C. J. W. CLASEN.

DUMP DOOR OPERATING MECHANISM.

APPLICATION FILED JULY 19, 1913. RENEWED APR. 27, 1914.

1,098,315. **Patented May 26, 1914.**

3 SHEETS—SHEET 1.

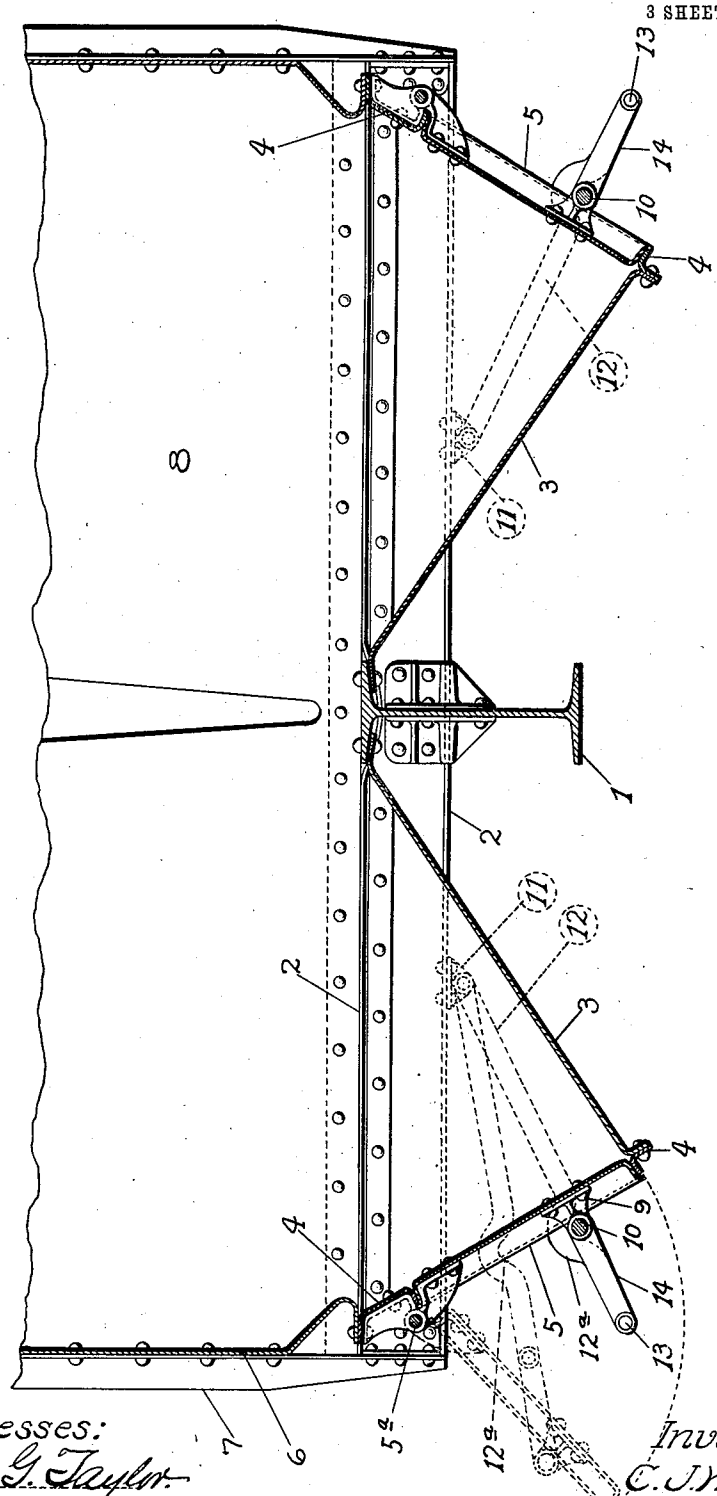


Fig. 1.

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H. Burmann

Inventor:
C. J. W. Clasen
per A. B. Greenleaf
Attorney.

