(No Model.)

2 Sheets—Sheet 1.

J. L. MITCHELL.

CAR DUMPING APPARATUS.

No. 300,719. Patented June 17, 1884.

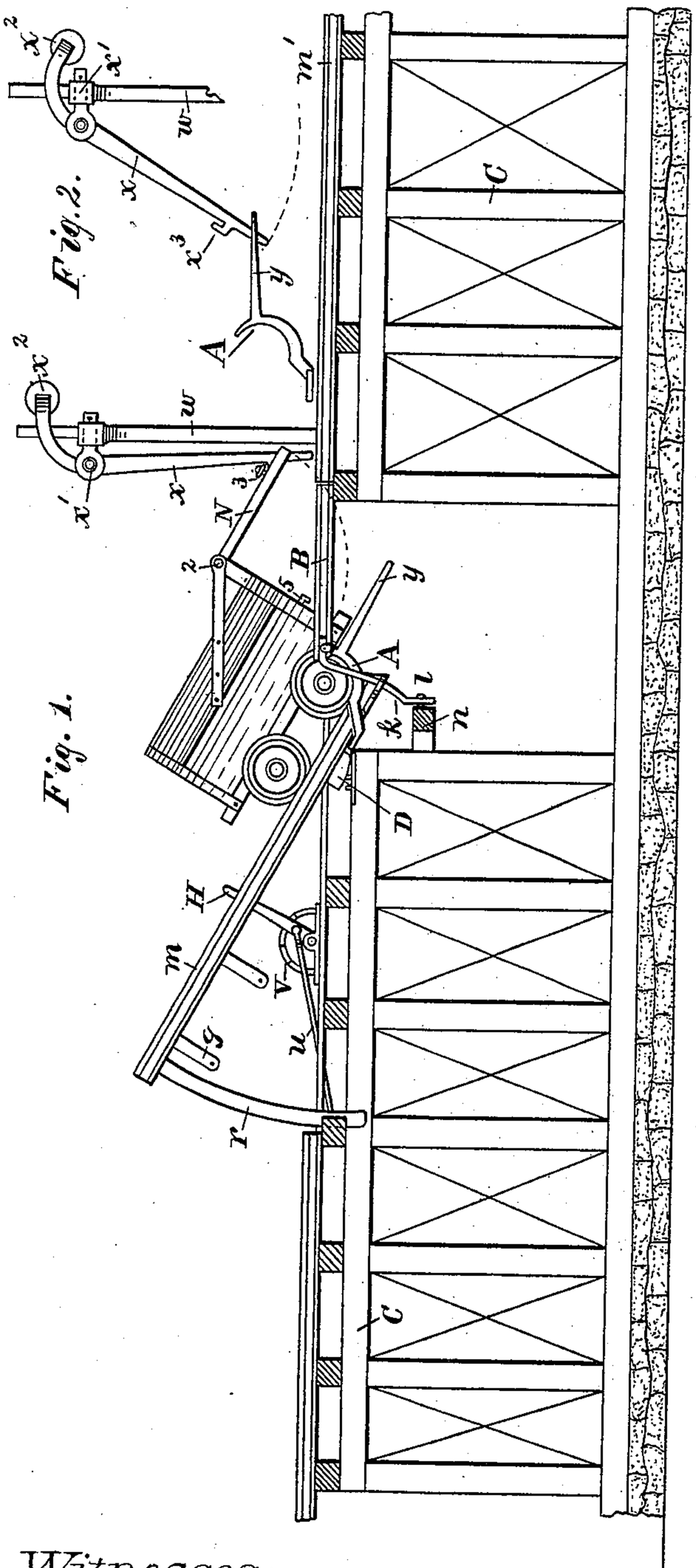

Fig. 1.

Fig. 2.

