

C. K. PROBES.
HOPPER CAR AND WAGON.
APPLICATION FILED JAN. 14, 1910.

984,105.

Patented Feb. 14, 1911.

3 SHEETS—SHEET 1.

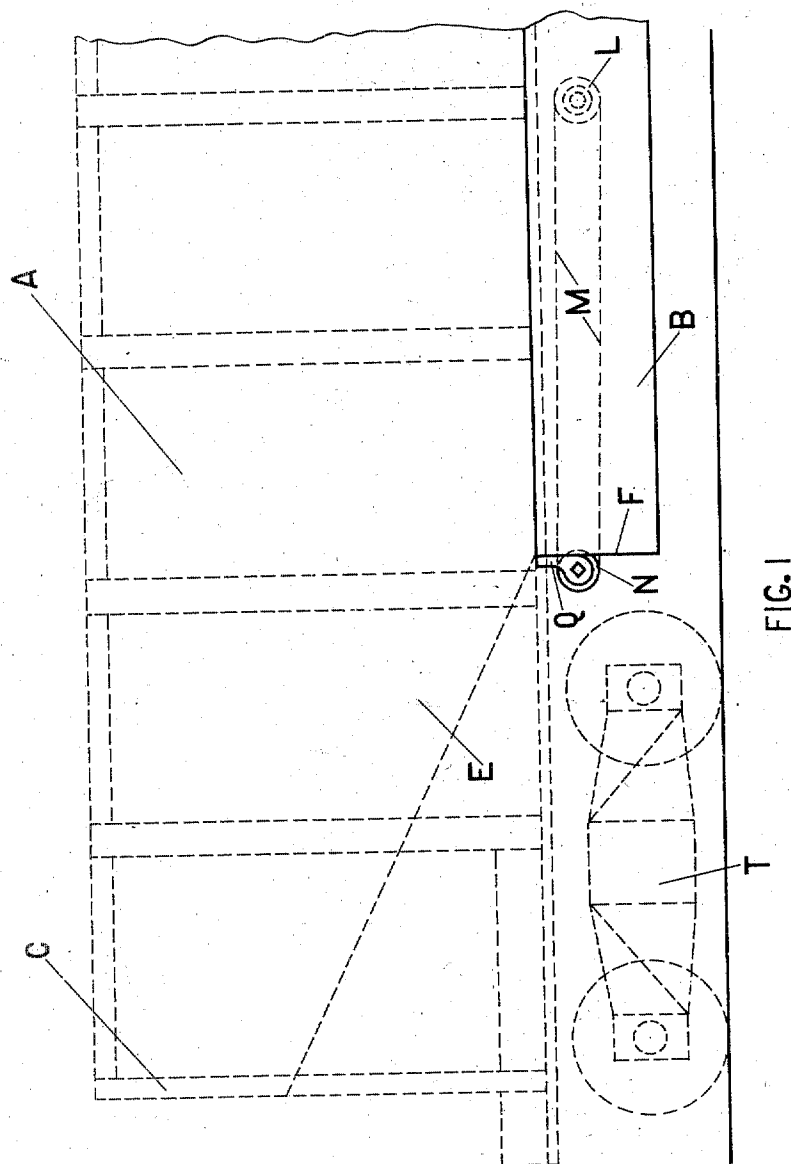


FIG. 1

WITNESSES

John J. O'Brien
John J. Stanley

INVENTOR

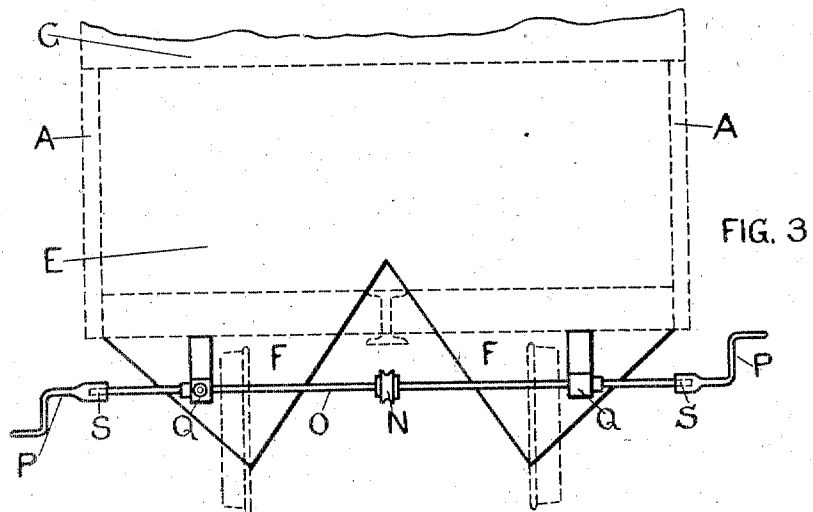
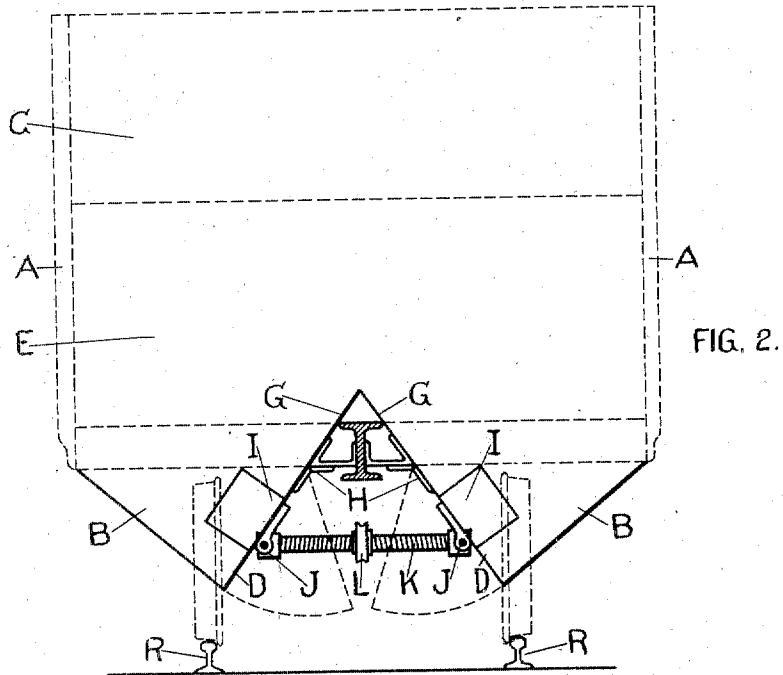
Charles K. Probes

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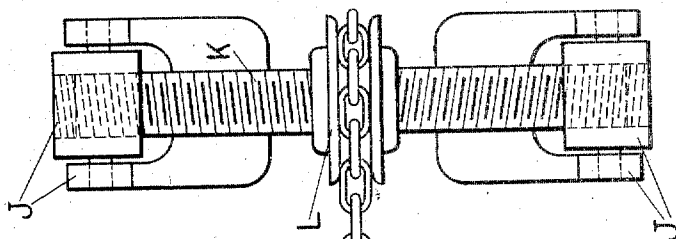
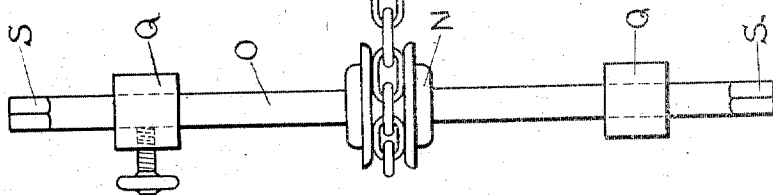


FIG. 4



WITNESSES

John J. Stanley
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INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES K. PROBES, OF SCHENECTADY, NEW YORK.

HOPPER CAR AND WAGON.

984,105.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed January 14, 1910. Serial No. 538,165.