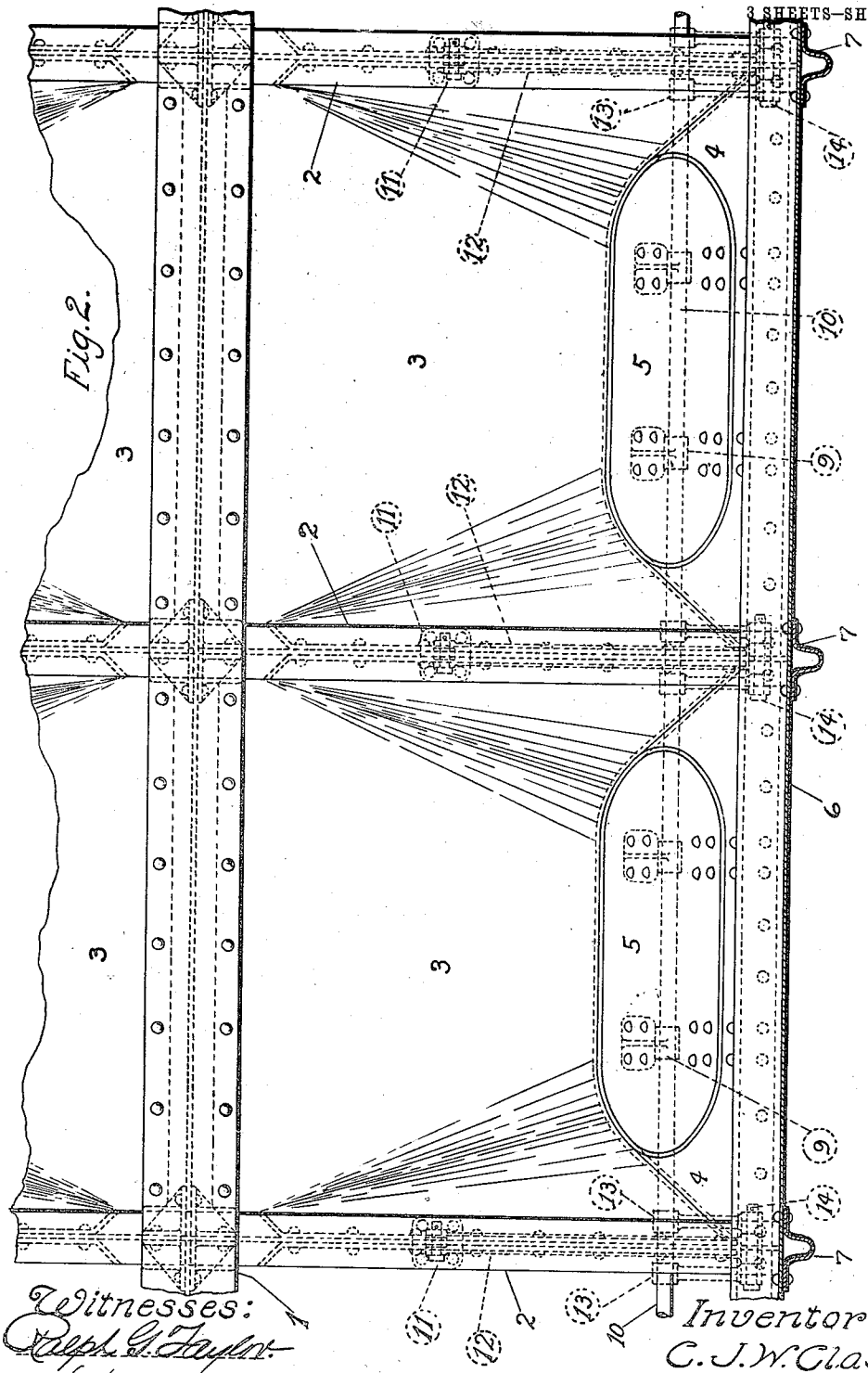
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

