(No Model.)

2 Sheets—Sheet 1.

W. LAWTON.

ELEVATOR.

No. 310,063. Patented Dec. 30, 1884.

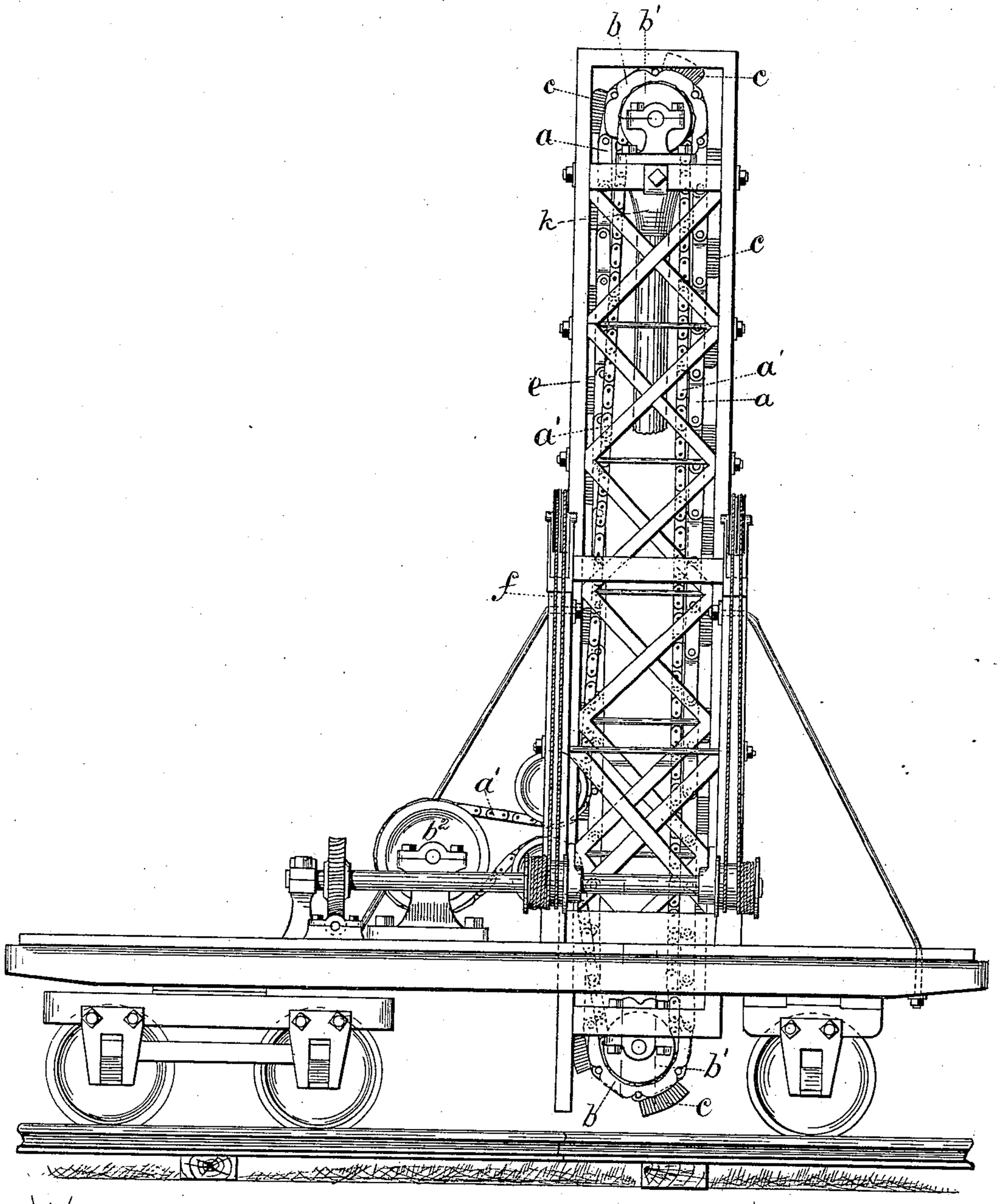

Fig. 1.

