

(No Model.)

R. M. BROOKS.  
CHAIN PUMP BUCKET.

No. 316,005.

Patented Apr. 21, 1885.

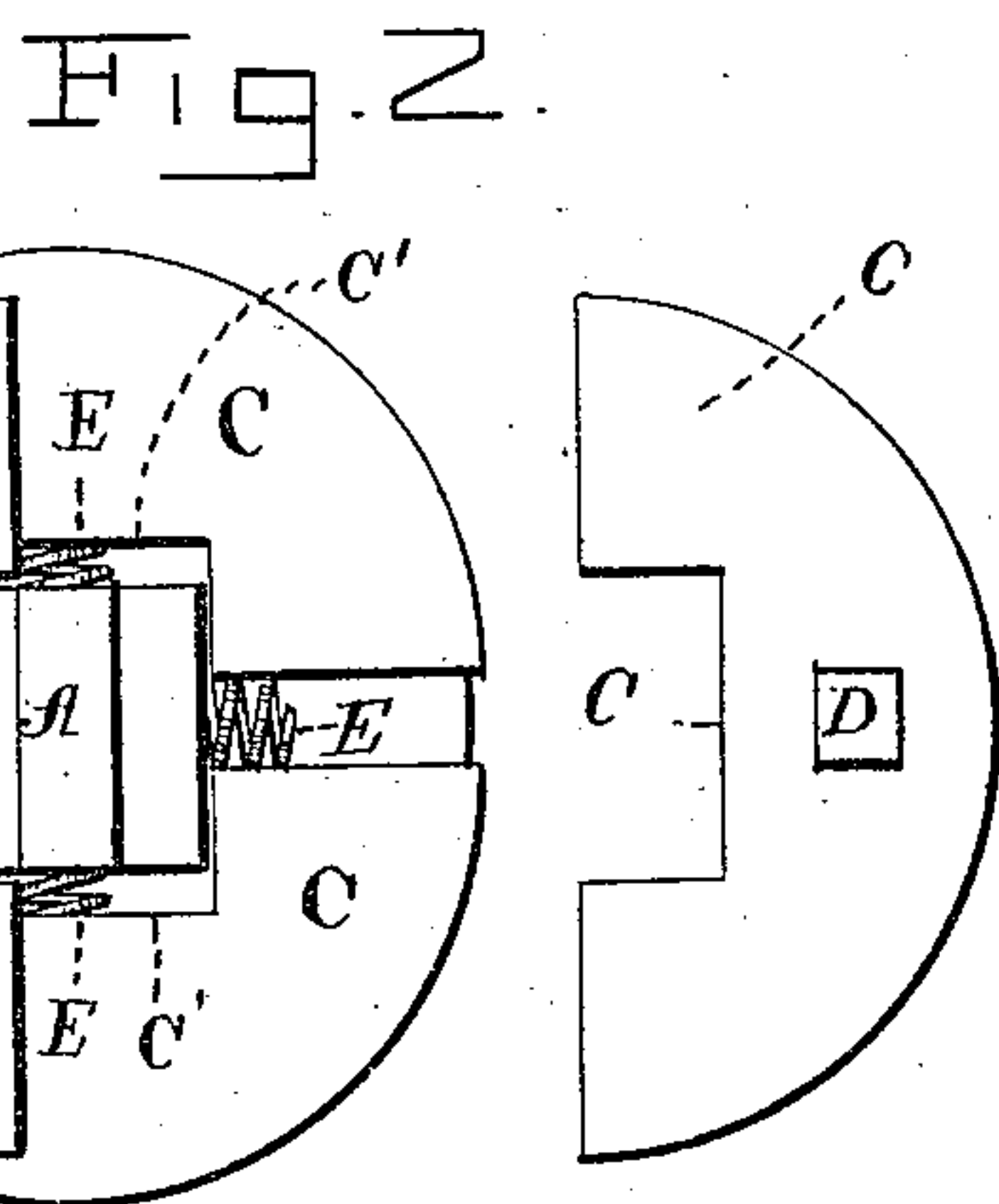
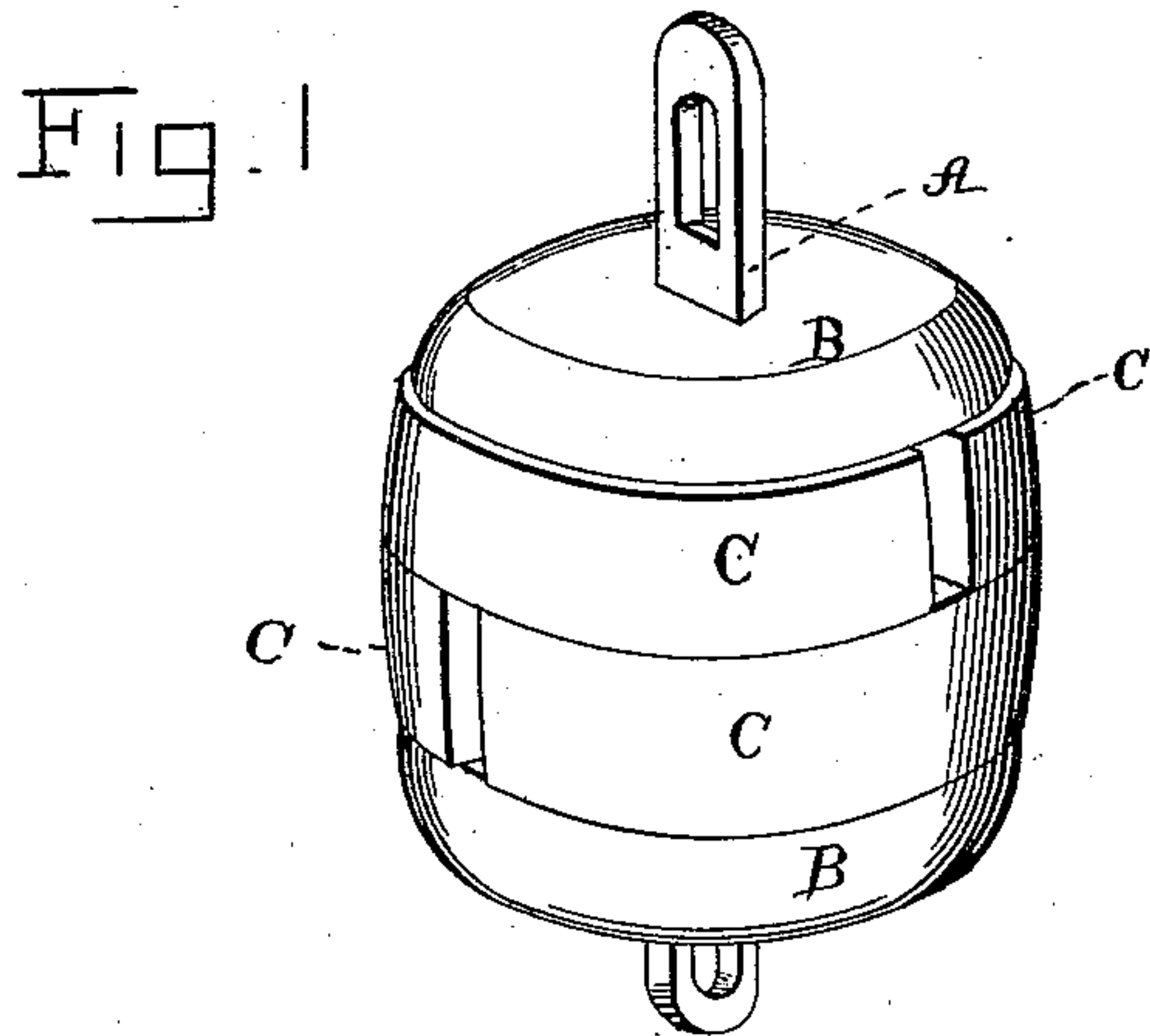


Fig. 3.

