

No. 615,368.

Patented Dec. 6, 1898.

C. H. SHIPMAN.
ELEVATED CARRIER.

(Application filed Feb. 10, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

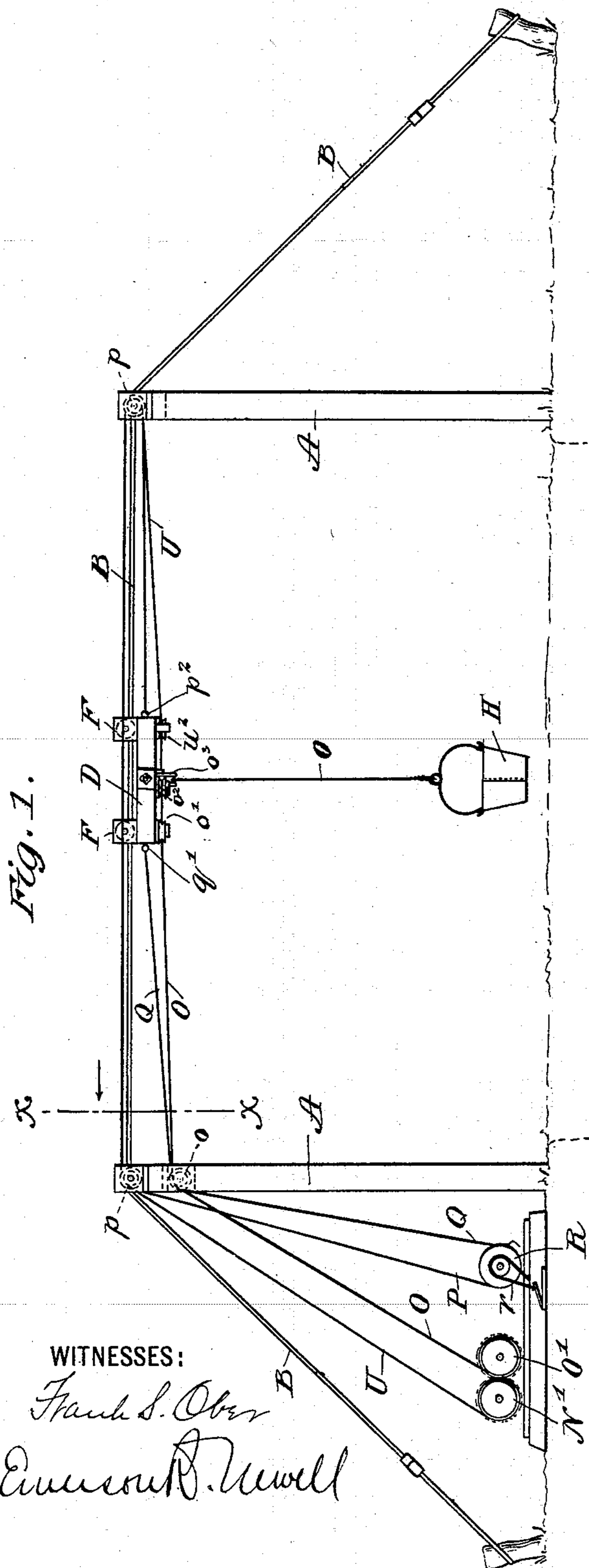
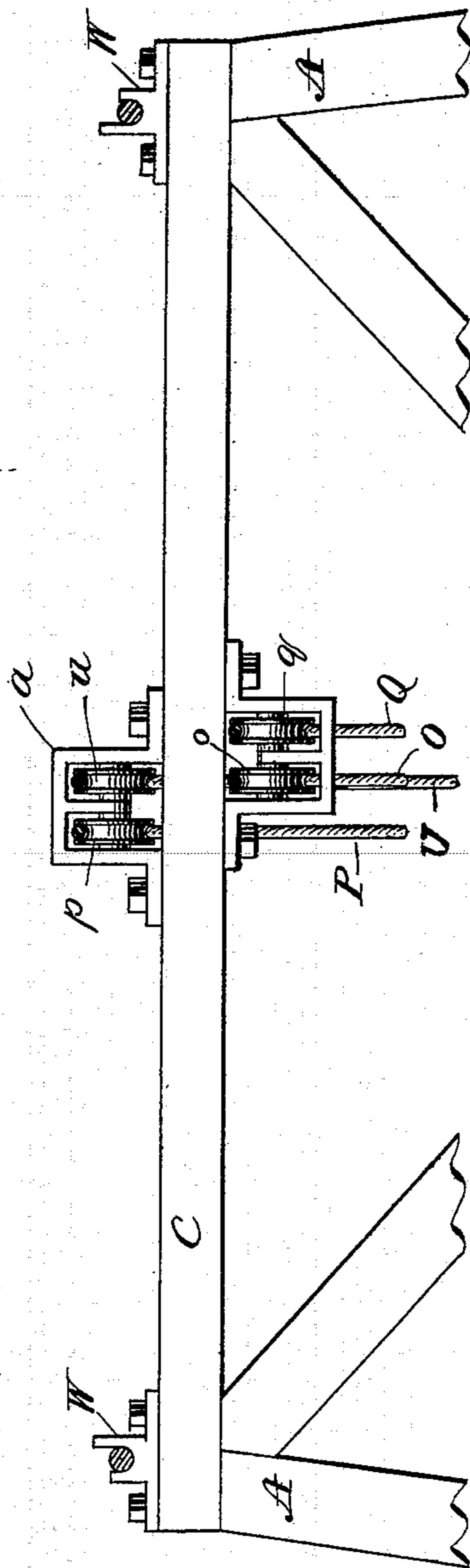


