

(No Model.)

2 Sheets—Sheet 1.

D. C. MULVIHILL.
ORE CAR.

No. 542,831.

Patented July 16, 1895.

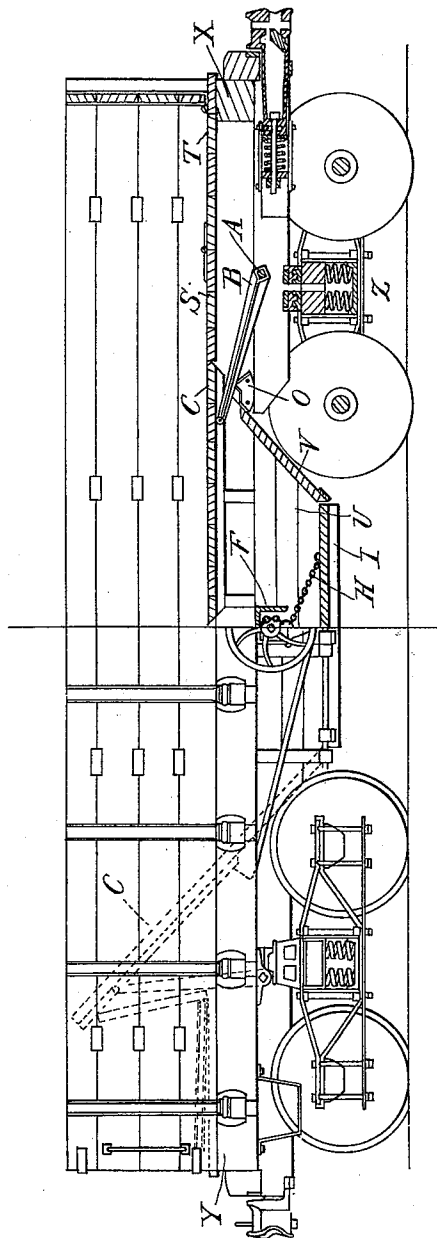


Fig. 1.

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Inventor
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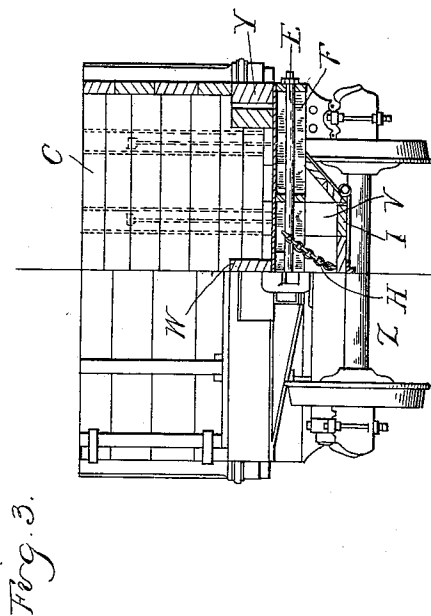
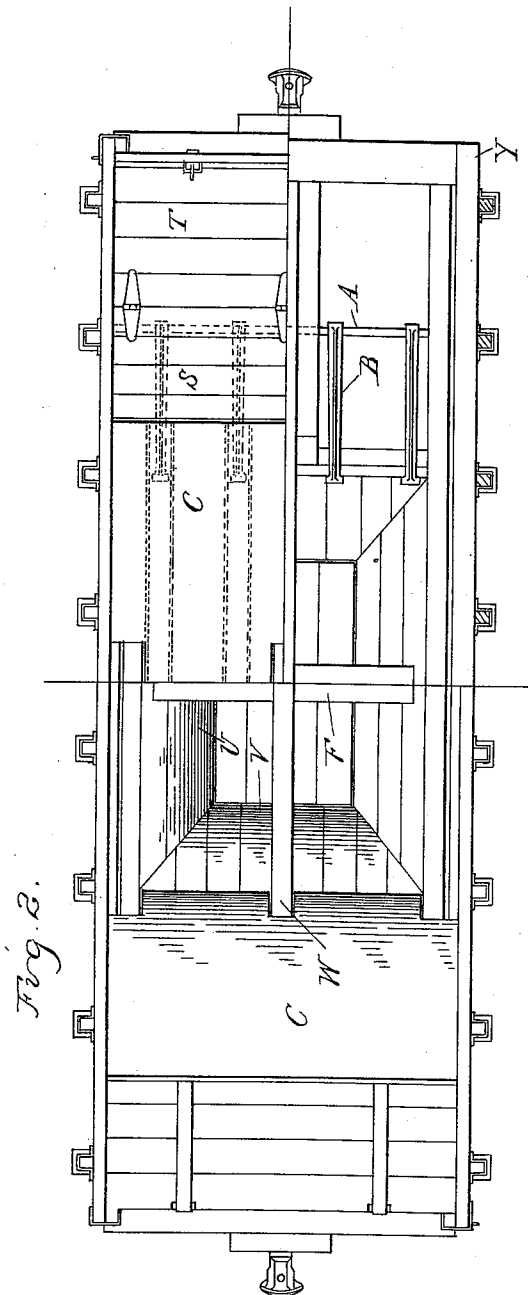
(No Model.)

