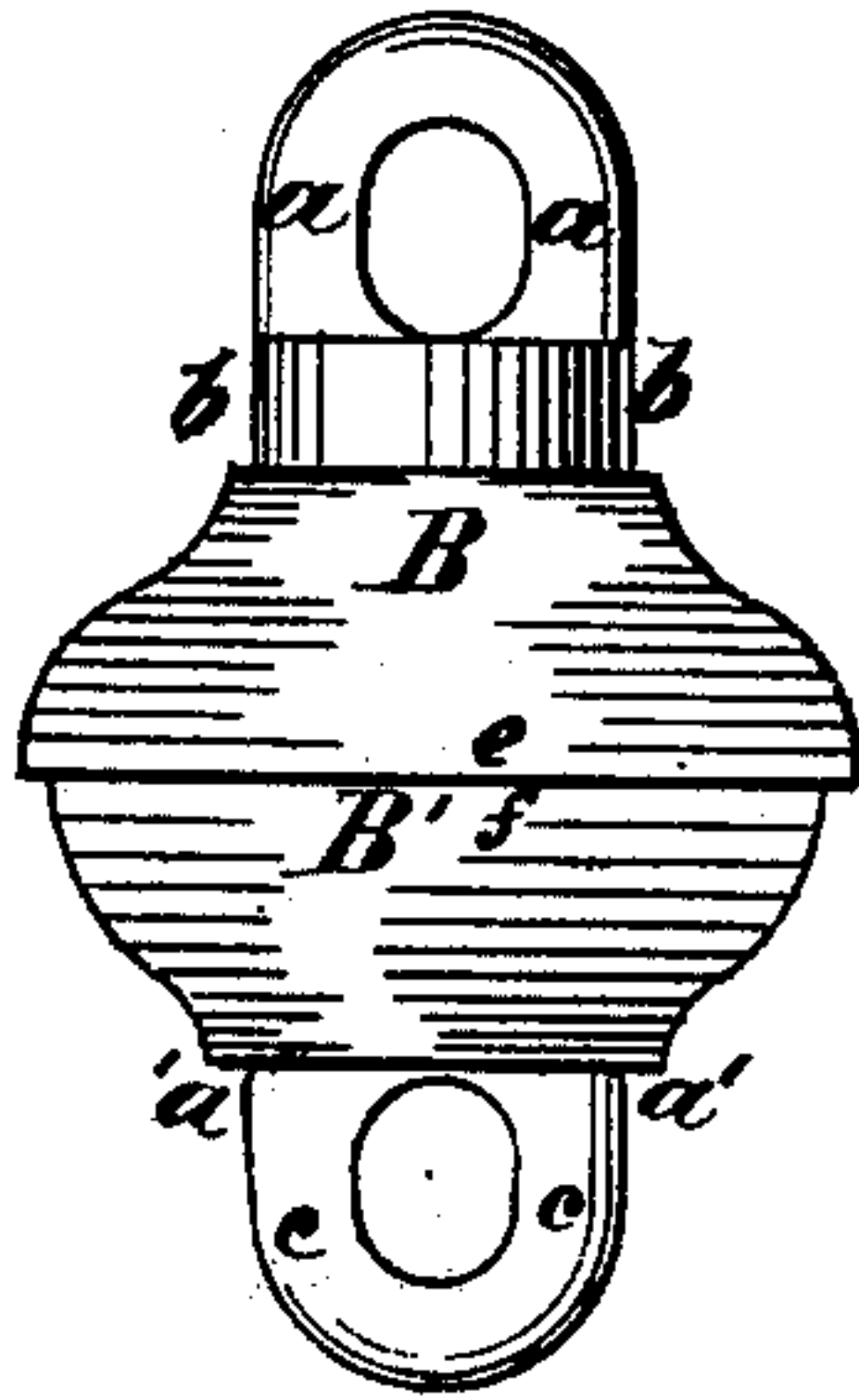


E. WHITE.  
Chain-Pump Bucket.

