W. C. BARKER.

CHAIN PUMP BUCKET.

No. 173,881. Patented Feb. 22, 1876.

Fig. 1

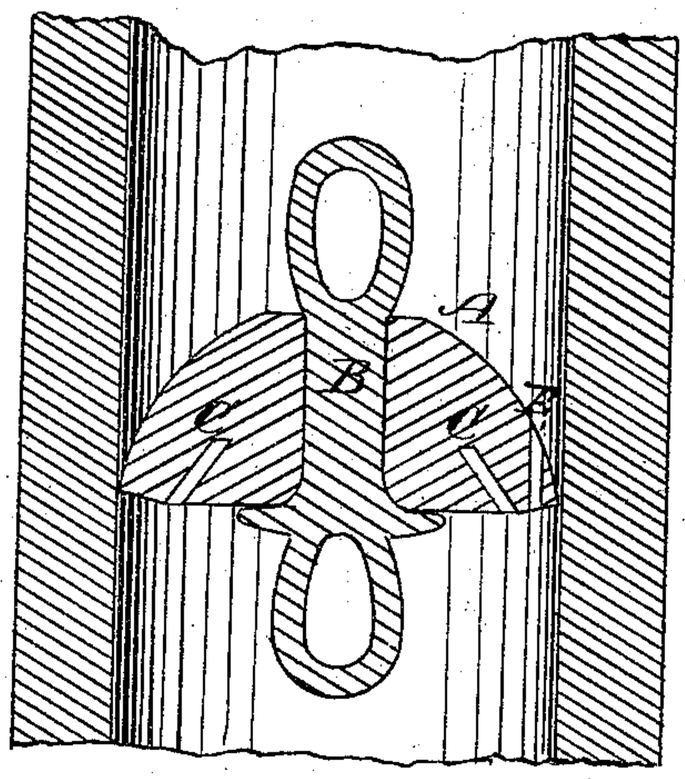


Fig. 2.

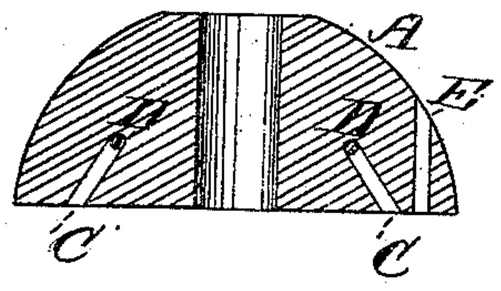
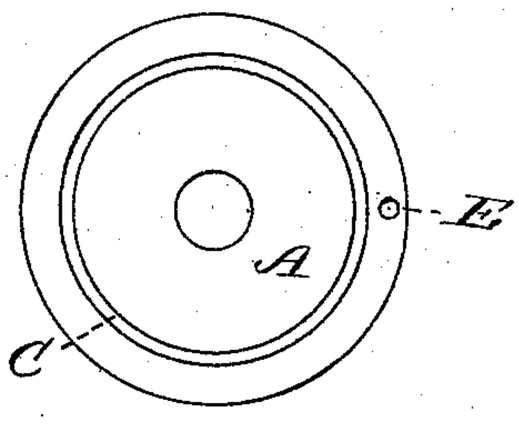


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM C. BARKER, OF MILLPORT, NEW YORK.

IMPROVEMENT IN CHAIN-PUMP BUCKETS.

Specification forming part of Letters Patent No. **173,881**, dated February 22, 1876; application filed January 17, 1876.

To all whom it may concern:

Be it known that I, WILLIAM C. BARKER, of Millport, Chemung county, New York, have invented a new and useful Improvement in Buckets for Chain-Pumps; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part hereof.

