

A. D. CROSBY.
BUCKETS FOR CHAIN-PUMPS.

No. 172,395.

Patented Jan. 18, 1876.

Fig. 1.

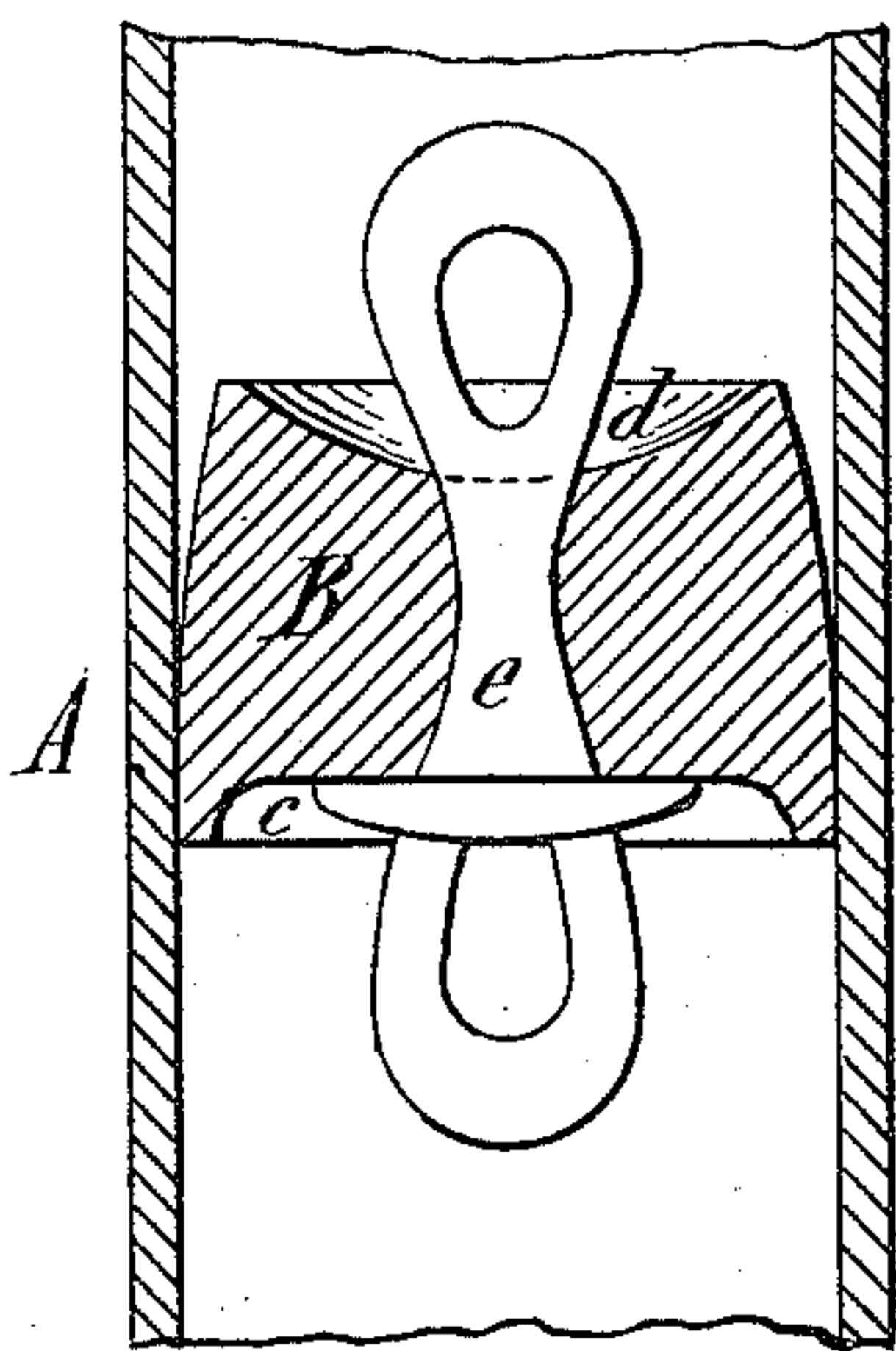
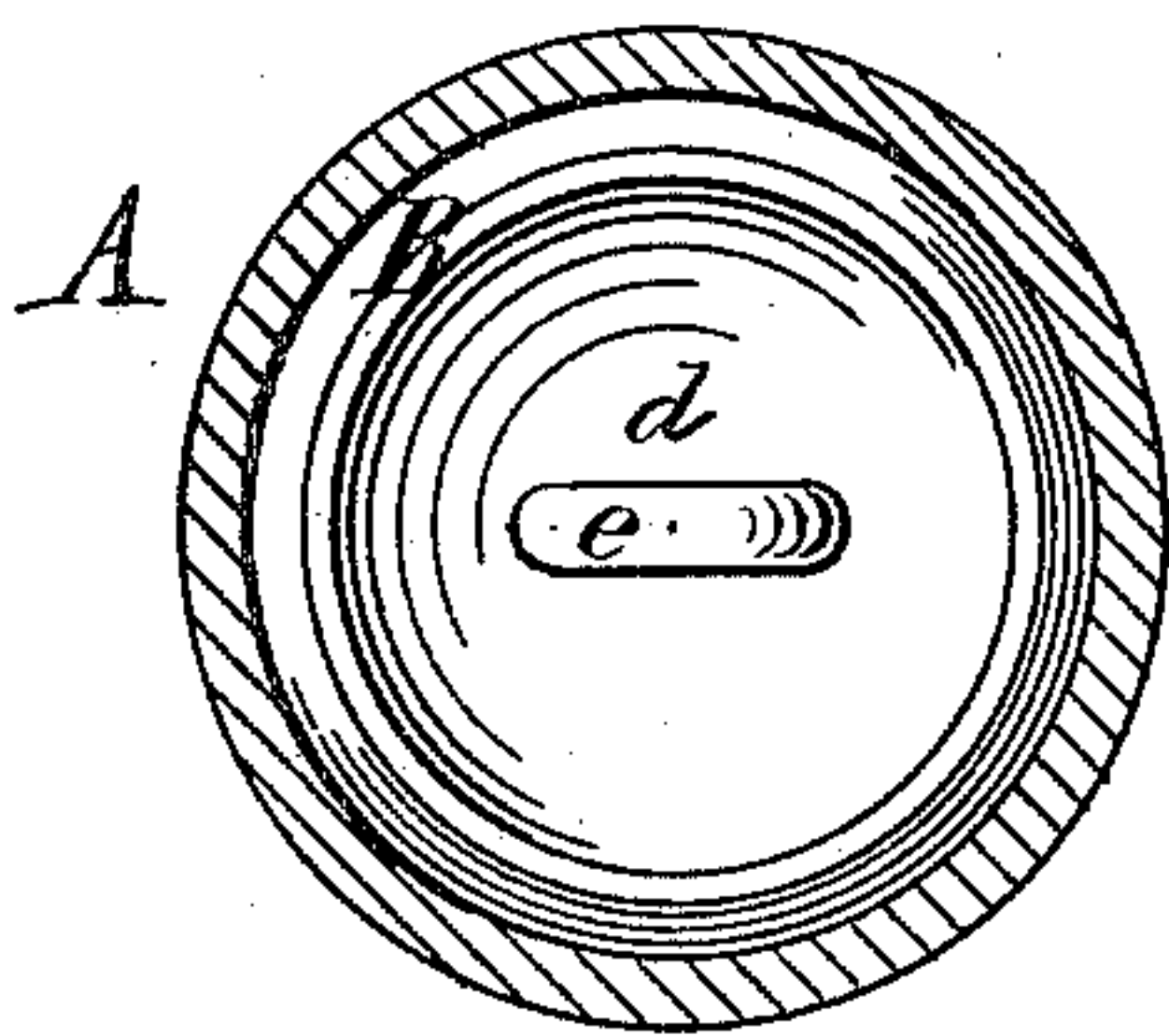


