(No Model.)

2 Sheets—Sheet 1.

B. TWEEDLE.

Dumping Cart.

No. 234,351. Patented Nov. 9, 1880.

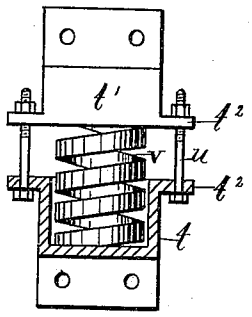


Fig. 3.

Fig. 1.

Fig. 4.

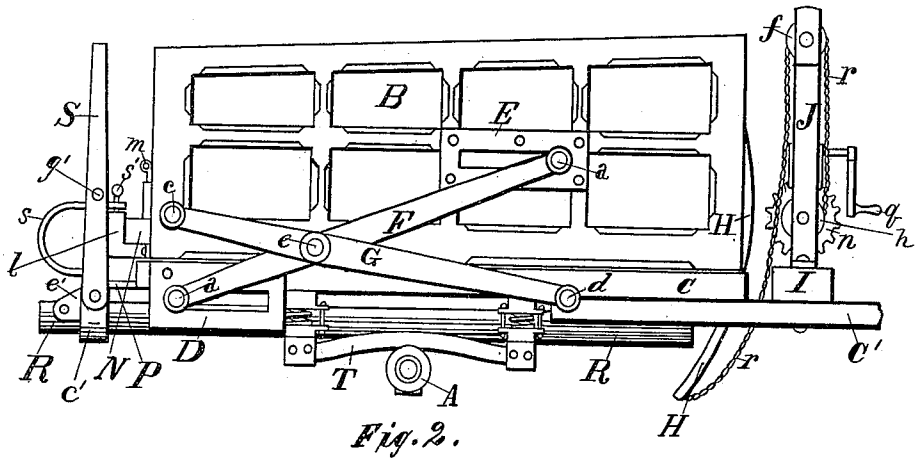


Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

B. TWEEDLE.

Dumping Cart.

No. 234,351. Patented Nov. 9, 1880.

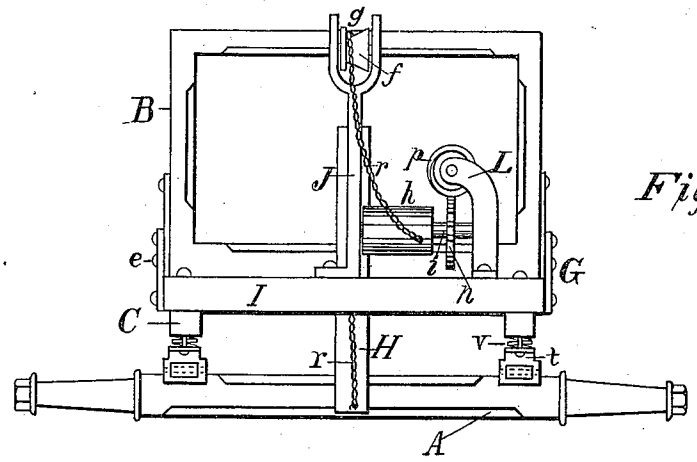


Fig. 5.

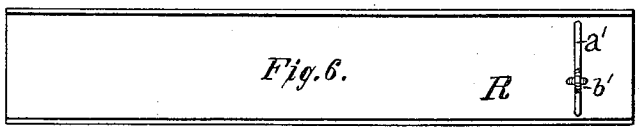


Fig. 6.

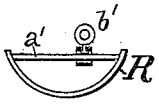


Fig. 7.

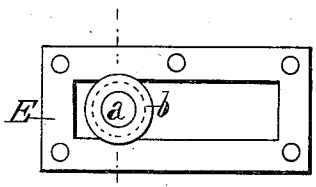


Fig. 8.

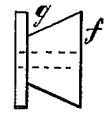


Fig. 10.

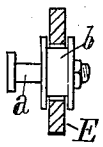


Fig. 9.

Fig. 12.

Fig. 11.

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Inventor:
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By his Atty
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UNITED STATES PATENT OFFICE.

BENJAMIN TWEEDLE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOSEPH W. MATHERS AND CHOCKLEY W. SEARS, OF SAME PLACE.

DUMPING-CART.

SPECIFICATION forming part of Letters Patent No. 234,351, dated November 9, 1880.

