March 9, 1926.

G. L. STIEFEL

1,575,801

DUMPING TRUCK

Filed Sept. 4, 1923

2 Sheets-Sheet 1

Fig. 1

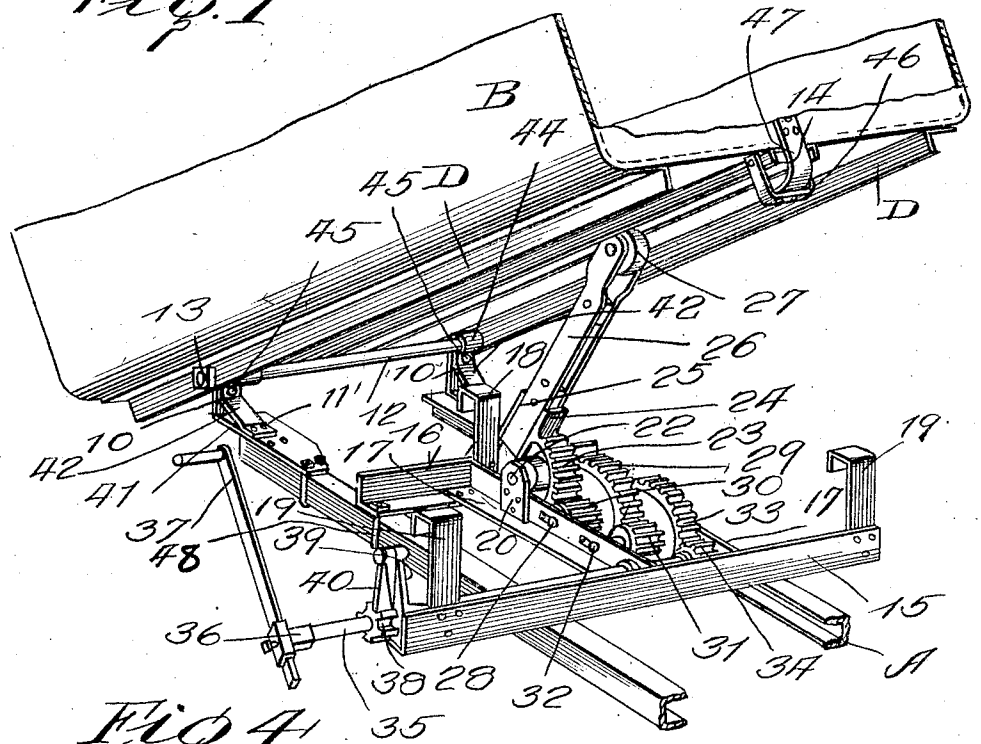


Fig. 4.

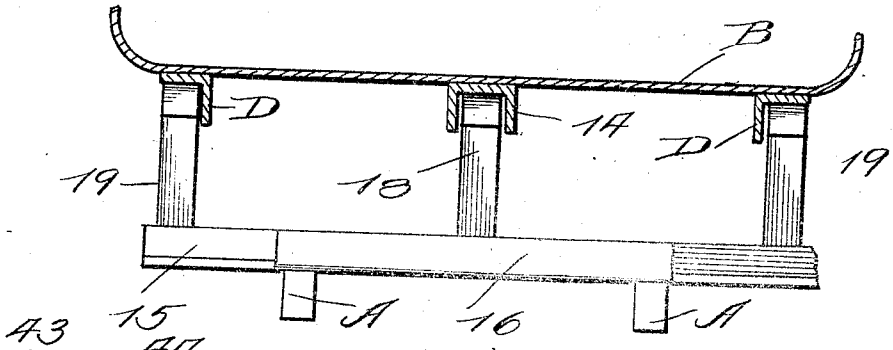
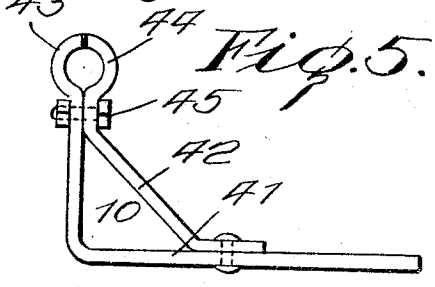


Fig. 5.



