

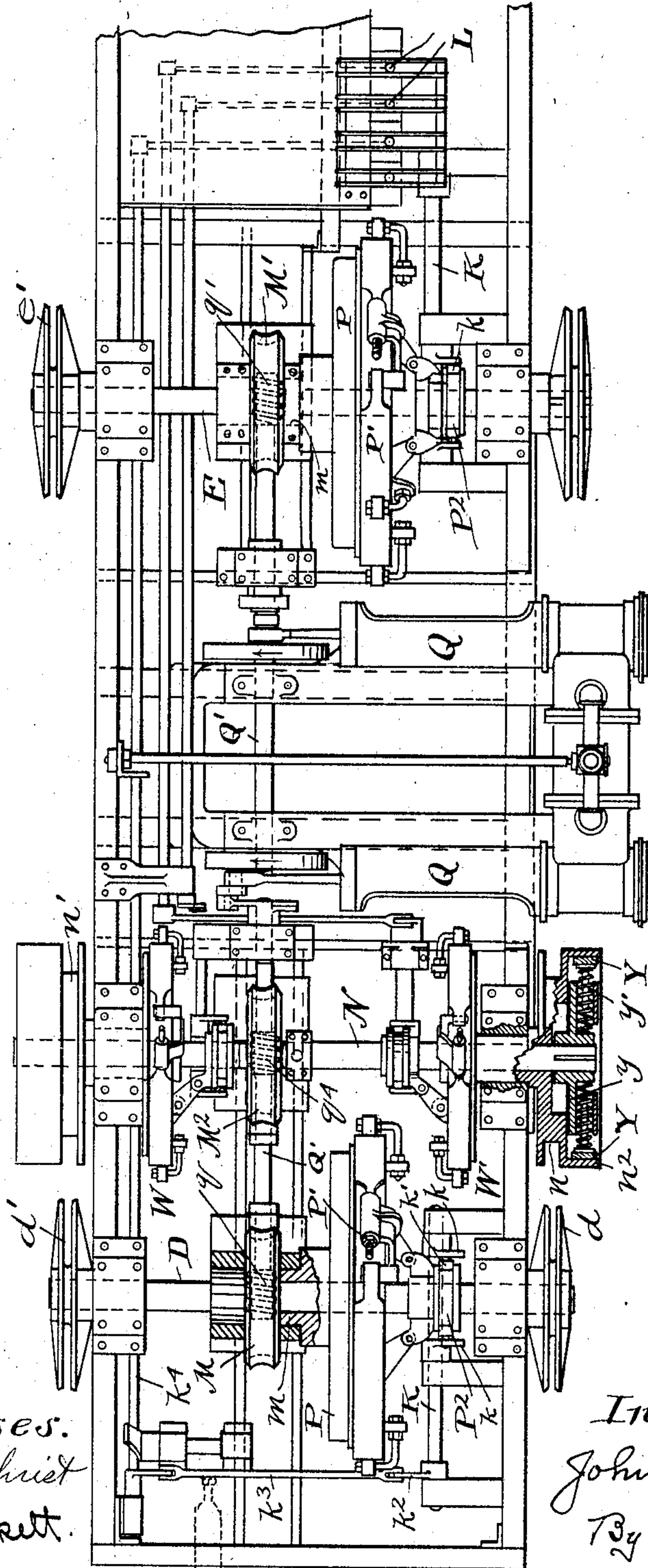
No. 790,073.

PATENTED MAY 16, 1905.

J. McMYLER.
LOADING MACHINERY.
APPLICATION FILED SEPT. 29, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses.
E. B. Gilchrist
B. W. Brackett.

