No. 702,628.

Patented June 17, 1902.

E. CHAQUETTE.

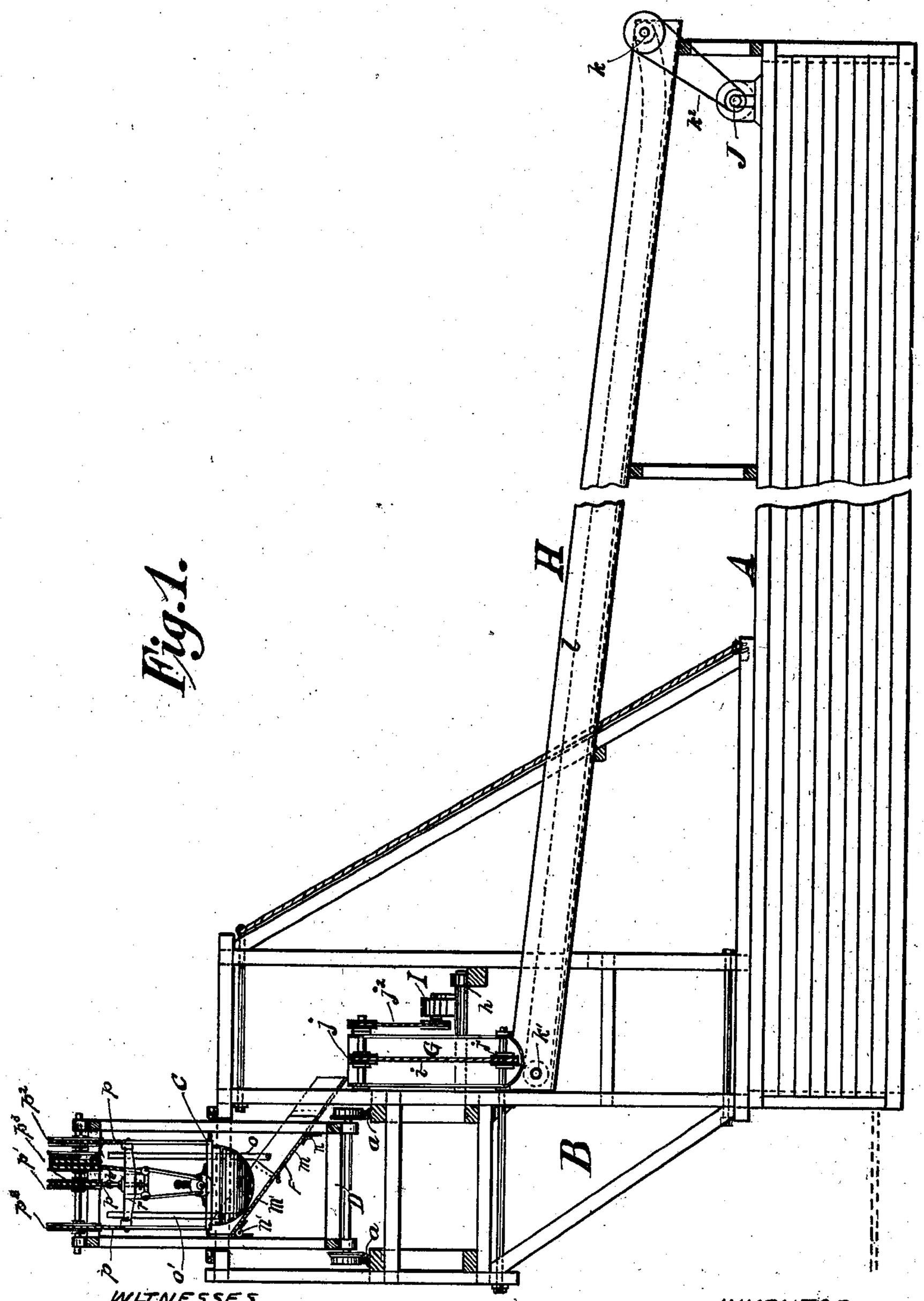
CLAM DREDGE.

(Application filed Jan. 7, 1902.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.



