

(No Model.)

C. O. FRYE.
PUMP.

No. 261,918

Patented Aug. 1, 1882

Fig. 1.

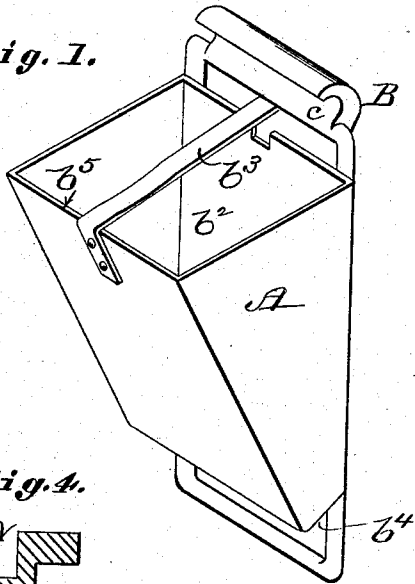


Fig. 2.

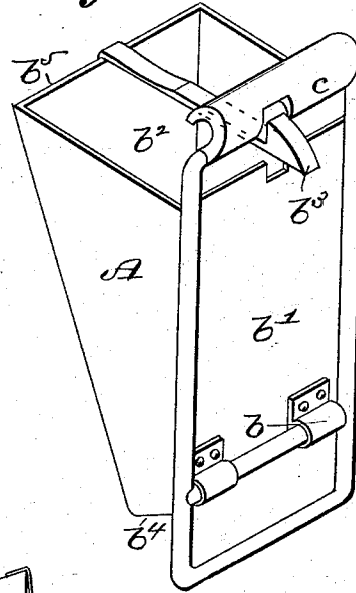
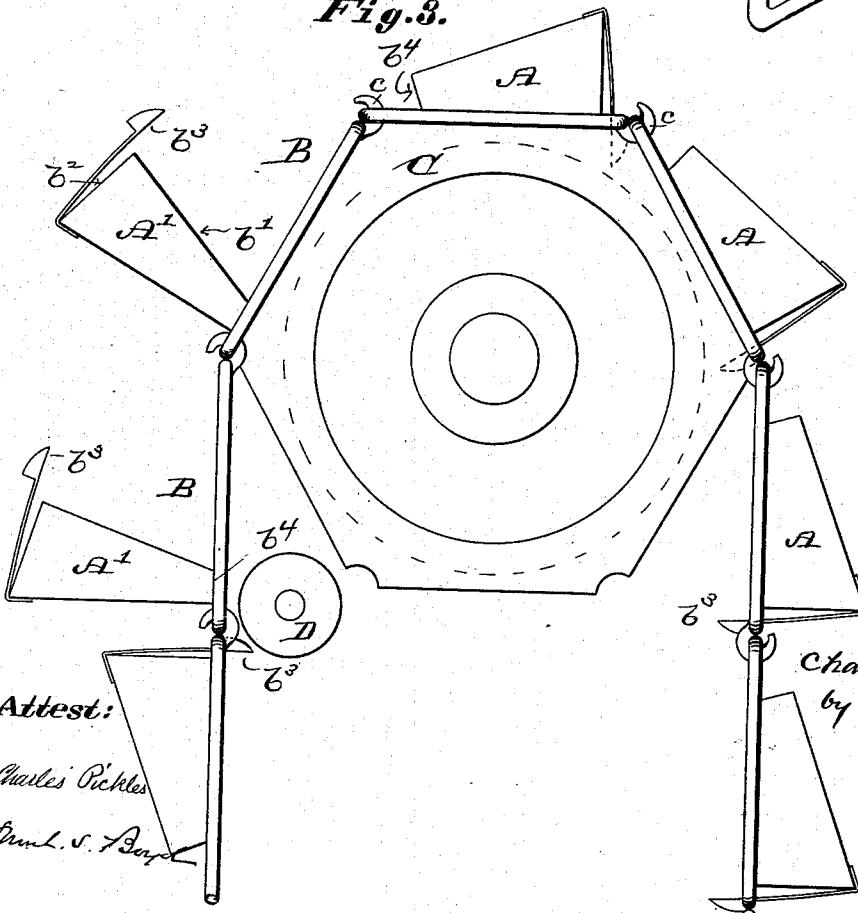


Fig. 4.



Fig. 3.



Attest:

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SPECIFICATION forming part of Letters Patent No. 261,918, dated August 1, 1882.

Application filed May 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. FRYE, of Carthage, Missouri, have made a new and useful Improvement in Pumps, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective, looking from the front, showing one of the pump-buckets and the link of the chain to which it is attached; Fig. 2, a view in perspective, looking from the back, of the bucket and link; Fig. 3, a side elevation of the upper end of the pump, and Fig. 4 a cross-section taken through the pulley-rim.

The same letters denote the same parts.

The present invention is an improvement in chain-pumps.

It relates mainly to the mode of connecting the pump-buckets and the pump-chain.

In the drawings, A A' represent the pump-buckets. B represents the chain, and C the upper chain-pulley. The lower chain-pulley is not shown, as it is not in all cases needed, and when used is similar to the upper pulley. The buckets are hinged to the chain, the hinge *b* being arranged at or near the lower end of the bucket, and so that the buckets can be turned up to bring the back *b'* of the bucket against the chain, as shown, and can be turned down to bring the upper end or mouth, *b''*, of the bucket away from the chain, as shown in Fig. 3. At or near its upper end the bucket is provided with a spring-catch, *b³*, which, when the bucket is turned up, engages with the cross bar *c* of the chain B.

The operation is as follows: The buckets on the ascending side of the chain are turned up against the chain and the catches are engaged with the cross-bars. The buckets and chain remain thus connected until the buckets are elevated to the level at which it is desired to deliver the water. At this point the catches, by coming in contact with a suitable projection—such as the roller D, Fig. 3—are detached from the chain. The buckets, which are suitably shaped to cause them to turn upon the hinges when the catches are unfastened, then fall outward from the chain, as shown in Fig.

3, so as to discharge their contents. The buckets are squared at the bottom end, *b⁴*, or are furnished with a suitable projection to prevent them from turning below a horizontal position, or thereabout, and to prevent an upper bucket from falling so far down as to interfere with the proper action of the bucket beneath. After the buckets are thus turned down they are carried by the chain in that position until above the chain-pulley C, whereupon the weight of the bucket causes it to fall toward the chain and the catch *b³* to engage again with the chain. The buckets thus fastened at their upper ends to the chain are carried down, again filled, elevated, and again turned outward from the chain, and so on, turning upon their hinges to discharge their contents and turning back again before being refilled. The catch *b³* preferably extends from the edge *b⁵* of the bucket. The present improvement is adaptable to other forms of elevators as well as to pumps. The groove *d* in the pulley C receives the catch *b³*.

I claim—

1. The combination of the chain B, the catch *b³*, and the bucket A, substantially as described.

2. The combination of the chain B and the bucket A, the latter being hinged to the former, and having the shoulder *b⁴* to prevent the bucket, when turning upon the chain, from dropping beyond the desired limit, substantially as described.

3. The combination of the chain B, the bucket A, and the catch *b³*, said bucket being hinged at its lower end to the chain, and said catch connecting the chain and bucket at the upper end of the latter, and being made in the form of a spring, as and for the purpose described.

4. The combination of the chain B, the bucket A, and the catch *b³*, the latter extending from the edge *b⁵* of the bucket, as and for the purpose described.

CHARLES O. FRYE.

Witnesses:

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