

(No Model.)

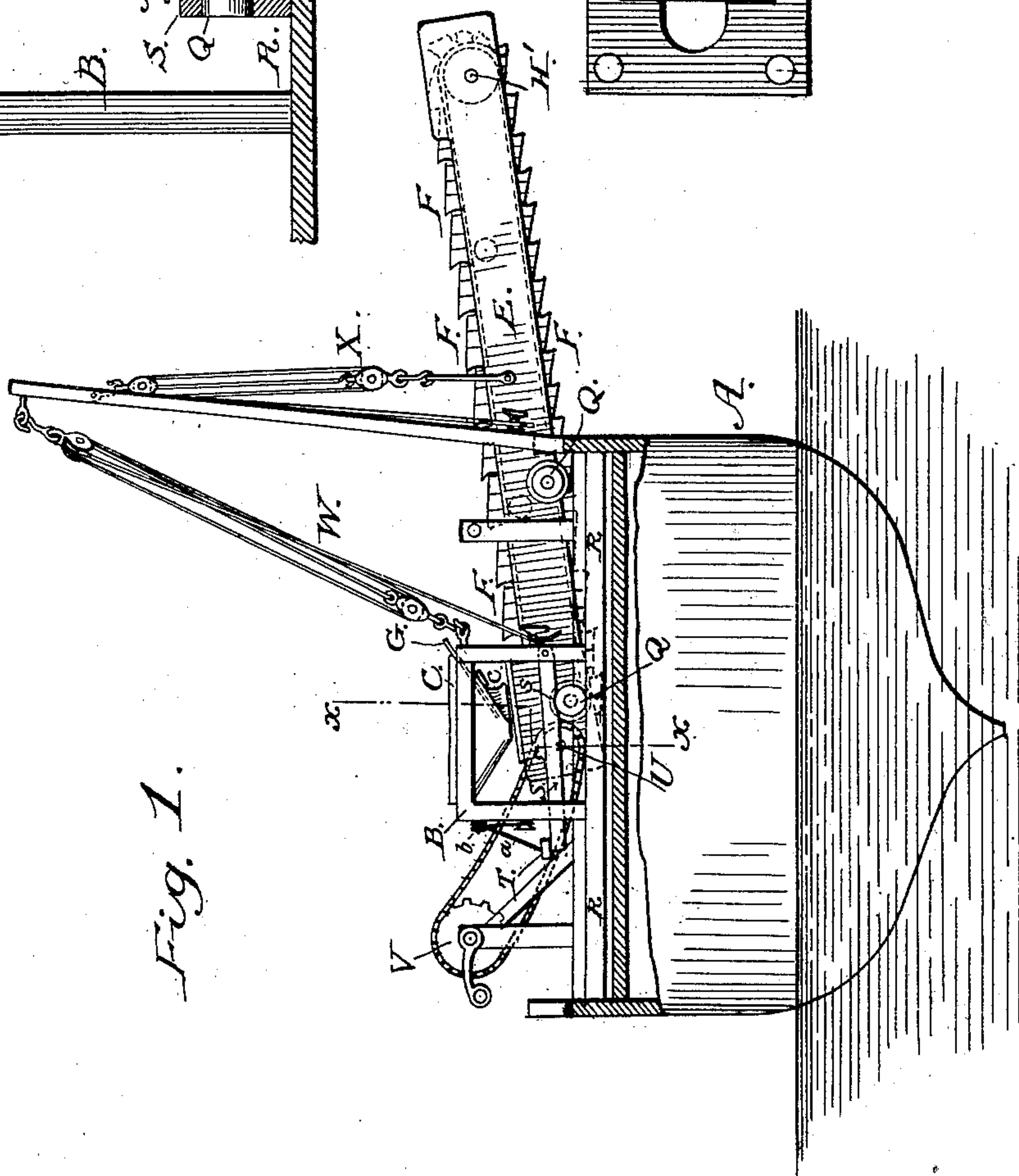