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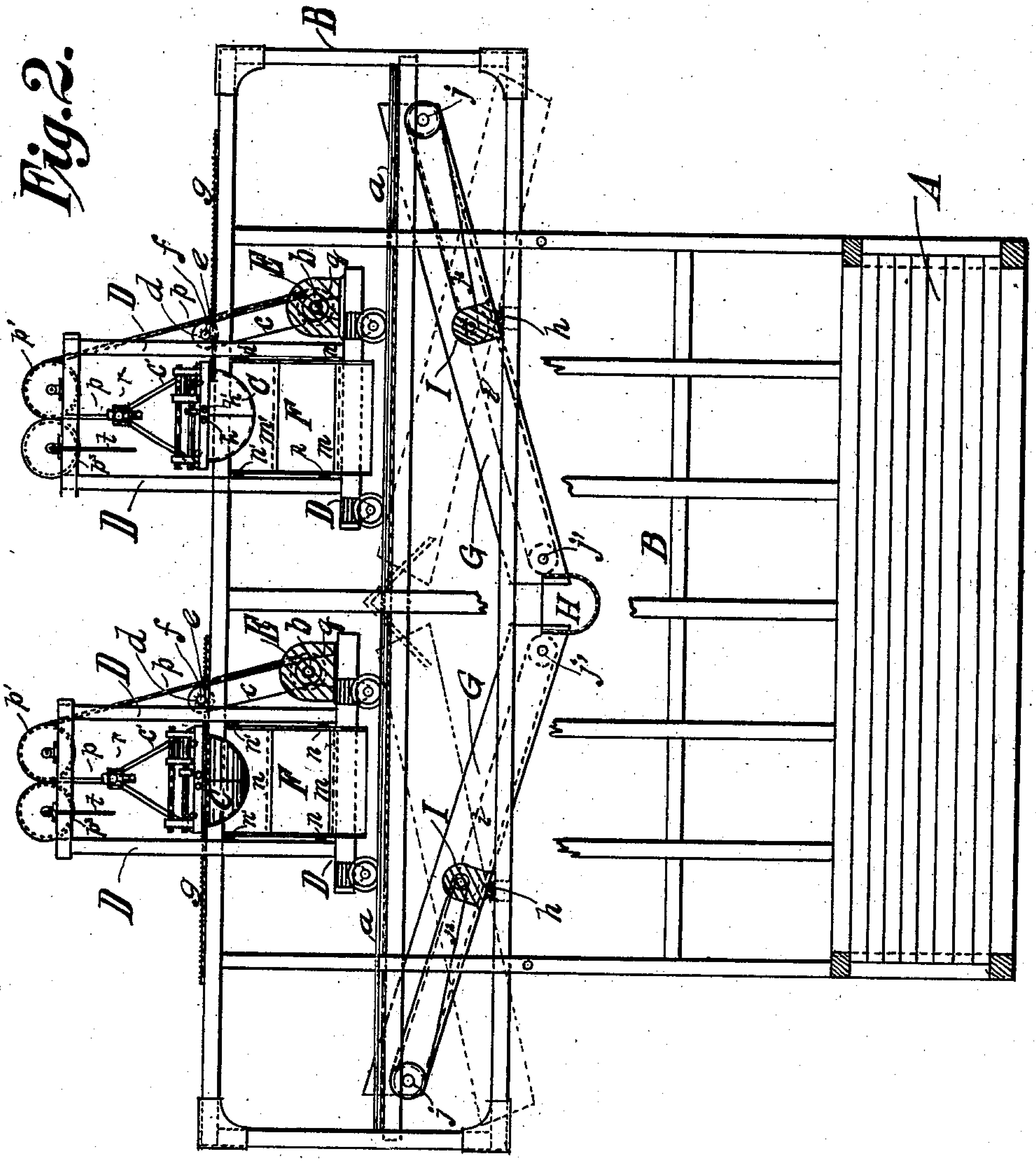
(No Model.) 4 Sheets—Sheet 2.

Fig. 2.



