

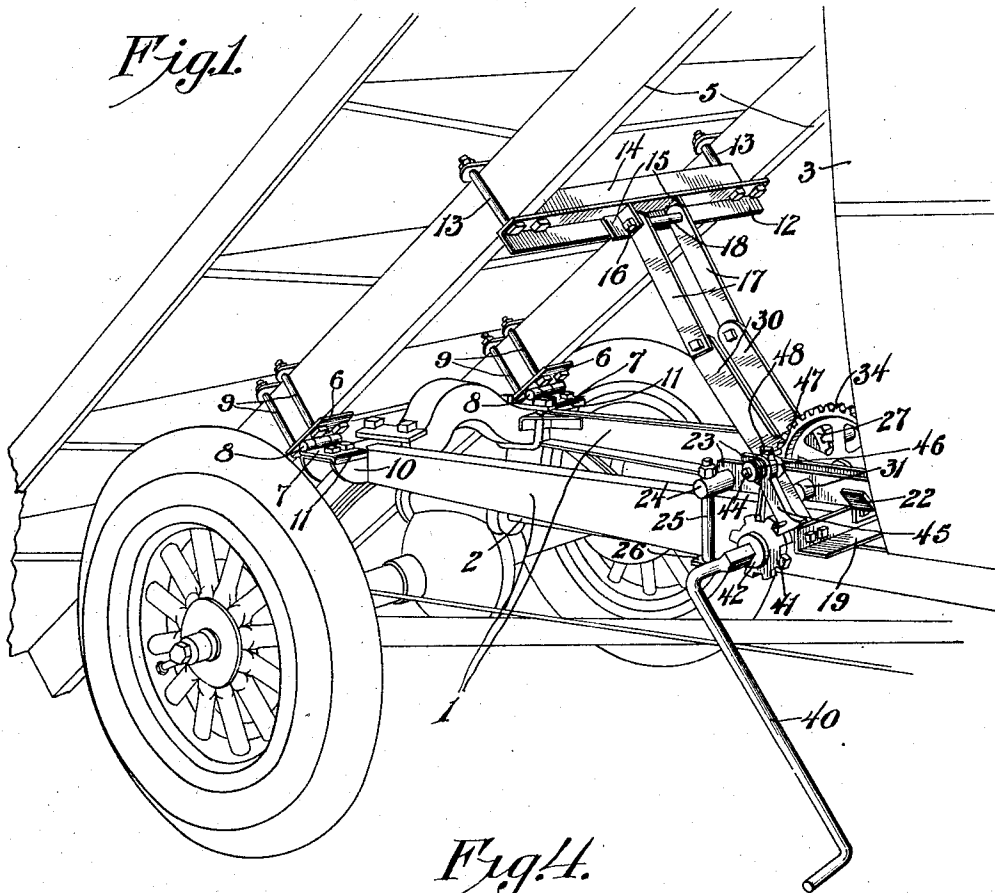
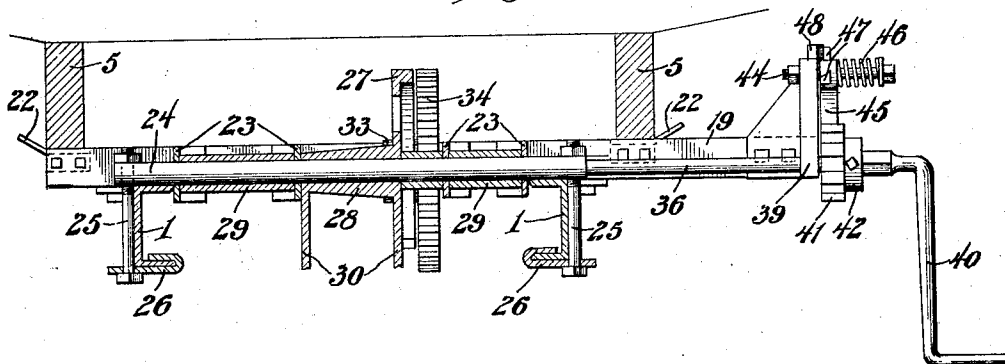
Jan. 28, 1930.