Fig. 2.



WITNESSES:

Frank S. Ober
Emerson R. Newell

INVENTOR

Charles H. Shipman.

BY

R. C. Metchie
ATTORNEY

No. 615,368.

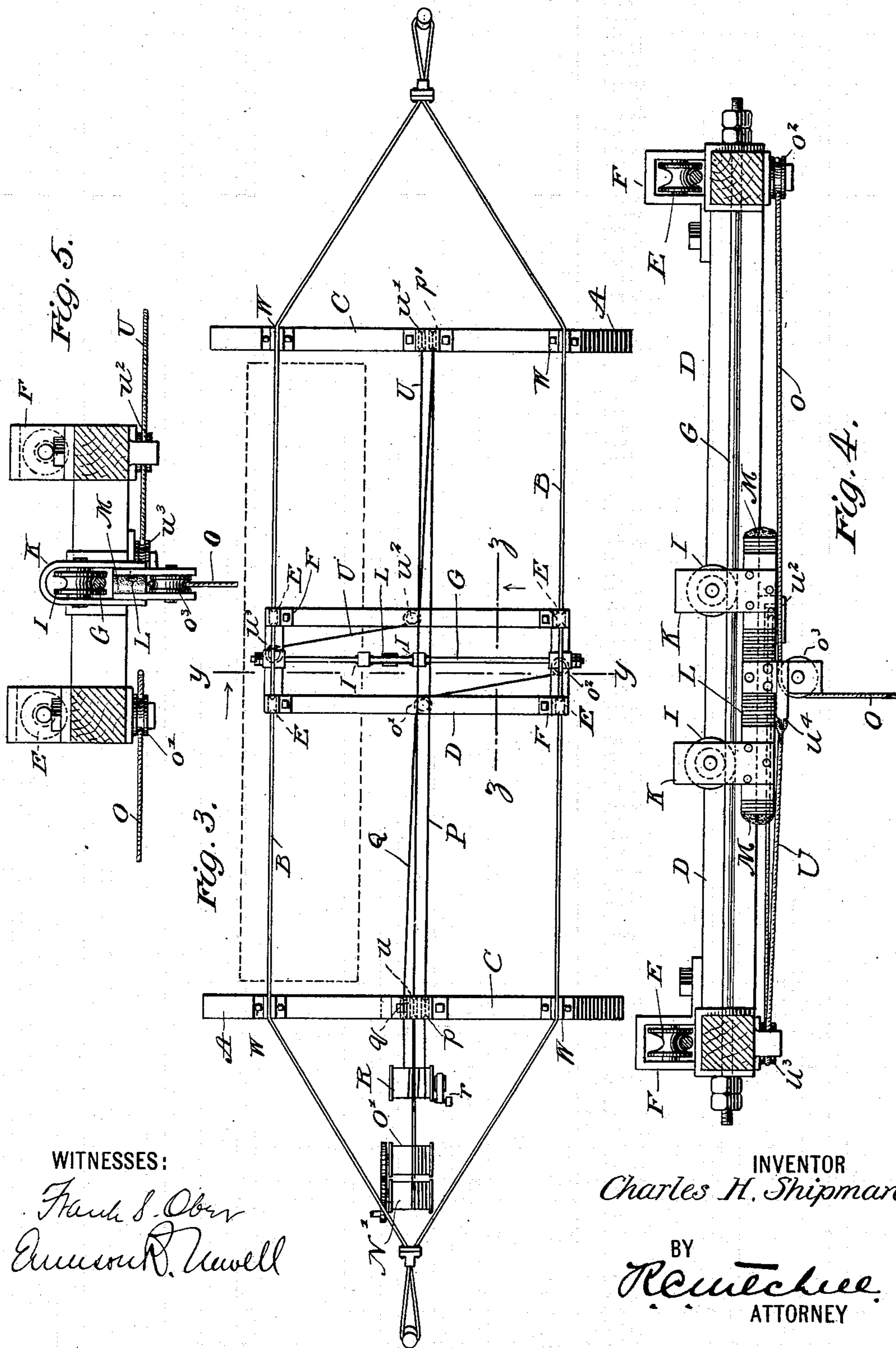
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WITNESSES:

