

No. 646,195.

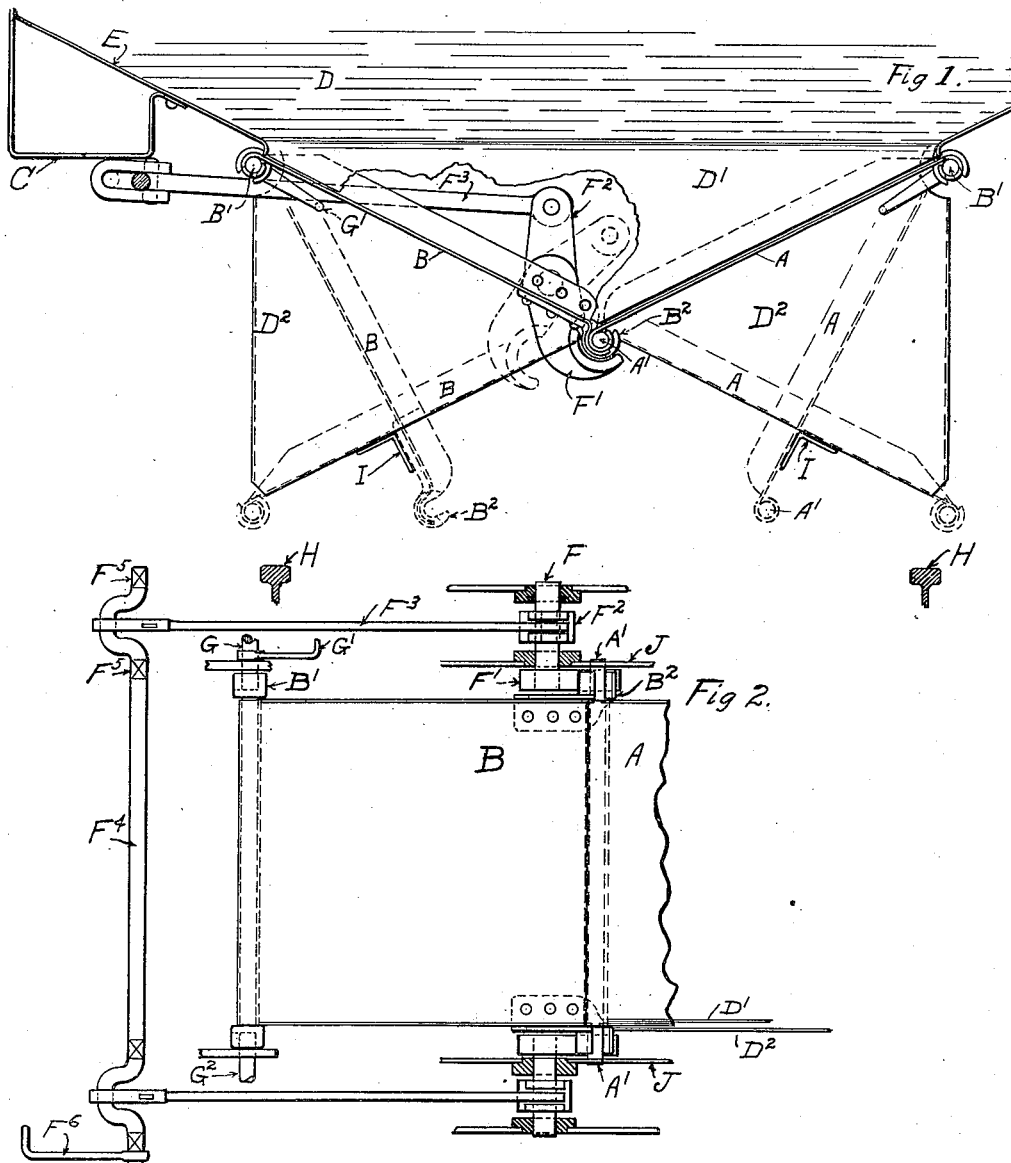
Patented Mar. 27, 1900.

E. W. SUMMERS.
CAR BOTTOM.

(Application filed June 28, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

Vancut Kelbling.
L. A. F. Summers

INVENTOR.