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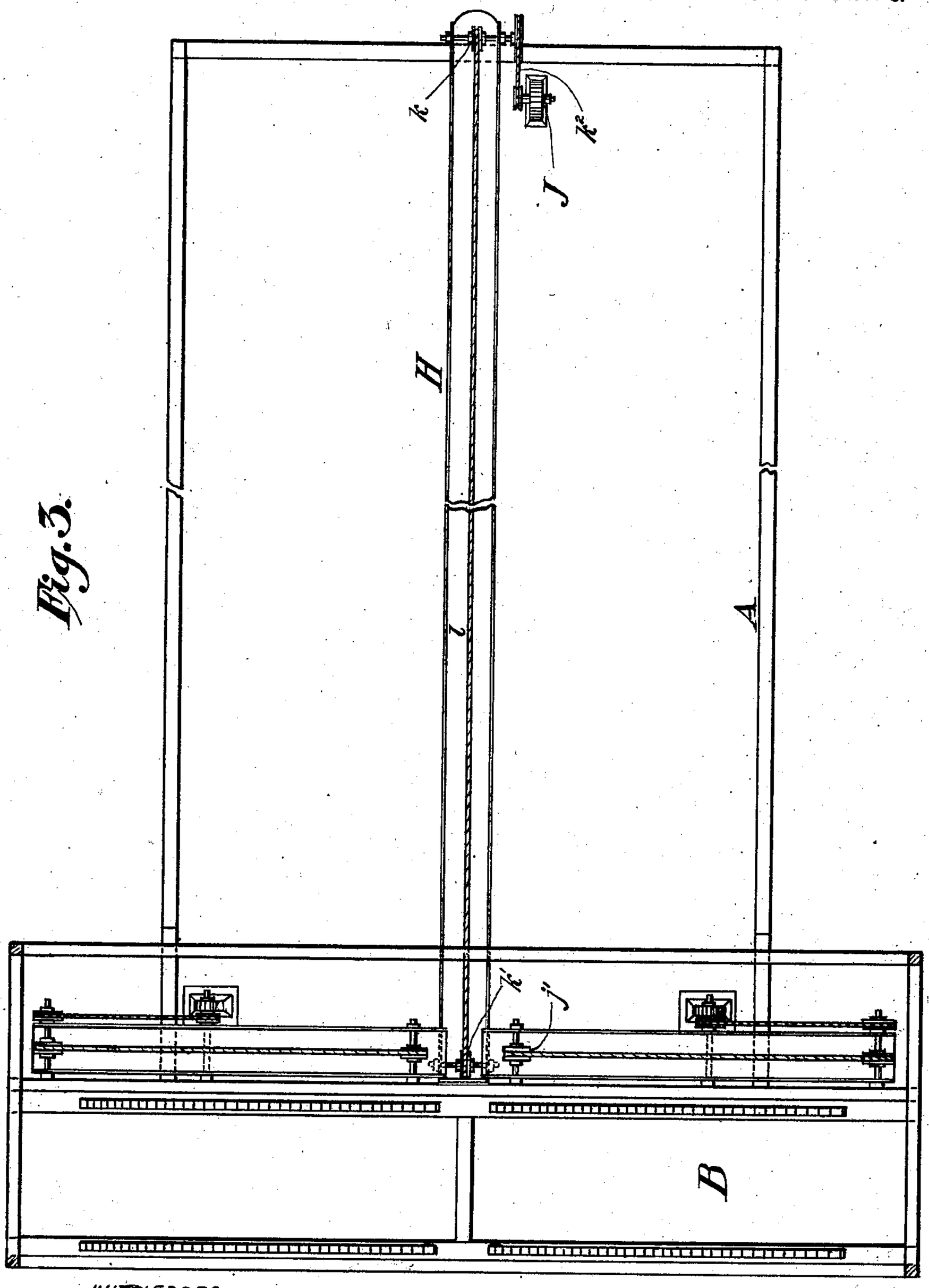
(No Model.) 4 Sheets—Sheet 3.

Fig. 3.



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(No Model.) 4 Sheets—Sheet 4.

