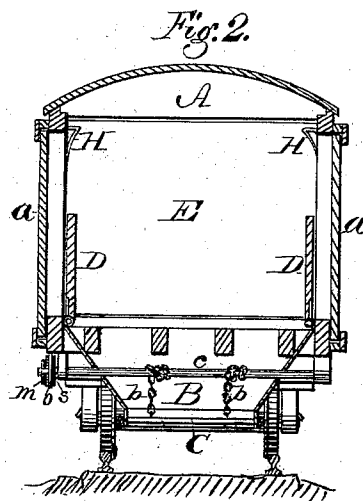
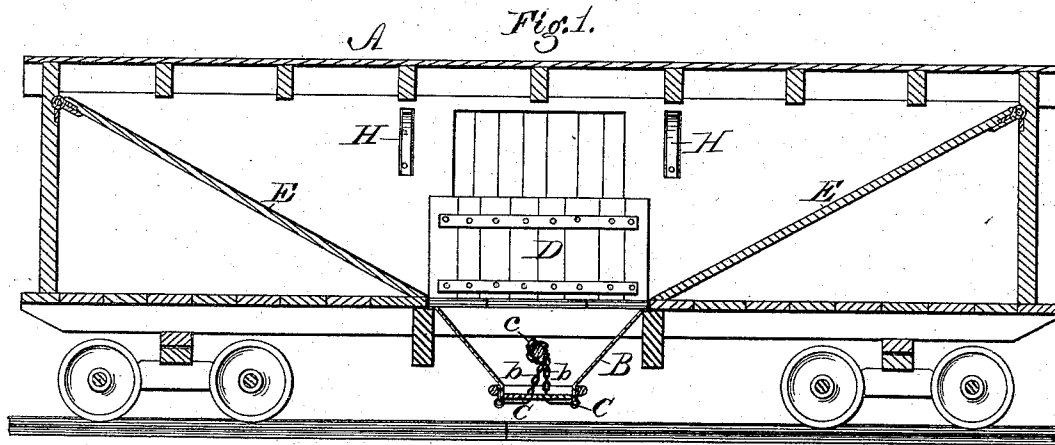


B. P. POWER.
Convertible Grain and Merchandise Cars.
 No. 157,481. Patented Dec. 8, 1874.



Witnesses:
 Will H. Dodge
 Alex Mahon

Inventor:
 B. P. Power
 By his Atty.
 Dodge & Son.

B. P. POWER.

Convertible Grain and Merchandise Cars.

No. 157,481.

Patented Dec. 8, 1874.

Fig. 3.

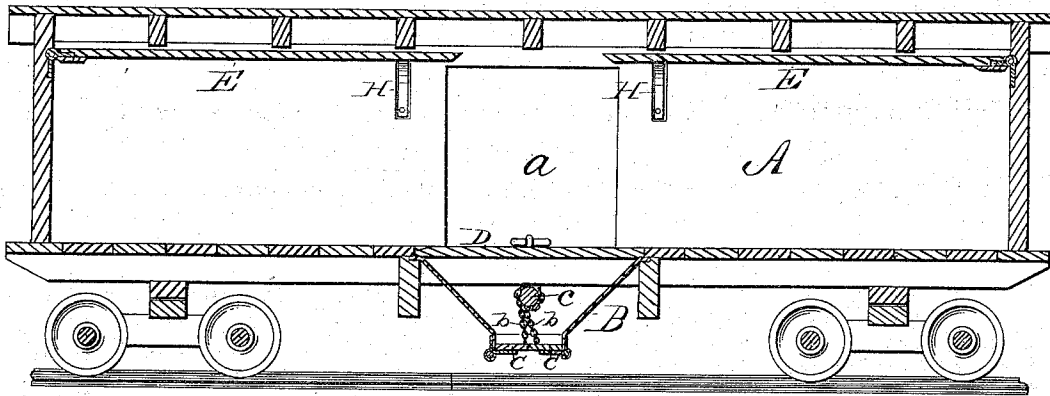


Fig. 4.

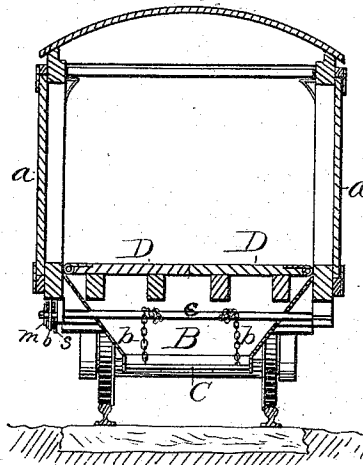


Fig. 5.

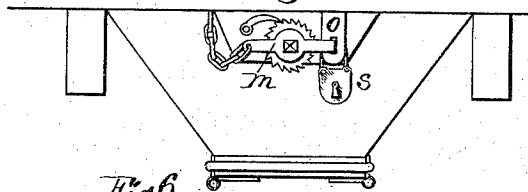
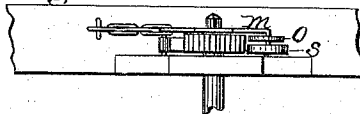


Fig. 6.



Witnesses:
 Will. H. Dodge
 Alex. Mahon

Inventor:
 B. P. Power.
 By his attys.
 Dodge & Son.