D. C. MULVIHILL.
ORE CAR.

2 Sheets—Sheet 2.

No. 542,831.

Patented July 16, 1895.



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL C. MULVIHILL, OF MARQUETTE, MICHIGAN.

ORE-CAR.

SPECIFICATION forming part of Letters Patent No. 542,831, dated July 16, 1895.

Application filed June 13, 1894. Serial No. 514,421. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. MULVIHILL, a citizen of the United States, residing at Marquette, in the county of Marquette and State of Michigan, have invented certain new and useful Improvements in Ore-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The object of my invention is to so construct a railway freight-car that it may be adapted either for the carrying of ore with a suitable dump or it may be converted into the ordinary gondola-car for carrying lumber
15 and other freight.

The invention consists in the construction of a car-body having a hopper-section below the platform and a platform having sections adapted to be moved to make a floor over the
20 hopper-section or to be turned to form extensions of the sides of the hopper, and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

25 In the drawings, Figure 1 is a side elevation, partly in section, showing at different ends of the car the movable platform in different positions. Fig. 2 is a sectional plan also showing the parts in different positions at different
30 ends of the car. Fig. 3 is an end elevation, half in section.

The car is supported upon the usual trucks Z. The car-frame consists of the longitudinal sills Y and the cross-sills X, forming a
35 substantially rectangular frame and comprising a central longitudinal timber W.

F is a central cross-timber secured to the under side of the side sills and the central sill W, and preferably formed of an inverted
40 beam of two angle-irons adapted to form a substantially inverted-U or channel beam.

V are permanent inclined end walls of the hopper suspended beneath the sills, and U are inclined side walls.

45 I are the trap-doors forming the bottom of the hopper, hinged at the sides thereof and having their outer ends supported by chains H, which are wound about the actuating-shaft E, which passes centrally through the cross-bar F, this bar acting as a shield to protect

the shaft and its chain from damage in handling the ore or coal.

The platform of the car is made up of the permanent end sections T, to the inner edges of which are hinged the sections S. These
55 two sections extend about one-quarter the length of the car. Extending from the sections S to the middle of the car are the sections C, which are adapted to cover the middle portion of the car when the same is used
60 for lumber, &c., and which may be drawn up to form complementary extensions of the inclined end sections V. This is accomplished by means of the rock-shaft A, extending to the sides of the car and provided with suitable
65 actuating means, and the crank-arms B secured thereto and pivoted to the outer ends of the sections C. When thus turned, the whole car is transformed into a coal or ore
70 car having only a central hopper, the sections S being turned upon their hinges to a vertical position, as shown in Fig. 1 at the left hand. In this position the lower end of the section C is supported on brackets O secured
75 on the sides of the sills.

When it is desired to use the car for lumber and other purposes, the shafts A are rocked, bringing the inclined sections C from the position shown in dotted lines at the left
80 hand in Fig. 1 to the horizontal position shown in full lines at the right hand of that figure, these two sections forming the covering for the hopper. This construction enables me to change a car designed to carry
85 iron ore, &c., into one which will be available to carry lumber, logs, &c., or vice versa, and thus enable me to use the car the entire season, while if it were not convertible it would be in use but practically half the year.

What I claim as my invention is—

90 1. In a car, the combination with the sides, of a flat bottom comprising an intermediate series of removable horizontally disposed sections, hinged connections between the outer
95 movable sections and fixed portion of the bottom, crank arms on the car frame connected at their upper ends to the central movable sections and having a limited vertical
100 movement, rests adjacent to the outer ends of the central movable sections, and a

hopper below the bottom having inclined sides with which the central movable sections register when elevated, substantially as described.

- 5 2. In a convertible car, the combination with the frame, of a bottom normally horizontal and composed of end hinged and independently movable central sections, a hopper below the bottom, and means for longi-

tudinally shifting the independently movable sections, and simultaneously tilting the end sections, substantially as described.

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

DANIEL C. MULVIHILL.

Witnesses:

ALBERT E. MILLER,
R. W. GILBERT.