Frank S. Ober
Amos R. Lowell

INVENTOR

Charles H. Shipman

BY

R. C. Hutchins
ATTORNEY

No. 615,368.

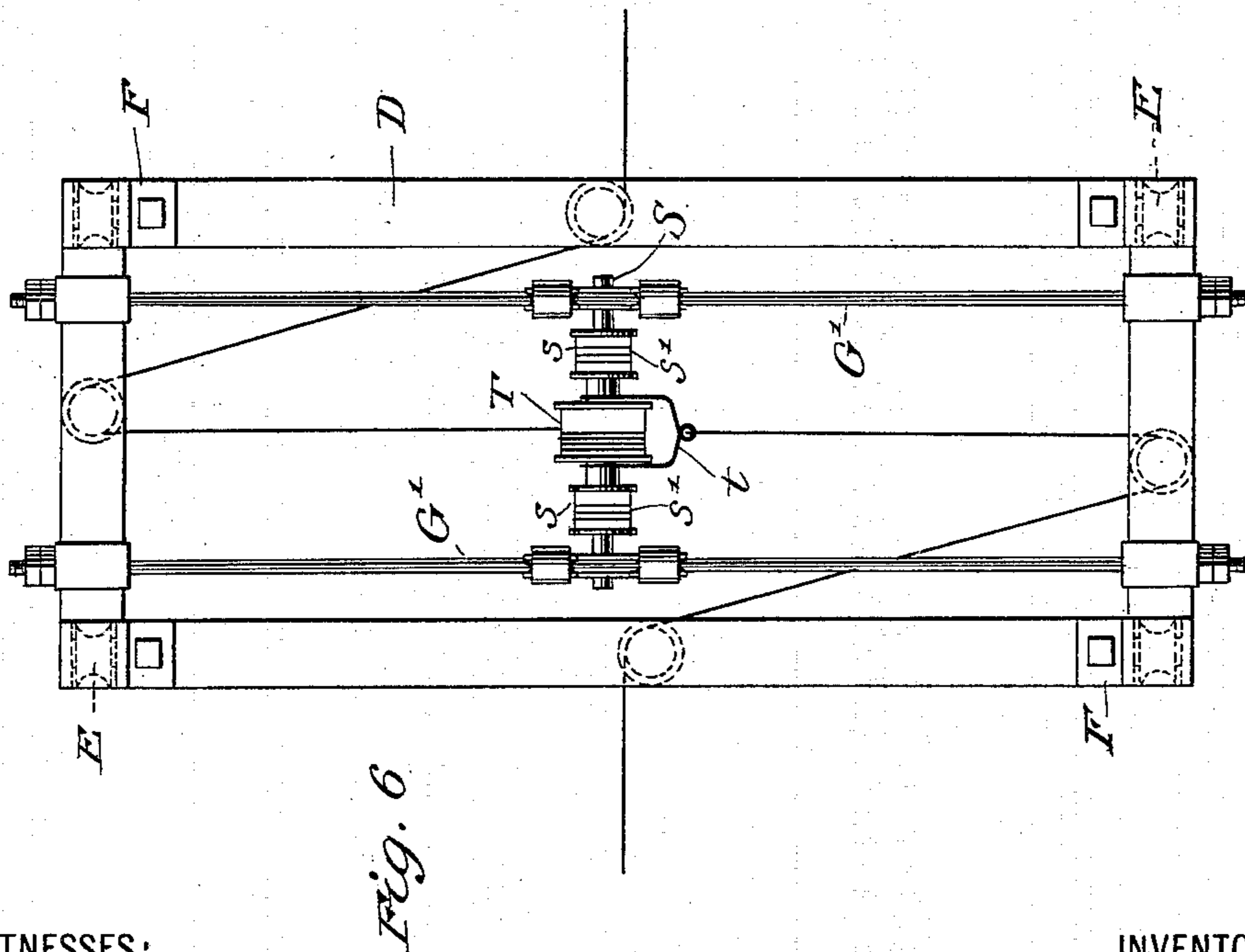
