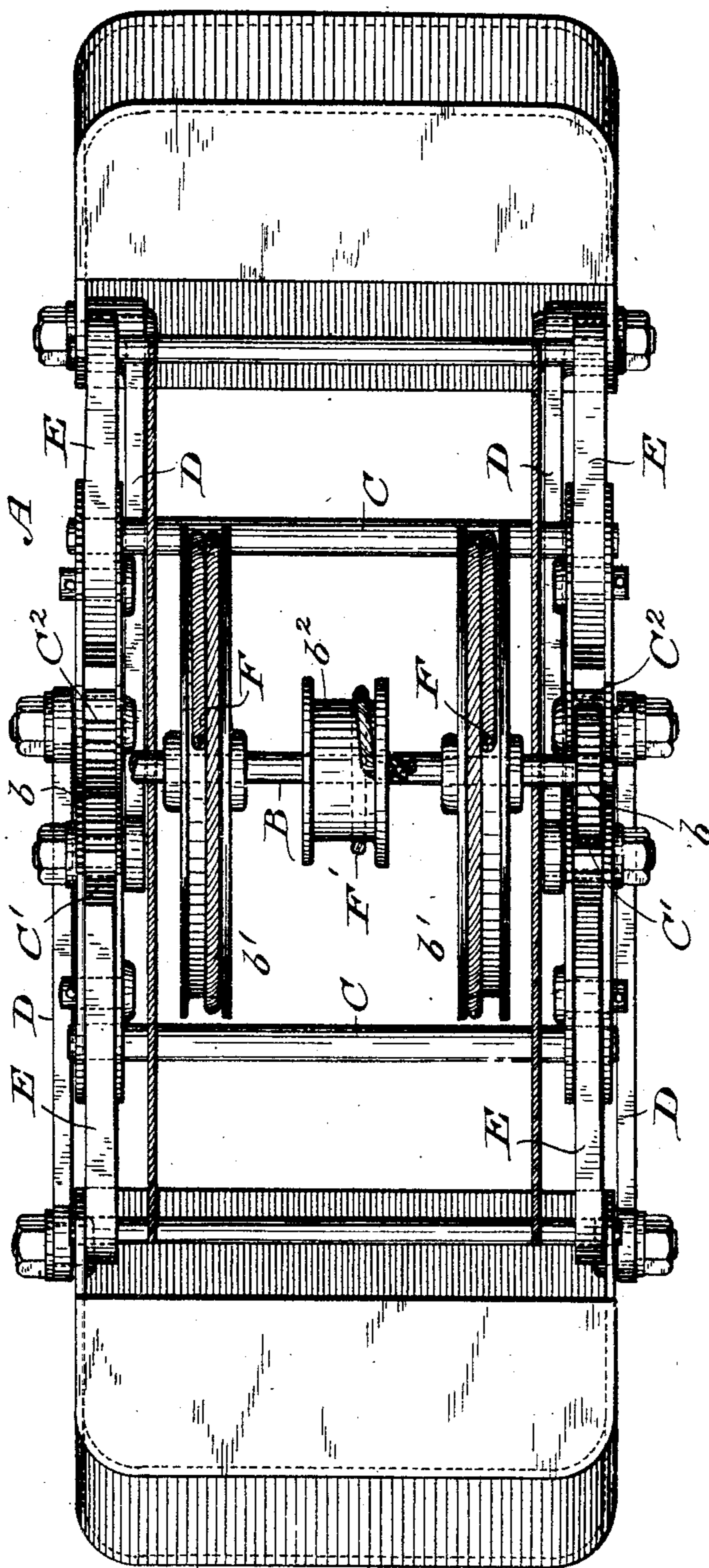


No. 779,512.

PATENTED JAN. 10, 1905.

G. H. WILLIAMS.
CLAM SHELL BUCKET.
APPLICATION FILED MAY 19, 1904.

4 SHEETS—SHEET 1.



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INVENTOR:

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4 SHEETS—SHEET 2.