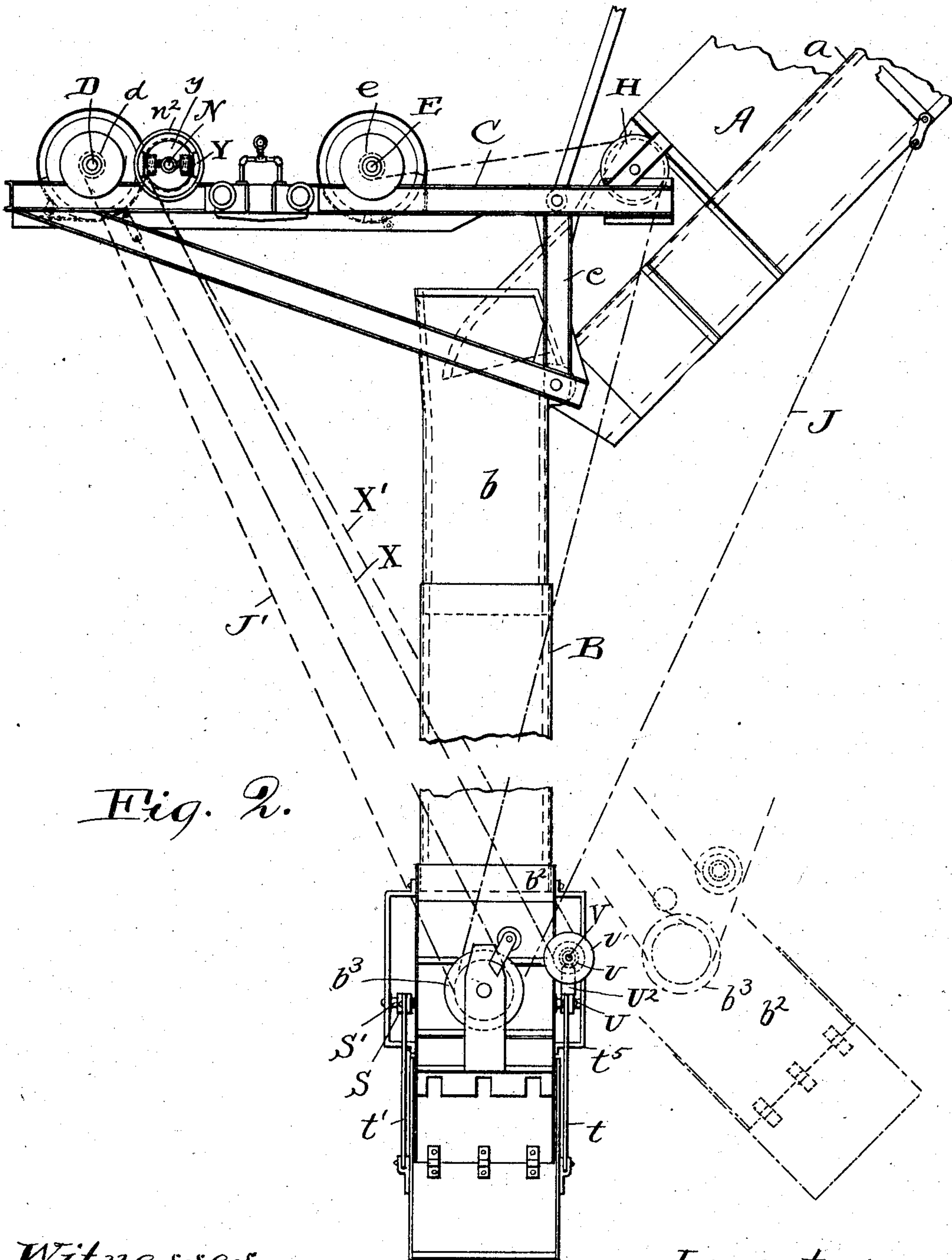
Inventor.
John Mc Myler,
By his Attorneys,
Thurston & Bates.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

