

H. E. THOMPSON.

DUMP CAR.

APPLICATION FILED AUG. 15, 1911.

Patented Jan. 7, 1913.

2 SHEETS-SHEET 1.

1,049,622.

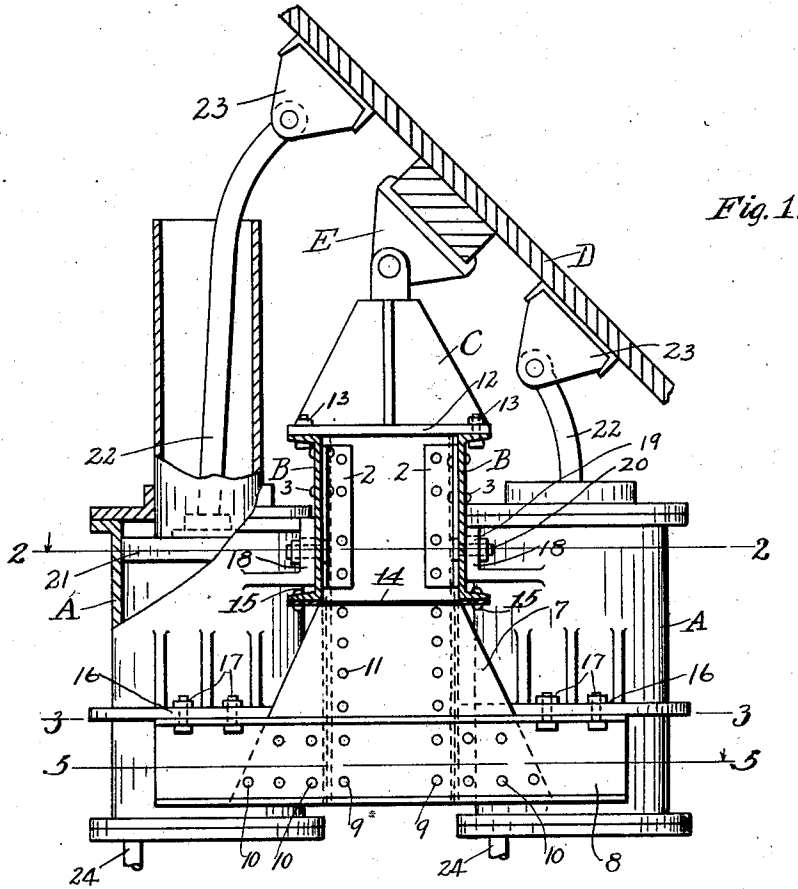


Fig. 1.

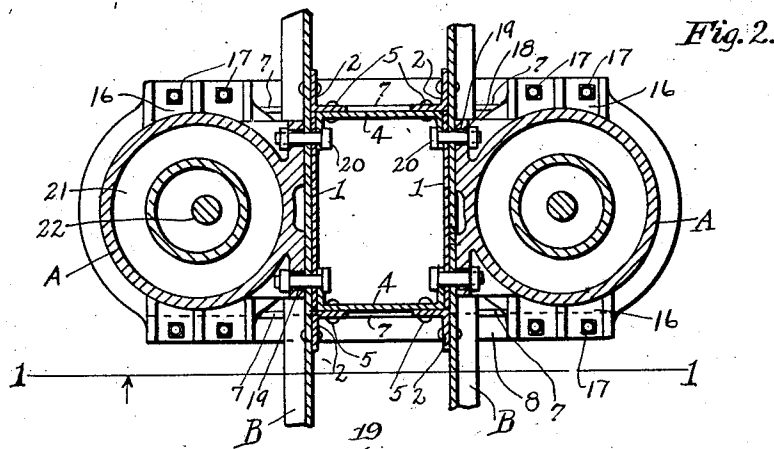
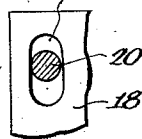


Fig. 2.

WITNESSES
Myrtle Linger
W. W. Haley

Fig. 2a.



