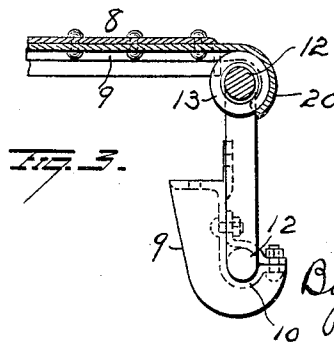
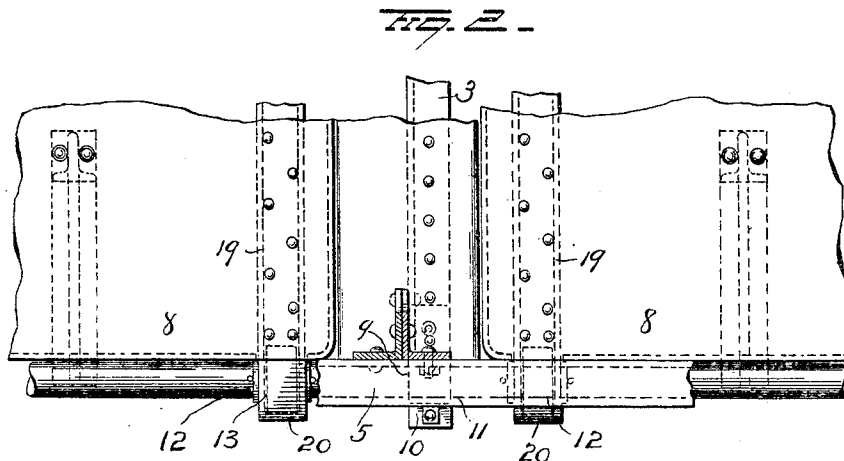
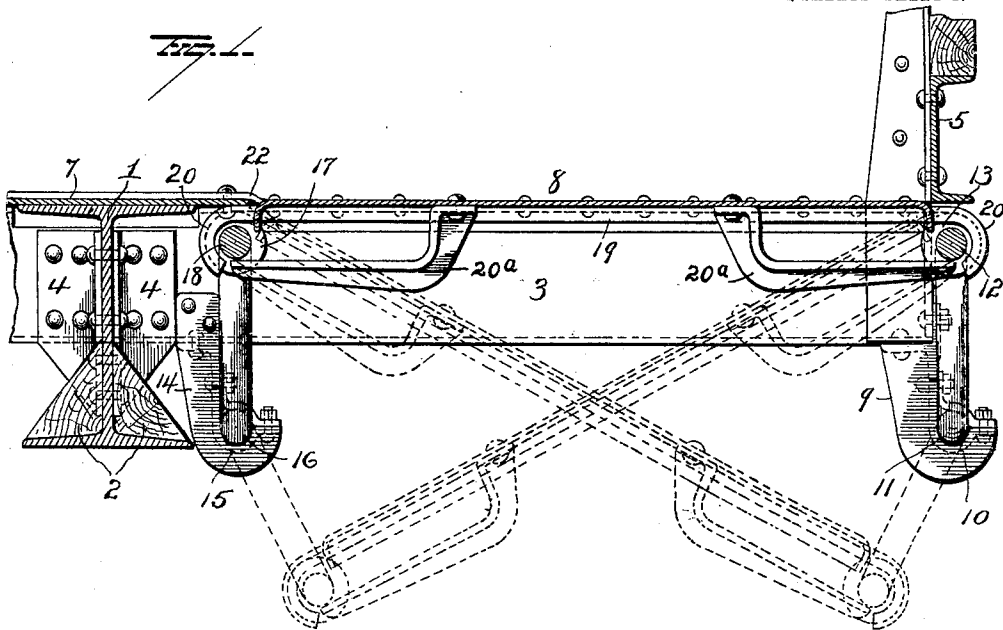


931,720.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.