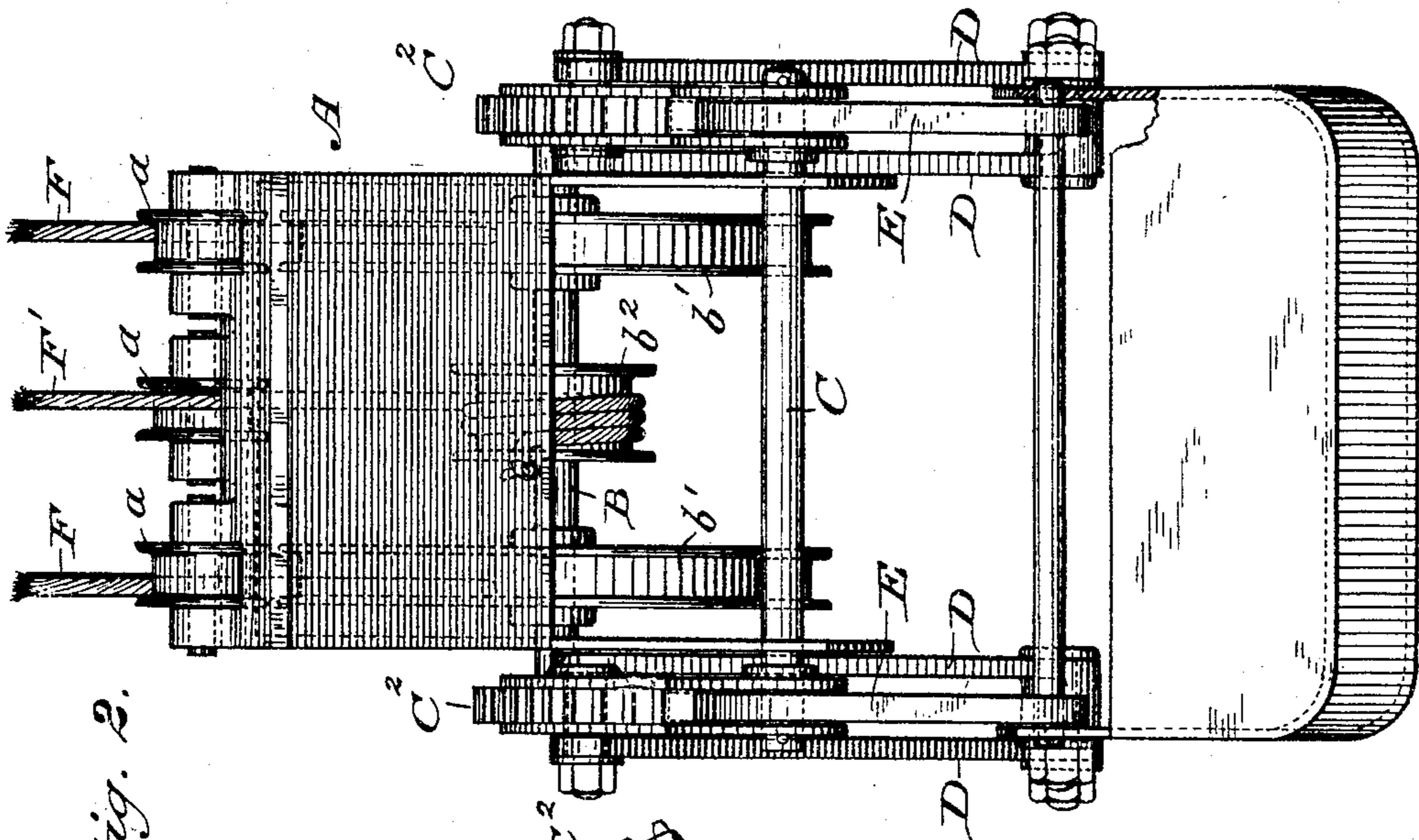


Fig. 2.