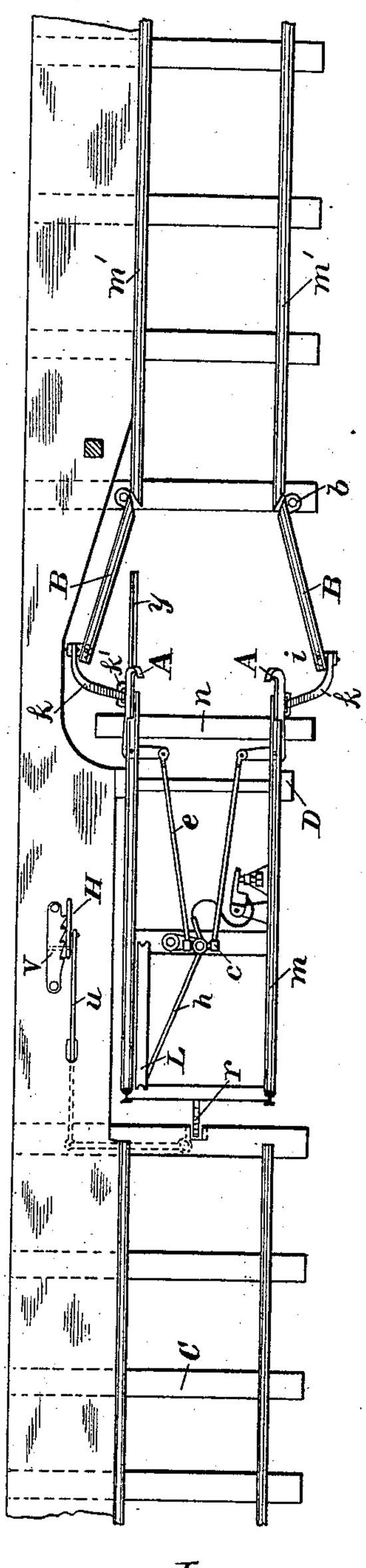

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 6.

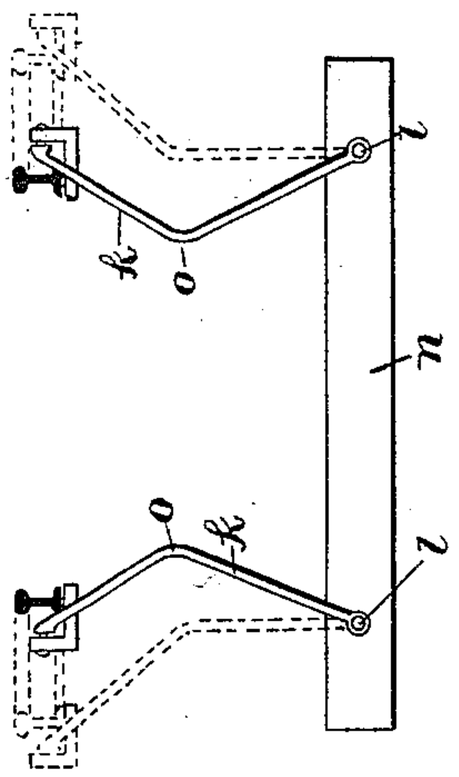


Fig. 5.

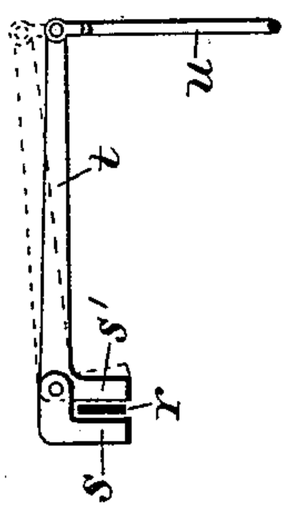


Fig. 7.

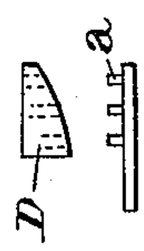


Fig. 8.