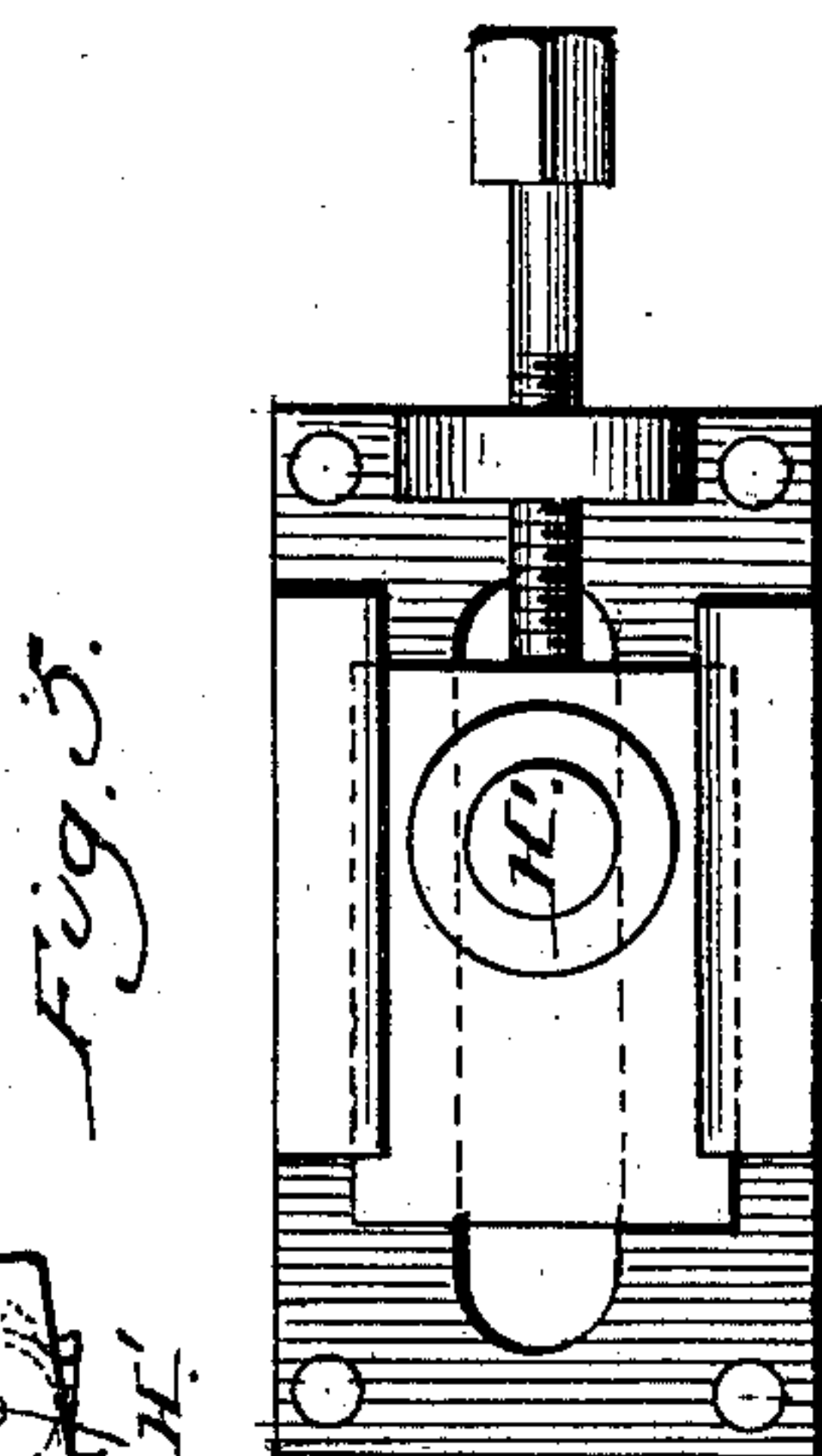