My invention consists of an elastic bucket for chain-pumps, having a groove or slit in its lower surface, passing around equidistant at all points from and contiguous to the edge, to impart elasticity to the edge of the bucket; also, of an elastic bucket for chain-pumps, having a groove or slit in its lower surface, passing around equidistant at all points from and contiguous to the edge, and sunk to such a depth as to admit of the introduction of a thin strip of cord, wire, or other material, to swell out the edge of the bucket; also, of an elastic bucket for chain-pumps, having a groove or slit in its lower surface, passing around equidistant at all points from and contiguous to the edge, and sunk to such a depth as to admit of the introduction of a thin strip of cord, wire, or other material, this groove being slanted at such an angle with the horizontal plane of the bucket that the cord or other material so inserted will rest upon the slant; also, of the process of expanding a rubber bucket by means of a strip introduced into a slit passing around the lower surface of the bucket equidistant at all points from and contiguous to the edge.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the drawings, Figure 1 is a cross-section of my improved bucket, showing the link and pump-tube; Fig. 2, a cross section of my bucket, showing the cord or wire inserted in the groove; Fig. 3, a bottom view, showing the groove.

A is the body of the bucket; B, the link; C, the groove; D, the cord or wire; E, the drip notch or hole.

The body A of my bucket is of rubber, and is cast in a mold. The groove C and the opening for the reception of the link are cast with it, as may also be the drip-hole, but this latter I prefer to punch. This groove C is so cast that the body of rubber circumscribed by it forms the upright frustum of a cone—that is, the groove in the direction of its depth recedes or inclines toward the link which passes through the bucket. It may be made to incline outwardly with like results, but I prefer the inward inclination, and that at a sharper angle with the horizontal plane of the bucket than is made by the recession of the side of the bucket from the bearing-edge, as such a plan makes the distance through the rubber or material of the bucket, from the upper part of the groove (the bucket being upright) to the side, greater than that from its lower part to the outer edge of the bucket at the base. This peculiarity of construction will tend to throw the lower outer edge of the bucket outward with greater certainty than would be the case were the groove vertical in its depth, or inclined outward toward the sides of the bucket. Such size of the wire or cord D may be used as will throw the lower edge of the bucket out to the distance required. It may be easily seen that the object is thus readily obtained. The wire or cord is cut to a length equal to the circumference of the circle formed by the upper part of the groove, and is pushed in place by a knife or other convenient device. Then, as it clasps the upper part of the frustum of a cone within it, and is moreover held by the pressure of the rubber around it, the wire or cord will remain in place until it is picked out purposely. This cord or wire is not in the bucket when it is first used, of course, as the buckets are made to fit certain bores of tubing, but whenever, by the friction upon the tubing, the bucket becomes too small for the bore, cord or wire of such thickness may be pushed into the groove to swell the bearing-edge of the bucket outward, as will attain the desired end, to wit: a perfect refit of the worn bucket to the groove. This groove, which I make about three-eighths of an inch in depth, also serves the purpose of leaving the bearing-edge of the bucket more elastic than it would be if the bucket were solid and full across the bottom.

The bevel upon the edge of the bucket is an advantage, in that, where the cord or wire

is inserted, the action of the cord lifts the surrounding rubber lip outward in a line (in cross-section,) about from the point where the cord rests to where the bearing-edge of the bucket is left by the bevel; thus the action of the cord is to throw the bearing-edge directly outward. The result would be nearly the same without the level, but the latter is more effective.

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

1. An elastic bucket for chain-pumps, having a groove or slit in its lower surface, passing around equidistant at all points from and contiguous to the edge, to impart elasticity to the edge of the bucket, substantially as described.

2. An elastic bucket for chain-pumps having a groove or slit in its lower surface passing around equidistant at all points from and contiguous to the edge, and sunk to such a depth as to admit of the introduction of a thin strip of cord, wire, or other material to swell out the edge of the bucket, substantially as described.

3. An elastic bucket for chain-pumps, having a groove or slit in its lower surface passing around equidistant at all points from and contiguous to the edge, and sunk to such a depth as to admit of the introduction of a thin strip of cord, wire, or other material, this groove being slanted at such an angle with the horizontal plane of the bucket that the cord or other material so inserted will rest upon the slant, substantially as described.

4. The process of expanding a rubber bucket by means of a strip introduced into a slit passing around the lower surface of the bucket equidistant at all points from and contiguous to the edge, substantially as described.

WILLIAM C. BARKER.

Witnesses:

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