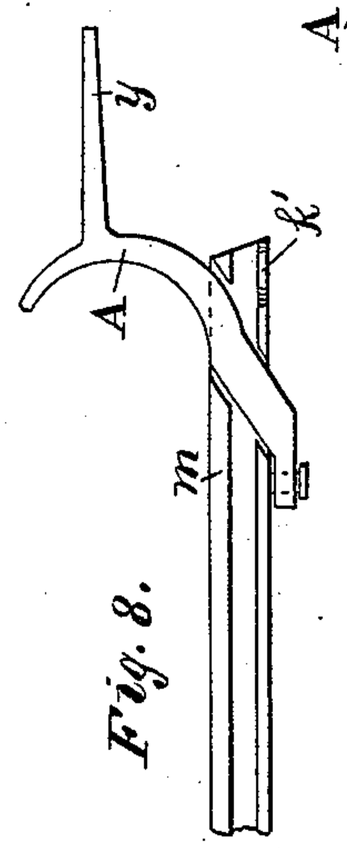


Fig. 10.

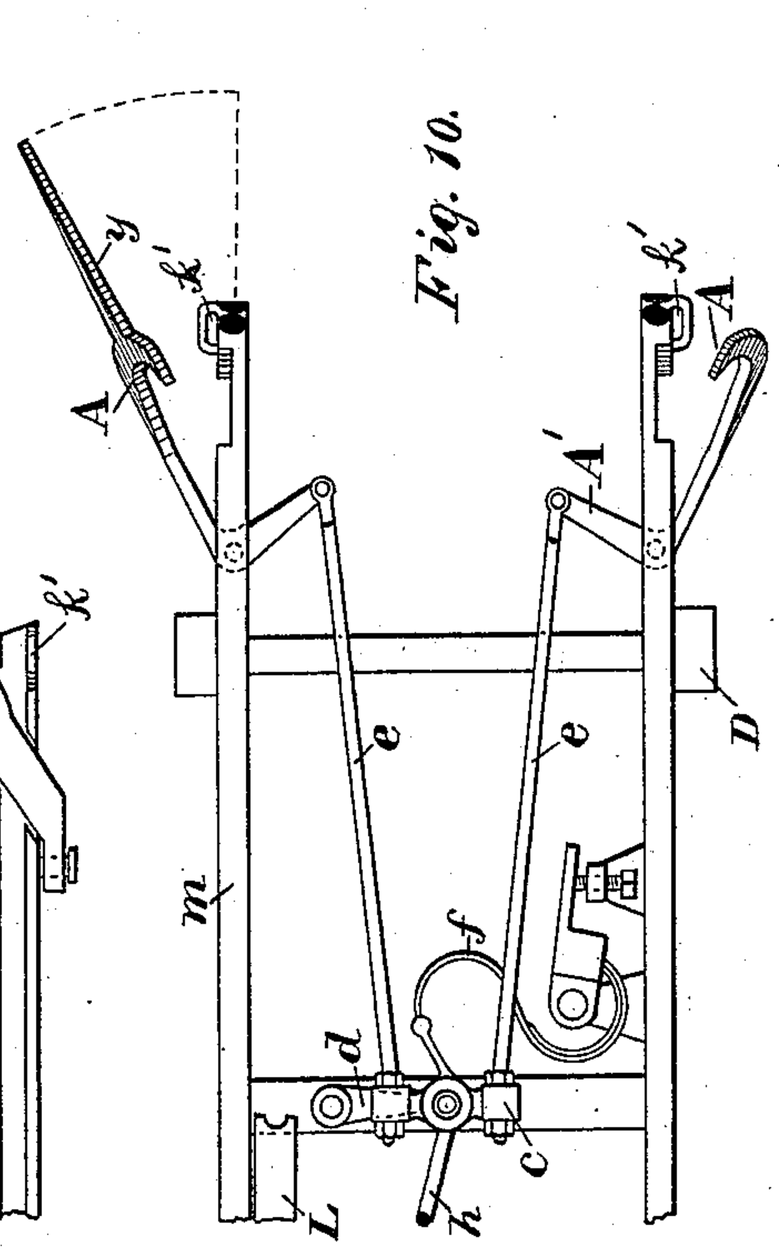


Fig. 4.

