

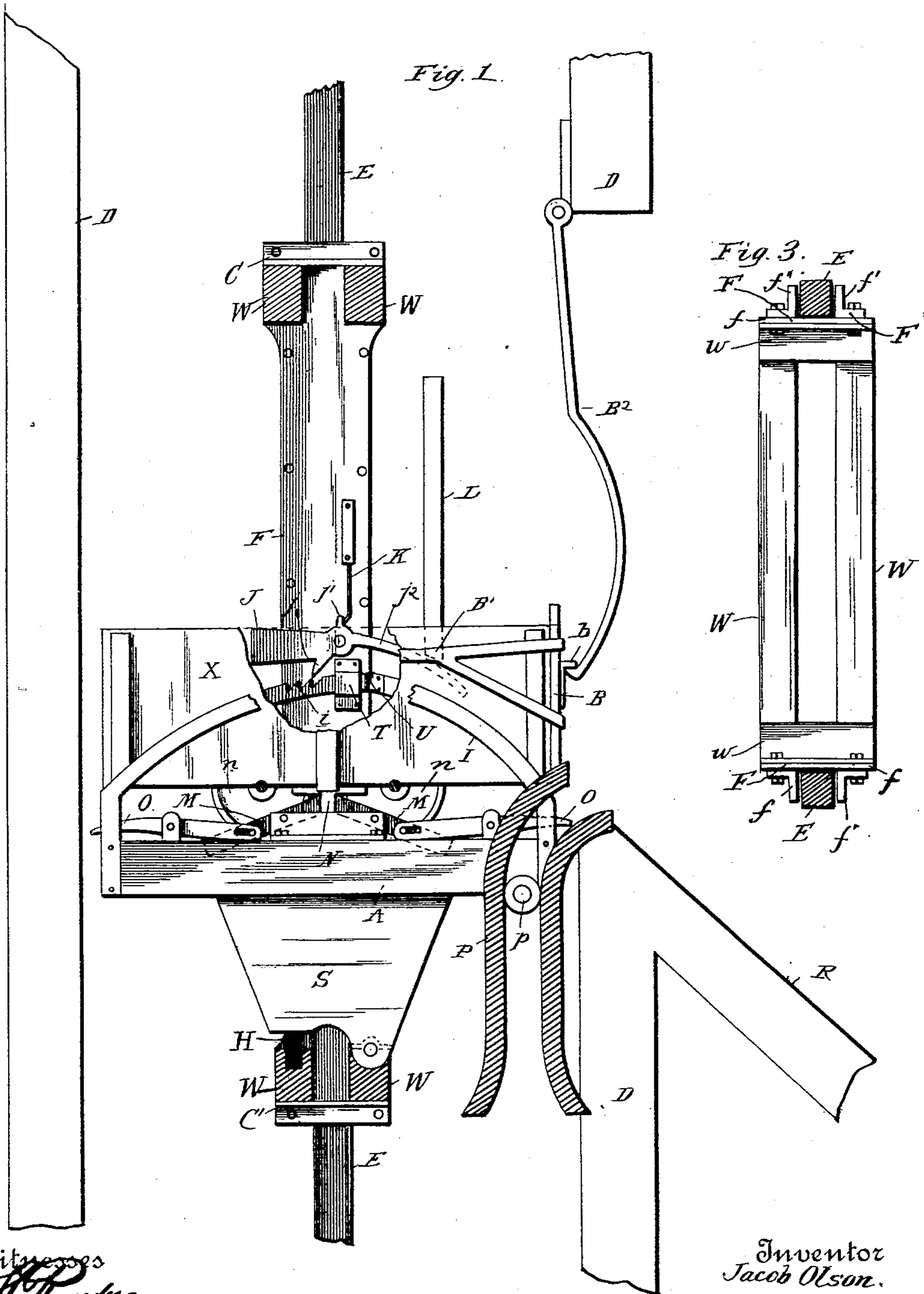
(No Model.)

2 Sheets—Sheet 1.

J. OLSON.
COAL HOIST.

No. 411,166.

Patented Sept. 17, 1889.



Witnesses
Chas. P. Pender
Van Buren Hillyard.

Inventor
Jacob Olson.