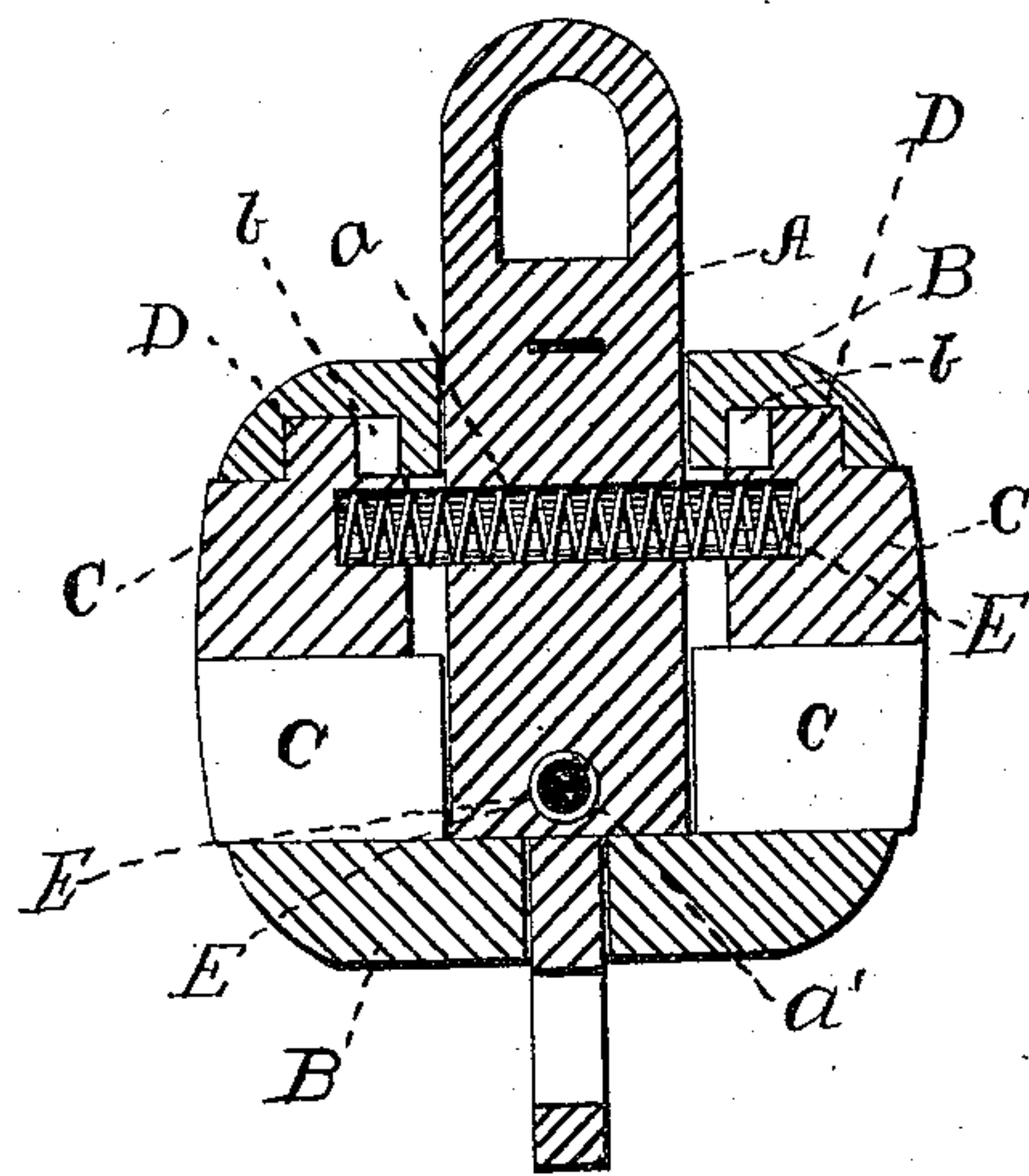