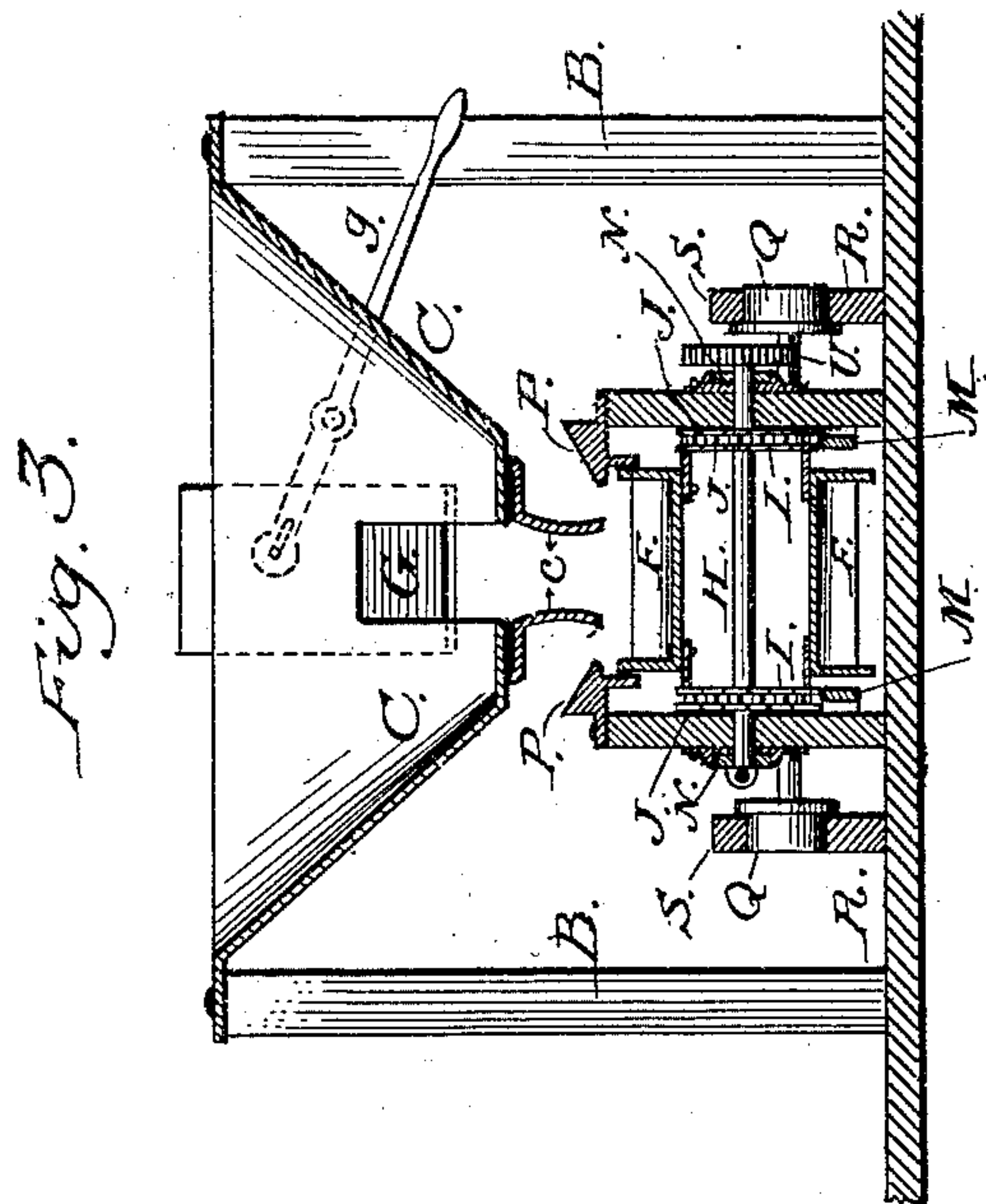
2 Sheets—Sheet 1.