By his Attorneys
R. H. A. Lacey

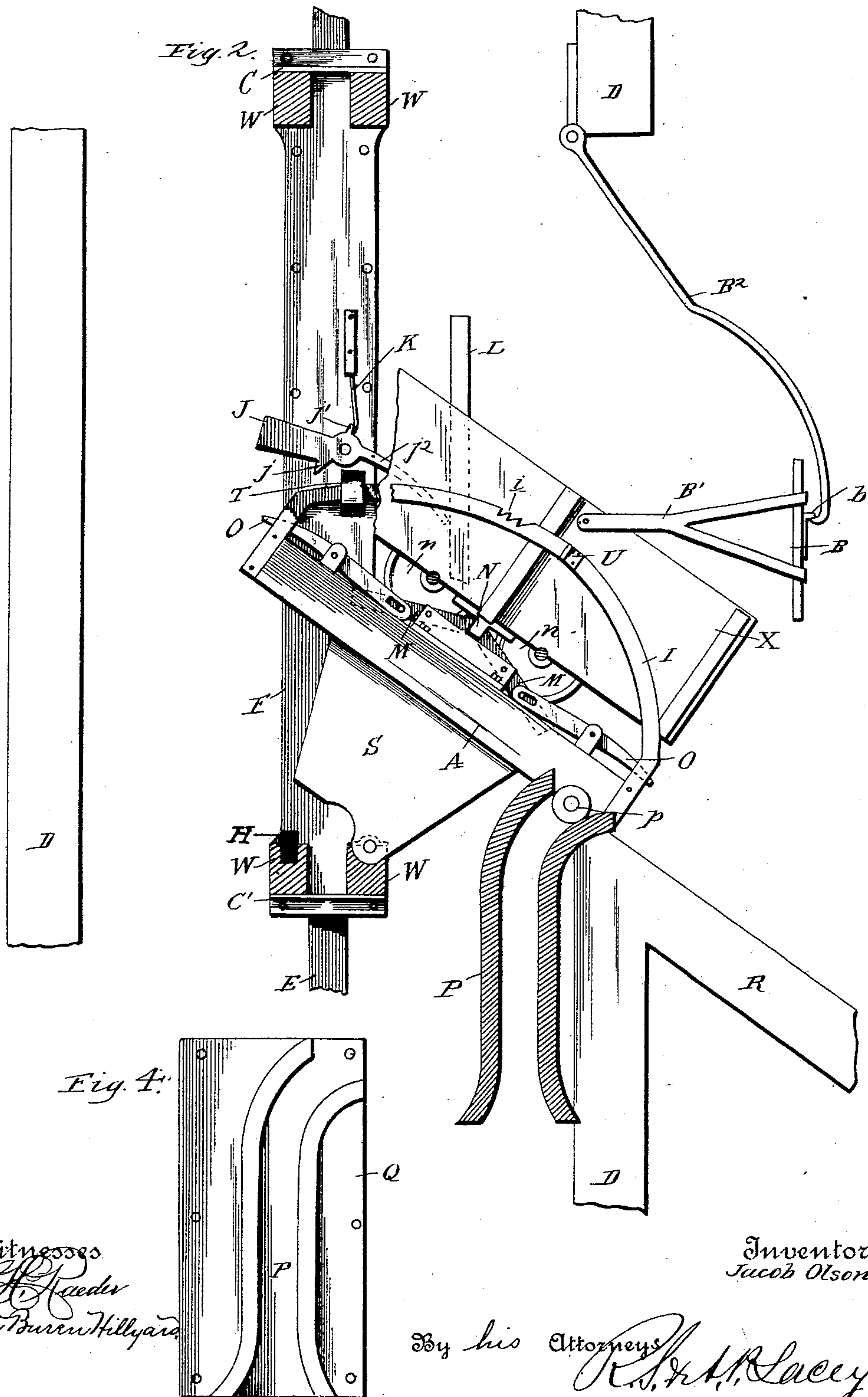
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Van Buren Hillyard

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UNITED STATES PATENT OFFICE.

JACOB OLSON, OF MUCHACHINOCK, ASSIGNOR OF ONE-HALF TO JOHN E. BUXTON, OF OSKALOOSA, IOWA.

COAL-HOIST.

SPECIFICATION forming part of Letters Patent No. 411,166, dated September 17, 1889.

Application filed March 22, 1889. Serial No. 304,263. (No model.)

To all whom it may concern:

Be it known that I, JACOB OLSON, a citizen of the United States, residing at Muchachinock, in the county of Mahaska and State of Iowa, have invented certain new and useful Improvements in Coal-Hoists; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to coal-hoists, and has for its object the provision of novel devices for locking the cage to the hoisting-frame and for automatically unlocking and tipping the same, and to provide simple means for securing the car to the cage, which can be conveniently operated to release the car when required.