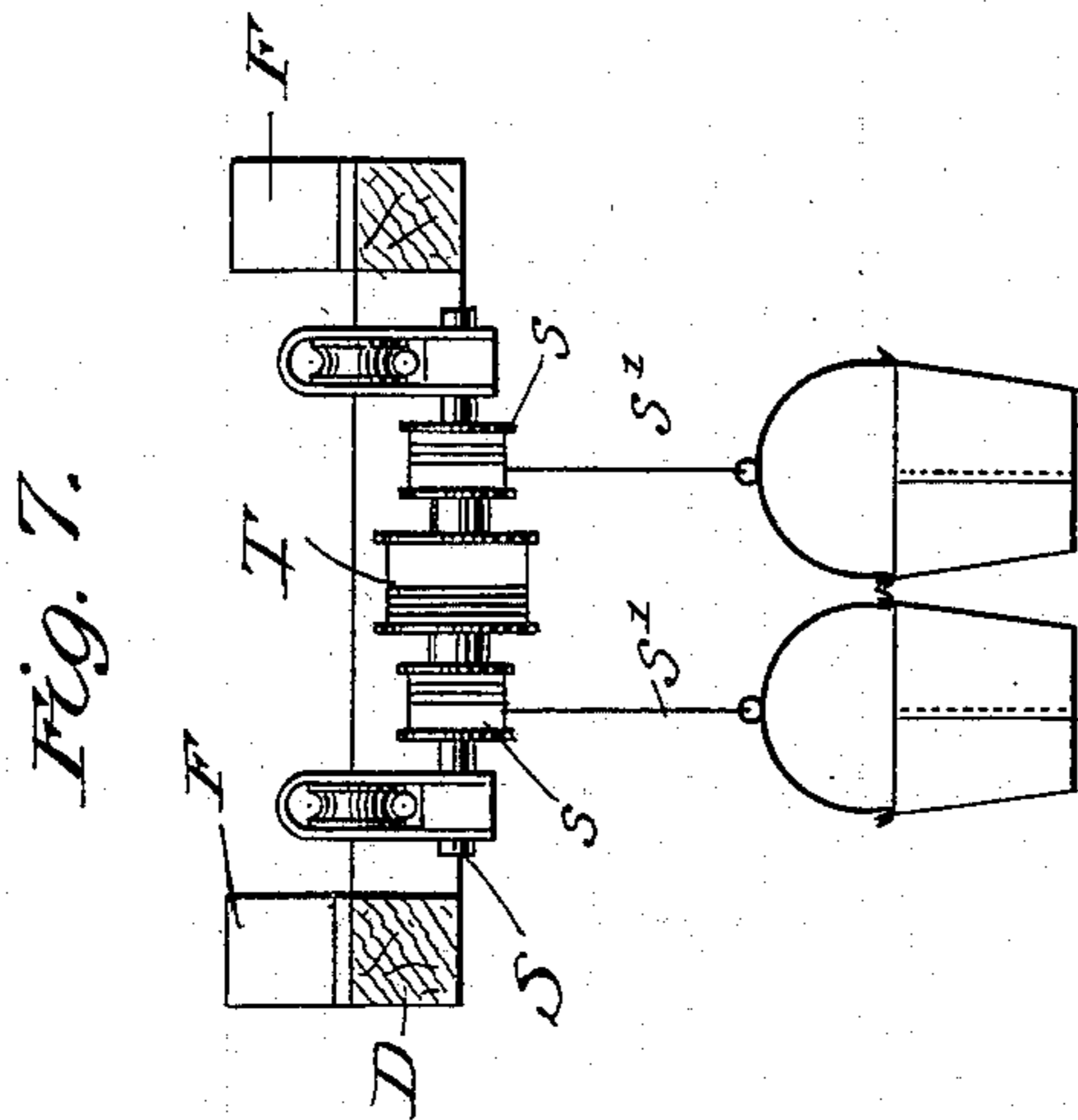
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3 Sheets—Sheet 3.