Application filed April 14, 1880. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN TWEEDLE, of the city of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Vehicles for Hauling and Dumping Coal, of which the following is a specification.

My invention relates to certain mechanism applied to a cart or wagon, whereby the body thereof may be lifted and inclined rearward to facilitate the discharging of the load. The improvements will first be described, and my invention will then be designated in the claims.

In the drawings hereto annexed, Figure 1 is a side view of a cart embodying my invention, showing the body raised. Fig. 2 shows the body down. Fig. 3 is a view, on a large scale, of the spring. Fig. 4 is a view of the chute-support. Fig. 5 is a front end view of the cart. Fig. 6 is a top view of the chute. Fig. 7 is an end view of the same. Fig. 8 is a view, on a large scale, of the metal slide attached to the side of the body and the grooved roller. Fig. 9 is a cross-section of same. Fig. 10 is a face view of the grooved pulley for the chain. Fig. 11 is an end view of the spout and bar across it in section. Fig. 12 shows a cart-body having my improvements convertible into an ordinary dump-cart.

In the present instance the improvement is applied to a cart.

The letter A designates the axle of the cart, and B the body. C designates a beam, of which there are two, supported above the axle, one at each end, as seen in Fig. 5. A slotted metal plate, D, of suitable thickness, is secured to the beam C at or near the rear end, and a similar plate, E, is secured to the side of the body near its forward end. A lever, F, has at each end a wrist-pin or bolt, *a*, on which a grooved roller, *b*, is mounted. One of these rollers fits and moves within the slot of the plate D, and the other within the slot of the plate E. By this construction both ends of the lever are adapted to slide to the extent of the length of the slotted plates. A second lever, G, has one end pivoted at *c* to the side of the body near the rear end, and the other end is pivoted, in like manner, at *d*, to the beam C, near the forward end. At the point where these levers cross each other they are pivoted together by a suitable bolt, *e*. The two levers may be said to have somewhat the appearance of a pair of tongs.

Some of the advantages of cross-levers arranged as here shown consist in permitting the body, when transporting the load, to lie on a level with the shafts. The forward part of the body is raised faster than the rear, and when up is elevated higher than the rear and gives the requisite inclination without any additional tilting; and an important advantage is that as the body is elevated it is gradually moved forward toward the horse. Thereby, notwithstanding the rearward inclination of the body, the center of gravity of the load is preserved, so as to keep the weight on the shafts, which may be supported by the ordinary prop.

At the front end of the body a rod, H, is attached in any suitable manner and depends below the body. This rod is preferably curved, as shown in the drawings. (See Fig. 2.)

A cross-bar, I, is secured on the beams C or on the shafts C′ in front of the body, and a standard, J, is mounted on the cross-bar and extends to the upper edge of the body.

A pulley, *f*, having an angular groove, *g*, is mounted at the upper end of the standard, and a drum, *h*, and a pinion, *n*, are mounted on a horizontal shaft, *i*, which has its bearings in the standards above the cross-bar.

An endless screw or worm, *p*, is mounted in the standard L, and is adapted to mesh with the pinion *n*.

A hand-crank, *q*, is attached to the shaft on which the worm is mounted, and a chain, *r*, having one end made fast to the drum, passes over the pulley *f* and is attached to the lower extremity of the curved rod H. By turning the crank the worm, which engages with the pinion, causes the drum to revolve and wind the chain, which draws on the curved rod, and thereby raises the body to the position shown in Fig. 1—that is, elevated and inclined rearward.

At the rear end of the body is a discharge-gate, *m*, arranged to move in vertical slides. The said gate may be raised by a lever or in any other manner.

A spout, N, leads from the gate and has at

the end a check-door, *x*, hinged at its upper edge. The lower edge of the check-door rests on the chute, hereinafter described.

A rod, *l*, is secured to the end of the cart-body and projects from the end and extends horizontally over the spout, as seen in Fig. 11.

A pin-hole, *l'*, is made in the rod over the center of the spout and another over each side, for a purpose hereinafter described.

A rod, P, is secured on the bottom of the body, at the forward end thereof, by means of a pivot-bolt, whereby the end at the rear may be moved to either side. This end curves upward and back, forming a hook, *s*, which rests upon the horizontal rod *l*.

A pin, *s'*, which passes vertically through the rod, serves to hold it above the spout at the center or at either side by insertion in one of the holes *l'*.