A. S. HUGHES

1,744,897

HOIST

Original Filed April 19, 1926 3 Sheets-Sheet 1



Witnesses

C. L. McDonald.

E. N. Lovell

By

Inventor
Arthur S. Hughes
E. J. Siggers

Attorney

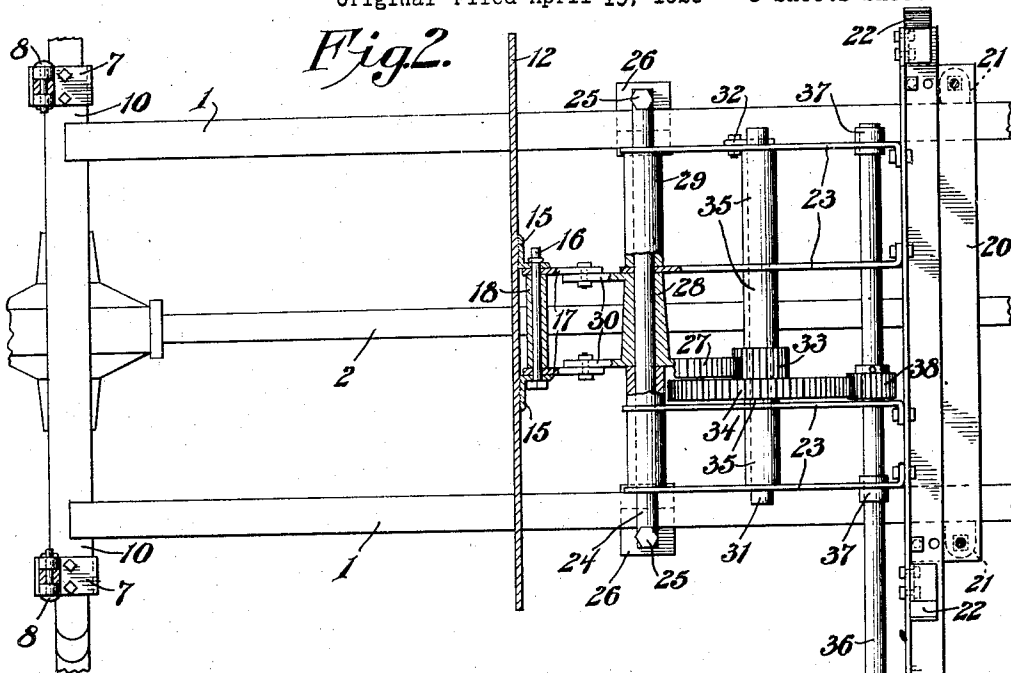
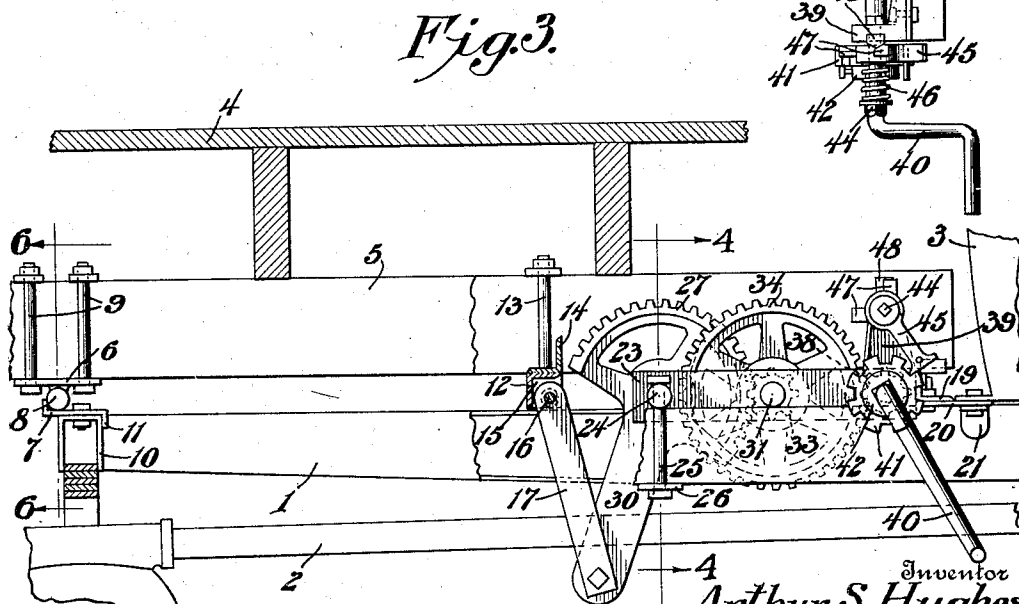
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A. S. HUGHES

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Original Filed April 19, 1926 3 Sheets-Sheet 2



Witnesses

C. L. McDonald

E. N. Lovewell

Inventor
Arthur S. Hughes

C. L. Siggers

Attorney

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A. S. HUGHES

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Original Filed April 19, 1926 3 Sheets-Sheet 3

Fig. 5.