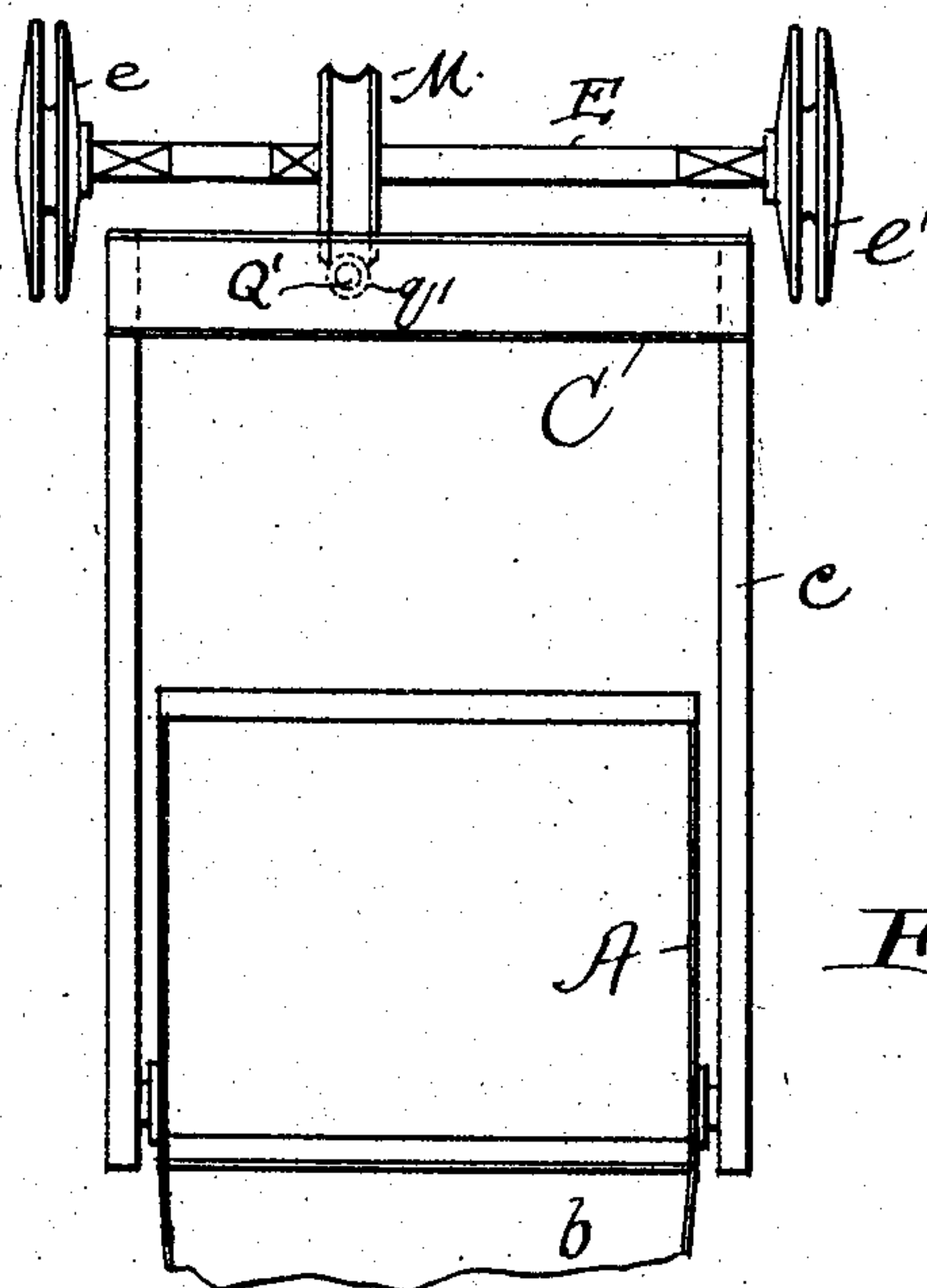