WITNESSES:
Frank S. Ober
Amos R. Howell

INVENTOR
Charles H. Shipman
BY
R. C. Mitchell
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES H. SHIPMAN, OF NEW YORK, N. Y.

ELEVATED CARRIER.

SPECIFICATION forming part of Letters Patent No. 615,368, dated December 6, 1898.

Application filed February 10, 1898. Serial No. 669,792. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SHIPMAN, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Carriers, of which the following is a full, clear, and exact description.

My invention relates to an improved carrier especially adapted for use in digging trenches, ditches, and the like.

Among the main objects of my invention are the provision of a cheap and easily-adjusted device for raising and transporting the excavated materials from one place to another, together with simple and easily-operated means for controlling the several different motions of the same.

In the preferred embodiment of my device, Figure 1 represents my structure as a whole in side elevation. Fig. 2 is a sectional view thereof on the line $x x$, looking in the direction of the arrow, showing the arrangement of the pulleys at this part. Fig. 3 is a plan view of the device. Fig. 4 is a longitudinal sectional view of a carriage on the line $y y$, looking in the direction of the arrow. Fig. 5 is a transverse sectional view of the carriage on the line $z z$, looking in the direction of the arrow. Fig. 6 is a plan view of a modified construction of the carriage. Fig. 7 is a sectional view of Fig. 6, showing the arrangement of the means for raising the bucket.

In excavating trenches, cellars, and the like, especially in the case of deep excavations, difficulty is found in properly removing the material excavated, and no device which properly answers the requirements has as yet been constructed. In the case of deep excavations—for instance, of a trench for a sewer or the like—the man in the trench cannot throw the dirt outside of the trench without great difficulty after the trench is more than five feet deep, and by the time that this depth has been reached the pile of dirt at the side of the trench is so high that the laborer cannot without great difficulty prevent the dirt from falling back into the trench. As a consequence two or more sets of excavators are necessary, one set on a staging a little above the other to receive the dirt excavated by the lower set as thrown upon the staging and to throw the same outside of the trench. In ex-

