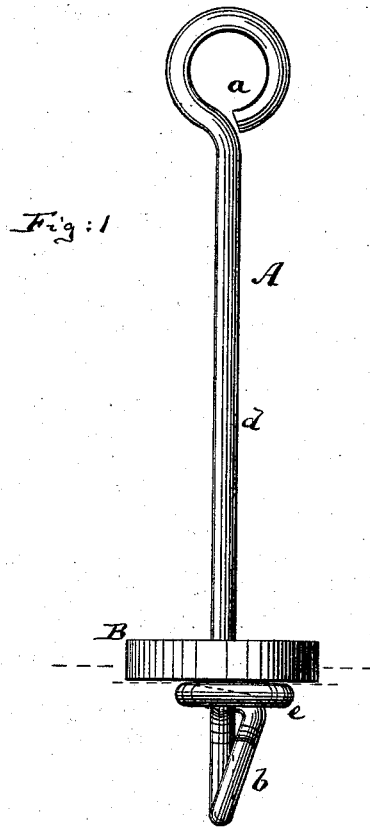


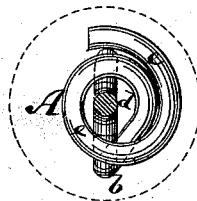
W. A. ROOT.  
Link for Chain-Pumps.

No. 219,176.

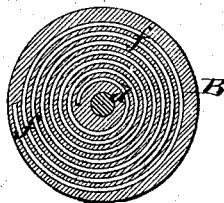
Patented Sept. 2, 1879.



*Fig: 2*



*Fig: 3*



Witnesses:  
*Willy G. Schults.*  
*John C. Dunbridge*

Inventor:  
*Wm. A. Root*  
by his attorney  
*Ans. Brieseman*

# UNITED STATES PATENT OFFICE.

WILLIAM A. ROOT, OF NEW YORK, N. Y.

## IMPROVEMENT IN LINKS FOR CHAIN-PUMPS.

Specification forming part of Letters Patent No. **219,176**, dated September 2, 1879; application filed April 1, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM A. ROOT, of New York city, county and State of New York, have invented a new and Improved Link for Chain-Pumps, of which the following is a specification.

Figure 1 is a side view of my improved link for a chain-pump; Fig. 2, a cross-section of the metallic part thereof without the washer or bucket part. Fig. 3 is a cross-section thereof through the washer or bucket.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a new construction of link and bucket for chain-pumps.

It consists in a new manner of supporting the bucket on the link by properly shaping the latter, and also in making the bucket of a piece of rubber, and in stiffening the same by an inlay of coiled or other wire, all as herein-after more fully described.

The letter A represents one link of the chain. It is made of stout wire, and looped at top and bottom to form eyes *a* and *b*, wherewith to establish connection with the adjoining links of the chain.

Between the eyes *a* and *b* the body *d* of the link is straight, as shown, thereby producing a light and strong chain.

The lower part of the link is formed (by properly bending the wire of which it is composed spirally or otherwise) into a shoulder or seat, *e*, for the support of the washer or bucket B. This bucket is a disk of india-rubber or equivalent gum, of proper thickness and diameter, and is perforated in the center, so that it may be strung upon the link. Its elastic

property will cause it to firmly clasp the body *d* of the link, and to form a water-tight joint around the same, and also within the pump-barrel.

The seat *e* of the link will impart the proper strength to the bucket.

For greater strength and rigidity I embed within the rubber bucket B a coil, *f*, of wire, as shown in Fig. 3, or arrange the wire therein in other suitable form.

It will be seen that my link is but one piece, likewise my bucket, and that a chain thus made can be produced at small cost, and will, nevertheless, render effective service.

I claim—

1. The pump-link bent spirally near one end to form the seat *e* above the lower eye, *b*, substantially as specified.

2. In a chain-pump, the chain-link A, made with eyes *a b* at the ends, and straight body *d* of single thickness between said eyes, and with seat *e*, for the reception of the bucket, substantially as specified.

3. The combination of the elastic disk or bucket B with the chain-link A, having body *d*, of single thickness, and seat *e*, substantially as herein shown and described.

4. The circular elastic pump-bucket B, constructed with a metal core or warp, which is embedded in and entirely surrounded by the elastic portion, substantially as herein shown and described.

WILLIAM A. ROOT.

Witnesses:

T. B. MOSHER,  
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