WITNESSES:
C. S. Gooding.
A. L. White

INVENTOR:
Walter Lawton
by Wright Brown
Attys.

(No Model.)

2 Sheets—Sheet 2.

W. LAWTON.

ELEVATOR.

No. 310,063. Patented Dec. 30, 1884.

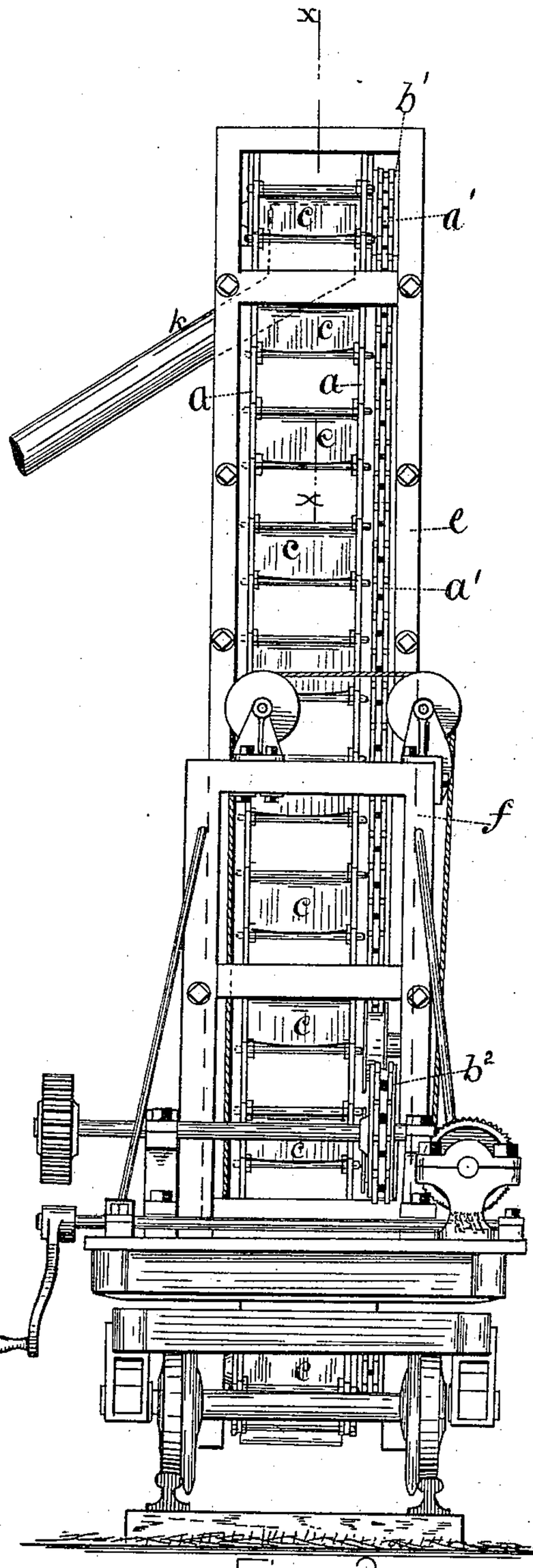

Fig. 2.