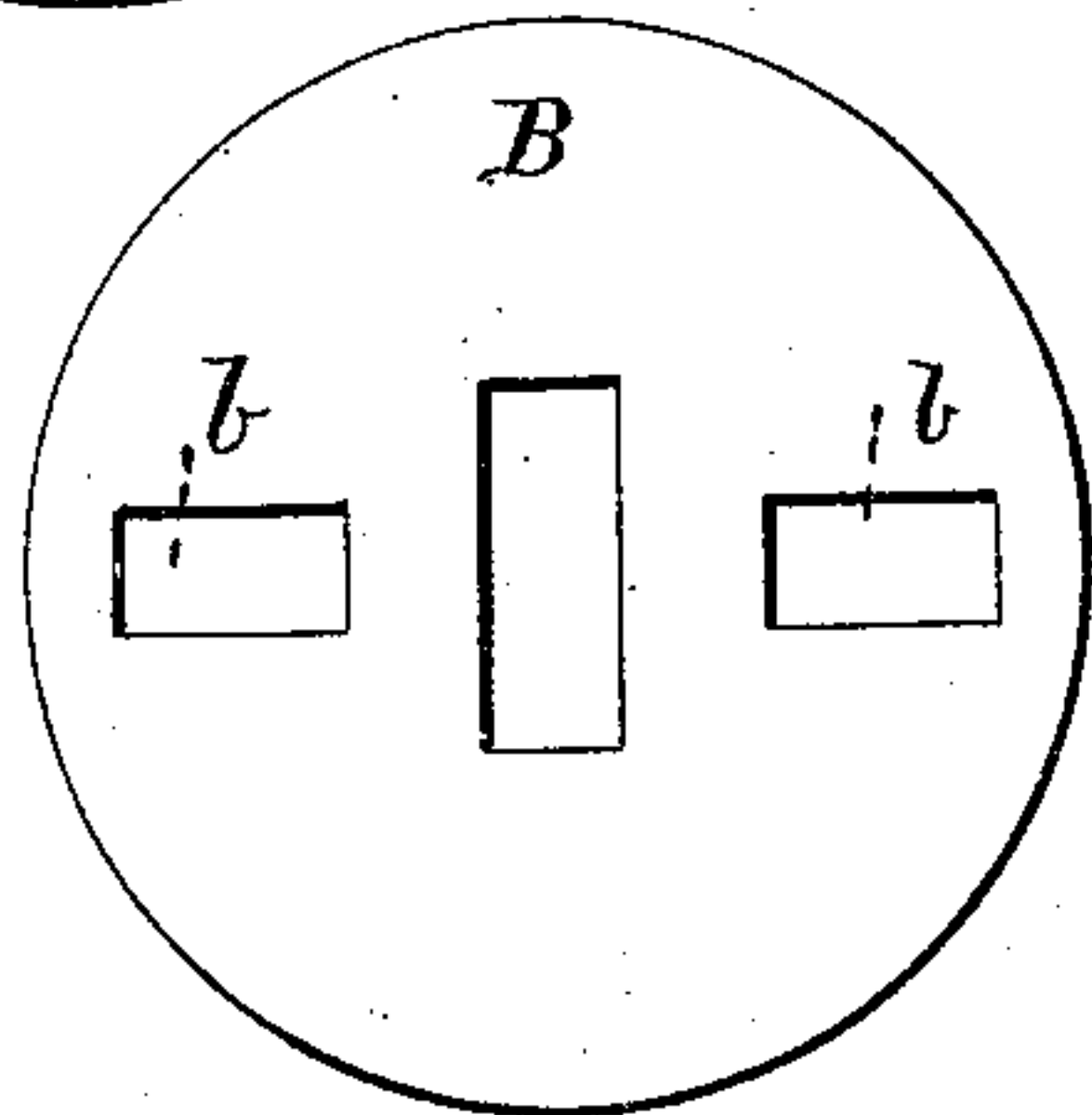


