

W. E. SHERWOOD.
EQUALIZER.

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1,051,522.

Patented Jan. 28, 1913.

Fig. 1-

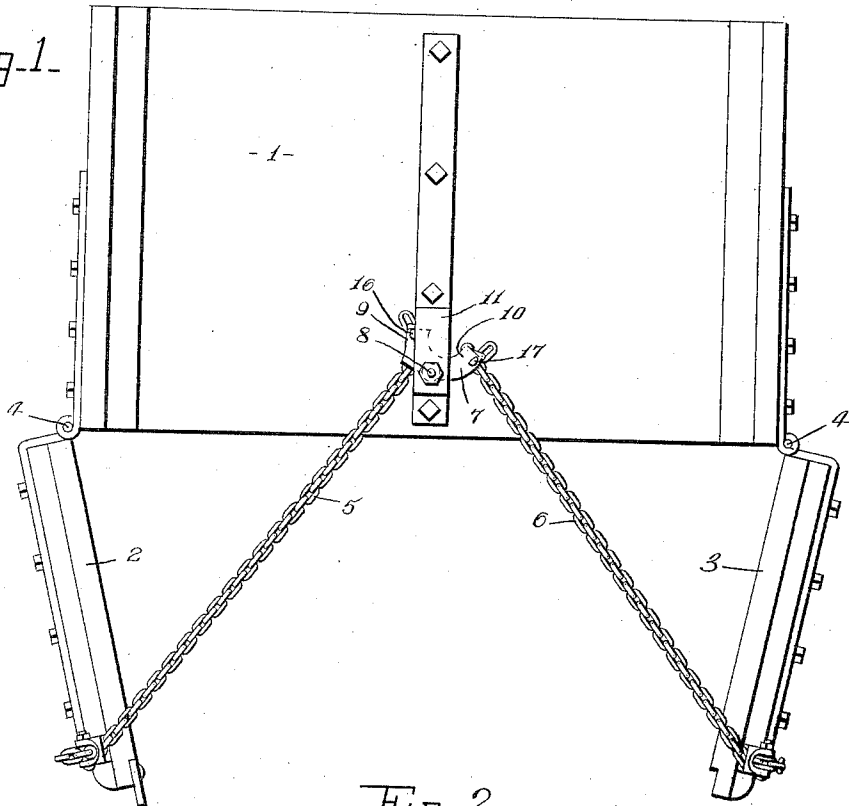
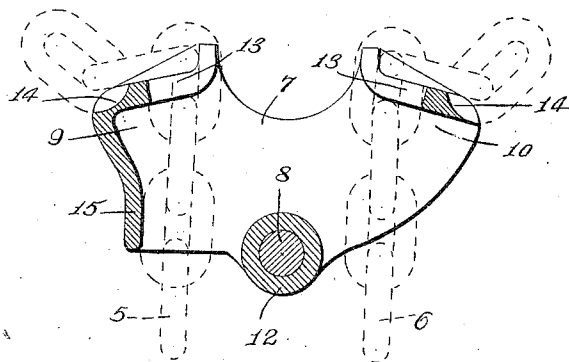


Fig. 2-



WITNESSES:

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EQUALIZER.

1,051,522.

Specification of Letters Patent.

Patented Jan. 28, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM E. SHERWOOD, a citizen of the United States, and residing at Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Equalizer, of which the following is a specification.

This invention has for its object the production of a particularly simple and efficient equalizer for dumping doors of dumping wagons and other vehicles; and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a rear elevation of a dumping wagon provided with my invention, the running gear being removed. Fig. 2 is an enlarged sectional view of my equalizer, the contiguous ends of the cables for raising the dumping doors being shown in dotted lines.

1 is the body of the dumping wagon, or other vehicle.

2 and 3 are dumping doors which are usually hinged at their outer longitudinal edges, as at 4 to the body, said doors 2, 3 meeting at their inner edges when the doors are closed.

5 and 6 are cables for closing the doors 2, 3 respectively, the cables usually running lengthwise of the doors near the meeting edges thereof.

7 is an equalizer consisting of a single rigid element pivoted at 8 between its ends, and having arms 9, 10 usually of equal length to the ends of which the cables 5, 6 are secured respectively. One of the arms of the equalizer is provided with means for changing the effective leverage of such arm during the movement of the doors. The equalizer 7 is here shown as mounted on the rear end wall of the box 1 and the pivot 8 thereof is supported by said wall and a strap 11 offset therefrom, but it is obvious that with any other arrangement of the doors than that shown, the equalizer could be mounted in any other desirable position. The pivot 8 of the equalizer is located midway between the ends thereof, and the means for changing the leverage of one of the arms consists of means for engaging the corresponding cable 5 or 6 at a point nearer the

pivotal axis of the equalizer 8 than the point of securement of said cable to said arm.

In the preferable form of my equalizer the arms 9, 10 extend upwardly and outwardly from the pivot 8 and the cables 5, 6 are secured respectively to the upper ends of such arms at points equidistant from the pivot 8, and the means for engaging one of the cables as 5, is located below the point of securement of such cable 5 and the arm 9.