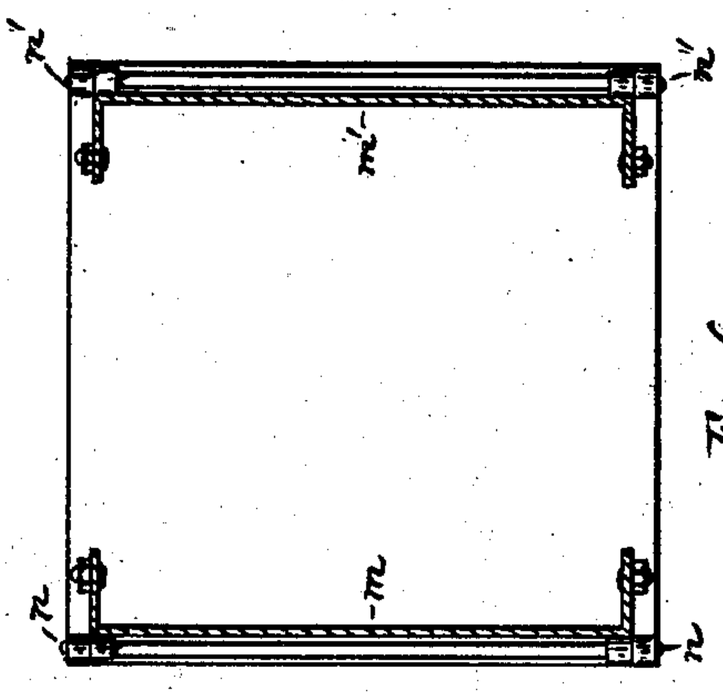

Fig. 6

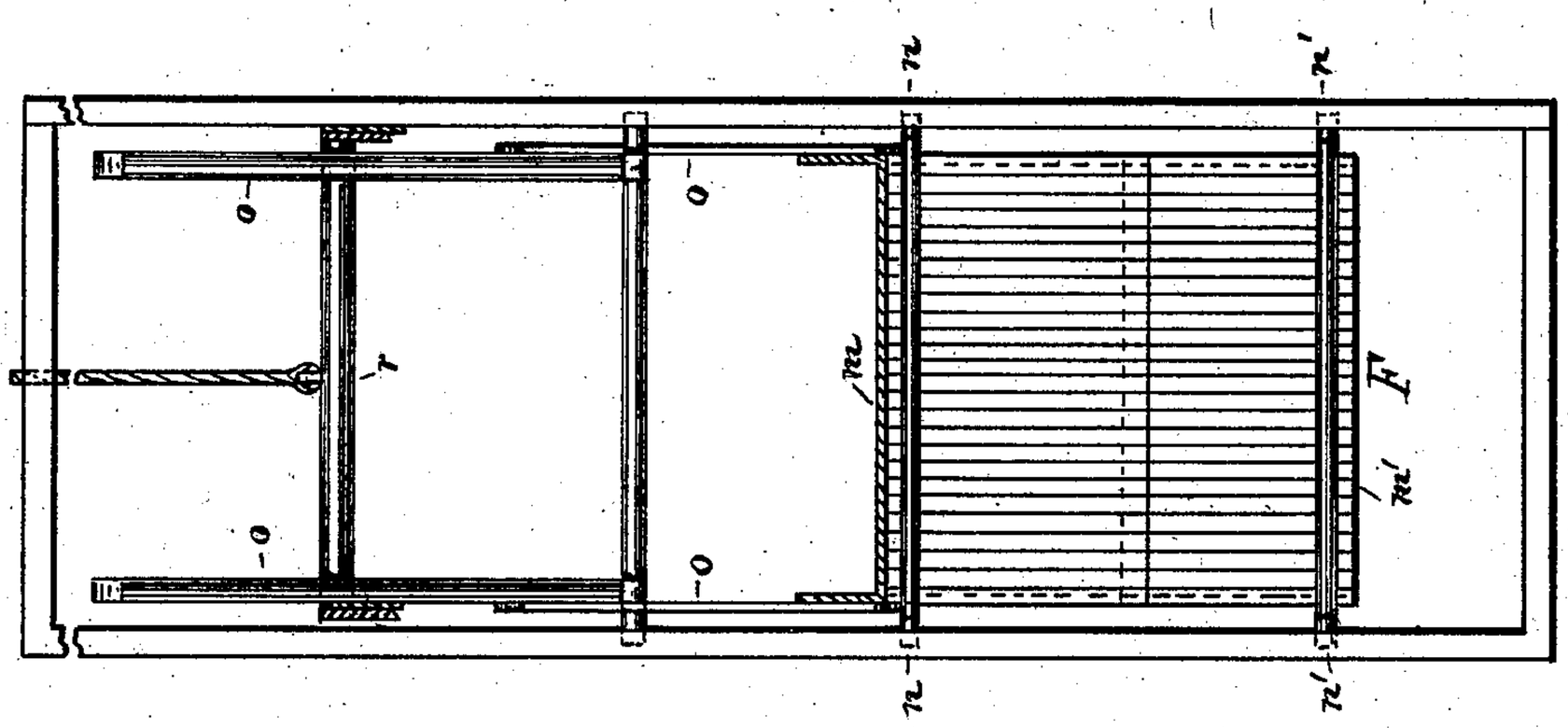

Fig. 5

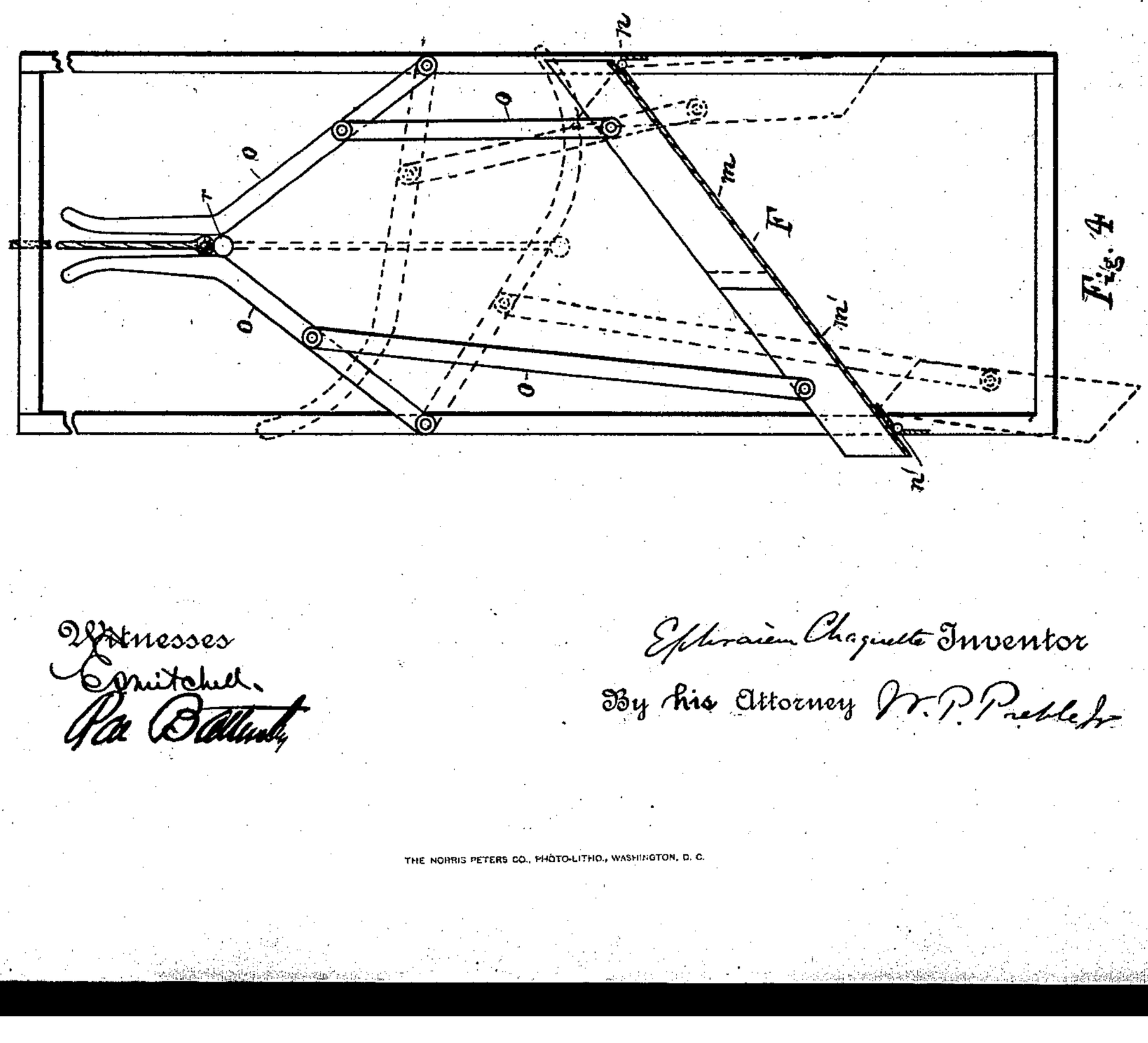

Fig. 4

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UNITED STATES PATENT OFFICE.

EPHRAIEM CHAQUETTE, OF NEW ROCHELLE, NEW YORK.

CLAM-DREDGE.

SPECIFICATION forming part of Letters Patent No. 702,628, dated June 17, 1902.

Application filed January 7, 1902. Serial No. 88,758. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIEM CHAQUETTE, a citizen of the United States, and a resident of New Rochelle, county of Westchester, State of New York, have invented certain new and useful Improvements in Clam-Dredges, of which the following is a specification.

The object of my invention is to provide a clam-dredging apparatus in which the clam is opened and closed by means of compressed air and which by reason of its construction shall be more powerful and capable of excavating a larger quantity of material in a given time and shall be easier and more effective in its operation than has heretofore been the case.