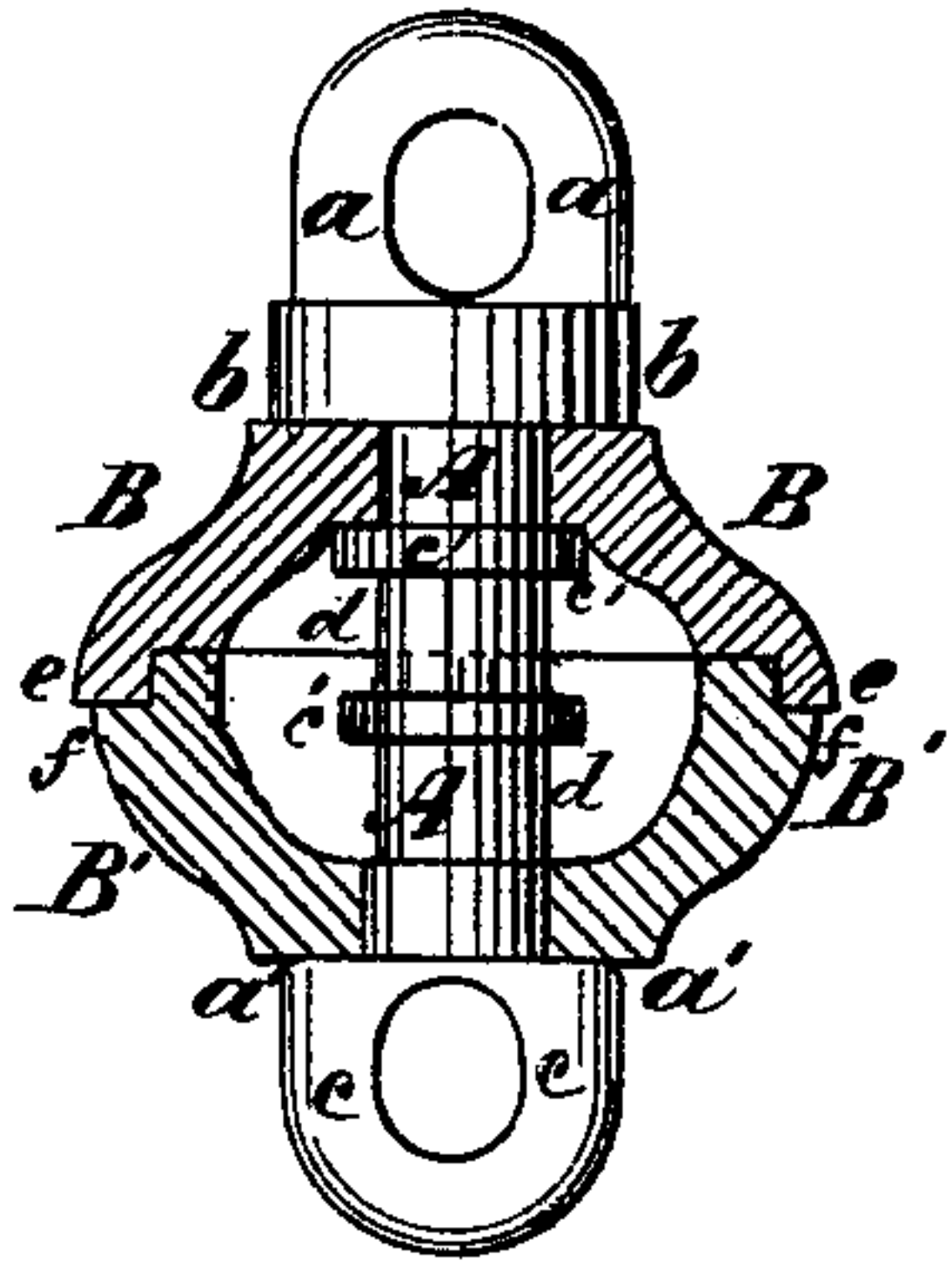
No. 205,819.

Patented July 9, 1878.

