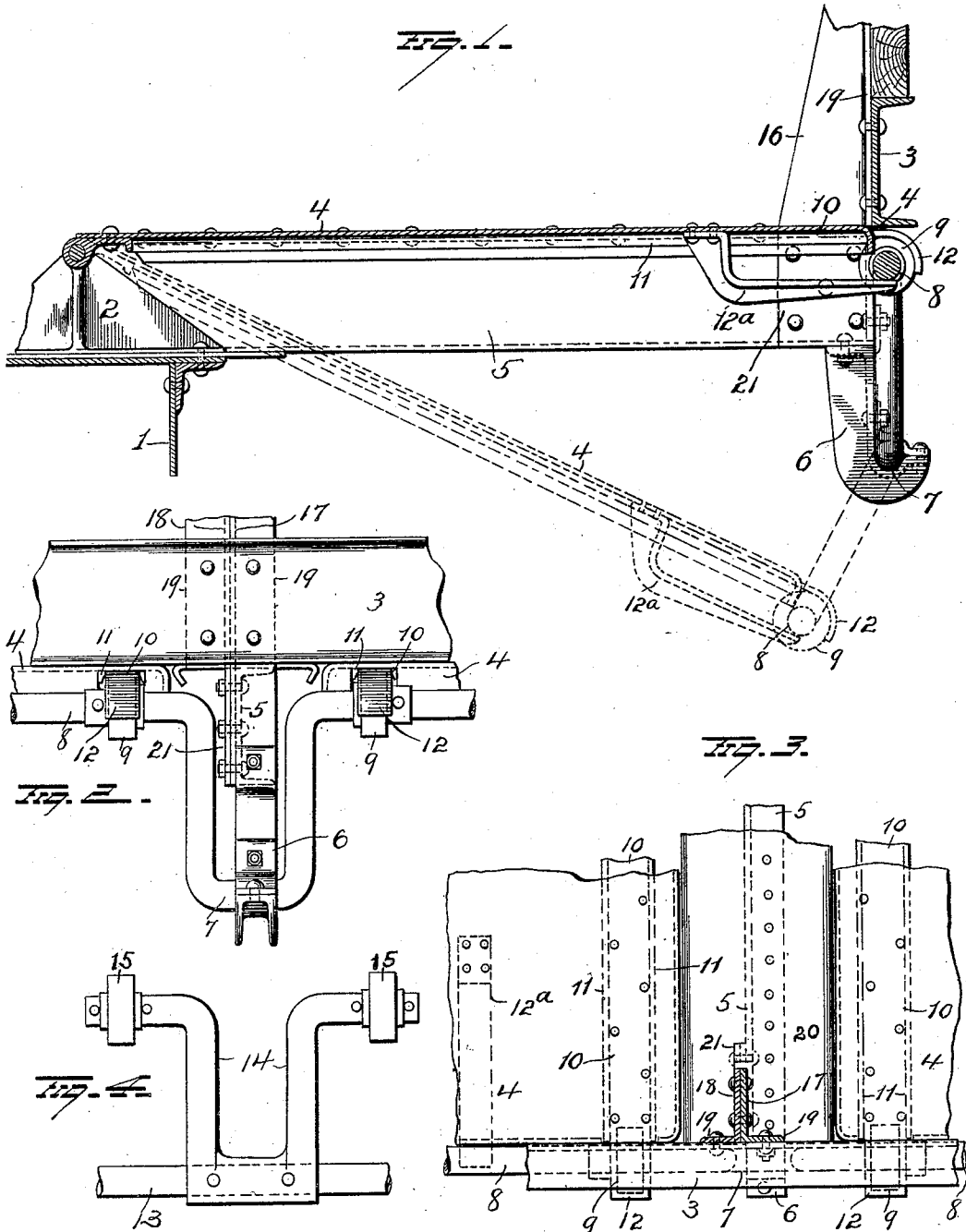


A. BECKER.
DUMPING CAR.
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WITNESSES
E. Nottingham
G. J. Downing

INVENTOR
A. Becker
Cy H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

ANTON BECKER, OF COLUMBUS, OHIO, ASSIGNOR TO THE RALSTON STEEL CAR COMPANY, OF COLUMBUS, OHIO.

DUMPING-CAR.

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To all whom it may concern:

Be it known that I, ANTON BECKER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Dumping-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in dumping cars, and more particularly to such as employ drop-floor doors,—one object of the invention being to provide simple and efficient means for operating the drop-doors.

A further object is to provide drop floor door operating mechanism employing a crank shaft, in which said crank shaft shall be located outside the path of the free edge of the door and adapted to coöperate with the door without permanent connection therewith.

A further object is to provide drop-door mechanism which will operate to effect the opening and closing of the door and support the latter at its free edge in locked position.

With these objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a fragmentary view showing a portion of a car structure and illustrating an embodiment of my invention. Fig. 2 is a face view of the structure shown in Fig. 1. Fig. 3 is a plan view of the same, and Fig. 4 is a detail view.