My improved dredge is intended and adapted either for harbor or dock use. In the harbor-dredging I prefer to have two mud-scows, one on each side of the dredging apparatus, in which case the dredge is preferably provided with two clams driven by the same engine, so that the excavated material can be delivered to both scows simultaneously. In dredging a dock or slip or similar place I prefer to have the mud-scow located at the outer end of the dredging apparatus, so that the clams can operate when necessary close up to the pier or shore. In the accompanying drawings I have shown both ways of equipping the dredging apparatus.

Figure 1 is an end view. Fig. 2 is a side view. Fig. 3 is a top view without the clams or their operating mechanism. Figs. 4, 5, and 6 are enlarged views showing the collapsible apron in side and front views and as a top plan, respectively.

Same letters indicate similar parts in the different figures.

A is the float or boat which constitutes the body of the dredge.

B is a framework built at the forward end of the boat and supporting the dredging apparatus. This frame, as shown, projects over the end of the boat sufficiently to allow the clams to rise and fall vertically.

C C are the clams, which, as before stated, are preferably two in number. Each is mounted upon a dredge-carriage D, adapted to move along the framework B sidewise of the boat A upon the track *a a*, which is mounted upon the frame B. When two clams are employed, each travels half the width of the boat; but if a single clam were used it would travel the entire width.

The to-and-fro motion of the dredge-carriages is brought about by a rack-and-pinion device operated by the motors E E, one of which is mounted on each dredge-carriage, as follows: The motor-shaft carries the sprocket *b*, connected by the chain *c* to the sprocket *d*. This latter sprocket is mounted upon the rack-shaft *e*, which is journaled with bearings fastened to the upper part of the carriage D and carries also the pinion *f*, which meshes with the rack *g*, extending crosswise of the boat A and secured upon the frame B. It is obvious that by turning the motor-shaft in one direction the dredge and dredge-carriage will be moved toward the side of the boat A, while turning it in the other direction will cause the dredge-carriage to return to its original position in the middle of the boat. These motors E may be electric or mechanical and driven by connection (not shown) from a single engine set in any convenient location in the boat A.