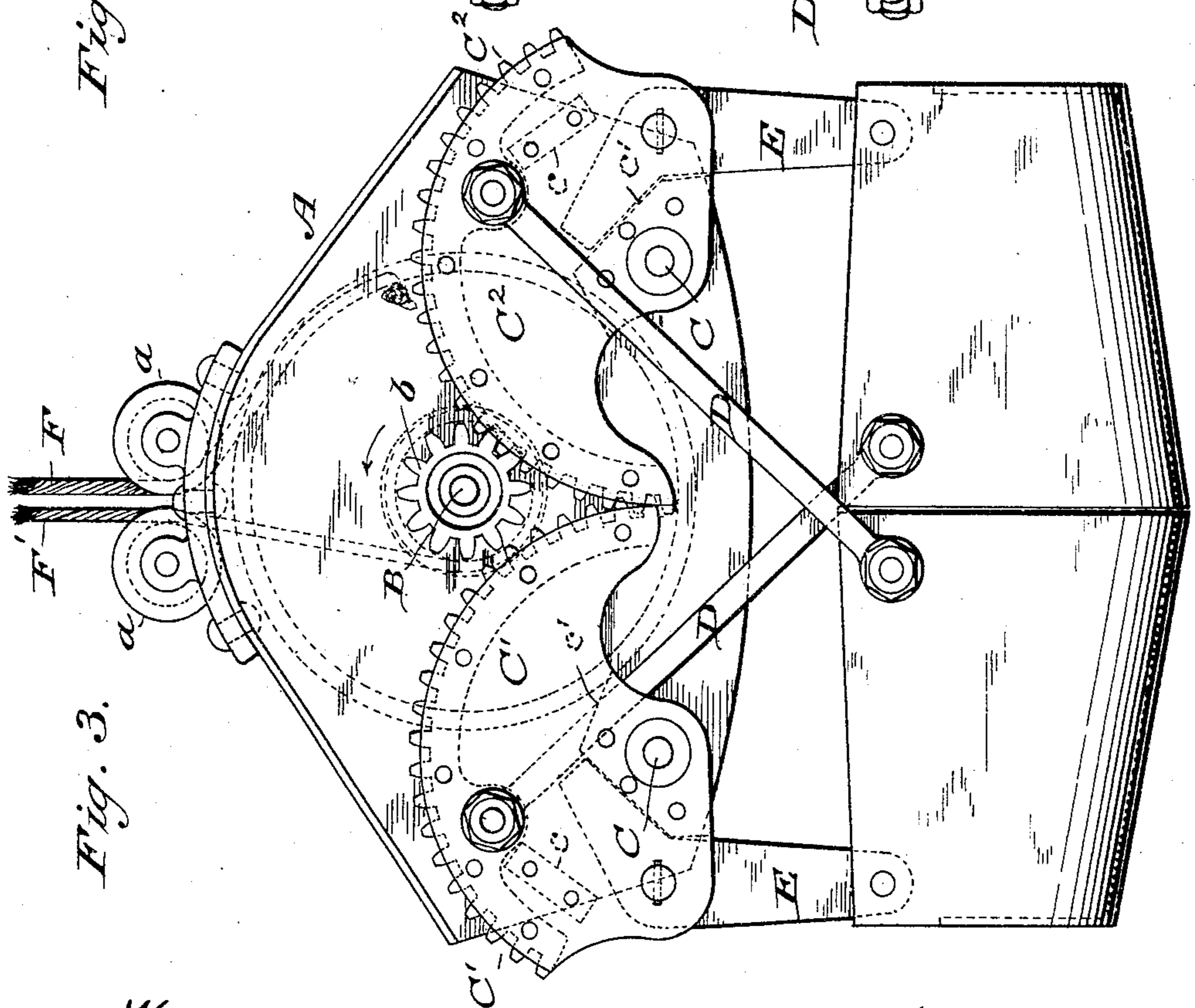


Fig. 3.