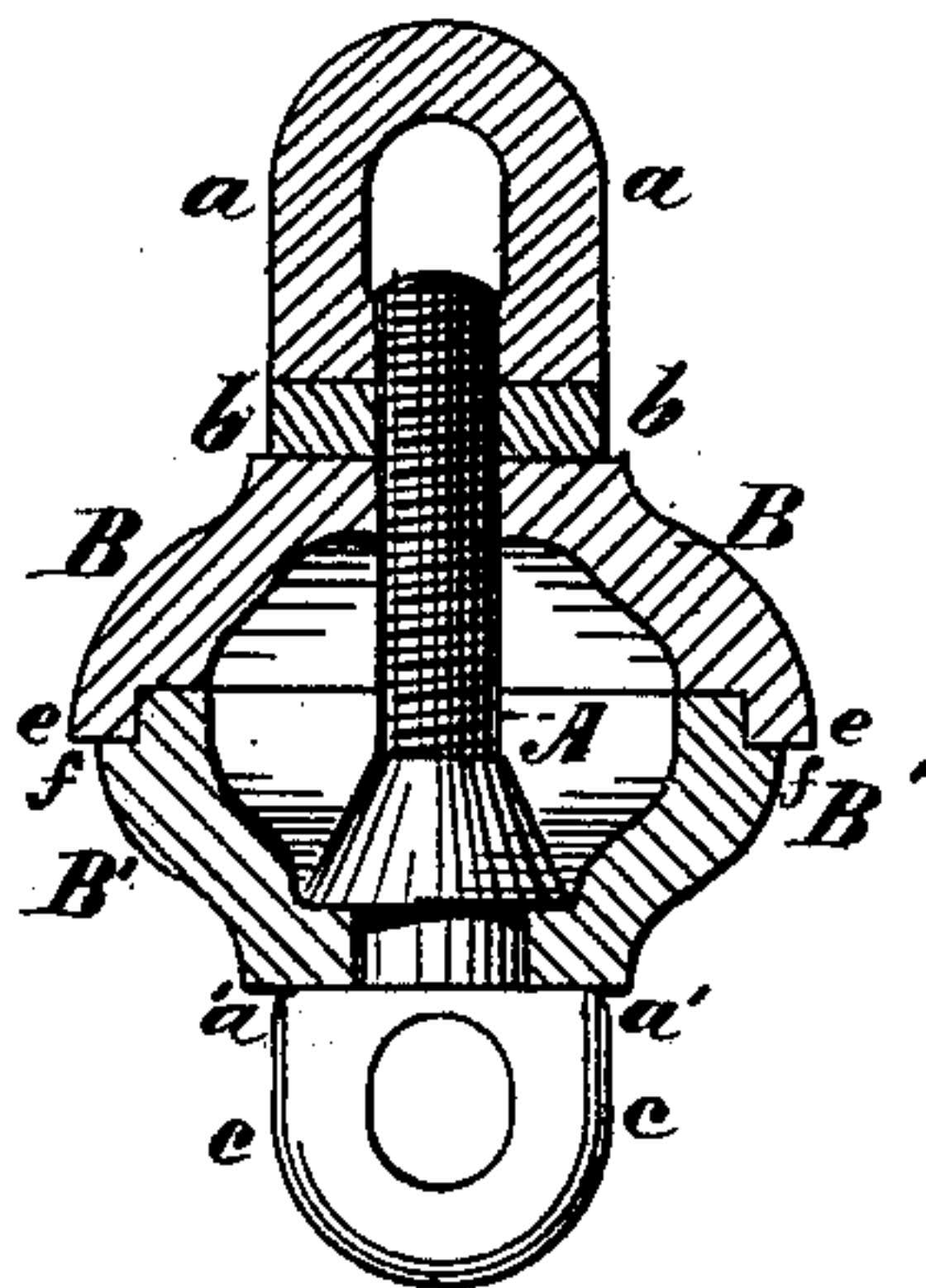
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses:*  
*Henry Eichling*  
*H. Wells Jr.*

*Inventor*  
*Elbert White*  
*per James A. Whitney*  
*Atty.*

# UNITED STATES PATENT OFFICE.

ELBERT WHITE, OF STAMFORD, CONNECTICUT.

## IMPROVEMENT IN CHAIN-PUMP BUCKETS.

Specification forming part of Letters Patent No. 205,819, dated July 9, 1878; application filed January 22, 1878.