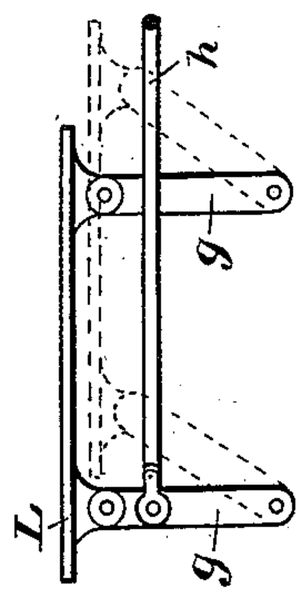
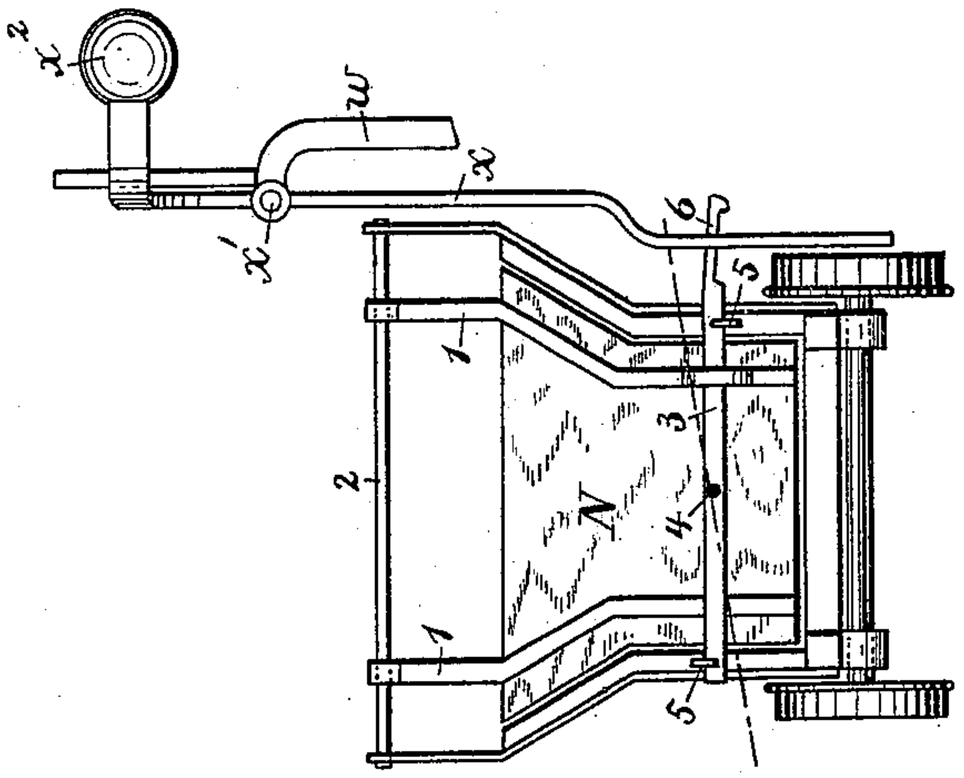


Fig. 9.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

JONAS L. MITCHELL, OF LOGAN, OHIO.

CAR-DUMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 300,719, dated June 17, 1884.

Application filed January 31, 1884. (No model.)

To all whom it may concern:

Be it known that I, JONAS L. MITCHELL, a citizen of the United States, residing at Logan, in the county of Hocking and State of Ohio, have invented certain new and useful Improvements in Car-Dumping Apparatus, of which the following is a specification.

The object of my invention is to furnish a car-dumping apparatus for use at coal and ore mines, whereby the cars as they come loaded from the mine may be rapidly dumped, the load discharging from the tilted end of the car, which passes between the track-rails, the empty car and dumper righting themselves, the car then passing forward, while another loaded car at once takes its place on the dumper.

The present invention is of the same character as that for which Letters Patent of the United States were granted me March 27, 1877, numbered 188,812; and this invention consists of certain new and useful improvements, which are first described and then claimed.