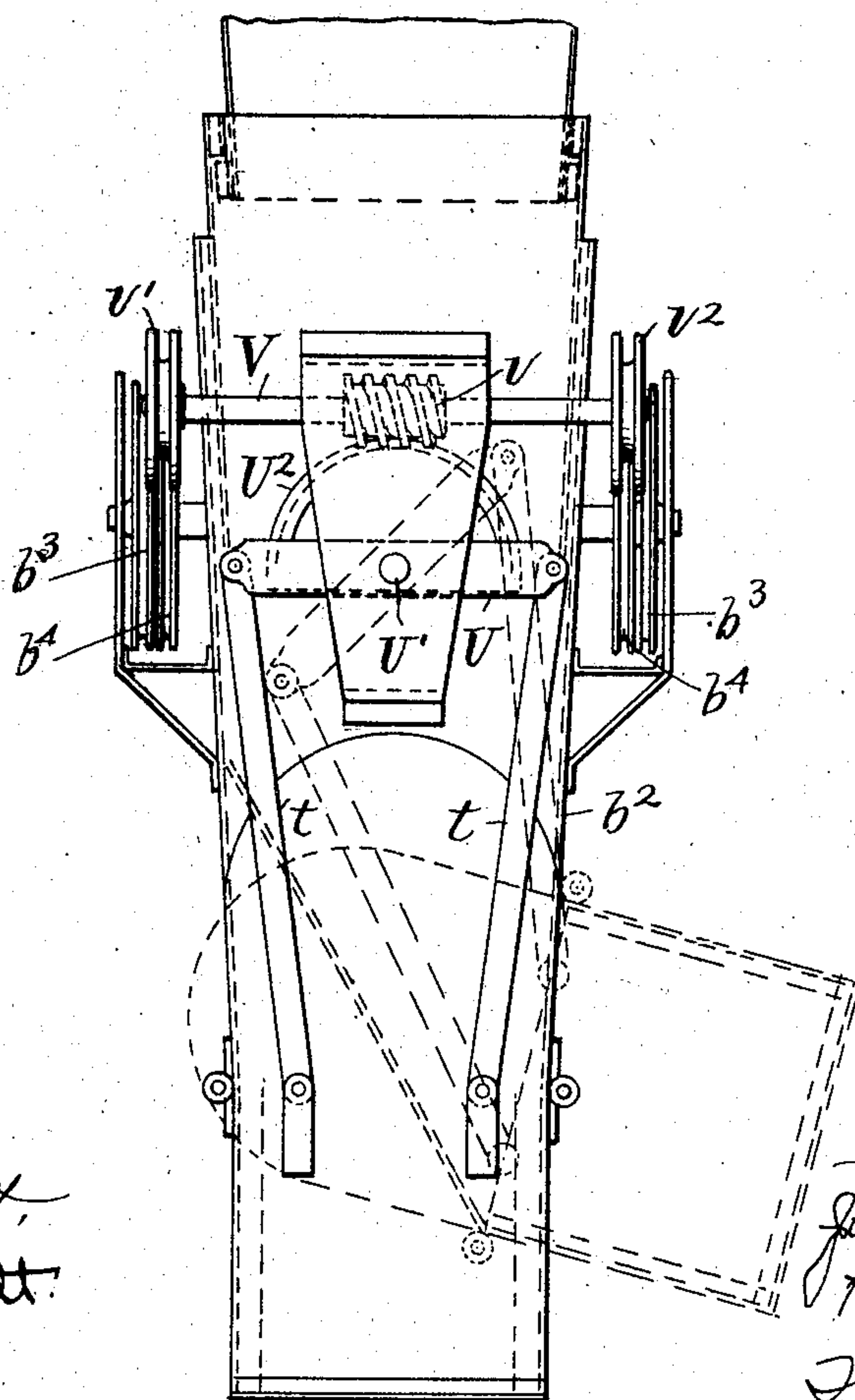