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

RUFUS M. BROOKS, OF GREELEY, KANSAS.

## CHAIN-PUMP BUCKET.

SPECIFICATION forming part of Letters Patent No. 316,005, dated April 24, 1885.

Application filed June 19, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, RUFUS M. BROOKS, a citizen of the United States, residing at Greeley, in the county of Anderson and State of Kansas, have invented certain new and useful Improvements in Chain-Pump Buckets; 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 accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to buckets for chain-pumps in which the water is raised through a tube by means of a series of buckets made to fit the bore thereof; and it consists in the novel construction, combination, and arrangement of parts, as will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a perspective view of one of my buckets. Fig. 2 is a detail plan view of same with one end plate removed and showing one of the packing-sections in detail. Fig. 3 is a vertical section of the bucket. Fig. 4 is a detail view, showing the inner side of one of the end plates, all of which will be described.

The link A is preferably made angular in cross-section, as shown in Fig. 2, and has formed transversely through it openings *a a'*, arranged at right angles to each other, as shown. The end plates, B, are placed or formed on the link near the opposite end of the latter, and are provided on their inner faces with grooves or slots *b*, the said slots being formed in their respective end plates in line at right angles to each other. To illustrate, for example, the grooves in the end plates are formed parallel with the adjacent transverse opening through the link, as will be understood from Fig. 3.

The packing-sections C are preferably four in number, and arranged in pairs, as shown. They are formed of segments having their bases formed approximately straight and through the center of the curve of the crown, and when placed on the link the base-lines of each pair are at right angles with the similar lines of the other pair. Thus the crowns of

one pair lap the joints of the other and a complete close packing is furnished.

The faces of the sections next the end plate are provided with projections or studs D, which extend into the grooves *b* of the end plate and hold the sections from detachment, and yet permit their lateral adjustment to bind closely the walls of the tube. The inner edge or base of these sections is formed with a slot or mortise, *C'*, fitted to the link, as shown in Fig. 1, so as to prevent the section from revolving on the link. Springs E are inserted through the openings *a a'*, and bear at their opposite ends against the inner sides of the sections, as will be understood from Figs. 2 and 3, thus giving said sections an outward tension.

Where so desired, instead of inserting the spring through the link and using one spring for each pair, separate springs may be employed for each section and made to bear between the same and the link, and the form of spring may be coil or any other suitable one desired. I prefer, however, to construct and arrange the spring as shown and before described, and in order to secure a better action of the springs I prefer to fit their ends into sockets *e*, formed in the inner sides of the sections, as shown in Fig. 3.

It will be appreciated that, instead of forming the studs on the sections and the grooves in the end plates, the order may be reversed without departing from the spirit of my invention. I prefer to form the end plates separate from the link, as shown; but where so desired they may be formed integral therewith, in which case it will be desirable to form the stud or projection detached from the plate and inserted through a slot through the plates; or the groove may be formed in the sections and a screw turned through the end plate to serve as a stud.

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

1. A chain-pump bucket composed of a stem or link, a plurality of transverse packing-rings formed in sections and actuated by springs, the joints of the sections of one ring alternating with those of the adjoining ring or rings, substantially as set forth.



2. The combination of the link, the end plates, and the spring-actuated sections, said sections and end plates being provided on their adjoining faces with interlocking slots  
5 and projections, substantially as set forth.

3. A pump-bucket consisting of a link provided with transverse openings formed at right angles to each other, end plates, B, held to such links and provided with slots *b*, the sec-  
10 tions C, provided with projections D, entering slots C', and the springs E, all arranged substantially as and for the purposes specified.

4. The herein-described pump-bucket com-

posed of the link, the end plates provided on their inner faces with slots, the packing-sections having their faces next said plates provided with studs or projections adapted to enter the slots in said plates, and the springs, substantially as set forth.

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

RUFUS M. BROOKS.

Witnesses:

D. W. SMITH,

A. W. BROOKS.