cavating dirt by these means the successive stages are usually staggered—that is, one set on one side of the trench and the next one above set on the opposite side of the trench. The consequence of this arrangement is that the men in the trench below are almost completely hidden, and as a result the foreman cannot oversee them as well and prevent them from shirking their work. This trouble has been avoided in part by certain traveling carriages which move back and forth over the trench carrying a hoisting-bucket for removing the dirt. This construction is objectionable, however, for several reasons. When the bucket, which is usually large and heavy, is passing over the trench, the men below are constantly on the watch to see that the same does not fall, and in consequence much time is lost to the contractor. It is also necessary in the usual form of carriage to transport this excavated dirt to a considerable distance down the trench to fill in the completed part with the dirt excavated ahead of it. In my construction these objections are avoided. The dirt may be shoveled into the bucket at the bottom of the deepest trench, raised up, and the traveler, together with the bucket, run to one side of and beyond the trench, and then the carriage as a whole may be started and moved in either direction desired, with the bucket passing along, not over, the trench, but entirely to one side thereof, and the dirt may be deposited at any point desired, and the necessity of any staging, as above explained, is avoided, and consequently the workmen in the trench are in full view of the foreman and can therefore be overseen by him to better advantage.

In the construction shown $A A$ are posts, and $C C$ are cross-beams thereon for supporting the carriage-track and certain of the other parts.

$B B$ constitute in this embodiment the carriage-track, which may be in the form of wire cables, as shown, fastened to a suitable anchorage and passing over and held by the chucks W . Upon this track runs a carriage D , as shown. This carriage has extended longitudinally across the same a supplemental track or guide G for the traveler L , which carries the bucket.

R is a rotatable drum controlled by a brake

5 *r*. Around this drum is wound flexible means P and Q, which in the preferred form of my construction consists of an endless rope, of which the part P passes over the pulley *p* (shown in Fig. 2 on the top of one of the cross-bars) from said pulley to the opposite pulley *p'* on the opposite cross-bar and back to the carriage, where it is attached at *p*². The other end Q of this endless rope
 10 passes up and over the pulley *q* (shown in Fig. 2) direct to the carriage, where it is attached at *q'*. The bucket-hoisting and other controlling mechanism consists of two drums N' and O', which are rotated by any suitable
 15 means either separately or together in the well-known manner of analogous constructions. Over the drum N' runs a rope U, over the pulley *u*, (shown in Fig. 2,) across either over or under said carriage to the pulley *u'*
 20 on the opposite cross-bar, back to the carriage, where it passes over the pulley *u*², as shown in Fig. 5, from thence over the pulley *u*³, and from there over to the traveler, to which it is attached at *u*⁴, as shown in Fig. 4.
 25 This rope I designate as the "traveler-rope." Over the drum O' runs the rope O and from this over the pulley *o* (shown in Fig. 2) to the carriage, where it passes over the pulley *o'* (shown in Fig. 5) and over the pulley *o*² on
 30 the carriage and *o*³ on the traveler to the bucket H. This last rope is designated as the "bucket-rope." This traveler runs back and forth on the traveler-rod G by means of the wheels I, held in the strap K, and may have
 35 at the ends thereof the cushions M. It must be seen that by rotating the drum O' in the proper direction while the drum N' is still the bucket will be drawn up until it reaches the traveler. By then rotating the drum N' in
 40 the proper direction and slackening away on the rope O, or by hauling in on the rope O and slackening away on the rope N, the traveler, together with the bucket, may be carried outside of and away from the ditch.

45 The drum R in my preferred construction is not power-driven to shift the carriage back and forth; but this movement of the carriage is accomplished by means of the ropes O and U, the drum R and the ropes P and Q running
 50 thereover being shifted by such movement, and when the proper position of the carriage has been reached the brake *r* is applied to the drum R, locking the same from further movement, and consequently holding
 55 the carriage fixed to allow of further manipulation of the traveler and bucket at this point.