In the illustrated embodiment of my invention, the arms of the equalizer are formed with passages extending on opposite sides of the bearing 12 for the pivot 8 and opening through the lower face of the equalizer equal distances from said pivot 8, and the upper end of each of the arms 9, 10 is formed with a slot 13 and a recess 14 for receiving links of the cables. The passage of the arm 10 also opens laterally through the outer end face of the arm 10 so that unobstructed lateral swinging of the chain 6 is permitted during the dumping of the door 3 but the outer end of the passage of the arm 9 is closed by a shoulder or wall 15 which obstructs the outward lateral swinging of the cable 5 and shortens the leverage of the arm 9 during the movement of the doors 2, 3 and the rocking of the equalizer.

Normally when the doors 2, 3 are closed the cables hang parallel from the equalizer, as shown in Fig. 2. During the dumping of the load, the doors 2, 3 will at first swing outwardly and exert the same amount of force on the equalizer 7, but after the initial movement of the doors 2, 3, the cable 6 connected to the arm 10 will exert a greater pull on the arm 10 than the other chain 5 will exert on the arm 9, owing to the greater leverage of the arm 10 and thus tilt the equalizer into the position shown in Fig. 1, such change of leverage being effected by the fact, that the chain 5 connected to the arm 9 is held by the shoulder 15. During the return of the doors to their closed position by winding the cables 5, 6 as will be understood by those skilled in the art, the cable 5 connected to the arm 9, owing to the shorter leverage of such arm, will close the door 2 slightly in advance of the door 3, and further winding of the chains 5, 6 after the door 2 has been closed will tilt the equalizer on its pivot raising the arm 10 and closing the door 3.

Stops 16, 17 are provided on the equalizer for engaging the strap 11 and limiting the tilting movement of the equalizer.

What I claim is:

5 1. The combination with dumping doors and cables for closing the doors, of a rocking equalizer consisting of a single rigid element pivoted between its ends, the arms of the equalizer having means for attaching
10 the cables thereto and one of the arms having means carried thereby and partaking of the same movement as said arm, for engaging the contiguous cable at a point removed and spaced apart from the point of
15 securement of the cable to said arm, said means being arranged to change the effective leverage of said arm relatively to the other arm of the equalizer, during the closing of the doors, substantially as and for the
20 purpose described.

2. The combination with dumping doors and cables for closing the doors; of a rocking equalizer consisting of a single rigid element pivoted midway between its ends,
25 the cables being connected, respectively, to the arms of the equalizer equal distances from the axis thereof, and one of the arms thereof having means rigid therewith for changing the effective leverage of such arm
30 during the movement of the doors, substantially as and for the purpose specified.

3. The combination with dumping doors and cables for closing the doors, of a rocking equalizer consisting of a single rigid
35 element pivoted between its ends, the arms of the equalizer having means for attaching the cables thereto, said means being located near the ends of the arms and above the pivot of the equalizer and one of the
40 arms having means arranged below the point of securement of the associated cable thereto and in substantially the same horizontal plane as the pivot of the equalizer, and located nearer the axis of the equalizer
45 than the point of securement of the associated cable and said arm, the last-mentioned means being arranged to shorten the effective leverage of the arm provided therewith relatively to the other arm of the
50 equalizer during the closing of the doors, substantially as and for the purpose set forth.

4. The combination with dumping doors and cables for closing the doors; of a rocking equalizer consisting of a single rigid
55 element pivoted midway between its ends, the arms of the equalizer having means for securing the ends of the cables thereto

equal distances from the axis of the equalizer, and one of the arms having means
60 rigid therewith for engaging the contiguous cable at a point nearer the axis of the equalizer than the point of securement of said cable to said arm, substantially as and for the purpose described.

5. In a dumping wagon, the combination with dumping doors and cables for raising the doors; of a rocking equalizer consisting of a single rigid element pivoted midway
65 between its ends to the body of the wagon, the arms of the equalizer extending in a direction upwardly and outwardly from the pivot of the equalizer, and said arms having means at their upper ends for securing
70 the cables thereto, and one of the arms having means rigid therewith for engaging the contiguous cable at a point below the point of securement of said cable to said arm, and nearer the axis of the equalizer than
75 said point of securement, substantially as and for the purpose specified.

6. In a dumping wagon, the combination with dumping doors and cables for raising the doors; of a rocking equalizer consisting of a single rigid element pivoted between its
80 ends to the body of the wagon, the arms of the equalizer extending in a direction upwardly and outwardly from the pivot of the equalizer and being formed with passages for the cables extending on opposite sides
85 of the pivot thereof, said arms having means at their upper ends for securing the cables to said arms, the passage of one of such arms opening through the outer end of such arm below the point of securement of the con-
90 tiguous cable thereto for permitting free outward swinging of said cable, and the passage of the other of such arms being closed at the outer end of such other arm by a shoulder located below the point of se-
95 curement of the contiguous cable thereto, such shoulder being located nearer the axis of the equalizer than the last-mentioned point of securement, and serving to limit the
100 outward swinging of the contiguous cable, substantially as and for the purpose set forth.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county
110 of Onondaga, in the State of New York, this 11th day of February, 1911.

WILLIAM E. SHERWOOD.

Witnesses:

S. DAVIS,

L. DAVIS.