UNITED STATES PATENT OFFICE.

BENJAMIN P. POWER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN COYNE, OF SAME PLACE.

IMPROVEMENT IN CONVERTIBLE GRAIN AND MERCHANDISE CARS.

Specification forming part of Letters Patent No. **157,481**, dated December 8, 1874; application filed September 18, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN P. POWER, of Baltimore, in the State of Maryland, have invented certain Improvements in Convertible Grain and Merchandise Cars, of which the following is a specification:

The object of my invention is to so construct a car that it may be readily converted from an ordinary merchandise or box car to one especially adapted for carrying and rapidly discharging grain, and vice versa.

The invention consists in providing an ordinary car-body with a central hopper at the bottom, with boards or wings hinged in the top of the body, so that they may be turned down to form continuations of the bottom hopper and convert the car into one large hopper, and with doors to cover the bottom hopper when the car is used for merchandise.

Figure 1 represents a longitudinal vertical section through the center of my car as used for carrying grain. Fig. 2 represents a vertical central cross-section of the same. Fig. 3 is a longitudinal vertical section through the center of the car as used for merchandise. Fig. 4 is a vertical central cross-section of the same; and Figs. 5 and 6 are, respectively, a side and a bottom view of the devices for locking the hopper-doors.

In building my improved car I construct its body A in the same general manner as the common freight, box, or merchandise cars now in general use, with doors *a* at the middle on opposite sides. In the floor of the body, at its middle, I make a large opening, below which, to the body, I secure a hopper, B, having its lower side or mouth closed by two hinged doors, C, which are held up by chains *b* winding on a transverse shaft, *c*, mounted in the upper part of the hopper, as shown in Figs. 1, 2, 3, and 4. To the inner sides of the body I hinge two longitudinal doors, D, which may be turned down, as shown in Figs. 3 and 4, to close the top of the hopper B and leave a smooth solid floor in the car for merchandise, or turned up against the sides of the car, as in Figs. 1 and 2, so as to close the lower part of the doorways *a* and leave the hopper open for grain. In the top of the body I arrange two boards or wings, E, hinged one to each

end of the body, and each extending nearly to the middle of the same, as shown in Figs. 3 and 4. On the inside of the body I place spring-catches H to support the inner free ends of the hinged wings or boards E, as shown.

When the car is to be employed for carrying grain the bottom of the hopper is closed, the door D turned up against the side of the car, in order to leave the top of the hopper open and prevent the escape of the grain through the doorways in the side of the body, and the inner ends of the wings or boards E turned down upon the floor, as shown in Fig. 1, so that they form continuations of the sides of the hopper B, and convert the car, as shown, into one large hopper. As the grain is supported above the floor of the car on the inclined wings or boards which lead downward to the hopper B, it will be seen that, upon opening the doors C in the bottom of the hopper, the grain will flow down by reason of its gravity, and be discharged very rapidly through the hopper, the car being thus emptied without the employment of the customary manual labor, and in far less time. In this way the expense of the labor is avoided and the grain delivered with such rapidity as to keep a large elevator running at full speed—a result which is not and cannot be attained when the grain is unloaded by hand.

When the car is to be used for freight and merchandise other than grain the hinged wings or boards E are turned up against the roof and the doors C shut down to form a continuous unbroken floor in the car, as shown in Figs. 3 and 4. When the parts are thus adjusted the car presents the same appearance and answers the same purposes as the common box-car.

By my method of construction I produce a car which may be adapted for transporting grain in bulk to the markets, and discharging it rapidly and without labor or expense, and then readily converted into a common box car for transporting the merchandise, such as is returned from the grain-buying to the grain-producing sections. My car is thus adapted for use while passing in both directions, while, at the same time, it possesses all the advantages of the different cars now employed.

The shaft *c*, on which the door-chains wind, is provided on one end with a ratchet-wheel, which is held by a pawl to keep the chains from unwinding and hold the doors shut. In order to prevent the car from being emptied by improper parties, I make the end of the shaft *c* square, and apply thereto a closely-fitting plate, *m*, one end of which is bent at right angles and passed through a staple, *o*, on the body, and secured by a padlock, *s*, in its end. Before turning the shaft to release the hopper-doors it is necessary to remove the lock and take off the plate *m*.

It is obvious that, in place of the two hinged doors at the bottom or mouth of the hopper, a single hinged door, or one or more sliding doors, may be used, or that the hopper may be closed in any other suitable manner.

I am aware that cars having hopper-bottoms are old; that it is old to use hinged doors to

cover the hoppers and form a flat floor; and that it is old to use short inclines in the corners of a car-body; and I therefore lay no claim to these features singly.

What I do claim is—

1. In combination with the box-car having the usual side doors, the large central hopper *B*, the two hinged doors *D*, and the two hinged wings *E*, extending inward to the sides of the hopper, so that the entire load may be discharged through the central hopper, all as set forth.

2. In combination with the doors *C*, chains *b*, and shaft *c*, the plate *m*, staple *o*, and lock *s*, arranged as shown.

BENJAMIN P. POWER.

Witnesses:

P. T. DODGE,

JNO. D. PATTEN.