To all whom it may concern:

Be it known that I, CHARLES K. PROBES, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Hopper Cars and Wagons, of which the following is a specification.

This invention relates to improvements in the door opening and closing devices for hopper cars designed for carrying coal, coke, and other loose or broken materials in bulk, wherefrom the load is to be dumped through the bottom of the vehicle through openings running longitudinally of the vehicle between the wheels; and my object is to provide a simple, positive and effective device for this purpose.

I attain my object by constructing the door operating device in the manner illustrated in the accompanying drawings, in which—

Figure 1 presents a side elevation of one end of a car outline in broken lines, with my improvement applied thereto; Fig. 2, a transverse sectional view of the car; Fig. 3, an end elevation thereof; and Fig. 4, a detail upon a larger scale, showing the door operating mechanism.

Like letters of reference designate like parts in the several views.

As illustrating my invention, I have shown it as applied to a railway hopper car.

The car body is constructed in any approved manner, of steel or wood, with sides A, A, of suitable height, and with the bottom of the car inclined downward to points over the inside of the rails, as shown more clearly at B, B, in Fig. 2, these bottom inclines extending longitudinally of the car between the wheel trucks, one of which trucks is shown at T. The ends of the car are closed by vertical endboards C, from which inclines E lead downward to the points where the bottom inclines B, B, begin; these inclines E serving to direct the material from the portions of the car over the trucks downward to the inclined bottoms B when the car is being unloaded. Supported by a center sill running from one end of the car to the other, are inclined plates G, G, in the form of an inverted V, said inclines forming chutes to direct the materials at the center of the car downward into the chutes formed by the inclined bottoms B, B. To these inclines G doors D, D,

are fastened by hinges at H, (see Fig. 2), to close the openings between the inclines G and the bottoms B. The ends of the chutes thus formed by the plates G and the bottoms B are closed by vertical plates F, F.

Midway between their ends the doors D, D, are provided with screw threaded trunnion blocks J, into which the ends of the right and left screw K are entered. On their inward sides the doors are provided with boxes at I, I, or other suitable protective housings into which the ends of this screw will pass when the doors are opened. At its center the screw K is provided with a pulley or sprocket wheel L, over which a chain M passes to a corresponding pulley or sprocket wheel N on the operating shaft O, mounted to rotate in brackets Q attached to the ends F of the chutes. This shaft projects outwardly at each end, and is squared to receive operating cranks P, as shown in Fig. 3. The left hand bracket Q is shown in Figs. 3 and 4 as provided with a set screw operable by hand, whereby this crank shaft may be fastened against rotation.

When in operation, the contents of the car will be dumped by turning the crank shaft O by means of the cranks P, applied thereto on one or both sides of the car, the doors D being opened more or less according to the freedom of discharge desired, by imparting the necessary rotation to the right and left screw K, through the chain connection M. By means of this construction the doors will be held positively open at any desired point, regardless of the weight of the contents of the car, and of the force of discharge thereof from the car.

If need be more than the one right and left screw may be applied to these doors and controlled by the one operating shaft, as will be obvious to those skilled in the art; and, furthermore, I do not limit myself to the exact details of construction illustrated and described, nor to any particular construction of railway car or road wagon.

What I claim as my invention, and desire to secure by Letters Patent is—

1. A hopper vehicle having longitudinal chutes opening toward one another and doors adapted to close the chutes, in combination with a transversely positioned right and left hand screw, the ends of which pass through openings therefor in the doors, trunnioned nuts on the doors into which

the ends of the screw are entered, and means for rotating the screw to open and close the doors at said openings.

2. A hopper vehicle having longitudinal
5 chutes opening toward one another and doors adapted to close the chutes, in combination with a transversely positioned right and left hand screw, trunnioned nuts on the doors into which the ends of the screw are
10 entered, housings on the inward sides of the

doors to receive and protect the ends of the screw, and means for rotating the screw to open and close the doors.

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

CHARLES K. PROBES.

Witnesses:

JOHN J. O'BRIEN,
JOHN J. STANLEY.