Edgar W. Summers.

E. W. SUMMERS.
CAR BOTTOM.

(Application filed June 28, 1899.)

(No Model.)

2 Sheets—Sheet 2

Fig 3.



Fig 4.

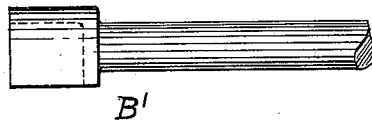


Fig 5.

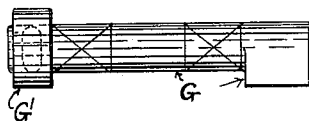


Fig 6.

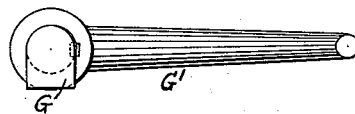


Fig 7.



Fig 8.

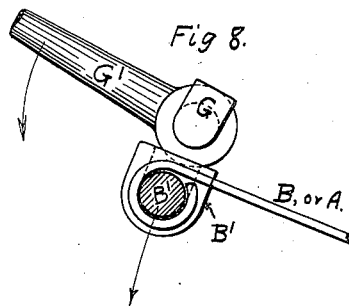
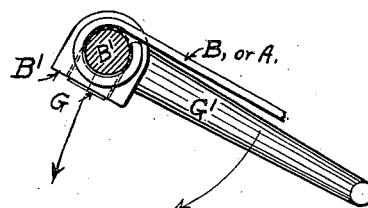


Fig 9.



WITNESSES:

S. Herbert Moore
Carl D. King

INVENTOR.

Edgar W. Summers.

UNITED STATES PATENT OFFICE.

EDGAR W. SUMMERS, OF AKRON, OHIO.

CAR-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 646,195, dated March 27, 1900.

Application filed June 28, 1899. Serial No. 722,177. (No model.)

To all whom it may concern:

Be it known that I, EDGAR W. SUMMERS, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Car-Bottoms, of which the following is a specification.

My invention relates to an improvement in the shape of the car-bottom and in the position, shape, and manner of operating discharge-doors in the bottom of the car.

The object of my invention is to produce a car-bottom with discharge-doors the shape and arrangement of which will permit the cargo of coal, iron ore, or other bulky granular material to be discharged all on one side of the tracks supporting the car or all on the other side or to be distributed on both sides or all in the middle, between the tracks, at the will of the operator. I attain this object by the arrangement shown in the accompanying drawings, in which—

Figure 1 is a vertical cross-section through the car-bottom and doors. Fig. 2 is a horizontal section viewing the doors from above. Figs. 3 to 9, inclusive, show latch and release mechanism for outer end of doors.

Similar letters refer to similar parts throughout the several views.

A and B are discharge-doors. (Shown by full lines in their closed position.) Each door is hinged at both its inner and outer ends. (Shown at B' and B² for door B and at B' and A' for door A.)

C is the side sill of the car, D the bottom sloping from the end of the car to the door, and E the bottom sloping from the side of car to the door.

D' is a vertical plate extending from the bottom D down (see Fig. 9) to the doors and overlapping the extended edges of the doors, the door-flange closing up outside of D'.

D² is a vertical plate attached to D' and offset above the door in its closed position and extending down outside and close to the door, the bottom edge conforming with the bottom of the door when the outer end of door is lowered, thereby forming the sides of a chute to discharge the load outside of the tracks H.

The hinge at outer end of door is formed by bending the plate (of which the door is made)

around shaft B', making a working fit to enable the door, with its inner end released, to rotate about this shaft. The ends of shaft B' extend beyond the sides of door and are enlarged, having sockets formed in the enlarged ends concentric with the axis of shaft, into which extend gudgeons G and G², which support the shaft. The sockets each have a radial slot in one side, through which gudgeons G and G² may pass in or out by swinging the door on its hinge at the inner end when the radial slot is in a position tangent to the circle of revolution. G² is fixed to the bottom of car and is circular in form, permitting the shaft to rotate on it. G has its projecting end formed to fit the slot and socket in end of shaft and is journaled in supporting-boxes on the bottom of car and has a lever G' fixed to it, whereby the shaft B' may be revolved. It will be seen that by turning B' over until the slotted side of sockets is down (see Fig. 9) the gudgeons will support the outer end of door, and by turning the slotted side up tangent to the circle of revolution (see Fig. 8) the door is released, thus forming either a hinge or a latch for the outer end of door.