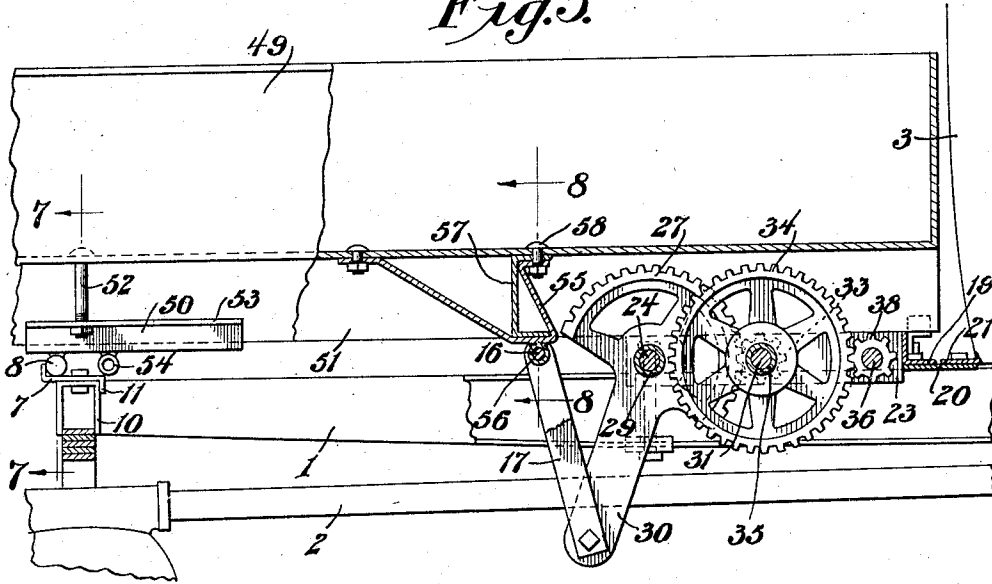


Fig. 6.

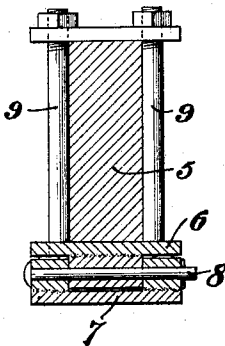


Fig. 7.

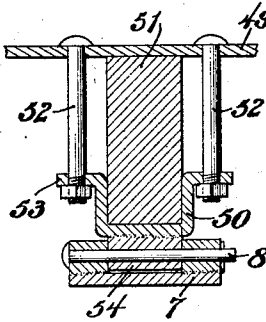


Fig. 8.

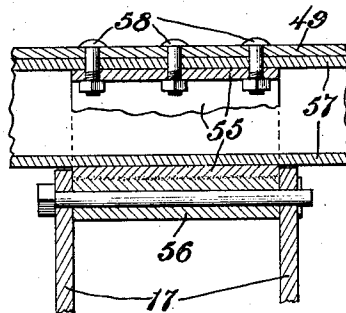


Fig. 9.

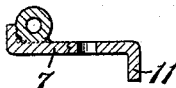
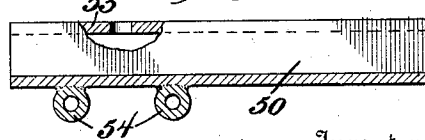


Fig. 10.



Fig. 11.



Witnesses

C. L. McDonald.

E. N. Lowell

334

Inventor
Arthur S. Hughes
E. J. Sigsbee

Attorney

UNITED STATES PATENT OFFICE

ARTHUR SHERIDAN HUGHES, OF MANSFIELD, OHIO

HOIST

Application filed April 19, 1926, Serial No. 103,019; Renewed May 22, 1929.

This invention relates to a booster hoist, which is adapted to be used in connection with a truck chassis and body for tilting the latter to dump its load.