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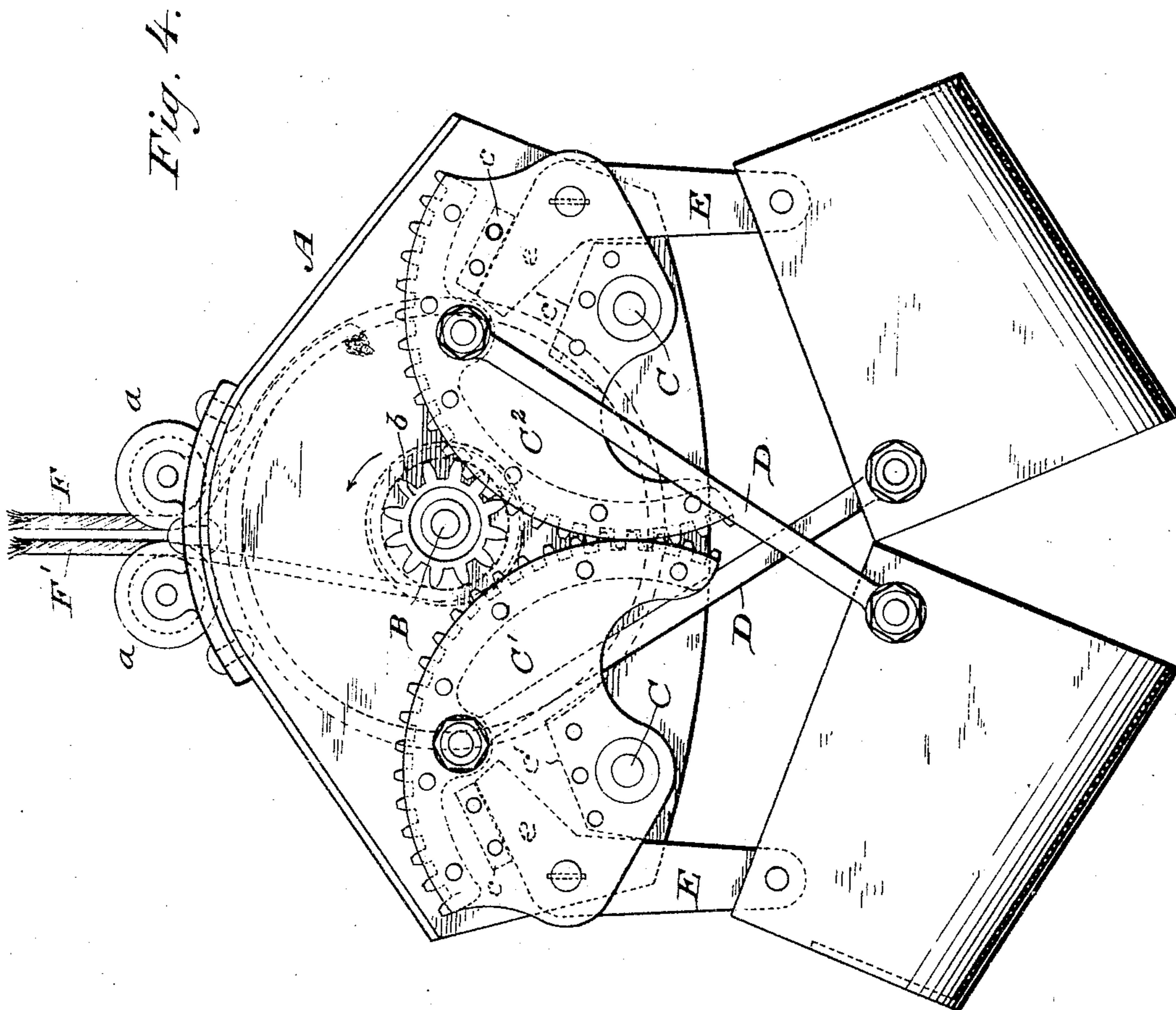
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4 SHEETS—SHEET 3.