The improvement consists of the peculiar construction and combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a side view, parts being broken away, showing the hoisting-frame at the top of the shaft and the relative position of the parts just prior to the tipping of the cage and the unlocking of the same from the hoisting-frame; Fig. 2, a view similar to Fig. 1, showing the cage tipped; Fig. 3, a plan view of the hoisting-frame, showing the relative position of the guide-posts therefor; Fig. 4, a side view of the cam or guide plate.

The coal-chute R is suitably supported at its upper end preferably by the posts D. The hoisting-frame F is guided in its movements by the guide-posts E, and is composed of the side frames F F and the upper and lower frames C and C', each of which is composed of the cross-beams W and the end plates w, which unite the beams W at their ends, each frame F being composed of a plate f and angle-irons f', which are bolted to the said plate near each edge thereof, and which embrace the sides of the posts E, as shown most clearly in Fig. 3. The cage is placed on the support S, which is journaled or pivoted to the lower frame C' of the hoisting-frame to one side of

a vertical plane passing centrally through the shaft, and is composed of the platform A and the side rails I, which are curved and work through keepers T, fastened to the side frame or bars F. The stop U, secured to the side of the rails I, strikes against the keeper T and limits the movement of the cage in one direction, and the pawl J, having the detent j, holds the cage from movement in the opposite direction, the detent j engaging with one of a series of notches i in the upper edge of the rail. The spring K, secured at its upper end to the side frame F, has its free or lower end projected within the path of the stop j' on the pawl J to press on the same and force the detent j in engagement with the notches i in the rail I. The front end j² of the pawl is curved and extends within the path of the trip-bar L, which is fixed in the shaft. The guide P flares at its lower end and curves toward the chute R at its upper end, and is designed to engage with a roller p on the side of the cage and effect a tipping of the latter. This guide is formed on the plate Q, as shown most clearly in Fig. 4. If required, there will be a roller p and guide P for each side of the cage. The locking-levers M, pivoted between their ends, embrace the stop-bar N on the under side of the car X between their ends and hold the car in position on the cage. The foot-levers O are provided as a convenience to operate the locking-levers and release them from the stop-bar N.

When the car is run on the cage, it is locked thereon by levers M and the frame is hoisted in the usual manner. When the car approaches the top of the shaft or the top of the chute, the pawl J engages with the trip-bar L and is released from the rail, and at the same time the roller p, engaging with the curved portion of the guide P, tips the cage, the coal being dumped in the usual way. By having the support pivoted to one side of a perpendicular line passing through the center of the cage the latter, when tipped, projects over or overlaps the mouth of the coal-chute, as clearly shown in Fig. 2. The support S rests on the rubber block H, the latter being provided to obviate noise and jar.

The end-gate B of the car X is removed when the cage is tipped by the hook B² engag-

ing with the stop *b* thereof in the usual way, and is provided with an arm *B'* at each end, which has a pivotal connection with the car, as shown.

5 The posts *D D* are the ordinary posts comprising the elevator-shaft of a coal-hoist.

The car *X*, of well-known construction, is mounted on the wheels *n* in the usual way.

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

1. In a coal-hoist, the combination, with the hoisting-frame, of the cage supported thereon and pivotally connected therewith to one side
15 of a perpendicular line passing centrally through the said cage, substantially as and for the purpose described.

2. In a coal-hoist, the combination, with the hoisting-frame and the cage having the rail *I*,
20 of the pawl engaging with the rail and locking the cage to the hoisting-frame, and the trip-bar for engaging with the said pawl to release it from the rail, substantially as described, for the purpose specified.

3. The combination, with the hoisting-frame 25 and the tilting cage, of the keeper *T*, the stop *U*, and the pawl *J*, substantially as and for the purpose described.

4. The combination, with the hoisting-frame, the tilting cage, and the pawl for locking the 30 cage to the frame, of the trip-bar for disengaging the pawl from the cage, the roller, and the curved guide for tipping the cage when released, substantially as set forth.

5. The combination, with the cage, of the 35 locking-levers *M* and the foot-levers *O*, substantially as and for the purpose described.

6. The combination, with the tilting cage and the car having the stop-bar *N*, of the locking-levers *M* and the foot-levers *O*, substan- 40 tially as described.

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

JACOB OLSON.

Witnesses:

W. R. LACEY,
S. J. HEGGASON.