In the accompanying drawings, Figure 1 is a side elevation of the dumper. Fig. 2 is a view of the car-end-gate lifter. Fig. 3 is a top view of the dumper, showing the parts in the same position which they occupy in Fig. 1, the car, however, being removed. Fig 4 is a view of the treadle. Fig. 5 is a view of the gripper of the brake mechanism. Fig. 6 is a vertical cross-section of that portion of the track which is pivoted to allow it to spread. Fig. 7 is a view of the tilting rocker. Fig. 8 is a side view of the track-rail and car-stop. Fig. 9 is an elevation of the car, showing the end-gate and its lifter. Fig. 10 is a plan view of the parts which operate the car-stops.

The car-track of the dumping apparatus may be supported on a raised embankment, pier, or trestle, C. The tilting portion of the dumping apparatus comprises the track-rails *m*, car-stops A, treadle L, to operate the car-stops, and mechanism which connects the car-stops and treadle. These parts are shown in my former patent.

I now show an improvement in the means for pivoting the tilting part or dumper, consisting of two curved rockers, D—one placed under each track-rail. As compared with a fulcrum like an axle or rock-shaft, such as shown in my former patent, the rocker shifts or advances the position of the fulcrum nearer to the down-tilting end as the loaded car tips, and thereby offsets the increased leverage of the load, resulting from the pitching forward and downward of the tipping car. This shifting of the fulcrum, therefore, serves as a check on the descent of the tipping car, and enables the dumper to tip automatically, no break or weight being necessary, as before. The curved face of the rocker has holes, into which enter pins *a*, projecting from a plate in contact with the said curved face. By this means the track-rails whereon the car rests may tilt without slipping. The rockers are not under the center of the dumper, but are nearer that end which tilts down, the design being that when a car loaded with coal or ore is run upon the down-tilting end its weight will cause the dumper to tilt, and when the load has been discharged the then greater weight of the elevated end of the dumper will raise the empty car and restore the dumper to a horizontal position. The car-stops A are attached to bell-crank levers A′, which are pivoted to the down-tilting ends of the rails, and attached to these levers are rods *e*, as shown in my former patent. The shape and also the movement of the car-stops may vary from that shown. I always adapt the shape to suit the construction of the particular car. Improved mechanism is now shown for connecting these parts with the treadle L. The rods *e* both connect to a head, *c*, which is pivoted on the free end of a pivoted arm, *d*. A spring, *f*, is so arranged with the head *c* as to exert a drawing strain on the rods *e*, and thereby normally keep the car-stops close to the track-rails. The treadle L itself is an improvement on that shown in my former patent. Each end of the treadle is mounted on an upright pivoted arm, *g*, whereby its movement is endwise, forward, and down, as indicated in Fig. 4. A rod, *h*, connects the treadle with the head *c* on the pivoted arm. When a loaded car moves forward, (an empty car being at the same time on the dumper,) the flange of the front wheel strikes the treadle, which thereby is moved endwise, causing the car-stops to spread, as

seen in Fig. 10, whereupon the empty car moves over the pivoted portion of track to the permanent track m'. As soon as the treadle is released, the car-stops close again.

To permit the car, when about to be tilted, to pass below the point where the rails normally have position, a portion, B, of the track-rails are pivoted at one end, b, to enable the other end, i, to spread apart, as shown in Fig. 3, in order that the forward end of car may go down between them. Two upright bars, k, have their lower ends pivoted at l on a cross-bar, n. These pivoted upright bars each have an angular bend, o, and the said bends project toward each other, and normally are closer together than the track-rails, as seen in Fig. 6. The upper end of each one of these pivoted bars is connected loosely to the free end i of one of the pivoted track-rails. It will be seen that when the latter spread apart the upright bars also spread apart. The track-rails m of the dumper have at their down-tilting end a loop or eye, k', through each of which one of the bars k passes freely. It will be seen that when the forward end of the dumper tilts down the loops or eyes k' slide on the upright bent pivoted bars k and force them apart, thereby spreading the pivoted track-rails B.