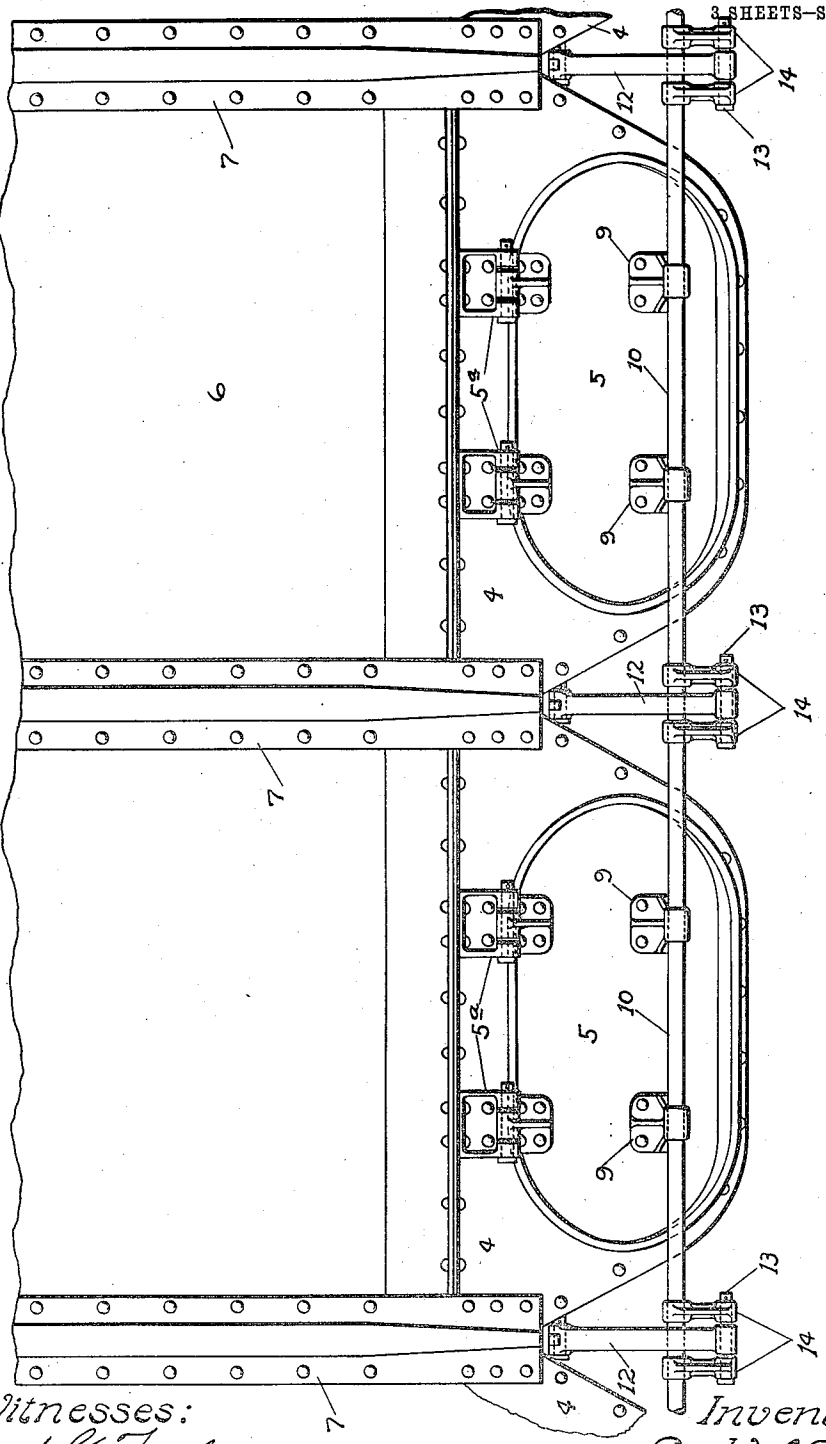


Fig. 3.

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UNITED STATES PATENT OFFICE.

CLAUS J. WERNER CLASEN, OF DAVENPORT, IOWA, ASSIGNOR TO THE BETTENDORF COMPANY, OF BETTENDORF, IOWA, A CORPORATION OF IOWA.

DUMP-DOOR-OPERATING MECHANISM.

1,098,315. Specification of Letters Patent. Patented May 26, 1914.

Application filed July 19, 1913, Serial No. 779,923. Renewed April 27, 1914. Serial No. 834,873.

To all whom it may concern:

Be it known that I, CLAUS J. WERNER CLASEN, a citizen of the United States of America, and resident of Davenport, Scott county, Iowa, have invented a certain new and useful Improvement in Dump-Door-Operating Mechanism, of which the following is a specification.