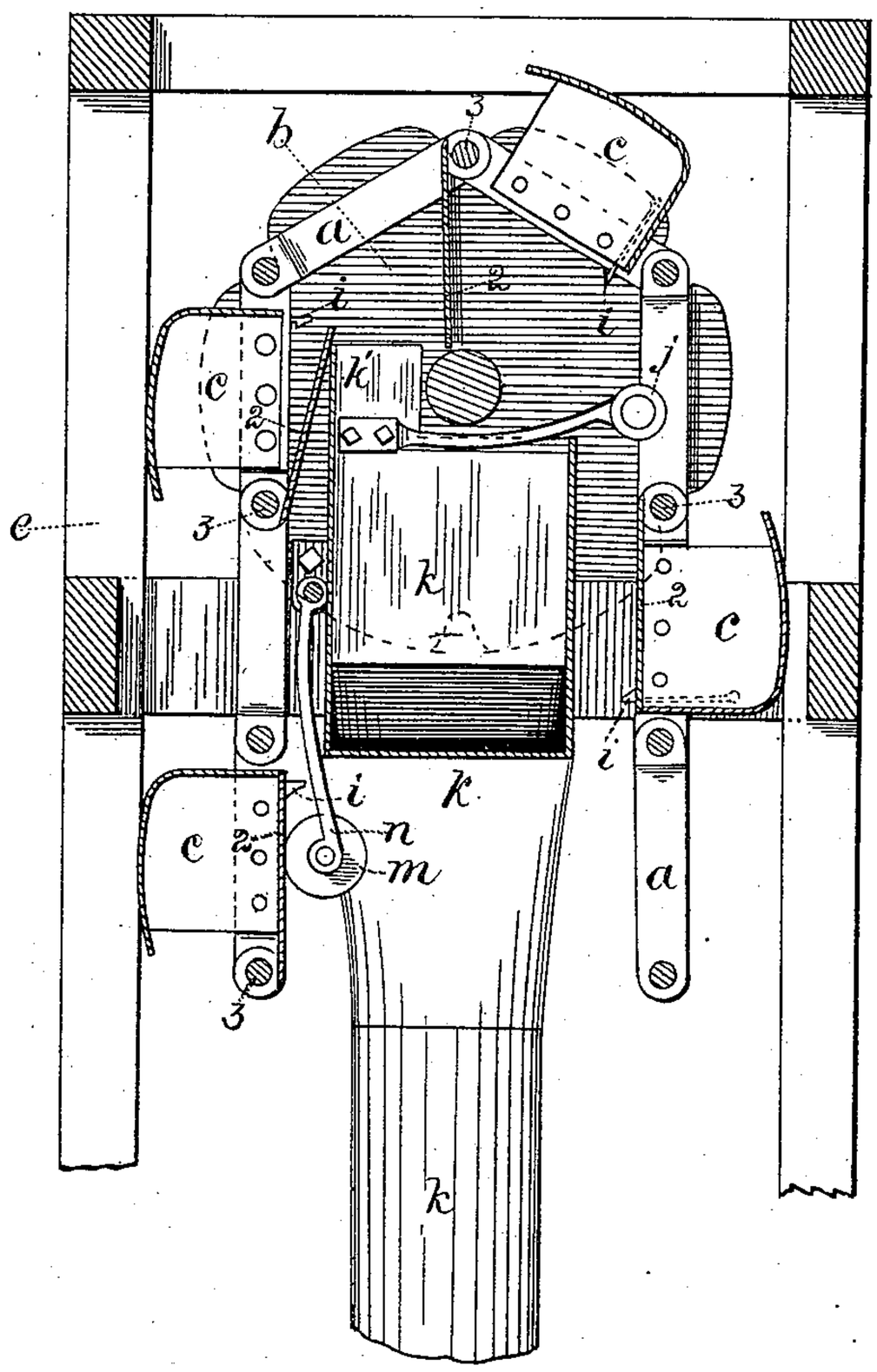

Fig. 3.

WITNESSES:
C. S. Gooding.
A. L. White.

INVENTOR:
Walter Lawton
by Wright & Brown
Attys.

UNITED STATES PATENT OFFICE.

WALTER LAWTON, OF WINTHROP, ASSIGNOR OF FIVE-EIGHTHS TO E. B. WELCH, OF CAMBRIDGE, AND JAMES S. ROGERS, OF ROCKPORT, MASS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 310,063, dated December 30, 1884.

Application filed June 9, 1884. (No model.)

To all whom it may concern:

Be it known that I, WALTER LAWTON, of Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Elevators, of which the following is a specification.

This invention relates to elevators composed of a series of buckets attached to endless chains supported by chain wheels or pulleys in a suitable frame-work, and adapted to raise coal or other material in the form of lumps or grains, and discharge it at the highest point reached by the buckets in their upward movement. Heretofore the material raised has been discharged out of the mouth of each bucket by the inversion or tipping of the bucket as it passes over the upper supporting-wheel. The objection to this method of emptying the buckets is the difficulty, if not impossibility, of arranging a spout or chute so that it will catch all the material discharged, the buckets in discharging being liable to scatter their contents, thus causing waste, and in the case of coal creating much dust and dirt.