1 represents the center girder of a car underframe and in the present instance, a girder of the box type is shown. Brackets 2 are located upon the center girder and between these brackets and the side sills 3 of the car, drop doors 4 are located. These drop doors are hinged at their inner edges to the brackets 2 on the center girder and are disposed between the parallel cross-bearers 5 which form parts of the car under-frame.

Brackets 6 are secured to and depend from the outer ends of the cross-bearers and the lower ends of these brackets are curved outwardly beyond the plane of the outer ends of the cross-bearers and also beyond the path

of movement of the free edge of the door and serve as bearings for a crank shaft 7.

The arms 8 of the crank shaft 7 are provided with rollers 9 adapted to engage and move against strips or plates 10 secured to the under face of the drop-door. Each plate or strip 10 also serves to reinforce the drop-door and is provided at its parallel edges with depending flanges 11. The drop-door is also flanged and that portion of the flange at the free edge of the door is cut-away to permit the plate or strip 10 to be projected beyond the free edge of the door. The projecting portion of the strip 10 is curved downwardly and constitutes a stop 12 for the crank shaft when the arms of the latter are disposed vertically to support and lock the door in its closed position. It will be observed that the stop 12 is so curved as to receive roller 9 on the arm 8 of the crank shaft and that the flanged plate of strip 10 will serve as a guide for said roller in its movements toward the stop 12 when the crank shaft is operated to close the door. It will also be seen that the crank shaft mounting is beyond the path of the free edge of the door; that when the door is closed it will be locked in such position on account of the vertical alinement of the crank arm with the bearing of the crank shaft, and that when the door is open, it will be supported at its free edge by the crank shaft. In order that the arms of the crank shaft shall be held properly in contact with the doors, the latter are provided at the center with hook arms 12^a.

Instead of employing a crank shaft such as shown in Fig. 2, a straight shaft 13 may be used and provided with arms 14 carrying rollers 15, the arms 14 being made separate from the shaft and secured thereto. When such construction is used, the shaft 13 should be supported somewhat farther outwardly from the end of the cross-bearer than the mounting of the crank shaft 7, shown in Fig. 1, so that it shall be disposed beyond the path of movement of the free edge of the door.

A stake 16 is located at the outer end of each cross-bearer and this stake comprises two members 17—18 secured together. Each member of the stake is provided with a flange 19 secured to the side sill and the member 17 of the stake is passed down-

wardly through the top of the cover plate 20 on the cross bearer at the end of the latter and secured to the said cross-bearer. The member 18 of the stake is cut off at the top
 5 of the cross-bearer and is made with a leg 21 passing through the cover plate, said leg being secured to the cross bearer by means of the small rivets which secure the stake member 17 thereto.

10 Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a dumping car, the combination with a drop door and means for affording a hinge-
 15 support for an edge of the door, of a strip secured to and extending across the bottom face of the door and projecting beyond the free edge of the door and bent downwardly forming a stop, and a crank
 20 shaft supported in a plane beyond that of the free edge of the door when the latter is in its closed position and cooperating with the door to close the same and with the stop formed by the downwardly bent end of the
 25 strip on the bottom of the door to lock the door in its closed position.

2. In a dumping car, the combination with a center girder, of drop doors having hinged mountings at their inner edges upon the cen-
 30 ter girder, flanged strips secured to the bottom faces of the drop doors and terminating in stops beyond the free edges of the drop doors, a shaft, a mounting for said shaft beyond the path of the free edges of the doors,
 35 said shaft provided with crank arms, rollers on said crank arms to engage the flanged strips on the drop doors and to engage the stops at the free ends of said strips and limit the movement of the shaft when the doors
 40 have been closed.

3. In a dumping car, the combination with a center girder and a cross bearer, of a drop-

door having hinge connection with the center girder, a flanged strip or plate secured to the bottom face of the door and terminating
 45 in a curved stop projecting outwardly beyond the free edge of the door, a hanger secured to the cross-bearer and having a bearing for a crank shaft disposed beyond the path of movement of the free edge of the
 50 door, a crank shaft mounted in said bearing, and a roller carried by an arm of the crank-shaft and adapted to move on said flanged guide strip and cooperate with the stop at the free end of the latter.

4. The combination with a center girder, a side sill a cross bearer and a cover plate, of a stake comprising two members secured
 55 together, each of said members having parts passing through the top of the cross plate on the cross bearer and secured to said cross-bearer and a portion of one member of said stake terminating at the top of the cross-
 60 bearer.

5. In a dumping car, the combination with a drop door and means constituting a hinge-
 65 support for an edge of the door, of a stop projecting beyond the opposite edge of the door, a crank shaft supported in a plane below that of the free edge of the door when
 70 the latter is in its closed position and cooperating with the door to close the same and with said stop to lock the door in its closed position, and a hook arm on the door
 75 between the side edges thereof to retain the crank of the shaft in proper relation to the door.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ANTON BECKER.

Witnesses:

E. S. CULVER,
 C. H. WEBER.