Fig. 2.



Edward Wilhelm
Charles Buckhite

Witnesses.

Adon D. Crosby
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UNITED STATES PATENT OFFICE

ADON D. CROSBY, OF CUBA, NEW YORK.

IMPROVEMENT IN BUCKETS FOR CHAIN-PUMPS.

Specification forming part of Letters Patent No. **172,395**, dated January 18, 1876; application filed December 14, 1875.

To all whom it may concern:

Be it known that I, ADON D. CROSBY, of Cuba, in the county of Allegany and State of New York, have invented certain Improvements in Buckets for Chain-Pumps, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates more particularly to that class of buckets which consist of a cast block of india-rubber, or other elastic material, made of semi-spherical, conical, or similar form, and secured to a chain attached centrally to the bucket.

In these buckets, as heretofore constructed, with a convex or conical upper surface, the pressure of the column of water resting upon the buckets would tend to flatten or expand the same, thereby causing them to bind in the pump barrel or tube, and requiring considerable force to overcome the friction produced thereby.

The object of my invention is to remedy this defect; and it consists of a bucket for chain-pumps, composed of india-rubber or other elastic material, and constructed at the top with a concave or tapering recess, whereby the weight of the column of water resting upon the bucket is concentrated centrally upon the link or chain, while the circumference or side of the bucket is correspondingly relieved, and prevented from binding in the pump-barrel.

In the accompanying drawing, Figure 1 is a vertical section, and Fig. 2 a top-plan view, of one of my improved buckets.

Like letters of reference refer to like parts in each of the figures.

A represents the vertical pump barrel or tube, and B one of the buckets secured to a suitable chain at proper distances apart. The bucket B consists of a cast-rubber block, preferably of the form of a spherical segment or truncated cone, so that the sides thereof converge from the base upward. *c* is a recess, preferably formed in the bottom of the buck-

ets, so as to leave a circular elastic flange projecting from the body of the bucket downward and outward, whereby a tight fit of the bucket in the pump-tube is obtained. *d* is a concave or tapering recess or cavity formed in the upper side of the bucket, so as to be deepest in the center, and made of such size as to occupy the greater portion of the upper surface of the bucket, leaving only a comparatively narrow annular space between its circumference and the pump-tube. *e* is the metallic link secured centrally in the bucket, for connecting the latter to the pump-chain, and provided on the under side of the bucket with a disk or washer for better supporting the bucket. The concave recess *d* in the upper side of the bucket serves to direct the weight of the column of water above the recess toward the center of the bucket, where it is directly received by the chain, while the inclined and feathering side of the bucket receives only that pressure which is exerted by the column of water between the circumference of the recess *d* and the pump-barrel, which pressure is comparatively small, and not sufficient to affect the shape of the elastic bucket to any considerable or injurious extent.

From the foregoing it will be seen that the side and lower edge of the elastic bucket are relieved of the greatest portion of the pressure to which they were heretofore subjected, whereby the flattening of the bucket and its binding in the pump-tube are most effectually prevented.

I claim as my invention—

A bucket for chain-pumps, composed of india-rubber or other elastic material, and provided in its upper side with a central concave recess, *d*, for relieving the sides of the bucket from excessive pressure, substantially as herein set forth.

A. D. CROSBY.

Witnesses:

EDWARD WILHELM,
CHARLES BUCHHEIT.