*To all whom it may concern:*

Be it known that I, ELBERT WHITE, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain Improvements in Buckets for Chain-Pumps, of which the following is a specification:

This invention relates to that class of buckets for chain-pumps which are made of india-rubber; and its object is to provide a bucket of the class specified which may be adjusted to a greater or less diameter, as occasion may require, which may be made to compensate for any wear or loss of elasticity incurred from long use, and which will possess the form and characteristics best adapted to its most efficient operation when applied to the pump.

Figure 1 is a side view of a bucket made according to my invention. Fig. 2 is a central longitudinal sectional view of the same. Fig. 3 is a similar view of the said bucket in modified form.

Having reference first to Figs. 1 and 2, A is a metallic shank, having formed in one piece therewith at one end a loop, *a*, and a circular disk or shoulder, *b*, and at the other end a second loop, *c*, the inner surface of which forms bearings *a'*. On the central part or stem *d* of this shank A are one or more circumferential shoulders, *c'*. It is, of course, to be understood that the links *a c* provide means whereby the bucket may be affixed in place upon the chain.

B B' indicate the two halves or sections of a hollow spheroidal or otherwise suitably shaped bulb, of india-rubber or any other appropriate material, and which constitutes the body of the bucket. The adjoining edges *e f* of these two sections are rabbeted to fit upon each other, as shown in Fig. 2, and also in Fig. 3, the edge *e* of the section B—i. e., the section which is uppermost during the operation of the pump—projecting beyond the circumference, as represented in each of the figures of the drawing. Each of these sections has a central hole or opening, which enables it to be slipped upon the shank A and brought into the position shown in the drawing.

When thus applied to the shank the ends of the bulb or body B B' will be compressed

between the disk or shoulder *b* and the bearings *a'*, so that the central portion of said bulb or body is expanded in proportion to the degree of compression exercised upon the bulb or body aforesaid.

The edge *e*, lapping beyond the edge *f*, as just explained, promotes or increases the elasticity of the said body at the circumference, and adds to the facility with which such adjustment of the diameter of the bulb or body is secured.

In case the bulb or body should lose its elasticity, or for any other reason require a higher degree of compression than is afforded between the shoulder *a* and the bearings *a'*, one or the other of the sections may be pushed inward until it is caught and held by the adjacent shoulder *c'*, which confines it with an expanded circumference proportioned to the degree of its compression.

It is to be observed that the rabbets in the edges of the sections assist materially in keeping said edges in due relation with each other.

In Fig. 3 the shank A is of modified construction, the loop *a* being provided upon a nut, *g*, which is screwed upon one end of the shank, and the bulb may be compressed by screwing said nut inward.

I am aware that buckets for chain-pumps have been proposed, in which a semispheroidal cup of larger diameter has been arranged with its thinned edges overlapping the edges of a smaller spheroidal cup in such manner that by compressing the two together the edges of the larger cup would be expanded; but in this combination only the larger cup is expanded. The two cups do not mutually support each other at the edges, and the bucket has a much less firm and solid periphery when expanded than when the edges, being mutually rabbeted, mutually sustain each other, and both expand together, such combination of a larger and smaller cup with the thinned edges of the former merely lapping those of the latter. I therefore do not claim this construction; but

What I claim as my invention is—

1. In a rubber bucket for chain-pumps, the bulb or body composed of sections B B', placed upon an eyed screw-shank, A, and with the circumferential edge of one section rabbeted



upon the edge of the other, the whole held and adjusted by means of a nut upon said screw-shank, substantially as described.

2. Hollow buckets or valves of two sections, of spheroidal form, and rabbeted together, forming an adjustable bucket, substantially as described.

3. In a bucket for chain-pumps, the bulb or body composed of the sections B B', placed upon a shank, A, and with the edges of the

two sections rabbeted upon each other, substantially as and for the purpose set forth.

4. The shank A, constructed with the loop *a*, shoulder *b*, loop *c*, and bearings *a'*, in combination with the two sections B B', substantially as herein set forth.

ELBERT WHITE.

Witnesses:

H. WELLS, Jr.,

HENRY EICHLING.