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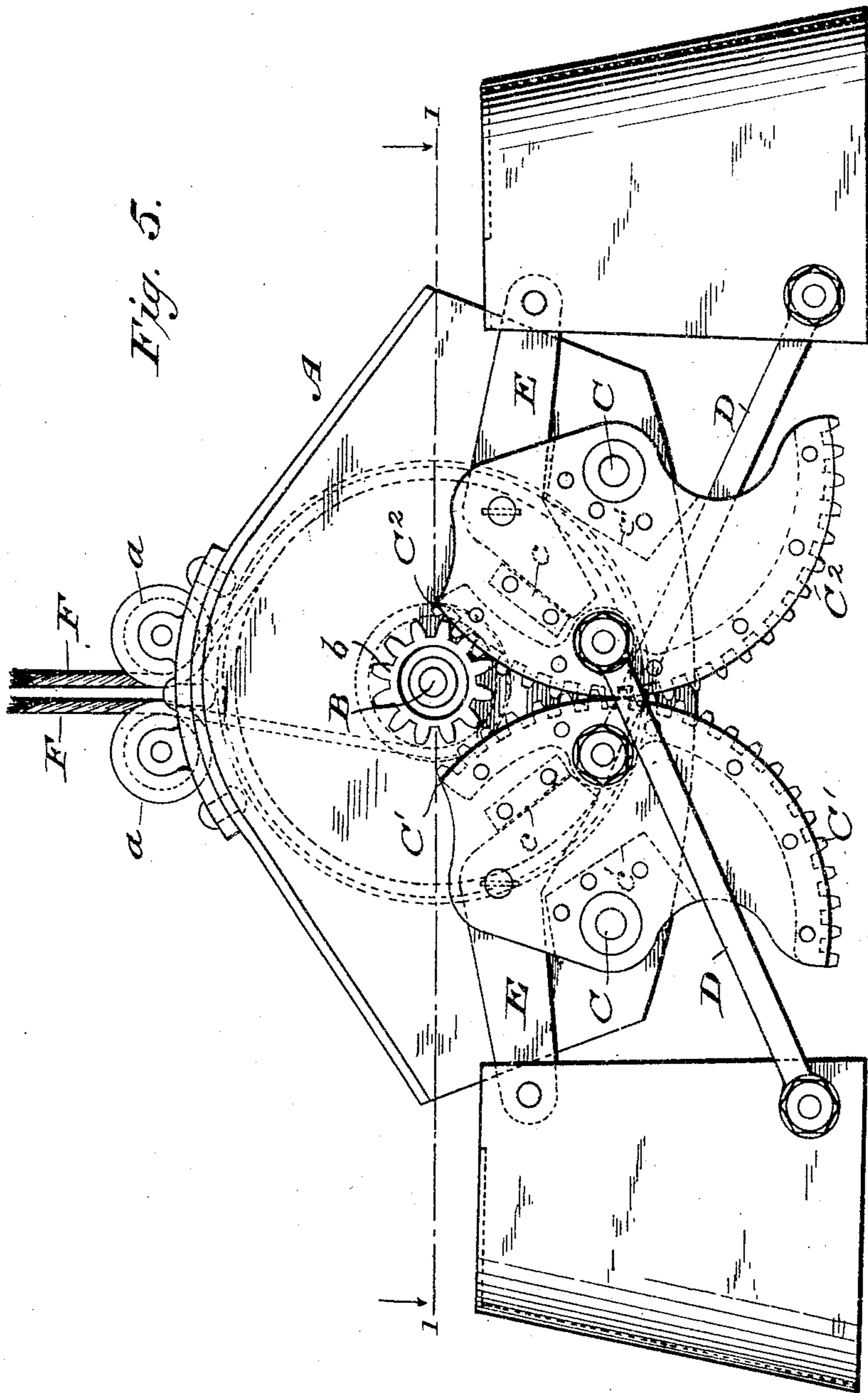
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4 SHEETS—SHEET 4.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GURDON H. WILLIAMS, OF CLEVELAND, OHIO.

CLAM-SHELL BUCKET.

SPECIFICATION forming part of Letters Patent No. 779,512, dated January 10, 1905.

Application filed May 19, 1904. Serial No. 208,700.

To all whom it may concern:

Be it known that I, GURDON H. WILLIAMS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Clam-Shell Buckets, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to clam-shell buckets, its object being to provide a bucket which shall combine economy of structure with efficiency of operation.

Said invention consists of means hereinafter fully described, and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure 1 represents a plan view of a clam-shell bucket embodying my invention. Figs. 2 and 3 represent end and front elevations, respectively, of such bucket. Fig. 4 represents a front elevation showing the bucket partially open, and Fig. 5 represents a similar view showing the bucket completely open.

Journalled in the middle of a suitable frame A is a driving shaft B, upon the outer projecting ends of which are secured, respectively, two driving-pinions b b , Fig. 1. Mounted in said frame upon opposite sides of a vertical transverse plane containing the axis of said shaft B are two rocking shafts C C, respectively parallel with shaft B. Upon the projecting ends of these rock-shafts are mounted two pairs of oppositely-disposed oscillatory sectors C' C' and C'' C''. The members of each pair of sectors mesh with each other, and one of such members is engaged by driving-pinion b , so that, as will be seen, the rotation of the pinion will cause the members of the pairs of sectors to rock in opposite directions. Upon each sector is pivoted a link D, whose lower end is journalled at the front or inner end of the scoop

member upon the opposite side of the said central plane, as shown. Upon the rear portion of each sector is pivoted a downwardly-depending link E, whose lower end is pivoted upon the rear or outer end of the adjacent scoop member. Such link is provided with an extension e , which extends upwardly and inwardly from its point of support on the sector. Upon the inside of each sector and lying upon opposite sides of the corresponding extension e are two stop-lugs c and c' , which limit the amount of oscillation relatively to the sector to which the link E may be subjected. When the bucket is in its closed position, as shown in Fig. 3, the extension e rests normally against the inner stop-lugs c' .