My invention relates to mechanism for opening, closing and locking the dump doors of hopper bottom cars and particularly of that type of hopper bottom cars described in an application for Letters Patent of the United States filed by me June 10th, 1912, Serial No. 702643 which resulted in Patent No. 1,071,141, dated Aug. 26, 1913.

The object of my invention is to provide means for operating doors of this nature that will be simple, inexpensive, efficient and durable and that will securely hold the doors in closed position without the use of the usual ratchets and locking pawls.

These and other objects that will more fully hereinafter appear, I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a transverse section of a hopper bottom dump car body taken through the center of the hoppers with the upper portion of the car body broken away; Fig. 2 is a top plan view of a portion of the same car showing portions of the intersecting floor beams and two hoppers complete with my improved door operating mechanism in place shown in dotted lines; Fig. 3 is a side elevation of the same portion of the car shown in Fig. 2 with my improved mechanism in place.

Similar reference characters refer to similar parts throughout the several views.

The center sill 1 extending longitudinally of the car and the cross beams 2 form the usual framing of a car of this type, only a portion of the center sill at about the center of the car being shown in Fig. 2. Three needle beams or cross beams are also shown in this figure. While they are shown broken away on one side of the center sill it is to be understood that they extend across the car from side to side as shown in Fig. 1. In the spaces formed by the intersection of the floor beams, on both sides of the center sill and from end to end of the car, the hoppers 3 are located. They are secured at their upper edges to the floor beams immediately underneath the flanges thereof with the discharge end depressed below the floor beams and extending substantially to the car sides. The discharge end can be closed by the end plate 4 in which is hinged the door 5 by the hinges 5^a or the door 5 can be made of a size and shape to form a closure without the use of the end plate 4, in which event the hinges would be secured to the side sheets 6 direct. The side stakes 7 are secured to the side sheets and ends of the cross beams in the usual manner.

8 is an end sheet of the car body. Journaled in the brackets 9 which are secured to the outer face of the doors 5 near their free or swinging edge, is the door operating shaft 10. In the case of a 24-hopper car, that is, with 12 hoppers on each side of the center sill, the shaft 10 would be made to connect up the doors of six hoppers and be operated from one end of the car, while another similar shaft would connect up the other six doors and be operated from the other end of the car. This arrangement would also obtain with the twelve doors on the other side of the car. Swingingly connected to the under side of the cross beams 2 by the brackets 11 are the links 12. The other end of these links are jointedly connected to the end of the arms 14 by the pintles 13. The arms 14 are rigidly secured to the shaft 10.

Where the link 12 intersects the shaft 10, when the door is in a closed position, it is offset as at 12^a thus bringing the end of the link in alinement with the shaft 10 and its connection at 11 with the cross beams. In bringing these three points to a "dead center" the door is securely held in its closed position and cannot be opened until the free end of arm 14 is raised above this center line by manually revolving the shaft, permitting it to make a partial rotation about the shaft 10. The rotation of the shaft continues until link 12 and arm 14 assume the position shown by the dotted lines with the door in its open position. If the shaft is rotated sufficiently to again bring the three points above referred to, to a "dead center" the doors will be locked in their open position.

What I claim as new is—

1. In a dump car, the combination with a car body having a plurality of door openings on each side of its longitudinal center,

doors hinged in said openings, an operating shaft journaled tc and movable with said doors, an arm rigidly secured to said shaft and connected to said car body by a single link.

2. In a dump car, the combination with a car body having a plurality of side delivery hoppers on each side of its longitudinal center, doors hinged to said hoppers, an operating shaft journaled to said doors near their free edges and movable therewith, an arm rigidly secured to said shaft, a link provided with an offset mediate its ends connecting said arm to said car body.

3. In a dump car having a plurality of door openings on each side of its longitudinal center, doors hinged in said openings, a shaft journaled in said doors near the swinging edges thereof and movable therewith and connected to said car by an arm and a link, whereby, when in a folded position and when extended the shaft, arm and link are in alinement.

Signed by me at Davenport, Iowa this 15th day of July 1913.

CLAUS J. WERNER CLASEN.

Witnesses:
FRANK H. PETERS,
M. R. BURR.