W. G. BARNARD.

APPARATUS FOR LOADING COAL.

No. 333,585.

Patented Jan. 5, 1886.



Witnesses

J. W. Fowler
H. B. Applewhite

Inventor

Wm G. Barnard

By his Attorney S

A. H. Evans & Co.

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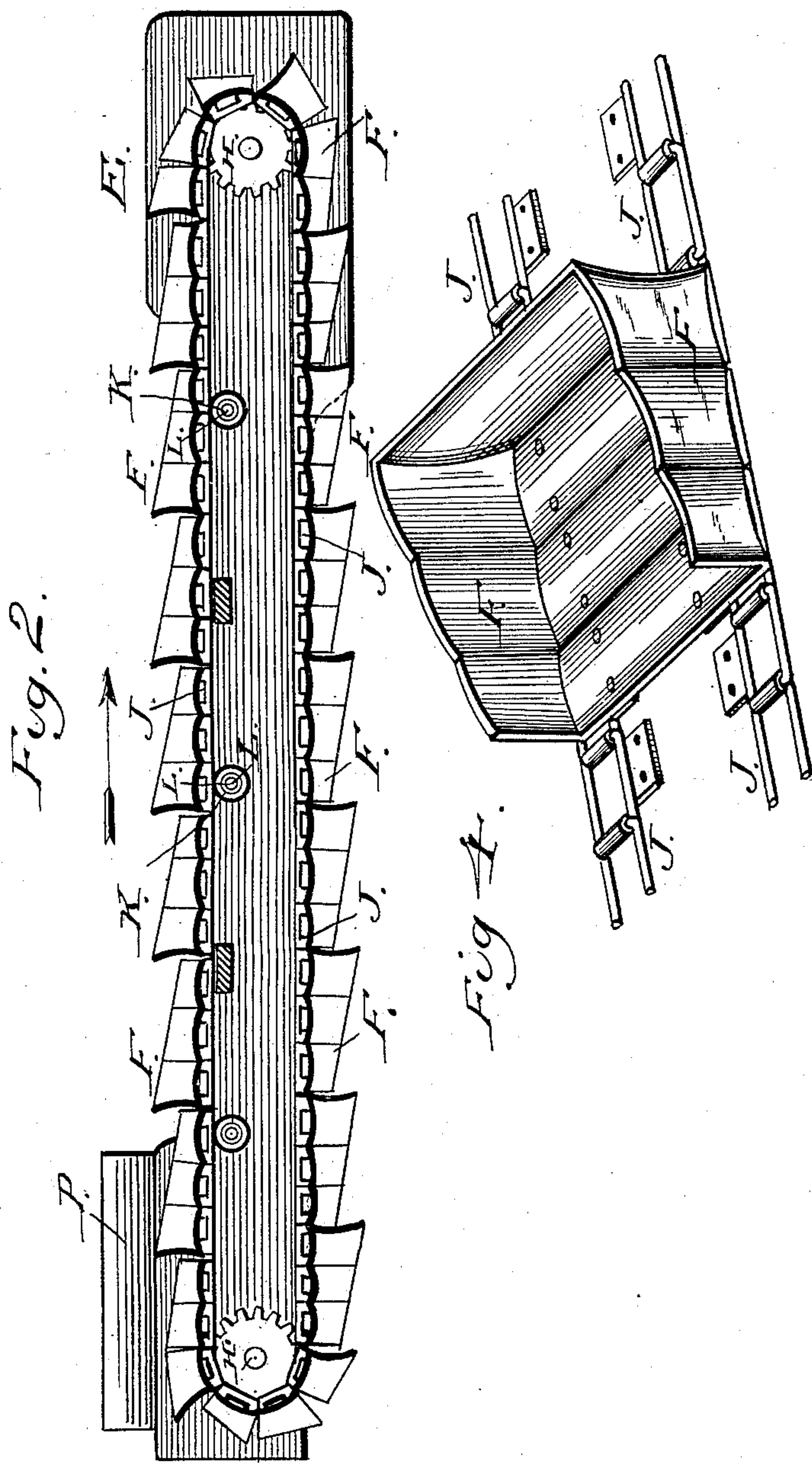
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UNITED STATES PATENT OFFICE.

WILLIAM G. BARNARD, OF BELLAIRE, OHIO.

APPARATUS FOR LOADING COAL.

SPECIFICATION forming part of Letters Patent No. 333,585, dated January 5, 1886.

Application filed December 2, 1885. Serial No. 184,394. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. BARNARD, a citizen of the United States, residing at Bellaire, in the county of Belmont and State of Ohio, have invented a new and useful Improvement in Apparatus for Loading Coal, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of an apparatus for loading coal with my new improvements attached. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section on the line *xx* of Fig. 1. Fig. 4 is a detailed perspective view of the sectional buckets with their carrying-chains. Fig. 5 is a detail showing the means for adjusting the shaft H.

My present invention relates to certain new and useful improvements in an apparatus for loading coal and other coarse articles into steamers, barges, and other vessels from cars or storing-cribs, and is an improvement on Patent No. 285,952, issued to me October 2, 1883; and my invention consists in the several combinations of devices hereinafter explained and claimed.

To enable others skilled in the art to make and use my invention, I will now describe the manner in which I have carried it out.

In the drawings, A represents a cross-section of a boat, on which is mounted and secured the frame-work B, for supporting the hopper C and the adjustable frame E, containing the sectional buckets F and the devices by which the buckets are supported and moved. The hopper C is provided at the point of discharge with the flanges or lips *c*, which guide the coal into the buckets and prevent its flying outside, where it would be liable to choke or interrupt the free working of the apparatus. The sliding door G, which closes the discharge-opening of the hopper, is provided with a lever, *g*, fulcrumed on the outside of the hopper, by which the operator is enabled to regulate the feed at will. The adjustable frame E is provided with two shafts, H H', one at each end, having suitable bearings in the sides of the frame. On each end of each shaft, and within the sides of the frame, I place a sprocket-wheel, I, rigidly at-

tached to the shaft, over and around which pass the two link-chains J, to which are secured the outer ends of the sectional buckets.

