

(No Model.)

2 Sheets—Sheet 1.

R. M. HOSEA.
COAL CHUTE.

No. 482,009.

Patented Sept. 6, 1892.

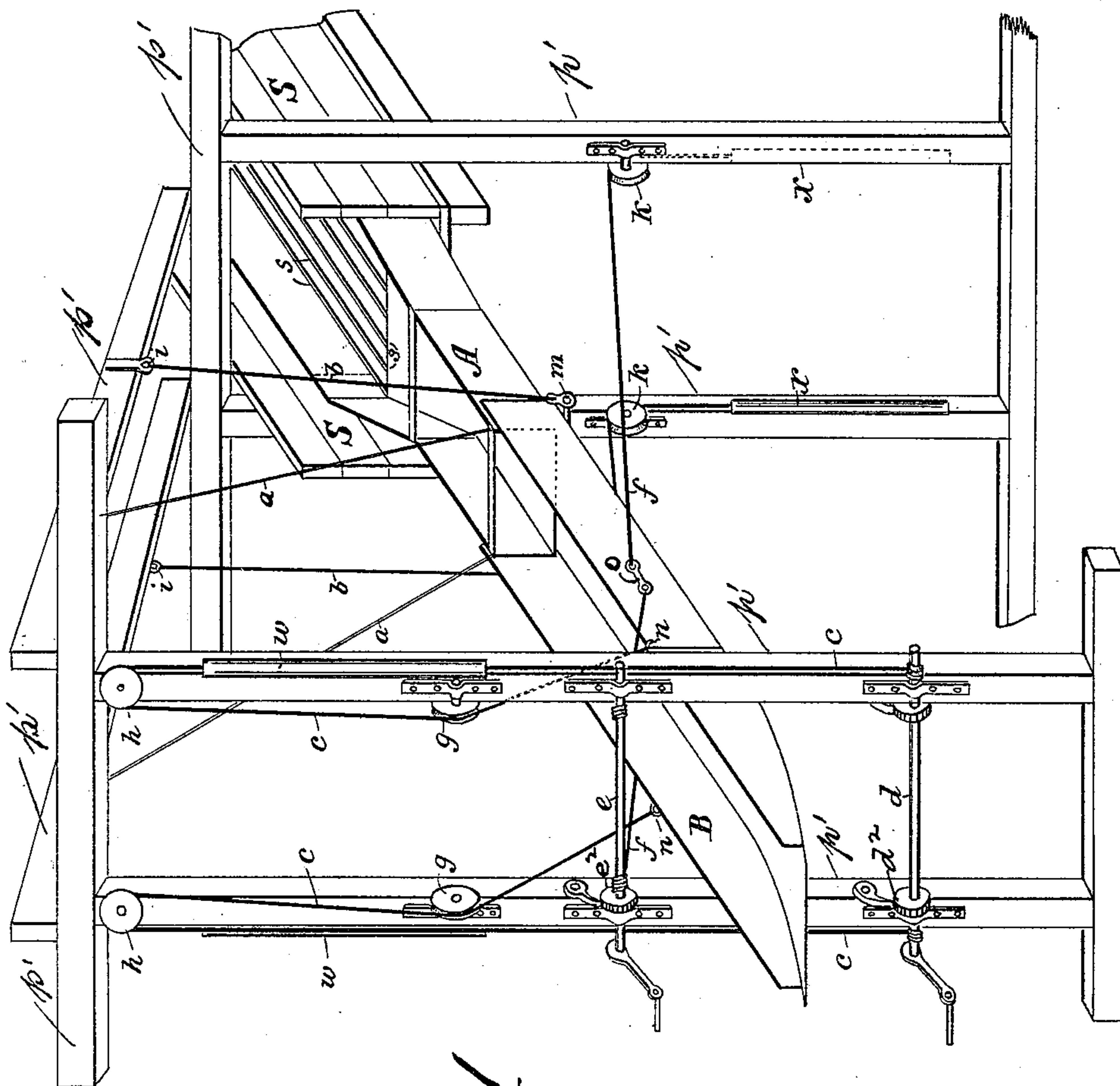


Figure 1

WITNESSES:

Geo S. Rice Jr
Ely Sisdale

INVENTOR

R. M. Hosea
BY
R. M. Hosea
ATTORNEY

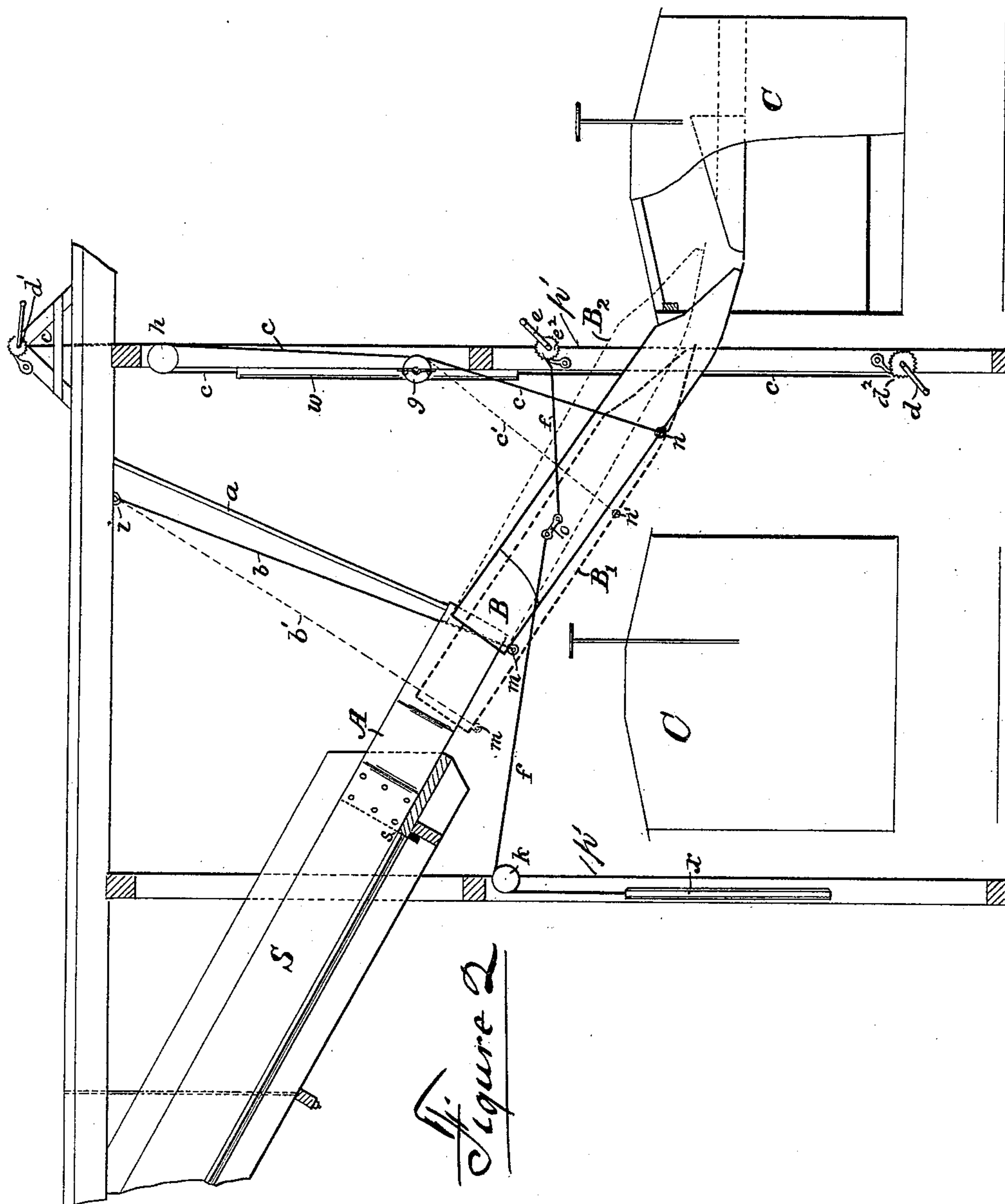
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WITNESSES:

Geo S. Rice Jr.
Essex

INVENTOR

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ATTORNEY

UNITED STATES PATENT OFFICE.

RAPHAEL M. HOSEA, OF DENVER, COLORADO.

COAL-CHUTE.

SPECIFICATION forming part of Letters Patent No. 482,009, dated September 6, 1892.

Application filed December 4, 1890. Serial No. 373,610. (No model.)

To all whom it may concern:

Be it known that I, RAPHAEL M. HOSEA, a citizen of the United States, residing at Denver, Colorado, have invented new and useful Improvements in Coal-Chutes, of which the following is a specification.

My invention relates to an improved coal-chute adapted for loading coal into all kinds of railroad-cars, but is especially adapted for use in connection with box or stock cars, where it is necessary to withdraw and reinsert a chute in loading successive cars, which operations usually require the services of several men and consume considerable time. It is also especially adapted for use in connection with any of the mechanical coal-distributors now in use by reason of the facility of withdrawal of the chute when the car is loaded and its easy reinsertion into the next car when moved to position, all under the control of one man. It is likewise adapted for use with broad or narrow gage cars or cars of different heights by reason of the vertical adjustment of the chute at its delivery end, whereby it may be adjusted to any height above rail within the limits of practical use. In all of these adaptations the same features are common—viz., facility in placing the chute in position for use in the minimum time and instant and automatic withdrawal when a loaded car is to be moved, all under the control of one man.

My invention consists in the novel construction and combination of the several parts to accomplish the above results, as will be hereinafter more fully set forth.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a coal-tipple, showing the construction of my improvement. Fig. 2 is a side view in section showing the operation of my improvement.