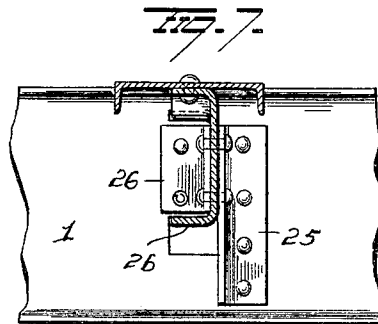
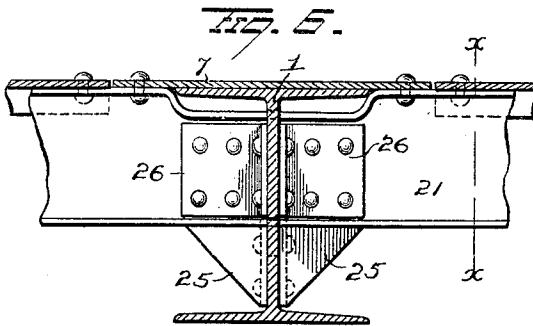
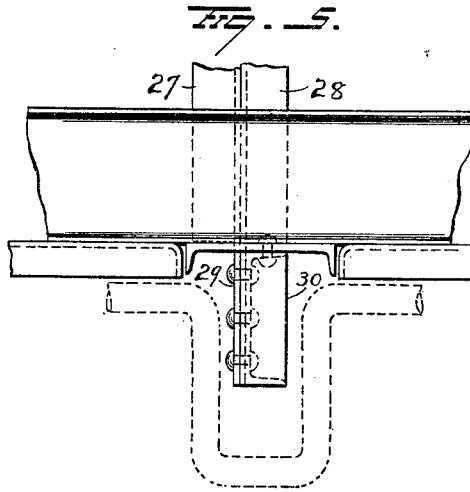
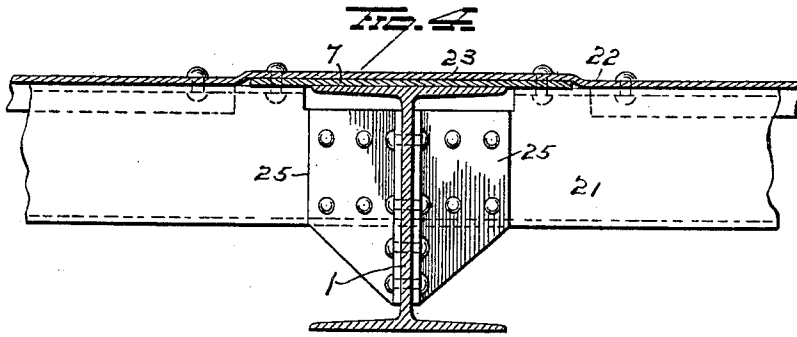
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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

DUMPING-CAR.

931,720.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed November 28, 1908. Serial No. 464,852.

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,—the object of the invention being to provide in a simple structure, drop-doors which shall be so mounted as to allow material to be dumped either at the center or at the sides of the car, and to so mount the operating mechanism that the doors shall be effectually locked in their closed positions and supported at their free sides when opened or lowered.

A further object is to so mount crank shafts for operating drop-doors that one of said crank shafts shall constitute a hinge support for one side of a drop-door while the other crank shaft controls the opening and closing of said door,—the arrangement of the parts being such that the crank shafts will be out of line and beyond the free edge of the door whether said door be swung downwardly from the side of the car or from the center thereof.

A further object is to improve the construction of the underframe in which the doors are mounted.

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

In the accompanying drawings, Figure 1 is a sectional view of a portion of a car structure, showing an embodiment of my invention. Fig. 2 is a partial plan view showing a part of one of the drop-doors. Fig. 3

is a detail view illustrating one of the stops at the free edge of the door or at the hinge edge thereof and its coöperation with a roller on the crank shaft. Fig. 4 is a sectional view showing one manner of connecting the cross-bearers and center girder. Fig. 5 is an elevation taken at right angles to Fig. 4. Fig. 6 is a sectional view illustrating a modification, and Fig. 7 is a sectional view on the line *x—x* of Fig. 6.

1 represents the center girder of a car underframe and, in the present instance is of the I-beam type, and its lower flanges may be provided with beveled blocks or strips (preferably of wood) as shown at 2, for the purpose of guiding material from the car and prevent it from lodging on the lower flanges of the beam.

In the construction shown in Fig. 1 the cross-bearers each comprise two members 3 the inner ends of which are secured, by means of angle irons 4 to respective sides of the web of the center girder above the blocks or strips 2. Side sills 5 are located adjacent to the plane of the ends of the cross bearer members and may consist of channel irons. A cover or floor plate 7 is located upon the center girder and projects at its side edges somewhat beyond the flanges of said center girder. Between the side edges of the floor plate 7 and the side sills, and intermediate of the cross-bearers, drop doors 8 are located. These drop-doors are so mounted that they can be swung downwardly either from the side of the car to dump material under the center of the latter or at the center of the car so as to dump material at the side of the same. The devices by means of which these results are accomplished will now be explained: Brackets 9 are secured to and depend from the outer ends of the cross-bearer members and provide bearings 10 for a crank shaft 11 so that said crank shaft shall be disposed outwardly beyond the path of the free edge of the door when the latter is swung on its hinged support near the center

sill. The crank arm 12 of the shaft 10 is provided with rollers 13 which cooperate with the door for raising the same.