Inventor

Gilbert L. Stiefel

By Frederick A. Stitt.

Attorney

March 9, 1926.

1,575,801

G. L. STIEFEL

DUMPING TRUCK

Filed Sept. 4, 1923

2 Sheets-Sheet 2

Fig. 2.

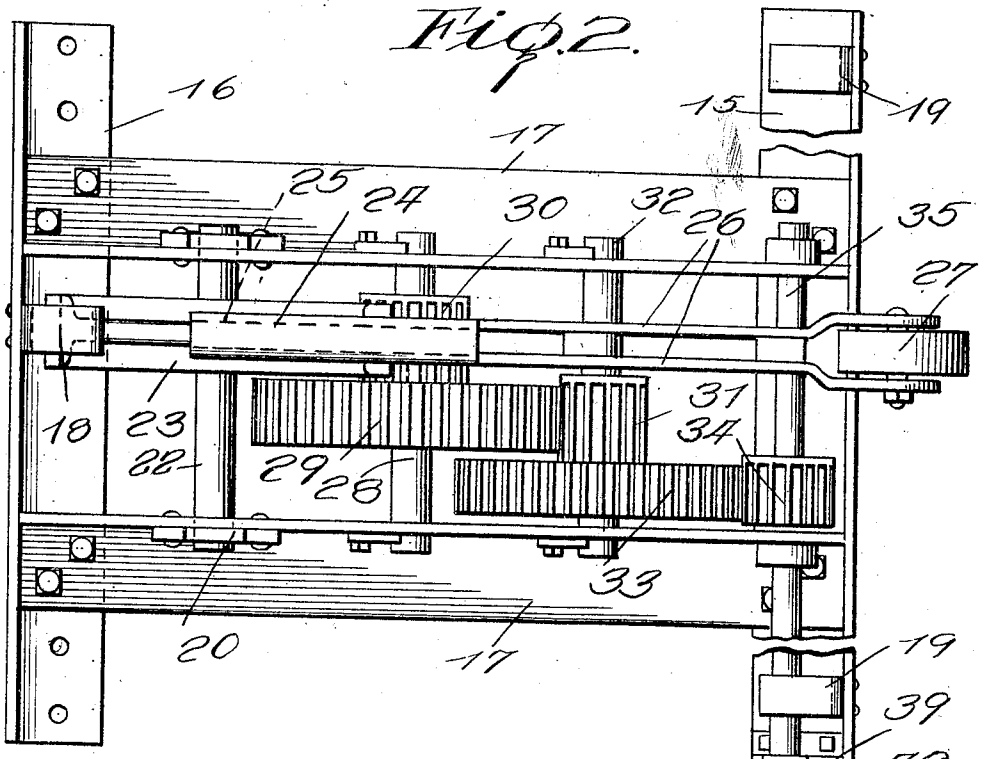
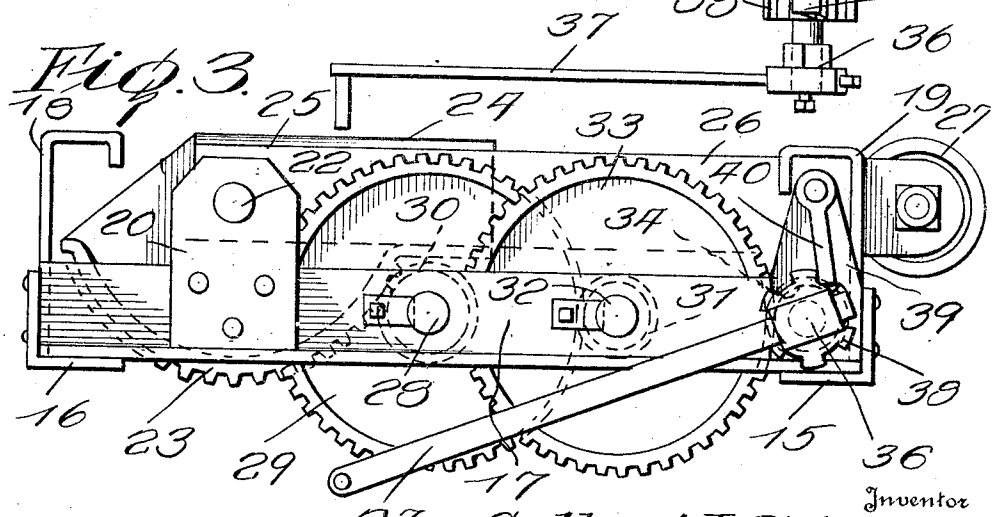