INVENTOR
Harry E. Thompson
By Cyrus Koller
Attorney

H. E. THOMPSON.

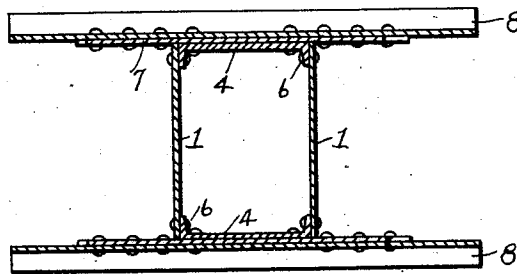
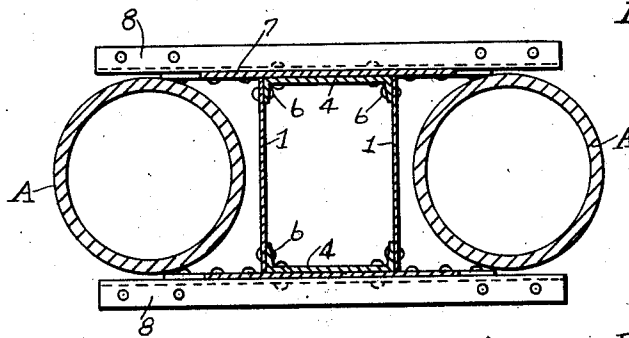
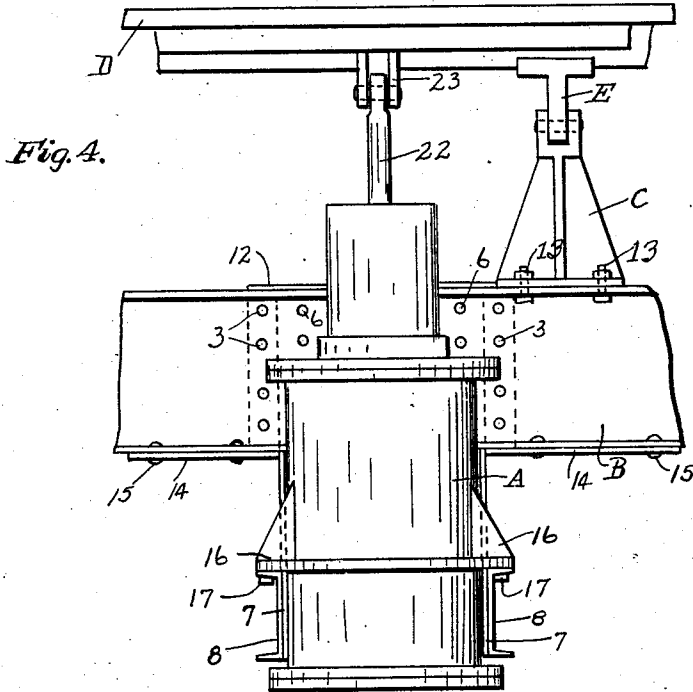
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WITNESSES

Myrtle Linger
Wm. Whaley

INVENTOR

Harry E. Thompson
By Cyrus K. Orr
Attorney.

UNITED STATES PATENT OFFICE.

HARRY E. THOMPSON, OF KNOXVILLE, TENNESSEE, ASSIGNOR TO WILLIAM J. OLIVER
MANUFACTURING COMPANY, A CORPORATION OF TENNESSEE.

DUMP-CAR.

1,049,622.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed August 15, 1911. Serial No. 644,239.

To all whom it may concern:

Be it known that I, HARRY E. THOMPSON, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Dump-Cars, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to dump cars constructed for the tilting of the car body to either side and comprising mechanism for controlling such movement of the car body by means of air or steam power applied through cylinders and pistons.

The object of the improvement is to provide a powerful and efficient and easily-controlled mechanism for tilting and righting the bodies of large dump cars used in construction work and for similar purposes.

The present improvement is especially applicable to the car which is made the subject matter of Letters Patent of the United States No. 953,865 granted to Robert L. Sites, April 5, 1910, my improvement being designed to constitute a strong support for the two lifting cylinders of said patent. In constructing my improvement strong metal should be used.