Brackets or hangers 14 depend from the cross-bearer members in proximity to the center sill and afford bearings 15 located under a projecting edge of the floor plate 7, for the accommodation of a crank shaft 16. The crank shaft 16 is provided with a roller 17 on its arm 18 to cooperate with the door for raising the same when the hinged support of said door is at the side of the car. The crank shaft 16 is so located that it will be out of the path of the free edge of the door when the latter is swung on its hinge support at the side of the car.

Flanged strips or plates 19 are secured to the under face of the door and project at both ends beyond the side edges of the door. The projecting ends of each strip or plate 19 are curved approximately into semi-circular form and constitute stops 20 to receive the rollers on the crank shafts and limit the movements of the latter. The curved stops 20 embracing the roller on the crank arm of one shaft will constitute a hinge support for one side of the door, while the rollers on the crank arm of the other shaft will, when the last mentioned shaft is turned, run against the guide strips 19 and raise the door or permit it to be lowered. When this crank shaft is operated to raise the door the rollers thereon will engage the curved stop 20 at the free edge of the door and the latter will be locked and supported in its closed position. When the crank shaft is turned in the other direction to permit the opening of the door, the curved stops 20 hanging on the rollers of the crank shaft will permit the latter to support the door in its opened position, as shown by dotted lines in Fig. 1. In order to keep the rollers on the shaft in contact with the door, hook arms 20^a may be employed.

In the construction shown in Figs. 4 and 5 the upper portion of the center girder is slotted for the passage of the cross bearer 21, which latter is made continuous from side to side of the car, and the intermediate portion of the cross bearer is recessed in its upper edge, as shown at 24 for the accommodation of the upper flanges of the I-beam center girder. At the recessed portion of the cross bearer, the upper flange of the latter may be omitted as shown in Fig. 4, or the flanges at the edges of the cross bearer may be continued and made to pass through the web of the center girder as shown in Fig. 6. The cover plate 22 on the cross bearer may be bent upwardly as shown at 23 so as to pass over the cover plate 7 on the center girder as shown in Fig. 4, or the cover plate 7 on the center girder may be disposed in line with the cover plates on the cross

bearer, as shown in Figs. 6 and 7. Braces 25 are secured to the web of the center girder at both sides thereof adjacent to its slotted portion, and to the back face of the cross bearer and depend below the latter. Angle braces 26 are secured to the front face of the cross bearer and to the web of the center girder.

Each stake at the sides of the car comprise two members 27—28 having leg portions 29—30 passing through the cover plate on the cross bearer and secured to the side sill. The member 27 of the stake is cut-away at the upper end of the leg 29 and rests upon the cover plate.

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 cross-bearers, of brackets or hangers secured to and depending from said cross-bearers at the outer ends thereof and at points in proximity to the center of the car, crank shafts mounted in said brackets or hangers, a door, strips extending across the door and terminating at both ends in downward curved projections at the respective side edges of the door and adapted to receive the crank arms of the respective shafts, whereby said shafts will operate interchangeably as hinge supports for the door and operating means for said door.

2. In a dumping car, the combination with cross-bearers, of hangers or brackets depending from said cross-bearers at the ends thereof and also at points adjacent to the center of the car, two crank shafts mounted in said brackets or hangers, rollers on the crank arms of said shafts, a drop door, flanged guide strips on the bottom of the door, both ends of each of said guide strips projecting at its ends beyond the side edges of the door and terminating in curved stops to receive the rollers on the arms of the crank shafts.

3. The combination with a center girder of the I-beam type having a slot in its web and a continuous cross-bearer passing through said slot, of braces located at respective sides of the web of the center girder and secured thereto, each of said braces having a base portion extending below the cross-bearer and angle irons located above the base portions of the respective braces at respective sides of the center girder, and means securing said angle irons to the center girder, to the cross-bearer and to the brace.

4. The combination with a center girder of the I-beam type having a slot in its web, of a continuous cross-bearer passing through said slot, braces at respective sides of the center girder and secured thereto, said braces having base portions depending below the lower edge of the cross-bearer and secured to the web of the center girder, angle irons

located above the base portions of the respective braces at respective sides of the center girder, and means securing said angle irons to the center girder, to the cross-bearer and
5 to the brace.

5. The combination with a center girder and a cover plate thereon, of a continuous cross bearer passing through the center girder, and a cover plate on the cross bearer,

said last-mentioned cover plate passing over 10 the cover plate on the center girder.

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

ANTON BECKER.

Witnesses:

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