Upon the shaft B are secured two power-wheels b' b' and an opening-sheave b^2 , by means of which the shaft B may be rotated in two directions, and so open or close the bucket, as will be readily understood. Suitable guiding-pulleys a a a are secured to the top of the frame for properly guiding the opening and closing cables F', F, and F.

Operation: Assuming the bucket to be closed, as illustrated in Fig. 3, let the power-wheels b' b' be rotated in the direction indicated by the arrow in said figure. Such action will cause the links D to depress the inner or front upper portions of the scoop members and the links E to lift the rear or outer upper portions thereof. Such movement will proceed on the continuation of the rotation of the power-wheels until the parts assume the position shown in Fig. 4. During such time, however, it will be seen that the links E move upon their respective pivots, and hence move relatively to their respective sectors. The movement thus imparted to the scoop members is such as to cause the lower inner or front edges of the members to recede from each other, and so open the bucket for the discharge of its load by means of the application of only a small force. The parts having assumed the position shown in Fig. 4, practically all of the load will have been discharged. In this position it will be seen that the extensions e are in engagement with the stop-lugs c , so that during further opening movement the links E will be fixed relatively

to their respective sectors and the rear ends of the scoop members carried back to assume their open position, as shown in Fig. 5. Such latter part of the opening movement of the bucket is hence unattended by any considerable resistance due to the load contained in the scoop members. The opening movement is hence effected with a comparatively small applied force. Upon reversing the direction of rotation of the power-wheels the bucket is closed and the sequence of the above-described steps reversed.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a clam-shell bucket, the combination of two scoop members, a pair of opposed sectors, and links connecting the front or inner ends of the scoop members with the sectors respectively, the rear or outer ends of said scoop members being also connected with said sectors respectively.

2. In a clam-shell bucket, the combination of a frame, two sectors mounted upon said frame upon opposite sides of a given plane, two scoop members on opposite sides of said plane, and links connecting the inner or front ends of the said scoop members with the opposite sectors respectively, the outer or rear ends of said members being connected with the sectors on the same sides of said plane respectively.

3. In a clam-shell bucket, the combination of a frame, a pair of oscillatory members mounted upon said frame and upon opposite sides of a given plane, two scoop members on opposite sides of said plane, links connecting the one end of each scoop member with the opposite oscillatory member respectively, and

links connecting the other end of each such scoop member with said oscillatory member respectively.

4. In a clam-shell bucket, the combination of a frame, a pair of oscillatory members mounted upon said frame and upon opposite sides of a given plane, two scoop members on opposite sides of said plane, links connecting the one end of each scoop member with the opposite oscillatory member respectively, and links connecting the other end of each such scoop member with said oscillatory member respectively, said last-named links being fixed relatively to their respective oscillatory members throughout a part of their movement and oscillatory relatively thereto throughout another part of such movement.

5. In a clam-shell bucket, the combination of a frame, two oscillatory members mounted upon said frame, a scoop member, a link connecting the one end of said scoop member with one oscillatory member, and a link connecting the other end of said scoop member with the other oscillatory member, the one link being fixed relatively to the oscillatory member to which it is attached throughout a part of its movement and oscillatory relatively thereto throughout another part of such movement.

6. In a clam-shell bucket, the combination of a frame, two scoop members, and means supporting and moving said members to recede or approach, such means including oscillatory members and links respectively supported by said oscillatory members and attached to said scoop members, said links being fixed relatively to their respective oscillatory members through a part of their movement and movable relatively thereto throughout another part of such movement.

Signed by me this 18th day of May, 1904.

GURDON H. WILLIAMS.

Attest:

A. E. MERKEL,
G. W. SAYWELL.