5 The general object of the invention is to provide an improved construction of this nature which is simple and inexpensive, and which may be attached to an ordinary truck having either an express or platform body
10 and, without any alteration in the construction of the truck or body, to convert the same into a dumping truck.

Claim for the pawl and ratchet mechanism per se is not presented herein, but constitutes
15 the subject matter of the parent application, filed August 4, 1925, Serial No. 48,086.

The detailed construction of the preferred embodiment of my invention, together with its objects and advantages, will be more particularly described in connection with the accompanying drawings constituting a part
20 hereof.

In the drawings:

25 Figure 1 is a perspective view of the booster hoist applied to a chassis with a platform body.

Figure 2 is a plan view of certain parts of the mechanism shown in Figure 1, other parts being shown in section.

30 Figure 3 is a side elevation with parts broken away and other parts shown in section.

Figure 4 is a vertical section taken on the line 4—4 of Figure 3.

35 Figure 5 is a view, partly in section and partly in side elevation, showing the chassis having an express body.

Figure 6 is a section taken on the line 6—6 of Figure 3.

40 Figure 7 is a section taken on the line 7—7 of Figure 5.

Figure 8 is a section taken on the line 8—8 of Figure 5.

45 Figure 9 is a detail sectional view of the lower hinge member.

Figure 10 is a detail sectional view of the upper hinge member, as used in Figures 1 and 2.

50 Figure 11 is a detail sectional view of the upper hinge member, as used in Figure 5.

In the drawings, the improvements are shown as being applied to a truck chassis having longitudinal beams 1, midway between which is a transmission shaft housing 2, a cab 3 being secured to the front end
55 of the chassis.

In the embodiment shown in Figures 1, 2 and 3, the body of the truck comprises a platform 4, beneath which are secured longitudinal beams 5. This platform body is connected to the chassis by a pair of hinges, each of which comprises an upper hinge member 6 and a lower hinge member 7 connected by a pintle 8. The upper hinge member is securely clamped to the beam 5 by means of
60 bolts 9, and the lower hinge member is securely bolted to the projecting portion 10 of the chassis frame, and has at its front edge a downturned flange 11, which engages the front side thereof.
70

Toward the front end of the platform body, a Z bar 12 is secured transversely to the under sides of the beam 5 by means of bolts 13, one of the flanges 14 being cut off so that it fits in the space between the beams 5. Angle
75 irons 15 are welded, or otherwise secured, to the lower flange of the Z bar 12 in spaced relation to each other, and support a horizontal bolt 16 to which a pair of links 17 are connected. These links are held spaced by a
80 spacing sleeve 18 surrounding the bolt 16, and are actuated by means hereinafter described to raise the front end of the body to tilt it about its hinges to dump the load.

For supporting the dumping mechanism,
85 an angle bar 19 rests transversely on the beams 1 in rear of the cab 3, and is secured to plates 20, which are held by the same bolts which engage the lugs 21 to bolt the cab to the chassis frame. Guiding lugs 22
90 are secured to the vertical flange of the angle bar 19 for receiving the front ends of the beams 5 when the platform body is in horizontal position.

Longitudinal bars 23 are secured at their
95 front ends to the angle bar 19, and are supported at their rear ends on a round transverse bar or shaft 24, which is clamped to the longitudinal beams 1 by bolts 25, which are inserted through the ends of the shaft 24,
100

and through clips 26 which are slipped over the lower flanges of the beams of the chassis frame 1. It is preferred to use four of the bars 23, suitably spaced, as shown in Figure 2. These bars insure strength and stability to the hoist, although they may be made comparatively light, and their cost is inconsiderable.

A segment 27 is journaled on the shaft 24, and has an elongated hub 28 formed with radially projecting arms 30, which straddle the transmission shaft housing 2, and are pivotally connected to the lower ends of the links 17, so that by rotating the segment 27 the links 17 may be raised or lowered to tilt the platform 4, or to restore it to a horizontal position. The hub 28 is held against movement longitudinally of the shaft 24 by spacing sleeves 29.

An intermediate shaft 31 is mounted in the longitudinal bars 23, and its ends rest on the beams 1, the shaft being secured in position by an eye 32, which is connected to one end of the shaft, and is bolted to the adjacent bar 23. A pinion 33 is revolvably mounted on the shaft 31, and meshes with the segment 27. A gear 34 is integrally or otherwise secured to the pinion 33, and the pinion and gear are held against movement longitudinally of the shaft 31 by spacing sleeves 35.

