

(No Model.)

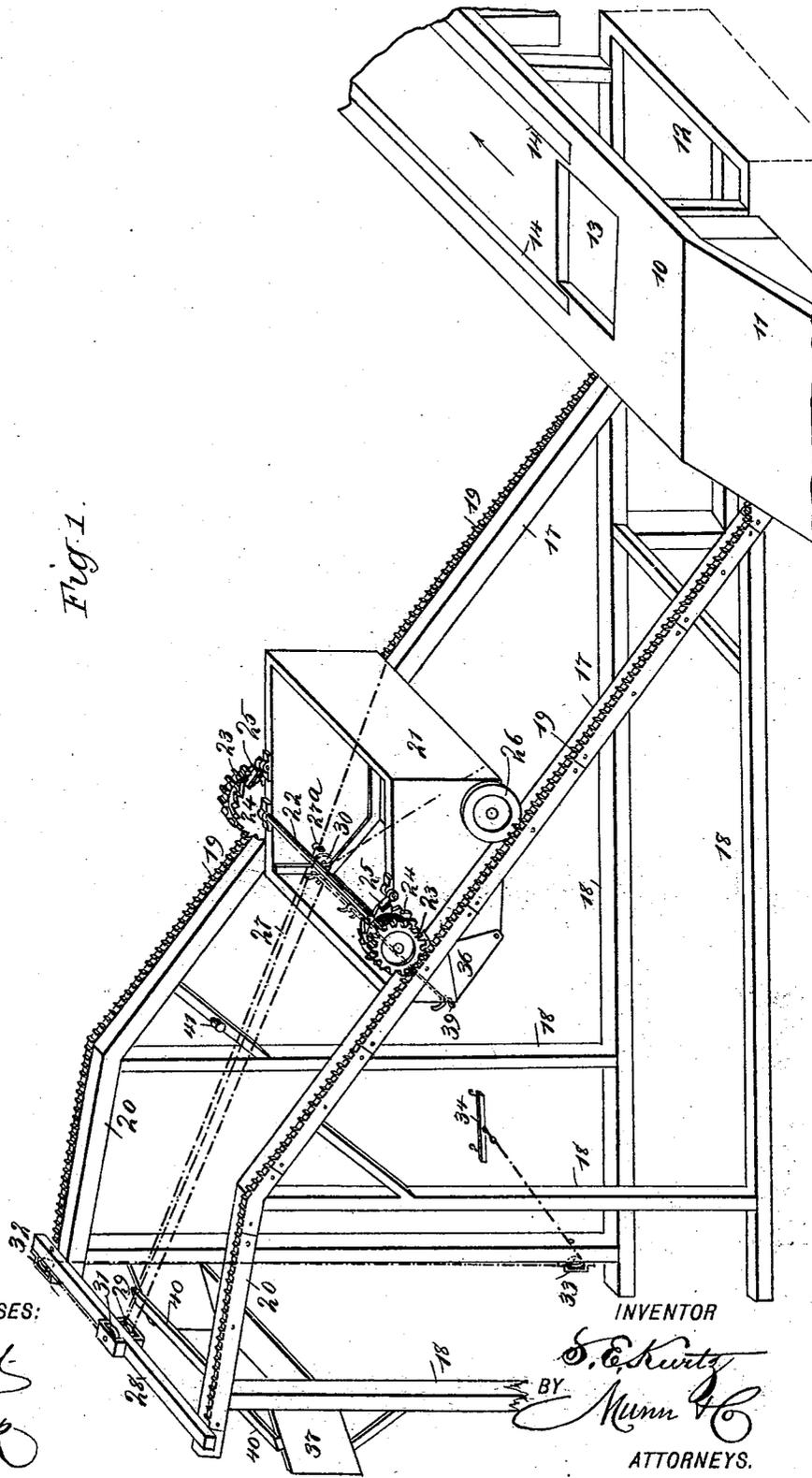
2 Sheets—Sheet 1.

S. E. KURTZ.
ELEVATOR AND DUMP.

No. 517,702.

Patented Apr. 3, 1894.

Fig. 1.



WITNESSES:

Paul J. J. J.
C. Sedgwick

INVENTOR

S. E. Kurtz
 BY *Munn & Co.*
 ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

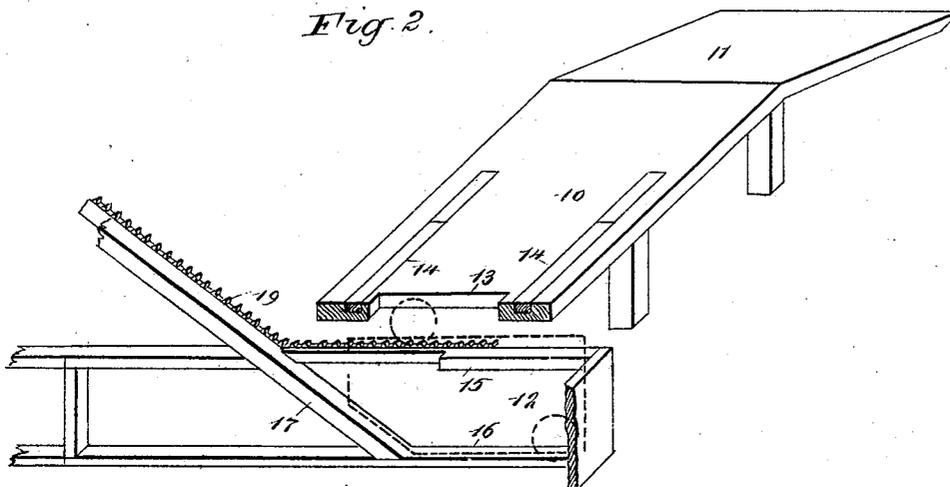


Fig. 3.

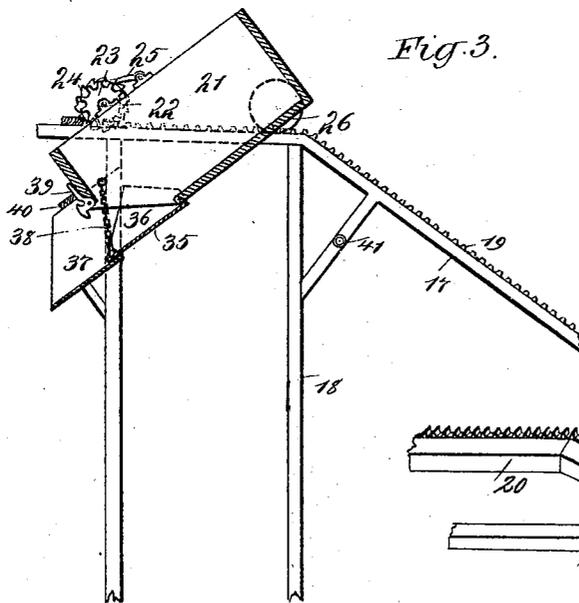
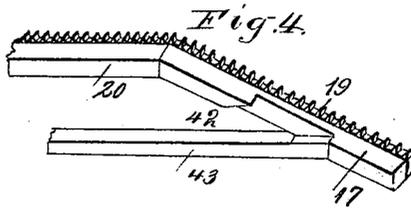


Fig. 4.



WITNESSES:

Paul J. J. J.
C. Sedgwick

INVENTOR

S. E. Kurtz
BY *Munn & Co.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL E. KURTZ, OF GREENFIELD, IOWA.

ELEVATOR AND DUMP.

SPECIFICATION forming part of Letters Patent No. 517,702, dated April 3, 1894.

Application filed October 13, 1893. Serial No. 488,045. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. KURTZ, of Greenfield, in the county of Adair and State of Iowa, have invented a new and Improved Elevator and Dump, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of apparatus which is used for elevating material and then dumping it into a chute; and the objects of my invention are to produce a very simple apparatus of this kind in which a low down dump is used, to provide an easy means for dumping a loaded wagon into the elevator car, to produce a simple and automatic mechanism for dumping the car when it reaches the top of its inclined track, to provide means for automatically closing the door of the car after its load has been dumped, to arrange the elevating apparatus in such a manner that the car may be quickly and easily raised, to provide means for preventing the car from slipping on the track, and in general to produce a cheap and efficient apparatus of the kind named.

To these ends my invention consists of certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken perspective view, showing the general arrangement of my improved apparatus and with the elevator car part way up the inclined track. Fig. 2 is a broken perspective view, partly in section, showing the arrangement of the pit and the tracks therein and the dumping platform above the pit. Fig. 3 is a detail sectional view, showing the car in position to dump its load into the chute; and Fig. 4 is a broken detail view of a modified form of track, showing how the track may be arranged to carry the car along a level.

The apparatus has a dumping platform 10 with inclined approaches 11 at the ends, so that a team may be readily driven upon it, and this platform extends over a pit 12 over which is an opening 13 in the platform, through which the material to be elevated is

dumped, and the platform is provided at a point adjacent to the said opening with the usual dumping logs 14 which are adapted to swing downward into the car beneath.

At the bottom of the inclined tracks and connected with them, are upper and lower tracks 15 and 16, which are parallel, and these merge in the inclined tracks or rails 17 which are supported on a suitable framework 18 and which terminate at their upper ends in the level sections 20. The forward parts of the tracks 15 are narrower than the tracks 16 and 17, this being to enable the rear wheels of the car, to be described below, to run down the inclined tracks 17 to the tracks 16 without striking the upper tracks 15.