Fig. 3.



Witnesses.
E. B. Gilchrist,
B. W. Brockitt.

Inventor.
John McMyler,
By his Attorneys,
Thurston & Bates.

UNITED STATES PATENT OFFICE.

JOHN McMYLER, OF CLEVELAND, OHIO.

LOADING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 790,073, dated May 16, 1905.

Application filed September 29, 1904. Serial No. 226,444.

To all whom it may concern:

Be it known that I, JOHN McMYLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Loading Machinery, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention is an improvement in the means whereby loose material—such as coal, ore, or grain—may be conveyed from an overhead platform or chute into the hold of a vessel and properly distributed therein irrespective of the distance (within limits) between the chute and the surface onto which the material is to be delivered.

The invention has been contrived with special reference to use as part of a coal-car-dumping machine; but it is not inherently limited to such use.

The invention may be summarized as consisting in the combinations of parts hereinafter described, and definitely set forth in the claims.

In the drawings, Figure 1 is a plan view of the platform which supports the mechanism by which said moving parts are moved. Fig. 2 is a side elevation of the one end of said platform, the lower end of the chute to which it is attached, and the spout associated with said chute. Fig. 3 is a front view of said spout, its support, and certain other mechanism hereinafter described.

Referring to the parts by letters, A represents an incline-chute onto which the material, such as coal, is to be delivered. The floor-line of this chute is indicated by *a*, the parts of the chute below said floor-line being the supporting-beams. B represents a telescopic discharge-spout—that is to say, a spout which is composed of several telescoping sections. The upper section *b* is pivoted to some part of the structure of which said chute is a rigid part, the pivot being horizontal and the upper end of the spout being in such position that the material sliding down the chute will flow into the upper end of said spout. A platform C is rigidly fixed to the outer end of said chute and normally occupies a substantially horizontal position. On this plat-

form are three rotatable shafts D, E, and N, said shafts being mounted in suitable bearings and in parallel relations. On the ends of the two shafts D and E the sheaves (indicated by *d d'* and *e e'*, respectively) are secured. Loosely mounted on these two shafts, respectively, are the two worm-wheels M M', and to the hubs *m* of each of these worm-wheels one part, P, of a friction-clutch is secured. The other part, P', of said clutch is fixed to the associated shaft. These clutches may be of any suitable or desired construction and may be operated by a sliding sleeve P². A motor—as, for example, engine Q—is secured upon the platform, and the motor-shaft Q' is provided with two worms *q* and *q'*, (shown in dotted lines in Fig. 1,) which engage, respectively, with the worm-wheels M M' and drive said worm-wheels and shafts constantly while the engine is running.

On each side of the lower section *b*² of the spout B are the two sheaves *b*³ and *b*⁴—that is to say, there are two sheaves *b*⁴, one on each side of said spout-section, and two sheaves *b*³, one on each side of said spout-section. Cables J are secured at one end to the chute on opposite sides thereof and extend down under the two sheaves *b*³ and thence up to idler-sheaves H and thence to the two sheaves *e e'*, respectively. Two other cables, J', are secured to the platform C and pass down under the two sheaves *b*⁴ and thence up to the two sheaves *d d'*.

It will be understood that the operator of the mechanism herein described is to stand upon the platform C and that the motor is in constant operation. If now he desires to swing the spout bodily forward or backward, he has only to throw in that friction-clutch P which will connect either the shaft D or E, as required, to the associated worm-wheel M or M', and the result will be the winding up of the proper cables to cause said spout to swing in the desired direction, the cables running in the other direction being free to unwind from their sheaves to permit the spout to so swing. If it is desired to shorten the spout without swinging it on its supporting-pivot, both of the clutches P P' are thrown in and all of the cables J and J' are wound up

equally. The clutch-sleeves may be moved by any suitable mechanism; but in the embodiment of the invention shown they are moved by the arms k , projecting from rock-shafts K and having pins k' , which enter the grooves of the sleeves. These rock-shafts have also operating-arms k^2 , which are connected by suitable links k^3 with other rock-shafts k^4 , suitably mounted upon the platform, and all these and other rock-shafts employed in connection with other clutches to be specified are capable of being moved by various levers L, respectively, grouped at some convenient point.

On the lower end of the spout B is what is sometimes called a "trimmer"—that is to say, it is a tubular section adapted to be swung into various positions relative to the spout, but in a direction transverse to that direction in which the spout swings as an entirety. There is nothing new in this swinging trimmer-section-piece; but the mechanism by which it may be swung as desired by the operator on the platform C is thought to be new. The trimmer-section is supported by four substantially vertical links $t t' t'' t'''$, two of which are pivoted to the front side and two to the rear side of said section. The upper ends of the two links $t' t''$ on the rear side are pivotally connected with a rocker S, loosely mounted on a stud S', which projects from the rear side of the lower spout-section, the outer end of this stud being supported by brackets t^5 . The two links $t t'$ on the front side of said trimmer-section are pivotally connected at their upper ends with a rocker U; but this rocker is rigidly fixed to a rock-shaft U', on which is also secured a worm-segment U². A horizontal shaft V is mounted on the front side of the lower spout-section, and it carries a worm v , which engages with this segment. Two sheaves $v' v^2$ are also secured to opposite ends of this shaft. A cable X, secured to and wound in one direction upon one of these sheaves, extends up and is wound upon a sheave n upon the shaft N. Another cable, X', is wound in opposite direction upon the other sheave and extends up to and is wound upon another sheave, n' , on shaft N. A worm-wheel M², which engages a worm q^4 on the motor-shaft Q', is secured upon shaft N, and it and said shaft are constantly driven. There are two clutches W W' on this shaft N, which are independently operable by substantially the same means which is provided and as hereinbefore described for operating the other clutches, P. When one of these clutches is thrown in, it connects one sheave, n , to the shaft and the associated cable is wound up, thereby swinging this trimmer-section in one direction. When the other friction-clutch, W', is drawn in, the sheave n' is connected with the shaft and the other cable is wound up and the trimmer-section is caused to swing in the opposite direction. The two sheaves $n n'$