The material raised by the clams C C is discharged by means of the collapsible apron F, as hereinafter described, into the inclined troughs G G, each of which is hung upon the frame B, as shown at *h h*, Fig. 2, in such manner that the two troughs may converge toward each other, as shown in full lines in Fig. 2, or diverge from each other, as shown in dotted lines in Fig. 2. In the latter case the material received by said trough is projected into mud-scows (not shown) tied up alongside the boat. In the former case the material is discharged into a longitudinal trough H, by which it is conveyed to a mud-scow (not shown) tied to the rear end of the boat.

The troughs G G are each provided with a feeding-chain *i*, turning upon the sprocket *j* and the idler *j'*, journaled near the end of said trough. The sprocket is turned by the chain j^2 from the motor I, mounted in said trough. The trough H is provided with a feeding-chain *l*, turning upon the sprocket *k* and the idler *k'*, journaled near the ends of said trough. The sprocket *k* is turned by the chain k^2 from the motor J, mounted on the boat A.

The collapsible trough F consists of two hinged portions *m m'*, hinged, respectively, at *n n'* to the frame of the dredge-carriage D. When the clam C is at the top of the dredge-carriage, as shown, the collapsible trough F is closed. As the clam moves downward to get a new load the trough F opens to let the clam pass through and remains hanging in an open position until the clam comes up again. This is effected by reason of the fact that the inner ends of the portions *m m'* are supported by rods *o o*, which form a collapsible frame hinged to the frame of the dredge-carriage D, in such a position as to be raised by the clam after passing between the two halves of the collapsible apron on its ascent and supported until the clam begins again to descend. This collapsible apron is shown in its closed or working position in full lines in Fig. 4 and in its open or collapsed position in dotted lines in said figure. It will be readily understood that the apron normally occupies the collapsed position and is only lifted into the closed position by the cross-bar *r* of the clam in its ascent, this cross-bar lifting in turn the upper arms *o o* from the position shown in dotted lines to that shown in full lines, by which time the two halves *m m'* of the apron F have overlapped.

The clam is preferably of the hemispherical type, the two halves of which are pivoted to the clam-frame C' near the center of the lower cross-bar, as shown at *h' h'*.

It will be readily understood that the clam goes down open, gets its load in closing, goes up closed, and opens again at the top of the dredge-carriage to discharge its contents upon the collapsible apron F, which it has pulled up behind it.

In using this improved dredge, as above described, a continuous strip of material may be cut of a length substantially equal to the width of the boat on which the dredge is mounted, which is generally about sixty feet, after which the boat is advanced just enough to enable the cutting of the next strip. Obviously without changing the moorings of the boat the depth of any given cut may be increased, if desired, by making the clam travel along the same path as many times as may be necessary.

I claim—

1. The above-described dredge which consists of a suitable boat provided with a stationary frame projecting over one end thereof, two independently-operated clams mounted upon said frame and adapted to be moved in the direction of the boat's width and their operating mechanism, and a pair of inclined troughs mounted upon said frame and adapted to be tipped so as to receive the excavated material from said clams both in their converging and diverging positions, substantially as and for the purpose set forth.

2. The above-described dredge which consists of a suitable boat provided with a stationary frame projecting over one end thereof, two independently-operated clams mounted upon said frame and adapted to be moved in the direction of the boat's width and their operating mechanism, and a pair of converging troughs mounted upon said frame and adapted to receive the excavated material from said clams and convey it to the middle of the boat and an inclined trough extending lengthwise of said boat and adapted to receive the excavated material from said conveying-troughs and convey it to the end of said boat substantially as and for the purpose set forth.

3. The above-described clam-dredge which consists of a suitable boat, a stationary frame mounted thereon and extending over one end thereof, a clam mounted on said frame and adapted to rise and fall vertically beyond the end of said boat, a collapsible apron mounted upon said frame adapted to open in advance of said clam in its descent and to be closed by said clam in its ascent, and suitable troughs adapted to receive the excavated material from said collapsible apron substantially as and for the purposes set forth.

4. A clam-dredge provided with a pair of receiving and conveying troughs hung upon a suitable frame and adapted to converge toward each other and deliver the excavated material to a central trough or to diverge from each other and discharge the excavated material over the sides of said dredge substantially as shown and described.

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