The car 21, which runs upon the inclined tracks 17 and also on the tracks 15 and 16, is adapted to be suspended between the tracks 17, and it is provided at the top and near its front edge with a transverse shaft 22 journaled in suitable bearings, which shaft has at its ends wheels 23, which are like ordinary hand car wheels except that their flanges are cogged to mesh with the racks 19 on the sides of the tracks 17, these toothed racks being preferably cast and fastened to the sides of the tracks 17, although they may be made and attached in any suitable and convenient way. The cog wheels 23 have, on their inner sides, ratchet wheels 24 which are engaged by pawls 25 pivoted on the car top, and the pawls thus prevent the ratchet wheels and cog wheels from slipping on the tracks and this arrangement enables the car to be readily drawn upward. The cog wheels 23 run on the racks 19, as described, these racks being on the outer sides of the tracks 17, and this arrangement leaves the inner top portions of the rails plain; and on these plain faces of the tracks run the rear wheels 26 of the car, these wheels being journaled at the lower rear corners of the car, as shown in Fig. 1. It will thus be seen that when the car descends into the pit the upper wheels 23 will run along the tracks 15, while the lower wheels 26, which are narrower than the upper wheels, will run down to the tracks 16 and so along the pit bottom, as shown by dotted lines in Fig. 2.

The car 21 is drawn upward by means of a cable 27, which is made fast to one side of the

car, as shown at 27^a, and this cable passes upward around a pulley 29 on the cross bar 28 at the upper end of the tracks, thence back and around a pulley 30 on the car, thence upward again around a pulley 31 above the pulley 29, and thence downward over guide pulleys 32 and 33, the free end of the cable having a whiffletree 34 or other equivalent apparatus connected with it so that a horse or other power may be attached, and when the cable is pulled it will be seen that the car will be moved forward and upward.

The car is provided at its front end and lower corner with a downwardly swinging door 35 which is hinged to the car bottom and which is provided with end flanges 36 adapted to overlap the sides of the car so as to make a firm connection therewith, and these side flanges also form the door into an extension chute 37 when the door is dropped into connection with the chute, as illustrated in Fig. 3. The chute 37 is suitably braced on the framework 18 and may be arranged to deliver into any receptacle in the usual manner.

To prevent the door from dropping too low when the car moves away from the chute, chains 38 are used, which are attached to the door and also to the car. The door is held normally closed by gravity catches 39 which are pivoted in the car just above the door and which engage the upper edge of the door. When the car is pulled up to its limit, these catches are released by a cross bar 40, above the chute 37, which cross bar comes in contact with the outer ends of the catches so as to tilt the catches out of engagement with the door and so permit the door to drop. The door is closed by rollers 41 which are journaled beneath the tracks 17 and on the frame 18, and when the car runs backward the door rides over these rollers which press it up to its normal position, in which position it is held by the catches 39.

It will be seen from the above description that the car may be very conveniently loaded by simply dumping a wagon-load of material through the opening 13 while the latter is in the pit, after which it may be raised as described and will automatically dump its load into the chute, as when the wheels 23 and 26 strike the level sections 20 of the track, the car is thrown into an inclined position, owing to the fact that the wheels are on different planes and the catches 39 are released as specified, while the inclined position of the car causes its load to slide quickly out into the chute 37.

If for any reason it is desired to carry the car along a level stretch, in an inclined position, the tracks may be arranged as illustrated in Fig. 4. Here, the tracks 17 and 20 are constructed and arranged as already described, tracks 43 are laid below and parallel with the tracks 20, while the inclined tracks

17 are cut away, as shown at 42, opposite the tracks 43, and consequently when the car is raised the upper or forward wheels will ride upward to the track sections 20 while the lower or rear wheels, being narrower, pass through the openings 42 and upon the tracks 43.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an elevator and dump, the combination with inclined tracks and elevated horizontal tracks, of a car whose width is less than the space between said tracks, and having a hinged door at its front end and supporting wheels on each side, the rear wheels being journaled at or near the rear lower corners and the upper wheels near the upper forward corners of said car, whereby the latter is held horizontal when passing up the inclined tracks and assumes an inclined position when on the horizontal tracks, and means for operating the car, as shown and described.

2. In an elevator and dump, the combination with inclined and elevated horizontal tracks, a chute arranged below the horizontal tracks, and an abutment or trip bar located above the chute, of a car which fits between the tracks and having pairs of supporting wheels arranged at or near its forward upper and rear lower corners, and a door hinged at its lower edge, and gravity catches attached to the end of the car above the door, as shown and described, whereby the car assumes an inclined position when between the horizontal tracks and the door being automatically opened drops upon the chute and forms practically a continuation of the same, and means for operating the car, as shown and described.

3. In an elevator and dump, the combination with inclined and elevated horizontal tracks, of a car having front and rear supporting wheels arranged in different horizontal planes, a door hinged at its rear edge, and automatic catches therefor, of a fixed contact arranged between the inclined tracks and upon which the said door when open is adapted to strike while the car makes its return passage after dumping, and means for operating the car, as shown and described.

4. An elevator and dump, comprising inclined tracks, a pit at the lower end of the tracks, horizontal tracks arranged one above another within the pit and connecting with the inclined tracks, a car having its front and rear wheels arranged in different planes, a dumping platform above the pit, and means for dumping the car at the top of the inclined tracks, substantially as described.

SAMUEL E. KURTZ.

Witnesses:

JNO. J. HETHERINGTON,
A. P. LITTLETON.