In the accompanying drawings, Figure 1 is a transverse sectional view of a portion of a car embodying my improvement, said section being on the line, 1—1, of Fig. 2; Fig. 2 is a section on the line, 2—2, of Fig. 1; Fig. 2^a is a detail view illustrating the manner of securing the cylinder to the draft sills. Fig. 3 is a section on the line, 3—3, of Fig. 1; Fig. 4 is an elevation, looking toward the right in Fig. 1; Fig. 5 is a section on the line, 5—5, of Fig. 1, the cylinders being omitted.

Referring to said drawings, B, B, are two horizontal, parallel, channel beams or draft sills which constitute the chief members of the under-framing of the car. Said sills are horizontally opposite and near each other and at opposite sides of and equi-distant from the vertical, middle longitudinal plane of the car. Chairs, C, extend across and rest upon said sills and are secured thereto by bolts 13. Each chair has hinged to it a hinge member, E, which is secured immovably to the bottom of the car body, D.

Only one such chair is shown in the drawings; but any desired number of such chairs and hinge members may be used to give the car body proper support. By means of said chairs and hinge members, the car body is supported in such manner as to permit tilting to either side or standing in the horizontal position. Any suitable means, not shown, may be used to retain said body in the horizontal position.

The two cylinders, A, A, are to be supported at opposite sides of the pair of draft sills, B, B, and the structure for supporting said cylinders is applied to said sills, as will be next described.

To the inner face of each draft sill is applied a wall plate, 1, said plates being horizontally opposite each other and each having its upper edge even with the upper edge of the adjacent sill and extending downward some distance below said sill. Along each upright edge of each wall plate, 1, is placed an angle plate, 2, as long as the height of the draft sills, one flange of said angle plate being approximately even with the adjacent edge of the adjacent wall plate, 1, and the other flange of said angle plate being directed toward the corresponding flange of the angle plate which is applied to the adjacent edge of the opposite plate, 1. Bolts or rivets, 3, extend through the angle plates, 2, the plate, 1, and the draft sill, B, and bind said parts rigidly to each other. Two upright channel plates, 4, are placed upright and transversely between the plates, 1, 1, each such channel plate being of proper width to make its outer flange faces fit against the adjacent faces of the plates, 1, and said channel plates extending downward lower than the plates, 1, 1, approximately to the base of the cylinders, A, A. Bolts or rivets, 5, extend through the plates, 4, and the adjacent flanges of the angle plates, 2; and bolts, 6, extend through the flanges of the channel plates, 4, and the adjacent plate, 1, and draft sill, B, as far as said sill extends, and below that point said bolts or rivets extend only through said flange and said plate. By means of such bolts and rivets, said parts are rigidly secured to each other.

Below the draft sills, a gusset plate, 7, is applied to the flat outer face of each

channel plate, 4, the upper portion of said gusset plate being only a little wider than said channel plate, and the lower portion being considerably wider. To the lower
 5 portion of the outer face of each gusset plate is applied a horizontal, channel cross-beam, 8, with its ends projecting beyond the gusset plate. Bolts or rivets, 9, extend through the cross-beam, 8, the gusset plate,
 10 7, and the channel plate, 4, so far as these three parts over-lap each other; and bolts, 10, extend through said beam and said gusset plate so far as said parts over-lap each other; and above the beam, bolts, 11, extend
 15 through the gusset plates and the channel plate, 4.

From the foregoing it will be observed that the cross-beams are separated from each other a distance equal to the distance
 20 from the outer face of one gusset plate to the outer face of the other gusset plate; and it will be observed that each end of each cross-beam extends outward beyond the adjacent edge of the gusset plate.