In the modified construction shown in Figs. 6 and 7 the principle of operation is substantially the same, but the embodiment is slightly
 60 different. In this construction the main part of the carriage is substantially the same as in my former embodiment; but in this case two traveler-rods G' G' instead of one are provided, each of which has a carriage running
 65 thereon and from one of which carriages to the other extends a suitable support, such as the shaft S, upon which are fixed drums *s s*,

over which run the ropes *s' s'*, to which are attached buckets. The shaft S also carries
 70 fixed to it a drum T, over which the hoisting-rope runs in the opposite direction from which the bucket-ropes *s'* run over their respective drums. By pulling on this hoisting-rope the drums T and *s* are rotated and the buckets
 75 are hoisted. Over the shaft S is also loosely fitted a yoke *t*, to which the traveler-rope is attached. It will thus be seen that the bucket may be raised and the traveler manipulated by the two ropes in the same manner that the
 80 corresponding parts in the other figures are manipulated. Besides merely an additional bucket this construction has especial advantage from the peculiar construction of trenches, especially of those which are particularly deep—for instance, such as are used
 85 in the construction of sewers. Where some friable material—such as dirt or, more especially, loose sand—is encountered in such construction, it is necessary that the trench be lined with planking and that suitable shores,
 90 therefore, should extend across from the planking on one side of the trench to that on the other to prevent the dirt from caving into the trench. These shores must be placed more or less closely together, dependent upon
 95 the condition of the material forming the sides of the trench, and said shores are usually set one above the other in a vertical plane, so that buckets and construction materials may be raised from or lowered into the
 100 trench with the least possible difficulty. In the usual construction of analogous carriages only one bucket is ordinarily used. As a result of this construction only the section between two planes of shores can be excavated
 105 at once; but by my construction shown in this modification Figs. 6 and 7 two or more buckets can be arranged upon the shaft at suitable distances, so that one bucket may be dropped into two or more sections of the
 110 trench, and in this way time is saved and the excavation may go on more rapidly.

The danger that the bucket might fall upon and injure the workmen in the trench is avoided by my construction, as the bucket
 115 can be passed along the trench entirely outside of the same, which is not the case in the usual construction of such devices.

Many different arrangements and modifications of my device and also of the buckets
 120 will occur to any one skilled in the art, and I therefore do not limit myself to the particular construction shown or to the particular number or arrangement of the buckets to be used.
 125

What I claim is—

1. In a carrier in combination, a track, a carriage movable thereon, a traveler movable transversely of said track on said carriage, identical supporting means passing to
 130 said traveler to manipulate the same and also said carriage.

2. In a carrier in combination, a track, a carriage movable thereon, a traveler mov-

able transversely of said track on said carriage, identical supporting means passing to said traveler to manipulate a weight and also said traveler.

5 3. In a carrier in combination, a track, a carriage movable thereon, a traveler movable transversely of said track on said carriage, identical supporting means passing to said traveler to manipulate a weight and also said carriage and traveler.

10 4. In a carrier in combination, a track, a carriage therefor, a transverse traveler, a weight-support and identical supporting means to move said weight longitudinally, transversely and vertically of said track.

15 5. In a carrier in combination, a track, supporting means movable longitudinally, transversely, and vertically of said track and operated from one drum.

20 6. In a carrier in combination, a track, a carriage thereon, a traveler movable with relation thereto and transversely of said track, flexible means running to said carriage and traveler and adapted to actuate both in one direction and to support a weight, and a second flexible means to actuate the carriage and traveler in an opposite direction.

7. In a carrier in combination, a track, a carriage thereon, a traveler on said carriage movable transversely of and below said track, 30 having a plurality of vertically-adjustable weight-supporting means arranged longitudinally of said track.

8. In a carrier in combination a track, a carriage thereon, a traveler on said carriage 35 movable transversely of said track having a plurality of vertical and simultaneously-adjustable weight-supporting means arranged longitudinally of said track and separated one from the other.

9. In a carrier in combination an elevated track, a carriage movable thereon, a traveler 40 movable on said carriage transversely of said track, identical supporting means passing to said traveler and adapted to manipulate a weight and also said carriage and traveler, a 45 drum to control said means, and means, to stop the movement of said carriage over said track, controllable from near said drum.

CHARLES H. SHIPMAN.

Witnesses:

R. C. MITCHELL,
EMERSON R. NEWELL.