The letter R designates the chute, which has at one end a cross-bar, *a'*, to which is attached an eye or ring, *b'*, which slides on the rod P. The eye has a swivel-connection to the cross-bar *a'*, in order to permit the other end of the chute to be turned in any direction. In addition to the swivel, the connection of the eye to the cross-bar permits it to slide on the latter, as shown in Fig. 7. By this arrangement the eye *b'* serves to sustain the chute at all times, and permits the chute to be adjusted under the spout in any desired position.

The letter S designates a prop or support adapted to be moved lengthwise of the chute to any desired position. The support consists of the standards, having at the upper end a pivoted band, *c'*, on which the chute is to rest. From one side of the band is a projection, *e'*, through which is a hole. A rod, *f'*, extends crosswise above the chute, and its ends form the pivots which secure the band *c'* to the standards. Fig. 1 shows the support in position under the chute, and Fig. 2 shows the support, with the standards turned up, and the cross-rod *g'* above the hooked end *s* of the rod P, in which position it serves to support the chute underneath the vehicle when the chute is not in use. When thus employed the standards are sustained in their turned-up position by a pin passed through the hole in the projection *e'* and into the side of the chute.

If desired the body may be mounted on springs of any approved construction. In the present example a rigid cross-piece, T, is secured above each end of the axle, and at each end of the cross-piece a box, *t*, is secured, while a similar box, *t'*, is bolted to the beam C. Each box has a flange, t^2, which are connected by means of a bolt, *u*, and a spiral spring, *v*, has one end incased in each box.

The improved mechanism for lifting and inclining the body may, in the case of a cart, be embodied in such manner as to permit the body to turn back on the axle and dump in the ordinary manner, as shown in Fig. 12. To enable this be done the long arms of the levers are secured so as to prevent their separation, for which purpose a hook or link, *y*, is attached, so that one end holds each lever. A pin, *z*, prevents the hook from disengaging. The front of the cart is held down to the shafts by the staple *w* in the usual manner of such carts.

When a cart employing the lifting-levers is to be convertible into an ordinary dump-cart, as above, the bar on the end of the chute to which the swiveled eye *b'* is attached should be arranged lengthwise of the chute instead of crosswise and fastened to the chute in any convenient manner. By the rod extending lengthwise the chute, when underneath the body, may be pushed beyond the pivoting point of the rod P, which is effected by the swiveled eye (which can slide no farther on the rod P) allowing the rod attached to the chute to slide through it. This adaptation to push the chute forward is necessary in the ordinary dump form, as the chute in such is not employed, but remains underneath, and must therefore be far enough forward to prevent the rear end of the chute from striking the pavement.

I am aware that two levers placed crosswise of each other and connected to the body of a vehicle and to a frame which supports the body have been used before; but I am not aware that cross-levers for raising a body have ever been used as herein shown and claimed.

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

1. The combination, substantially as set forth, of a vehicle-body, a beam supported by the axle, and two levers placed crosswise of each other and pivoted together, and one of the levers pivoted by one end to the body near its rear end and the other end of the same lever pivoted to the beam near the forward end, and the ends of the other lever secured to the body and beam, respectively, by means subtantially as described, to permit said ends to slide.

2. In a vehicle for dumping coal, the combination of a discharge-gate in the end of the body, a spout permanently attached to the body and leading from the gate, and a check-door hinged by its upper edge to the outermost end of the spout, as shown and described.

3. In combination with a vehicle-body, a rod, *l*, secured at the rear end and extending horizontally crosswise of the end and above the discharge-opening, and a rod, P, having one end pivoted to the bottom at its forward end and its other end curved upward and back and resting on the horizontal rod before mentioned, wherein it is adapted to be moved laterally, as set forth.

4. A chute for a dumping-vehicle, having attached to it a bar, *a'*, and a swiveled eye or ring, *b'*, adapted to slide on the bar, as set forth.

5. In a dumping-vehicle, the combination of a chute adapted, by means substantially as described, to slide underneath the body, and a supporter consisting of standards having at one end a pivoted band, c', on which the chute may rest, and a cross-rod, g', connecting the standards, whereby, when the chute is in position underneath the body, the standards may be turned up and the rod g' engage above a suitable projection at the rear end of the body, substantially as set forth.

It witness whereof I hereunto set my hand.

BENJAMIN TWEEDLE.

Witnesses:

JAS. R. SOUDER,

C. W. SEARS.