Fig. 3.



Inventor

Gilbert L. Stiefel

By Frederick S. Stiefel

Attorney

Patented Mar. 9, 1926. 1,575,801

UNITED STATES PATENT OFFICE.

GILBERT L. STIEFEL, OF GALION, OHIO, ASSIGNOR TO THE NATIONAL GRAVE VAULT COMPANY, OF GALION, OHIO, A CORPORATION OF OHIO.

DUMPING TRUCK.

Application filed September 4, 1923. Serial No. 660,812.

To all whom it may concern:

Be it known that I, GILBERT L. STIEFEL, a citizen of the United States, residing at Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Dumping Trucks, of which the following is a specification.

This invention relates to dumping trucks of that character wherein the truck body is pivotally mounted on the chassis, and particularly to the hoisting mechanism of such trucks.

The general object of this invention is the provision of a hoisting mechanism for dumping trucks which constitutes a unit in itself and is thus readily attached to or removed from a standard truck chassis, and further which is so constructed that the weight of the load shall be more uniformly distributed than it is ordinarily and so that the rear axle shall not support most of the load.

A further object is to provide a truck hoisting mechanism of this character so constructed that the usual hoisting pillar is done away with, together with all hoisting chains, pulleys, cables, and springs which have proved a constant source of annoyance and trouble, this construction also permitting the body to be mounted much more closely adjacent the chassis than has heretofore been possible.

A still further object is to provide a channel iron on the under side of the body within which the elevator arm travels, thus holding the elevator arm steady from any lateral movement and against any lateral tendency to bend, the elevator arm, when the body is lowered, fitting in a pocket in this channel, firmly locking the body in its load position and preventing rattling.

Another object is to provide means engaging this channel iron when the body is lowered which will eliminate any side sway of the truck body.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a fragmentary view of a truck chassis and body with my elevating mechanism applied thereto, the body being shown partly raised;

Figure 2 is a top plan view of the elevating mechanism with the elevating arm in a lowered position;

Figure 3 is a side elevation of the construction shown in Figure 2;

Figure 4 is a transverse section through the truck body in lowered position showing the manner in which it engages with the brackets 18 and 19;

Figure 5 is a side elevation of the bracket 10;

Referring to the drawings, it will be seen that I have illustrated a portion of the chassis and body of a one-ton truck. The particular construction of the chassis and body form no part of my present invention and it is sufficient to say that the chassis is provided with the usual longitudinal beams A, the body B, and that the body B has longitudinal angle irons D. The truck body is pivotally mounted upon the chassis, as illustrated, by means of brackets 10 attached by U-bolts 11 to the chassis and carrying a transverse pivot rod or bolt 12 passing through the upper ends of the brackets and through the angle irons D. This pivot bolt has nuts or equivalent members 13 at the ends for holding the bolt in place. Attached to the under face of the body and extending longitudinally thereof midway between the sides is a channel iron 14.

The mechanism which I have devised for the purpose of lifting the truck body is in the form of a unit adapted to be applied as a unit to the chassis and readily attached thereto and, as illustrated in the drawings, this mechanism is mounted upon a frame consisting of the relatively long angle iron 15, the parallel relatively short angle iron 16, and the connecting longitudinally extending lateral angle irons 17, the angle irons 17 having their flanges extending outward or away from each other and riveted to the confronting horizontal flanges of the angle irons 15 and 16. Midway of the angle iron 16 there is an upwardly extending bracket 18 which is angularly bent at its upper end and then bent downward.