25 Between the cylinders, A, a binder plate, 12, is placed across the two sills and secured thereto by bolts or rivets, 13, extending through the edges of said plate and the upper flanges of the sill. And from each
 30 gusset plate, 7, a plate, 14, extends across the lower edges of the sills and is secured to said sills by means of bolts or rivets, 15, extending through the edges of said plates and the adjacent flanges of the sills. Said
 35 plates and said sills together practically constitute a box-beam; and the plates, 1, channel plates, 4, angle plates, 2, and the gusset plates, 7, constitute, substantially, a box-column, the lower end of which is
 40 broadened by means of the gusset plates to make an extended attachment for the cross-beams, 8, and support the latter in a very strong manner. The cylinders, A, A, are supported by said cross-beams, each cyl-
 45 inder being provided at opposite sides with brackets, 16, cast upon the exterior of the cylinder between its ends, the body of the cylinder below such bracket being of suitable diameter to extend between the ends
 50 of said beams. Bolts, 17, extend through said brackets and the upper flange of the adjacent cross-beams and firmly bind the cylinders to said beams. Each cylinder has at its upper end two upright brackets, 18,
 55 having upright faces bearing against the outer face of the adjacent draft sill, B; and each such bracket has a bolt hole, 19, which is elongated in an upright plane. A bolt, 20, extends through each such bolt
 60 hole and through the adjacent portion of the sill, B, and plate, 1. And each such bolt is to be drawn sufficiently tight to prevent the upper portion of the cylinder from leaning away from the adjacent sill when strain
 65 is applied by driving air or steam beneath

the piston of said cylinder. But the elongation of the bolt holes, 19, allows downward movement of the adjacent brackets with reference to the bolts, 20. (See Figs. 1, 2, and 2^a.) This avoids shearing strain on said bolts, and avoiding the outward
 70 leaning of the cylinder reduces tendency of the cross-beams to bend downward at their outer ends. It will be understood that the maximum efficiency of the cross-beams can be attained only by continually applying the downward pressure of the cylinder to the cross-beam as closely as may be to the sills, and this is accomplished by holding the upper end of the cylinder in the man-
 75 ner described holding the upper ends of the cylinder against lateral movement while permitting downward yielding. In each cylinder is a piston, 21, having an upright piston rod, 22, having its upper end hinged
 85 to a bracket, 3, which is secured immovably to the bottom of the car. A fluid supply pipe, 24, is tapped into the lower end of each cylinder and leads to any suitable source of steam, air, or other fluid supply
 90 (not shown,) whereby such fluid may be forced into such cylinder for raising the piston of said cylinder.

I claim as my invention,

1. In a dump car, the combination with
 95 two parallel draft sills, of a box column located between and extending below said sills, gusset plates applied to said column below said sills, cross-beams secured to said gusset plates, cylinders extending be-
 100 tween said cross-beams and having brackets resting upon and secured to said cross-beams, and means for holding the upper of the cylinders against lateral movement while permitting downward yielding, sub-
 105 stantially as described.

2. In a dump car, the combination with
 110 two parallel draft sills, of wall plates applied to the inner faces of said sills, upright channel plates applied transversely between said wall plates, gusset plates applied to the lower ends of said channel plates, cross-beams secured to said gusset plates and said channel plates, cylinders extending between said cross-beams and hav-
 115 ing brackets resting upon and secured to said cross-beams, and means for holding the upper ends of the cylinders against lateral movement while permitting downward yielding, substantially as described. 120

3. In a dump car, the combination with
 125 two parallel draft sills, of wall plates applied to the inner faces of said sills, upright channel plates applied transversely between said wall plates, angle plates applied to said wall plates and said channel plates, gusset plates applied to the lower portion of said channel plates, cross-beams secured to said gusset plates and said chan-
 130 nel plates, cylinders extending between said

cross-beams and having brackets resting
upon and secured to said cross-beams, and
means for holding the upper ends of the
cylinders against lateral movement while
5 permitting downward yielding, substantially
as described.

In testimony whereof I have signed my

name, in presence of two witnesses, this
20th day of June, in the year one thousand
nine hundred and eleven.

HARRY E. THOMPSON.

Witnesses:

CYRUS KEHR,
C. A. MORSE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."