

MERRINGTON & KIRKWOOD

Dumping Car.

No. 108,810.

Patented Nov. 1, 1870.

Fig 1.

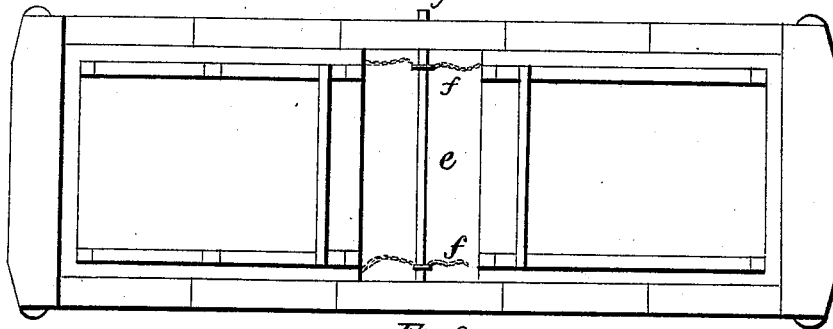


Fig. 2.

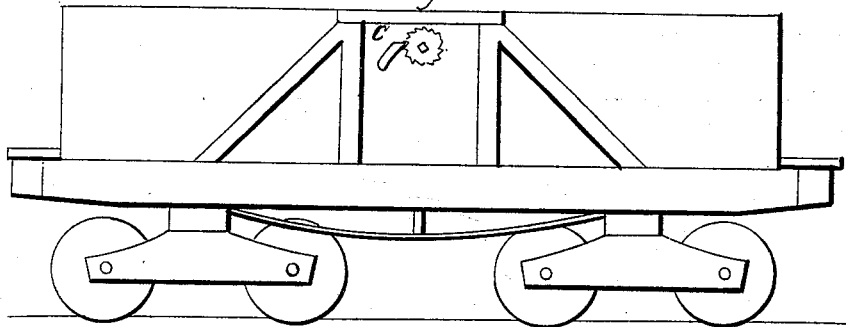
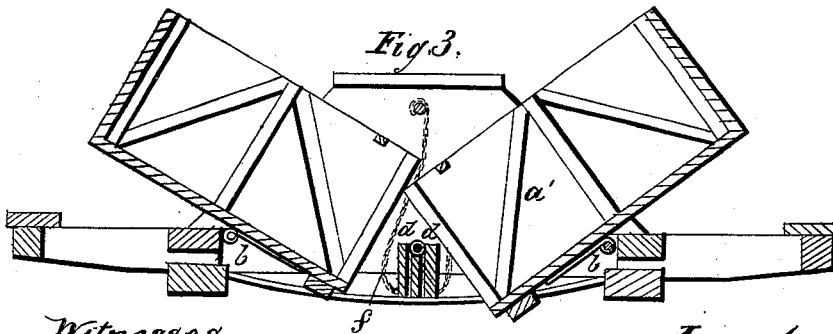


Fig 3.



Witnesses:

W. Parsons
Thos. Harper

Inventors:

William Merrington
Nathan Kirkwood
by Jas. Allison
att'y

UNITED STATES PATENT OFFICE.

WILLIAM MERRINGTON AND NATHAN KIRKWOOD, OF McKEESPORT, PA.

IMPROVEMENT IN DUMPING-CARS.

Specification forming part of Letters Patent No. **108,810**, dated November 1, 1870.

To all whom it may concern:

Be it known that we, WILLIAM MERRINGTON and NATHAN KIRKWOOD, of McKeesport, in the county of Allegheny and State of Pennsylvania, have jointly invented a new and valuable Improvement in Coal, Coke, and Bulk Cars; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a top view, showing also the roller and chain by which the trap-doors or wickets are kept closed or opened. Fig. 2 is a side view, showing also the ratchet. Fig. 3 is a central vertical longitudinal section, showing the boxes tipped toward the center and the position of the hinge.

We use the ordinary trucks or platform, and also the wickets, roller, and ratchet of all cars that empty through the bottom. Instead of hoppers which are funnel-shaped, we use two boxes nearly square, open at the inner end, and hinged near their center *b b*, Fig. 3, over the bolster of the trucks, thereby equalizing the load over the bed of the car. By lifting the ratchet *c*, Fig. 2, at the top of the side, near the middle of the car, the trap-doors *d d*, Fig. 3, fall downward, and break the bulk and arch of the load, leaving room for the tipping of the boxes *a a*, Fig. 3, toward the center. The whole load is thereby deposited in one place, or over the mouth of a chute.

The hopper-cars now used for carrying coal are funnel-shaped, being inclined from near the top to the wickets, occasioning a loss of one-fourth of the capacity obtained by our square construction. The hoppers contain about fourteen bushels per foot of measurement, while ours will contain eighteen bushels per foot. If our car be reduced in length, so as to make the capacity the same as that of the hopper-car, one-fifth of the timber or iron used in construction will be saved, and the length of the train reduced in even greater proportion, while the weight of the empty car will be nearly three tons less. The space occupied on sidings and at depots in cities, where room is scarce and valuable, will also be much economized; and where it becomes necessary to shovel out the load from a hopper, it is always accomplished with difficulty

and much disagreeable labor to the operators. From our car the load can be shoveled out with as much ease as from an ordinary flat car.

Our boxes may be constructed wholly of iron, or of wood braced by iron. When constructed of wood we use one-and-a-quarter-inch plank, and frame with iron belts two inches wide and a half inch thick, punched for half-inch screw-bolts. These belts pass down the sides and at the corners, through the timber, and across the bottom, being fastened by plate and nut. The corner belt, at the closed end, is of angle-iron, three-inch face by one-quarter inch thick. There are also side belts running anglewise from the cross-timber, under the open end of the box, to the top of the middle belt, and down again to the closed end, supporting the ends from drooping, and strengthening the whole box.

To prevent the open end from spreading at the top, we use a three-inch-square wooden rail, secured to each side by corner bands of three-inch by half-inch iron.

When constructed wholly of iron the sides and ends are made of sheet-iron three-sixteenths of an inch in thickness, and the bottom of quarter-inch iron. The corners are braced by angle-iron, two-inch face by three-eighths thick, riveted on. The bottom is strengthened by a bar two inches by one, nine feet long, running lengthwise under the middle of each box, with a cross-bar seven feet long under the open end. Another bar seven feet long, of inch-and-a-half angle-iron, with bolts and nuts, is used to prevent the open end spreading at the top.

We do not claim the trap-doors and the roller and ratchet; but

We do claim as of our joint invention and desire to secure by Letters Patent—

The double-tip boxes *a a*, hinged near their center *b b*, open at the inner ends, and tipping toward the middle of the car, between the boxes and trap-doors *d d*, the whole constructed substantially as described, and for the purposes set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

WILLIAM MERRINGTON.
NATHAN KIRKWOOD.

Witnesses:

LEWIS HANEY,
ANDREW REIBER.