My invention has for its object to prevent this objection, and enable the elevator-buckets to discharge their contents with precision into a chute or guide arranged to conduct the material to the desired point.

To this end the invention consists in providing the buckets with hinged inner sides held in place by suitable catches, and in the provision of devices adapted to disengage said catches and allow the hinged side of each bucket to yield and discharge the contents into a fixed spout placed between the ascending and descending portions of the elevator, devices being provided for automatically closing the hinged sides after the discharge, all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figures 1 and 2 represent elevations of an elevator of the class to which my invention relates. Fig. 3 represents a vertical section on line *x x*, Fig. 2.

The same letters of reference indicate the same parts in all the figures.

In the drawings I have shown an elevator composed of endless sprocket-chains *a a*, running on sprocket-wheels *b b*, and a series of buckets, *c*, attached at their ends to said chains, the buckets being adapted to move with the chains, and thus alternately descend and take up the coal or other material to be elevated, and ascend with such material. The arbors of the wheels *b b* are mounted in a suitable frame-work, *e*, which may be adapted to slide vertically in a supporting-frame, *f*, resting on a car or other support, which is provided with suitable mechanism for raising and lowering the frame *e*, to adapt the elevator to the varying height of the surface of the accumulation of material from which the buckets receive their supply, said surface being lowered by the continued removal of the material, and being raised and lowered by the tides when contained in the hold of a vessel. The arbors of the wheels *b b* are provided with sprocket-wheels *b' b'*, on which runs a driving sprocket-chain, *a'*, which is carried over a sprocket-wheel, b^2, on a driving-shaft, to which power is suitably applied to drive said chain, and thus move the series of buckets.

The construction above described is common and well known, and forms no part of my invention.

In carrying out my invention I provide each bucket with an inner side, 2, which is hinged or pivoted at 3, so that it constitutes a door or gate adapted to swing inwardly from the bucket, and permit the discharge of the contents thereof into the space between the ascending and descending buckets. The swinging edge of the hinged side 2 is held by spring-catches *i* when the hinged side is in place. When each bucket in its ascent reaches the point where its contents are to be discharged, the catches *i* meet rollers or other suitable devices, *j*, affixed to the supporting-frame, and are disengaged by said rollers from the hinged sides, which are thus released, and are allowed to swing inwardly, thus allowing the coal in the buckets to pass from the inner side of each bucket in succession into a spout or chute, *k*, which extends outwardly from the space between the ascending and descending buckets. I have found that by thus discharging the contents of the buckets all liability of scattering and wasting the coal or other material is obviated; the

coal being discharged compactly and accurately into the chute, and guided thereby to the desired point. As the buckets pass over the upper supporting-wheels after discharging, the hinged side pieces, 2, are partially closed by contact with an extension, *k'*, of the chute *k*, or any suitable fixed object. Below said extension *k'* are rollers, *m*, mounted on spring-arms *n*, and arranged to bear on the hinged side pieces, 2, of the descending buckets, and press them against the buckets until the catches *i* re-engage them, and thus prepare the buckets to be again filled.

I claim—

1. In an elevator of the class described, the buckets having hinged inner sides adapted to permit the discharge of the contents of the buckets into the space between the ascending and descending buckets, as set forth.

2. In an elevator, the buckets having hinged inner sides combined with catches or holding devices therefor, and means for disengaging said holding devices to release the hinged sides when the buckets reach a given height, and a chute or spout adapted to receive the contents of the buckets, as set forth.

3. In an elevator, the combination of the buckets having hinged sides and catches therefor, the chute, means for releasing the catches of the hinged side pieces when the buckets are ascending, and means, substantially as described, for pressing the hinged sides against the buckets and re-engaging them with their holding devices when the buckets are descending, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of June, 1884.

WALTER LAWTON.

Witnesses:
C. F. BROWN,
A. L. WHITE.