(No Model.)

A. JOHNSTON.
Chain Pump Bucket.

No. 238,911. Patented March 15, 1881.

Fig. 1.

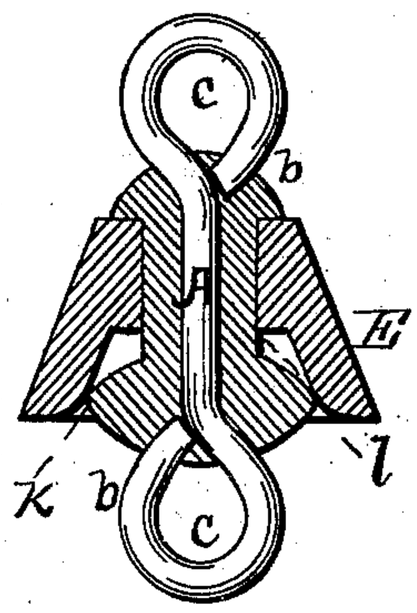


Fig. 2.

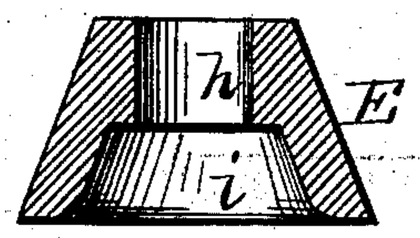


Fig. 3.

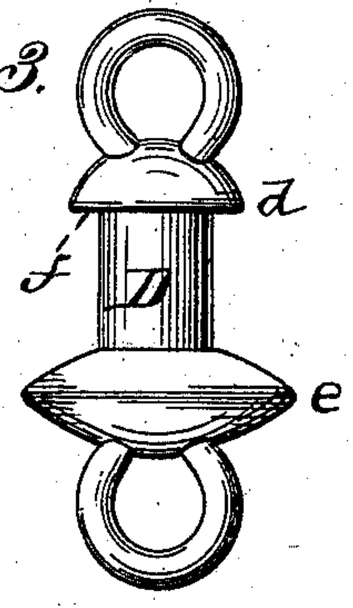
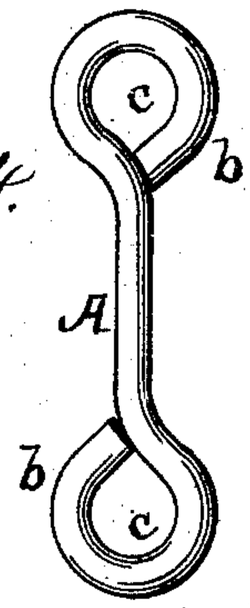


Fig. 4.



WITNESSES.

Robert Ewett

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UNITED STATES PATENT OFFICE.

ABNER JOHNSTON, OF SIDNEY, ASSIGNOR TO HENRY E. ST. JOHN, OF WALTON, NEW YORK.

CHAIN-PUMP BUCKET.

SPECIFICATION forming part of Letters Patent No. 238,911, dated March 15, 1881.

Application filed April 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, ABNER JOHNSTON, a citizen of the United States, residing at Sidney, in the county of Delaware and State of New York, have invented certain new and useful Improvements in Buckets for Chain-Pumps; 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to the manufacture of buckets for that class of pumps known as "chain-pumps."

The object of the improvements is to make a practical self or automatic expanding valve, and to prevent the rubber cap or hood from slipping on its core; and the novelty consists in the construction of the members constituting the chain-pump bucket, as will be hereinafter more fully set forth, and pointed out in the claim.

In the annexed drawings, forming a part of this specification, the letter A represents the metallic core, which is manufactured in the following manner: I take a piece of No. 5 galvanized wire of a proper length; then bend the ends *b* to form the eyes C, substantially as shown in Fig. 4 of the drawings. This formed link B is laid in the mold formed by a pattern having the shape or configuration as shown in Fig. 3 of the drawings, and the cast metal poured in so as to surround the link and fasten the eye ends into the body of the cast metal, substantially as shown in Fig. 1 of the drawings.

It will be observed (see Fig. 3) that I form on the upper and lower edges of the cast-metal body D flanges *d e*, the upper flange, *d*, being convex on its upper surface and plane on its under surface, and the flange *e* being convexo-convex. The shoulder-surface *f* of the upper flange will prevent the water from passing between the rubber cap and the metallic body to disturb the rubber hood from its seat, and its convex surface will conduct the water upon the conical surface of the rubber hood.

The rubber cap or hood E (see Fig. 2) is formed with an exterior surface of a cylindro-conical shape and an interior surface of a cylindro-conical and cylindro-vertical. The inner cylindro-vertical surface, *h*, snugly fits the cylindro-vertical walls of the metallic body, and the inner cylindro-conical surface, *i*, fits over the biting-edge *k* of the flange *e*, as shown in Fig. 1 of the drawings.

It will be noticed that the depth of the vertical wall *h* of the rubber hood is less than the length of the vertical walls *l* of the cast-metal body. The object of this difference in depth and length is to permit the rubber cap to be automatically adjusted to form a vacuum in the pipe; also, to provide for adjustment in case of wear. The biting-edge of the convexo-convex flange prevents the rubber hood from slipping and binding when sufficiently tight to form vacuum in pipe or pump-barrel.

What I claim as my invention, and desire to secure by Letters Patent, is—

The improved chain-bucket hereinbefore described, consisting of the link A, with turned-up eyes, embodied in the cast-iron body D, said body having the upper convex flange, *d*, and the lower convexo-convex flange, *e*, with the rubber hood E, having the exterior cylindro and vertical exterior surfaces.

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

ABNER JOHNSTON.

Witnesses:
T. L. MARSHALL,
JOHN H. COONS.