I employ an improved brake or lock device to prevent the dumper from tilting when, for any reason, it is desired to pass cars over the dumper to the permanent track m' beyond. A friction-bar, r, is attached to that end of the dumper which rises, and this bar depends below. Means to grip this bar, and thereby serve the purpose of a brake, consists (see Figs. 3 and 5) of two jaws, one of which, s, is fixed rigidly to the trestle or frame below the track, and the other, s', forms the right-angled part of a lever, t. A rod, u, connects the end of the lever with the upright hand-lever H, and a racked segment-iron, v, retains the hand-lever wherever set. When the hand-lever is tilted forward, the effect is to close the jaw s' against the bar r, thereby gripping the said bar and holding the dumper. In the present instance the depending bar is curved; but I sometimes use a straight one, if the locality of the dumper requires it.

An important feature of this invention is the lifter for the car end-gate N, whereby its latch is disengaged from its catch, and the gate lifted, as shown in Fig. 1, when the car is tipped forward. The end-gate has hinges 1, by which it is suspended from the cross-rod 2. This allows the bottom of the end-gate to swing out from the car. A latch-bar, 3, extends across the end-gate, and is pivoted at its center. (Indicated by 4.) The latch-bar engages with a catch, 5, at each side of the car-body, and one end, 6, of the latch projects. Near the point where the car-tracks spread is a post, w, which supports the end-gate lifter x. This lifter is attached to the upper end of the post by a double-jointed connection, x', which enables its lower end to swing in two directions—namely, sidewise (that is, toward or away from the car-track) and lengthwise of the car-track. The upper end of the lifter is curved, and has at its extremity a weight, x^2, which serves to keep the lower end normally swung away from the post, as seen in Fig. 2. The lower end of the lifter has a hook, x^3, which engages with the projected end 6 of the latch-bar. One of the car-stops A has an arm or bar, y, which projects straight out horizontally, as seen in Figs. 2 and 8. This arm y normally is in contact with the lower end of the swinging lifter, as seen in Fig. 2, and serves, when the car-stops are spread, to swing the lower end of the lifter sidewise from the car-track far enough to allow the car-body to tip forward without striking it. When the lifter is thus swung sidewise by the arm y, the hook x^3 slides along the projected end 6 of the latch-bar, but does not become disengaged therefrom.

It will be understood that when the wheels of the car come against the car-stops A the projected end 6 of the latch-bar will be against the swinging lifter above the hook x^3. The track-rails then spread and the car begins to tip forward. The first effect is to raise the projected end of the latch-bar, thereby releasing it from the catches 5. Then, as the tipping of the car continues, the next effect is to lift or swing up the bottom of the end-gate, as seen in Fig. 1, which permits the load in the car to be discharged. By this means the end-gate is unlatched and lifted at the right moment, all automatically.

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

1. In an apparatus for dumping the contents of cars, the rails mounted on rockers, as set forth.

2. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the rails provided with car-stops, and rockers to support the rails.

3. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the rails provided with car-stops, rockers to support the rails, having holes in their curved face, and pins adapted to enter the said holes.

4. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the rails provided with pivoted car-stops, a treadle consisting of a horizontal bar mounted at each end on an upright pivoted arm, g, and means to connect said treadle with the car-stops.

5. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails and track-rails pivoted at one end, so that the end adjoining the said tilting rails may spread apart.

6. In an apparatus for dumping the con-

tents of cars, the combination, substantially as set forth, of the tilting rails, track-rails pivoted at one end, so that the end adjoining the said tilting rails may spread apart, and two upright bars below the track, each having its lower end pivoted, and the upper end of each connected to the free end of one of the pivoted track-rails.

7. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails, a friction-bar attached to the rising end of the said rails and depending below, and means to grip the friction-bar.

8. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails provided with car-stops, a car having an end-gate, and means to lift the end-gate when the car tips forward.

9. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails provided with pivoted car-stops, a car having an end-gate, a swinging lifter to raise the end-gate when the car tips forward, and a projecting arm attached to one of the pivoted car-stops and adapted to move the said lifter sidewise.

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

JONAS L. MITCHELL.

Witnesses:
CHRIS NILL,
A. H. BROOKE.