(No Model.)

J. C. KEARNS.

CHAIN PUMP.

No. 283,894. Patented Aug. 28, 1883.

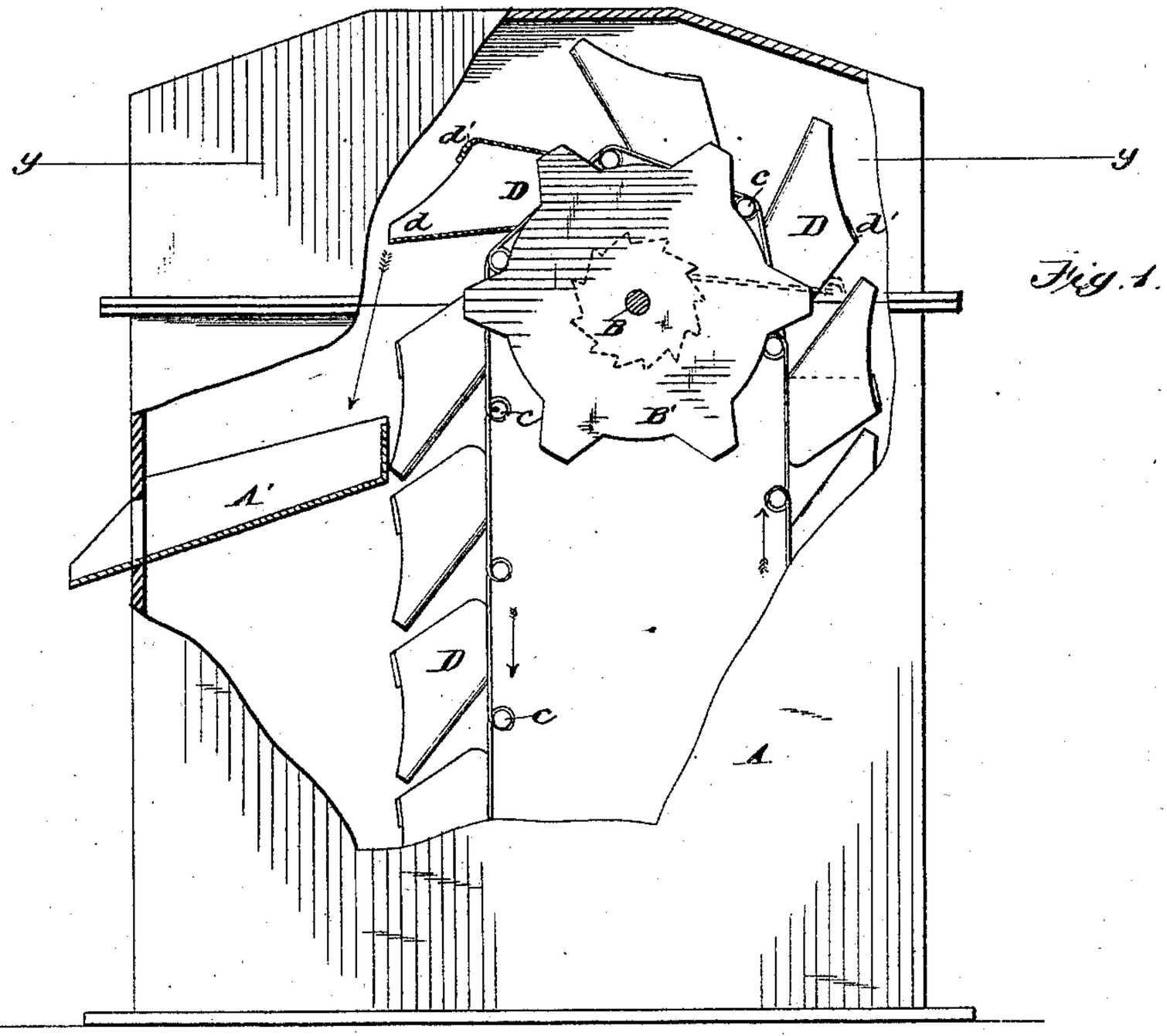


Fig. 1.