A crank shaft 36 is journaled in bearings 37 secured to the bars 23 near the front ends thereof, and has a pinion 38 secured thereto which meshes with the gear 34. The outwardly projecting portion of the crank shaft 36 is journaled in a bearing member 39, which is secured to the outwardly extended portion of the channel bar 19. The crank shaft 36 may be rotated by means of a crank 40 attached to its outer end. A ratchet wheel 41 is mounted on the shaft 36 outside of the bearing member 39 and is provided with a collar 42 which is secured to the shaft. The pinion 38, adjacent to one of the bars 23, prevents longitudinal movement of the crank shaft in one direction while the collar 42 prevents longitudinal movement in the other direction.

The bearing 39 extends upwardly and supports a pin or bolt 44, on which a pawl 45 is pivotally supported. An expansile coil spring 46 on the bolt 44 urges the pawl 45 toward the bearing member 39. The hub of the pawl is formed with two lugs 47, either of which is adapted to engage the inclined surface of a lug 48 projecting upwardly from the bearing member 39. The pawl is reversible. When it is in the position shown in Figures 1 and 3, and the crank shaft 36 is rotated to tilt the body, the pawl will ride over the teeth of the ratchet wheel 41, and will automatically engage successive notches to prevent backward rotation of the shaft. When the platform is to be restored to horizontal position, the position of the pawl is reversed. In either position of the pawl, one of the lugs

47 is adapted to engage the inclined face of the lug 48, and the combined action of the spring 46 and the inclined face of the lug 48 automatically holds the pawl in its proper place. Without something of this kind, if the crank shaft were to be revolved rapidly, the pawl might be kicked over to reverse position and cause breakage.

When the invention is used in connection with an express body 49, as shown in Figure 5, the upper hinge member 6 is replaced by a hinge member 50, which is in the form of a channel bar adapted to embrace the lower edge of one of the longitudinal beams 51 of the express body. The hinge member 50 is secured to the express body by bolts 52, which pass through holes formed in the outturned flanges 53 of the hinge member. It is preferred to form the hinge member 50 with a plurality of hinge lugs 54, any one of which is adapted to be engaged by the pintle 8, so that the body may be adjusted forwardly or backwardly to accommodate it to cabs of different sizes. An angle brace 55 is bolted to the under side of the body 49, and is provided with a lug 56 to which the upper ends of the links 17 are pivotally connected. The shape of the brace 55 is such as to fit around the cross bar 57 used on the standard express body and is secured by the same bolts 58.

From the foregoing description, it will be understood that the invention may be applied to the ordinary truck to convert the same into a dumping truck without any alteration in the construction thereof. It is not necessary to drill any holes either in the frame or in the body of the truck. All of the different parts of the hoist are directly connected to the frame of the chassis, or to the body and supported thereon. No additional frame is necessary to support the bearings for the gears. This makes the device quite inexpensive, and its installation on the truck may be effected with a small amount of labor.

While I have shown and described in detail the preferred embodiment of the invention, it is obvious that various modifications may be devised in the size, shape and relative arrangement of the various parts without any material departure from the essential features of the invention; it is my desire, therefore, to include all such modifications within the scope of the appended claim.

What is claimed is:

A dumping attachment for trucks comprising a shaft, means for securing said shaft transversely of the truck chassis, a segment having a hub journaled on said shaft, arms projecting from the hub, means for connecting said arms with the truck body, a transverse bar adapted to be secured to the chassis frame with one end projecting outwardly therefrom, longitudinal bars connecting said transverse bar to said shaft, bearings secured to the front portions of said longitudinal

bars, a crank shaft mounted in said bearings,
a pinion secured to the crank shaft, an inter-
mediate shaft secured to said longitudinal
bars and resting on the frame of the chassis,
5 gearing mounted on said intermediate shaft
and operatively connecting said pinion to
said segment, and a bearing bracket secured
to the outwardly projecting portion of said
transverse bar, said crank shaft also project-
10 ing outwardly and being journaled in said
bearing bracket.

In testimony that I claim the foregoing as
my own, I have hereto affixed my signature.

ARTHUR SHERIDAN HUGHES.