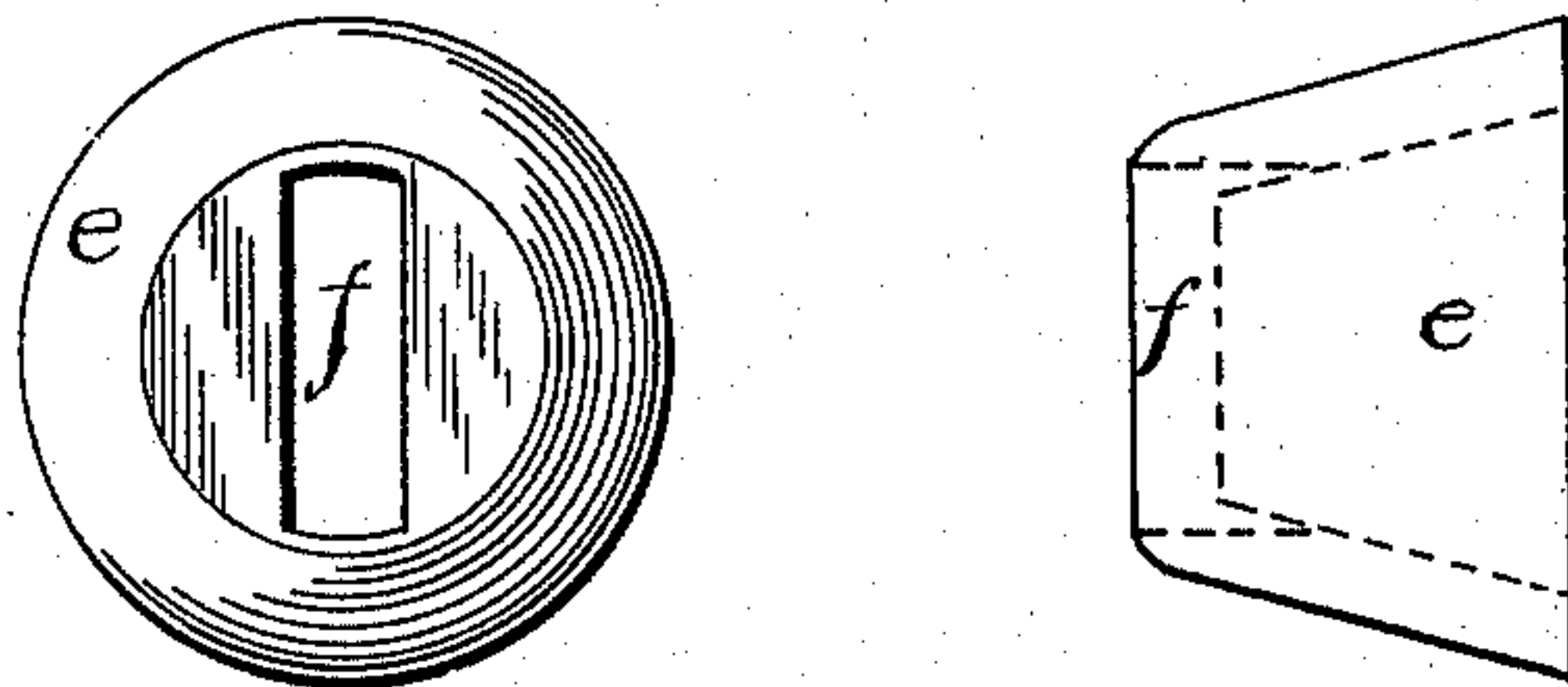


FIG. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

NOBLE W. HARTMAN, OF TOLEDO, OHIO, ASSIGNOR TO WILLIAM C. REH,
OF SAME PLACE.

BUCKET FOR CHAIN-PUMPS.

SPECIFICATION forming part of Letters Patent No. 567,712, dated September 15, 1896.

Application filed January 20, 1896. Serial No. 576,086. (No model.)

To all whom it may concern:

Be it known that I, NOBLE W. HARTMAN, a citizen of the United States, residing at Toledo, Lucas county, Ohio, have invented certain new and useful Improvements in Buckets for Chain-Pumps, of which the following is a specification.