To prevent the outer end of door from coming loose, G' is locked to the fixed part of car with any suitable lock. The outer end of all doors have the same hinge-and-latch arrangement.

The inner end of door A is provided with shaft A', about which the plate of which the door is made is curved and fixed. The ends of A' extend beyond the sides of door and engage in a recess in the under edge of plate J when the door is brought to the closed position, thereby preventing any further upward movement, but allowing the door to swing downward about its hinge-shaft B'. The inner end of door B is curved concentric with and conforming to the curved inner end of A, the part curved encircling the inner end of A something less than one hundred and eighty degrees, with its open side up, permitting the door to swing about its hinge-shaft B' to and from its closed position or permitting both to swing about the axis of A' from the closed position to an open position, with the outer end of doors down on stops I, as shown in broken lines. Lugs B² are fixed to each side of door B, extending beyond the door, form-

ing partially a continuation of the curved inner end of door, but of enlarged section, the inner part of the lug conforming to the projecting part of shaft A', having the outer and inner surfaces of lug concentric with the shaft, but open in the upper side, similar to the curved plate of the door. The office of this lug is to form a bearing in which shaft A' is journaled, being its under support, and to form a journal on which door B is revolved.

F' and F² are arms fixed to shaft F, which is supported on the fixed part of car-bottom. In the lower end of arm F' is a curved recess in which lug B² is journaled, forming the under support for the inner end of the doors when shaft F is held against rotation. Shaft F is held against rotation by means of arms F³, connecting-rods F³, crank-shaft F⁴, fixed boxes F⁵, and lever F⁶, which is locked in the closed position to the body of the car with any suitable lock. The supporting mechanism for the inner end of door is shown with full lines in the closed position, and the crank on shaft F⁴ is thrown on its center away from the center of car. To release doors at their inner end, lever F⁶ and crank on F⁴ are thrown over toward center of car, moving F' to the position shown in broken lines, when the inner end of doors will fall to position shown in broken lines against stops I. It will be seen that with stops I as shown the doors may hang open without injury while the car is in motion.

I am aware that previous to my invention cars have been made with hopper-bottoms or with the bottom sloping downward from the end of car toward the center and with doors at or near the middle of car. I therefore do not claim such a combination broadly; but What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a car-bottom, of doors with their outer ends hinged at or near the sides of car, and also hinged at the intersection of their inner ends, the axes of hinges being lengthwise of the car.

2. The combination in a car-bottom of one

or more than one pair of doors, hinged at their inner and outer ends, and which may be released at their hinged ends.

3. The combination in a car-bottom, of doors hinged at their inner and outer ends with their sides upturned, and with fixed plates in the car-bottom extending downward, overlapping the upturned edges of doors.

4. The doors A and B with the hinges at their outer ends, and at the intersection of the doors, and the release mechanism, substantially as shown and described.

5. The combination in a car-bottom of doors hinged at two opposite edges, the axis of hinges being lengthwise of car and of a latch mechanism for releasing the doors at their hinged edges.

6. The combination in a car-bottom of doors in pairs, hinged at both their inner and outer edges, and of substantially-vertical plates extending crosswise of the car from the floor downward, between which plates the doors may open and close, the plates forming the sides of a chute which is adapted to convey the contents of the car out over the car-track rail.

7. The combination, in a car-bottom, of doors hinged at both their inner and outer ends, the axes of the hinges being lengthwise of the car, and of stops fixed under the doors in a position that will stop the lower end of doors when either the inner or outer end of door is released, holding the released end of door above the level of the top of the car-track rail.

8. The combination, in a car-bottom, of doors hinged at both their inner and outer ends, the axes of the hinges being lengthwise of the car, of floor-plates sloping in and down from the side of the car to the outer end of the doors.

EDGAR W. SUMMERS.

Witnesses:

FOREST FIRESTONE,
VINCENT HELBLING.