Referring now to the drawings forming part of this specification, in which similar letters of reference indicate corresponding parts, Fig. 1 shows a guideway S, which may be a screen-frame having screening-bars s, of usual construction, supported between upright posts p'. Joined at the lower end of screen-bars s and fastened to the inside lining of screen-

frame S is a fixed chute A, (preferably made of thin sheet steel or iron,) supported firmly from above by rods or bars a a. At its junction with screen-bars s the chute A is of the same interior width as screen-frame S, but is exteriorly of such width as will allow free telescopic motion outside of it of suspended delivery-chute B for such distance as required, (from two to four feet in practice,) and may also be stiffened by suitable braces. The chute B is preferably constructed of thin sheet steel or iron and in practice is about two feet deep and of such width as will admit of its telescoping freely the required distance about the fixed chute A and at its lower end permit of easy entrance into the side doors of box-cars. The width may be uniform throughout, or it may, if desired, be constructed to taper from top to bottom. Near its forward end the chute B is suspended at points n by cords c and at the rear end at points m, by pivotal rods b, from points i upon the framing-timbers p' of the tipple. These suspended cords and rods are arranged approximately parallel and at right angles to the general line of inclination of the chute, so that in swinging backward the chute B moves approximately in said line of inclination in telescopic relations with the lower part or extension of the fixed chute A and said suspending rods and cords assume the positions indicated by the dotted lines b' c', Fig. 2. The rear pivotal suspension of chute B is permanent; but the forward suspension is adjustable vertically by carrying the cords c over idler-sheaves h, pivoted to the framing-timbers of the tipple, and attaching counter-weights w to the free ends. The cords c may be extended to a windlass d, provided with the usual pawl and ratchet d², secured upon the framing-timbers below, to provide for permanent vertical adjustments of the forward or delivery ends of the chute B. Preferably the counter-weights w are omitted and the windlass d alone employed, or the sheaves h and weights w omitted and the cords c carried directly to a windlass d', located at the top of the tipple. When necessary, the cords c are carried over guide-pulleys g to bring the suspension at the forward end of the chute into substantial parallelism with the rear suspension to insure the free telescopic adjustment referred

to at the rear end and maintain the proper head-room or clearance at the front end. The several positions which may be assumed by the delivery-chute B are indicated by full lines at B and by dotted lines at B' and B², respectively.

The fore-and-aft movements of the delivery-chute B are accomplished by attaching to the sides of the chute about midway of its length, as at *o*, cords *f*, extended rearward over pulleys *k*, attached to the framing-timbers of the tippie and terminated in overbalancing-weights *x* of sufficient gravity to positively and quickly swing the movable chute backward when required. Forward of their points of fastening upon the chute B the cords *f* extend to and wind upon a windlass *e*, provided with the usual pawl-and-ratchet mechanism *e*² and attached to the forward uprights *p'* of the tippie. The counterpoise-weights *x* are adjusted to such an amount that one man standing upon the car C may conveniently operate the windlass *e* and either draw the chute B into working position with facility and quickness or by releasing the windlass *e* allow the chute automatically to withdraw into the position B'. (Shown in heavy dotted lines, Fig. 2.)

The operation of my improved chute is as follows: At coal-mines the empty cars are stored on a track having an inclination toward the tippie and may be of various kinds and sizes. Each car is run by gravity to the tippie and checked opposite the chute, as at C. The attendant then operates the windlass *e* (the chute being in its withdrawn position B', in which its suspending rods and cords occupy the position shown in dotted lines *b' c'*) and by a few turns brings the chute forward to its loading position, retained by the pawl and ratchet of the windlass. Meanwhile the mining-cars are then dumped over the screen from above in the usual manner and distributed by shovelers or a mechanical coal-distributor when required. Should the chute B need vertical adjustment, the car-rider can operate the windlass *d* from the ground, or the attendant on the tippie above can adjust with the windlass *d'*. When the car is loaded, the pawl is released from the ratchet on the windlass *e*, permitting the chute to immediately swing out of the car when the loaded

car moves away. When the next car takes its place, the chute is drawn into position, as before. Should the following car be a gondola or coal car, it may require the adjustment of the chute to a greater or lesser height, in which case the windlass *d* or *d'* is operated to raise or lower the delivery end of the chute. In like manner for loading narrow-gage or other cars if any change of vertical adjustment is required it is easily and quickly accomplished and much valuable time is saved and the services of several men dispensed with.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In a coal-tippie, the combination of the following elements, namely: a fixed inclined receiving-chute or guideway, a movable extension or delivery-chute adjustable longitudinally in constant telescopic relation therewith, a windlass and connection for suspending the forward or delivery end of said movable chute at any desired height, while permitting its longitudinal movement, and a second windlass and counterweighted connections for drawing said delivery-chute forward to loading position and withdrawing the same when released to receded position, substantially as and for the purpose specified.

2. In a coal-tippie, in combination with a fixed inclined receiving-screen or guideway having an extension, a delivery-chute movable in longitudinal telescopic relations with said extension, rods pivotally suspending said chute at the rear, cords suspending said chute at its forward portion, a windlass upon which said cords are wound, a second windlass placed upon the tippie-framing forward of the chute, cords extended thence rearwardly to and connected with the chute and cords extending rearwardly of said connection over idler-pulleys upon the tippie-framing, and overbalancing counter-weights hung upon the free ends of said last-named cords, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

RAPHAEL M. HOSEA.

Witnesses:

ANDREW MAGEE, Jr.,
RALPH J. FREELAND.