My invention relates to, and its object is, to provide an india-rubber bucket for chain-pumps which may be connected to the chain of the pump by swiveled links, and to provide such bucket with means for expanding the rubber bucket within the stock or tube of the pump by means of the weight and downward pull of the chain and its load. I attain these objects by means of the device hereinafter described, and shown and illustrated in the accompanying drawings, made part hereof, in which—

Figure 1 is a central vertical sectional elevation of my device; Fig. 2 a front and edge view of the screw-threaded link hereinafter referred to, together with a cross-sectional view of its screw-threaded washer; Fig. 3, a side elevation and top plan view of the pin hereinafter referred to, and Fig. 4 a plan view and a central sectional elevation of the expansion ring or plug hereinafter referred to.

Like letters of reference indicate like parts throughout the several views.

In the drawings, *a* is a pin, the head of which is provided with an eye *a'*, and the shank of which has a longitudinal channel or groove, as shown in Fig. 3.

b is a link, one end of which is cylindrical in form, as at *c*, the cylindrical part being bored axially to receive the pin *a*, and being screw-threaded exteriorly to receive a screw-threaded washer *d*.

e is a cup, plug, or ring in the form of a truncated cone, the closed smaller end of the cup being slotted, as at *f*, to receive the lower part of the link *b*.

g is a rubber bucket of the usual hollow frustum form, the smaller end being closed, except for the axial opening therethrough.

The parts above enumerated and described are assembled as follows: The cylindrical part *c* of the link is passed through the axial opening in the rubber bucket from the under side and screwed into washer *d*, clamping the

bucket between the washer and the shoulder of the link. The slot *f* of the expansion-ring *e* is slipped over the lower end of the link, the smaller end of the expansion-ring being pushed up into the interior of the rubber bucket *g*. The shank of the pin *a* is now passed downwardly through the axial bore of the cylindrical part *c* of the link *b* and through the slot *f* in the ring *e*. A small washer *h* (see Fig. 1) is slipped over the downwardly-projecting end of the pin *a*, which end is now peened or upset, thus holding all the parts in the relation to each other shown in Fig. 1. The eye *a'* of the pin *a* is now engaged with a link of the pump-chain, and the lower end of the link *b* is also similarly engaged with another link of the pump-chain, so that the bucket forms part of the endless chain, and the bucket here described is ready for use.

The operation of my device is as follows: The bucket being connected with its chain and in place, the upward pull of the chain within the pump stock or tube is upon the eye *a'* and the resistance or downward pull is upon the link *b*. The upward pull upon the pin *a* draws the expansion-ring upwardly into the conical cavity of the rubber bucket *g*, while the downward pull of the link *b* upon its washer *d* tends to force the rubber bucket downwardly upon the expansion-ring *e*. Thus it will be seen that the two opposing strains upon the pin *a* and the link *b* force the expansion-ring into the conical cavity of the rubber bucket *g*, thus expanding the bucket at its lower end, causing it, when in motion, to fit closely the interior of the pump stock or tube. When the upward pull upon the chain is relieved, the parts resume their normal position, and the rubber bucket *g* by its resiliency resumes its original size. It will also be seen that the pin *a*, with its head resting upon the washer *d*, and having the lower end of its shank riveted or upset under the washer *h*, forms a swivel by means of which the chain may turn freely upon its axis, thus avoiding kinks and twists. The slot in the shank of the pin *a* (see Fig. 3) extends to the edge of the head of the pin and permits the gradual escape of water retained in the pump-stock above the top, thus preventing

freezing of the water in the pump in extremely cold weather.

Having described my invention, what I claim, and desire to secure by Letters Patent,
5 is—

An elastic, conical bucket for chain-pumps, having a conical cavity therein, in combination with a conical expansion-piece within said cavity, having an opening through its
10 apex end, a pin loosely engaging, at one end,

said expansion-piece and at its other end having an eye or link, a washer resting upon the apex end of the bucket, and a link secured to said washer and extending through the opening in said expansion-piece, substantially as
15 and for the purpose specified.

NOBLE W. HARTMAN.

Witnesses:

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