on shaft N, on which these cables are wound, have also a frictional connection with the shaft, which frictional connection is sufficiently strong to tend to rotate said shafts at all times. The tendency is not sufficient to wind up the cables and thereby swing the trimmer-section, but is strong enough to keep the cables taut at all times. The frictional connection between the sheaves and the shafts consist of a pair of radially-movable shoes Y, which are supported by a disk y , secured to the shaft N, and these shoes are impelled outward into engagement with a cylindrical flange n^2 on the sheaves by springs y' .

I claim—

1. The combination of an inclined chute, a platform fixed thereto, and a telescopic discharge-spout suspended by a pivot from said chute, two parallel shafts mounted upon said platform each having a sheave secured to each end, a rotatable shaft at right angles to said two shafts carrying two worms, two worm-wheels loosely mounted respectively upon the two parallel shafts, clutches for connecting said worm-wheels to said shafts, and cables wound upon said sheaves and connected with the lower section of the telescopic spout, and idler-sheaves over which two of said cables pass.

2. The combination of an inclined chute, a platform fixed thereto, and a telescopic discharge-spout suspended by a pivot from said chute, and a trimmer at the lower end of said discharge-spout, two rockers pivoted to the opposite sides of said lower spout-section, and links connecting the ends of said rockers with the sides of said trimmer, a worm-wheel segment fixed to one of said rockers, a horizontal worm-shaft mounted on the lower spout-section, sheaves connected with said worm-shaft, cables wound upon said sheaves and extending up to the platform, and mechanism on said platform for winding up and paying out said cables.

3. The combination of an inclined chute, a platform fixed thereto, and a telescopic discharge-spout suspended by a pivot from said chute, and a trimmer at the lower end of said discharge-spout, two rockers pivoted to the opposite sides of said lower spout-section, and links connecting the ends of said rockers with the sides of said trimmer, a worm-wheel segment fixed to one of said rockers, a horizontal worm-shaft mounted on the lower spout-section, sheaves connected with said worm-shaft, cables wound upon said sheaves and extending up to the platform, a shaft rotatably mounted upon said platform, a worm-wheel secured thereto, a worm-shaft engaging said worm-wheel, two sheaves upon said shaft and capable of rotating independently thereof, and clutches for connecting said sheaves with said shaft.

4. The combination of an inclined chute, a platform fixed thereto, and a telescopic dis-

charge-spout suspended by a pivot from said chute, and a trimmer supported from the lower section of said discharge-spout, two rockers pivoted to the opposite sides of said lower spout-section, and links connecting the ends of said rockers with the sides of said trimmer, a worm-wheel segment fixed to one of said rockers, a horizontal worm-shaft mounted upon the lower spout-section, sheaves connected with said worm-shaft, cables wound upon said sheaves and extending up to the platform, a constantly-rotating shaft mounted on said platform, sheaves loose upon said shaft, clutches for connecting said sheaves and shaft, and friction-producing devices engaging with said shaft and sheaves whereby the latter are turned, when the clutches are thrown out of action, sufficiently to take up the slack of said cables.

5. The combination of an inclined chute, a platform fixed thereto, and a telescopic discharge-spout suspended by a pivot from said chute, and a trimmer supported from the lower section of said discharge-spout, two rockers pivoted to the opposite sides of said

lower spout-section, and links connecting the ends of said rockers with the sides of said trimmer, a worm-wheel segment fixed to one of said rockers, a horizontal worm-shaft mounted upon the lower spout-section, sheaves connected with said worm-shaft, cables wound upon said sheaves and extending up to the platform, a shaft rotatably mounted upon said platform, a worm-wheel secured thereto, a worm-shaft engaging said worm-wheel, two sheaves upon said shaft and capable of rotating independently thereof, and spring-actuated shoes carried by said shaft engaging with said sheaves and thereby creating such friction that the sheaves without a load, will be rotated by said shaft, and friction-clutches for connecting the sheaves to the shaft.

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

JOHN McMYLER.

Witnesses:

C. F. SMIEDEL,

B. W. BROCKETT.