Fig. 2

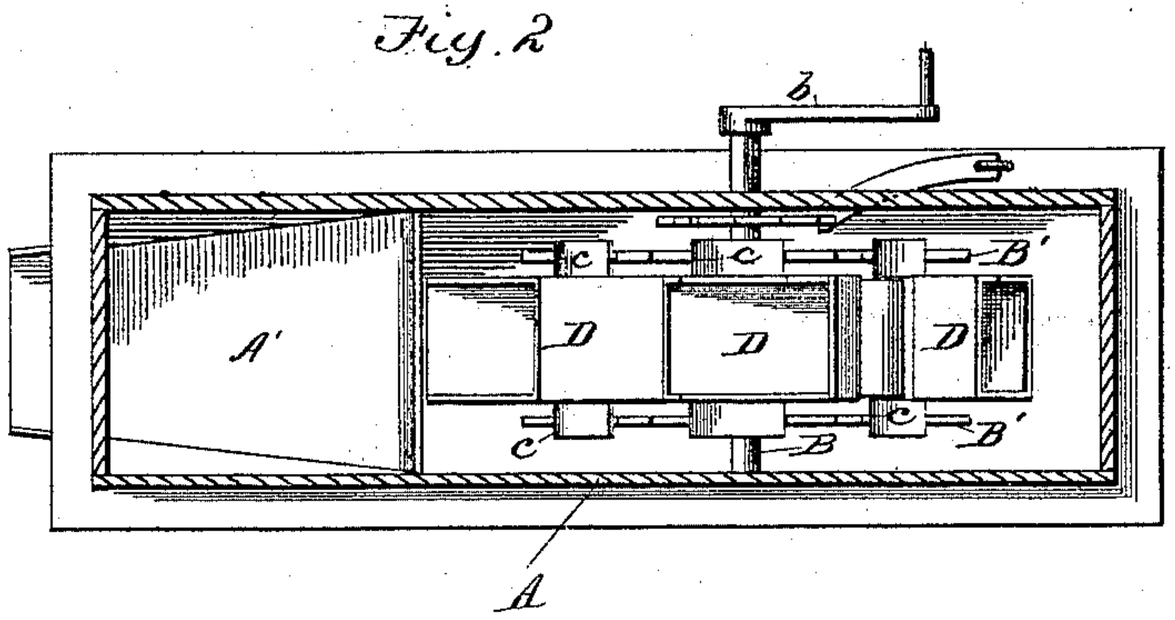
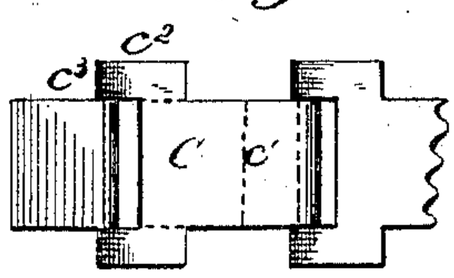


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN C. KEARNS, OF MAITLAND, PENNSYLVANIA.

CHAIN-PUMP.

SPECIFICATION forming part of Letters Patent No. 283,894, dated August 28, 1883.

Application filed February 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. KEARNS, a citizen of the United States, residing at Maitland, in the county of Mifflin and State of Pennsylvania, have invented certain new and useful Improvements in Chain-Pumps; and I do 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 acccompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to water-elevators; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The invention belongs to that class of water-elevators in which an endless chain having cups or buckets is employed, and the essential features are fully illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is an elevation of the overground structure, broken away to show the arrangement of windlass, chain, and buckets; Fig. 2, a horizontal section through the line *y y* of Fig. 1; and Fig. 3, a detail showing the construction of the links which form the body of the chain.

Referring to the drawings, in which similar letters of reference indicate like parts in all the figures, A represents the above-ground structure, to which is secured a spout or way, A′, and in which is properly journaled the shaft B of the sprocket-drum or windlass B′.

C designates the links of the endless chain, which passes over the drum B′, and each link is provided with a cup or bucket, D. These links C are cut from a single piece of sheet metal, and are formed with a part, c', projecting in one direction, and a wider portion, c^2, cut away at c^3. The part c' is of a width to allow it to fit snugly in the recess c^3, and the parts c^2 project laterally to engage the teeth or sprockets of the drum B′. Both the parts c' and c^2 are rolled inwardly transversely to the line of the chain and engage around bars *c*, as shown, the part c' operating in the recess c^3 of the part c^2 of the preceding link, and the part c^2 forming the recess for the succeeding link, as well as sprocket-engaging projections. Upon each of these links is secured a peculiar bucket, D. These buckets, owing to their reversed positions when in service, must be of such form and construction as to carry a maximum quantity of water on their upward traverse, to have a spout which will direct the water clearly and fairly into the trough A′ without waste, and which shall be so arranged obliquely to the vertical line of the chain that they will avoid touching the trough in their passage and lap one another, as shown. To these ends the frames of the buckets are arranged at an angle of approximately fifty degrees from the vertical plane of the chain, and each is formed with a long side, *d*, which forms the spout, and a short side having a lip, *d′*. This lip stands nearly vertical when the bucket is on the upward traverse, and is of importance in assisting the bucket to hold a larger quantity of water. In the construction and arrangement of these links and buckets lie the gist of this invention.

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

1. In a water-elevator, the endless chain, formed of links C, cut from a single piece of sheet metal to form a part or tongue, c', and a wide portion, c^2, having a recess, c^3, combined with the transverse bars *c* and adapted to serve in series, as set forth.

2. The buckets D, secured to the links C and lapping one another, as described, and provided with spout *d* and lip *d′*, the said buckets being secured to the links at an angle, and adapted to serve as and for the purposes set forth.

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

JOHN C. KEARNS.

Witnesses:
D. W. WOODS,
T. M. UTTLEY.