Adjacent the ends of the angle iron 15 are

the relatively wide, upwardly extending brackets 19 whose upper ends are angularly bent and then extended downward. These brackets 19 extend above the level of the brackets 18. Riveted to the vertical flanges of the angle irons 17 are the brackets 20 which support the transverse shaft 22. Mounted to rotate upon this shaft is a sector gear 23 formed to provide an arm 24 which is channeled on its opposite faces, as at 25. Disposed within these channels or sockets 25 are the longitudinally extending irons 26 which constitute extensions of the arm and which are spread apart at their free ends to support between them the roller 27 which is, of course, freely rotatable. These irons 26 are riveted, bolted or otherwise attached to the arm 25 so as to be rigid therewith.

Mounted upon a shaft 28 is a relatively large gear wheel 29, and mounted upon the same shaft is a pinion 30. This pinion 30 may be integral with the wheel 39 or not as desired. This pinion 30 meshes with the sector gear 23. The gear wheel 29 meshes with a pinion 31 mounted upon a shaft 32 which carries upon it the gear wheel 33, which in turn meshes with a pinion 34 mounted upon a driving shaft 35. This driving shaft is mounted in bearings in the vertical flanges of the angle irons 17 and projects out beyond the angle iron 15 at one end. This end of the shaft 35 is provided with a socket 36 or equivalent member through which the crank 37 is passed. Mounted upon the shaft 35 is a toothed wheel 38, and mounted upon an upstanding bracket 39 riveted or otherwise attached to the transverse angle iron 15 is a pawl 40 which is adapted to hold the shaft in any rotated position.

The crank handle may be shifted inward or outward in its socket and held by means of a set screw or like device. The roller 27 operates within the channel 14 and when the truck is loaded the arm constituated by the members 25 and 26 is in a horizontal position and the arm is disposed entirely within this channel 14 so that thus the channel is interlocked, as it were, with the elevating mechanism and the body thereby additionally prevented from any side sway which would tend to strain the bearing formed by the pivot bolt.

When the truck is being raised, the wheel 27 operates within the channel and thus locks the truck body against any lateral movement. When it is desired to raise the truck, the crank handle 37 is operated and thus through the chain of gears heretofore described acts upon the sector gear to lift the elevating arm and this moving upward and rearward acts to lift the truck body, and when the truck body is entirely lifted the arm is beyond the position shown in Figure 1 and at right angles to the load. In this position there is no strain upon the gears, as there is no tendency of the arm to turn and thereby turn the sector gear and furthermore all of the parts are held from any movement by means of the pawl 40. Of course, a reverse movement of the crank acts to lower the elevating arm and permit the depression of the truck. When the truck is fully lowered, the truck will rest upon the brackets 18 and 19, the bracket 18 fitting within the channel iron 14, thus locking the truck against any side movement.

The bracket 10, as illustrated in Figures 1 and 5, is composed of two members 41 and 42. The member 41 is right angular in form and at its upper end is formed with a jaw 43 which constitutes one half of a bearing for the shaft 12. The member 42 of the bracket fits upon and is bolted at its lower end to the bracket 41 and at its upper end is formed with a complementary jaw 44 forming a half bearing for the shaft 12, and the two members 41 and 42 are bolted together by means of bolts 45. This construction is very simple, permits of easy attachment to the chassis of an automobile, and permits the easy insertion of the shaft 12.

As illustrated in Figure 1, I preferably dispose at the forward end of the track 14 a cup, as it may be called, within which the roller 27 fits when the body B is in a horizontal position. This cup is formed by a U-shaped iron 46 riveted at its ends to the side flanges of the track 14. An iron 47 which is riveted to the front wall of the truck extends downward and inward in a curve and has its extremity riveted to the U-shaped yoke 46. This eliminates all rattle and noise and acts to lock the truck body in its horizontal position inasmuch as the arm 26 cannot lift or turn upon its pivot against the action of the gear wheels and thus this arm engaging with the iron 47 locks the truck body in its horizontal position.