At points between the rear and forward pair of sprocket-wheels I place the anti-friction rubber-bound wheels K (see Fig. 2) upon stub-shafts L, secured to the sides of the frame E, for the purpose of supporting the chains and buckets in their travel from the rear to the forward part of the frame, and on their return along the under portion of the frame E the chain and buckets are supported on the metal rods M, secured to the inner sides of the frame.

With a view of adjusting the tension of the chains carrying the buckets the shaft H is provided with adjustable bearings N, by means of which the distance between the two shafts may be increased or diminished at pleasure, and the chain J may be loosened or tightened.

The sectional buckets F, when made as shown and described in my patent before referred to, are objectionable as lacking resistance to the damaging effect of the coal thereon; and to overcome this defect I now make each part of the bucket concavo-convex, as shown in Fig. 4, which renders the buckets capable of resisting a much heavier strain.

On each side of the frame E, below and a little forward of the discharge-opening in the hopper C, I place the elevated inclines P, whereby any coal or other material accidentally falling outside the line of the buckets will be caught and fed back down the incline into the buckets, so that between the action of the inclines P and the lips *c* of the hopper no material can escape outside of the buckets to choke or retard the action of the apparatus.

The frame E is supplied with the wheels Q and the track R, on which it is easily run out for use, as shown in Fig. 1, or returned to its normal position on the boat A. When in position for working, as shown in Fig. 1, it becomes necessary to lock it securely, and for this purpose I pivot to the frame-work B the levers S, having a recess, *s*, fitting on the hind wheels of the frame, and to the free end of these is secured a sufficient weight, T, to hold the levers down and lock the wheels securely in position. A cord, *a*, passes from this weight through a pulley, *b*, and by pulling on this cord the weight is raised and the wheels un-

locked, when the frame can be returned to its position for storage on the boat.

On the outer end of the shaft H, and outside of the frame E, is rigidly secured the sprocket-wheel U, which is connected by a link-chain to the sprocket-wheel V, suitably journaled within the boat A. To this wheel is applied steam or any other convenient power for driving the apparatus.

As steamers and barges on which coal has to be loaded differ materially in the height of their main decks above the water, it becomes necessary to provide means for raising and lowering the forward end of the frame E. To accomplish this, I have shown the ordinary shears held in position by the tackling W, and provided with the tackling X, by which the end of the frame is raised or lowered; but this is no part of my invention.

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

1. In an apparatus for loading coal, the adjustable frame E, having the elevated inclines P, and provided with the sprocket-wheels I, in combination with the link-chains J and sectional buckets F, all constructed substantially as and for the purpose set forth.

2. The adjustable frame E, provided with the sprocket-wheels I, the anti-friction wheels K, and supporting-rods M, in combination with the link-chains J and sectional buckets F, all constructed substantially as and for the purpose set forth.

3. The adjustable frame E, provided with the sprocket-wheels I, the anti-friction wheels K, and supporting-rods M, in combination with

the link-chains J, sectional buckets F, and the hopper C, provided with flanges or lips *c* at its discharge-opening, substantially as and for the purpose set forth.

4. The adjustable frame E, provided with the sprocket-wheels I and shafts H H', in combination with the sprocket-wheels U and V, connected by a link-chain, and suitable power for driving the same, substantially as and for the purpose herein set forth.

5. The adjustable frame E, provided with the sprocket-wheels I, link-chains J, and buckets F, in combination with the wheels Q and track R, all constructed to operate substantially as and for the purpose set forth.

6. The adjustable frame E, wheels Q, and track R, in combination with the lever S, provided with the recess *s*, and the weight T, whereby the frame may be locked in position, substantially as and for the purpose set forth.

7. The adjustable frame E, shafts H H', and sprocket-wheels I, in combination with the adjustable bearings N, whereby the distance between the shafts may be regulated, substantially as and for the purpose set forth.

8. The sectional buckets F, constructed of concavo-convex plates of metal, substantially as and for the purpose set forth.

9. The hopper C, provided with the flanges or lips *c* and sliding door G, in combination with the lever *g*, substantially as and for the purpose set forth.

WILLIAM G. BARNARD.

Witnesses:

THOMAS GARRETT,
C. W. DICKENS.