I do not wish to be limited to the particular means which I have illustrated for the purpose of holding the unitary hoisting mechanism onto the truck, and I have provided for this purpose the U-bolts 48 which embrace the beams A and pass through the angle iron 16, thus holding the elevator arm firmly in place upon the longitudinal beams A. While I have illustrated one particular train of gearing whereby the elevator arm may be lifted and lowered by means of the crank handle 37, I do not wish to be limited to this particular train of gearing as it is obvious that this may be changed in many ways without departing from the spirit of the invention. Preferably the shafts for the gears and pinions will be loose and the gears and pinions will operate thereon. Obvious-

ly the details of the mechanism might be changed in many ways without departing from the spirit of the invention.

I claim:—

1. In a dumping truck, a chassis, a truck body pivotally mounted at its forward end upon the chassis for oscillation in a vertical plane, the truck body being formed with a medially disposed, longitudinally extending channel iron and with laterally disposed angle irons having downwardly extending flanges, a lifting member oscillatably mounted upon the chassis and having a roller adapted to operate within the channel iron, manually operable means for oscillating said member and holding it in adjusted positions, a bracket disposed forwardly of said member and adapted to engage within said channel iron when the truck body is lowered to a horizontal plane, and rearwardly disposed upwardly projecting brackets carried by the chassis and adapted to engage against the base flanges of said angle irons and laterally of the depending flanges of the lateral angle irons when the truck body is lowered.

2. The combination with a chassis and a tiltably mounted truck body, the truck body being provided on its under side with a longitudinally extending, medially disposed channel track, of means for elevating the truck body comprising a pair of longitudinally extending frame bars, transversely extending frame bars attached to the longitudinal frame bars, means carried by the last named bars for engaging the bars with the chassis of the truck, a shaft mounted in the first named pair of bars and having a sector gear and an arm extending therefrom, the extremity of the arm carrying a wheel adapted to operate in said channel track, a second shaft mounted in said first named pair of bars and having a crank handle whereby it may be rotated, a train of gears mounted in the first named pair of bars adapted to transmit motion from the second named shaft to the sector gear, means for holding the elevating arm in any raised position, one of said transverse bars being provided with an upwardly extending bracket disposed approximately in line with the sector gear and elevating arm and with which the channel is adapted to engage when the truck body is lowered to thereby prevent swaying of the truck body, and upstanding brackets mounted upon the other transverse bar adjacent the extremities thereof and upon which the truck body is adapted to rest when the truck body is lowered.

3. The combination with a chassis and a truck body, of brackets extending upward from the chassis, a shaft mounted upon said brackets and upon which the truck body is mounted for tilting movement, the under side of the truck body being provided with a medially disposed, longitudinally extending channel and means for elevating or lowering the truck body comprising a supporting frame detachably mounted upon the chassis, a sector gear mounted upon the frame and having an arm provided with a wheel engaging said channel, a shaft mounted upon the frame and having means whereby it may be held from reverse movement and having a crank handle, a train of gears disposed between said shaft and the sector gear whereby power may be transmitted from the second named shaft to the sector gear, an upstanding bracket mounted upon the frame adjacent the sector gear and approximately in line therewith and with the arm and adapted to be received in said channel iron when the truck body is lowered, and upstanding brackets mounted upon the supporting frame and upon which the truck body is adapted to rest when it is lowered.

4. A body elevating mechanism adapted to be applied to a truck chassis comprising a supporting frame having means whereby it may be attached to the chassis and having a plurality of upwardly projecting body supporting brackets, a shaft mounted on said frame and carrying a sector gear, an elevator arm having a roller at its extremity, means whereby power may be applied to the elevator arm to raise it, and a member adapted to be attached to the forward end of the body and adapted to receive the roller and the elevator arm and interlock therewith when the body is in a horizontal position.

In testimony whereof I affix my signature.

GILBERT L. STIEFEL.