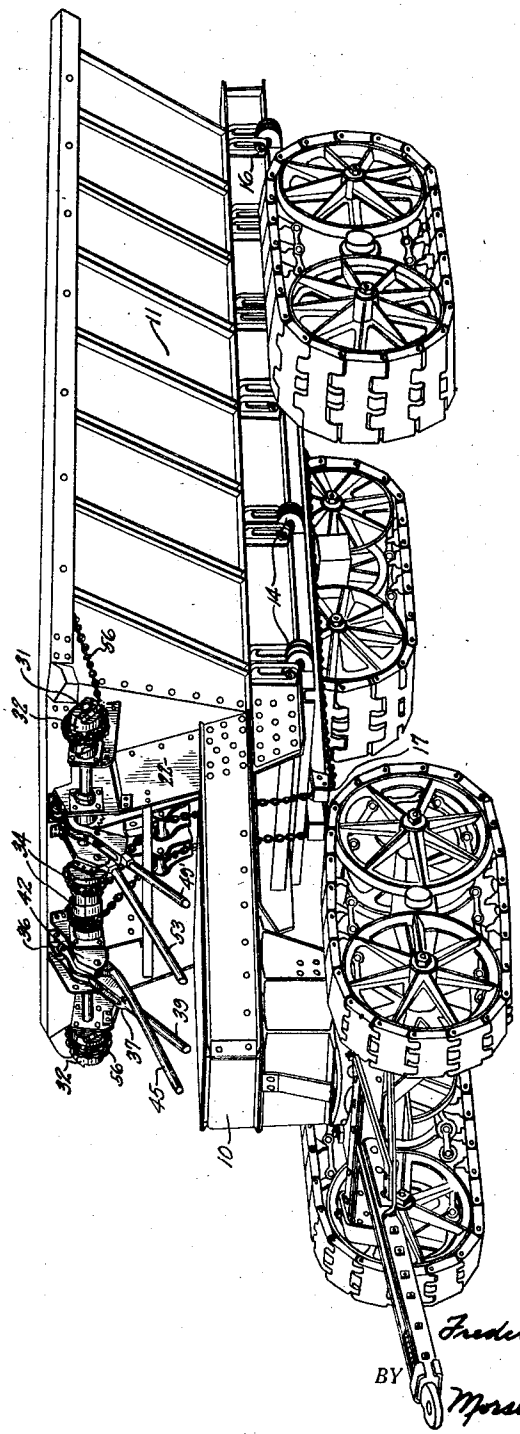
Sept. 8, 1931. F. A. STREICH 1,822,324

DUMP BODY DOOR OPERATING MECHANISM

Filed Oct. 25, 1928 3 Sheets-Sheet 1

Fig. 1.



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DUMP BODY DOOR OPERATING MECHANISM

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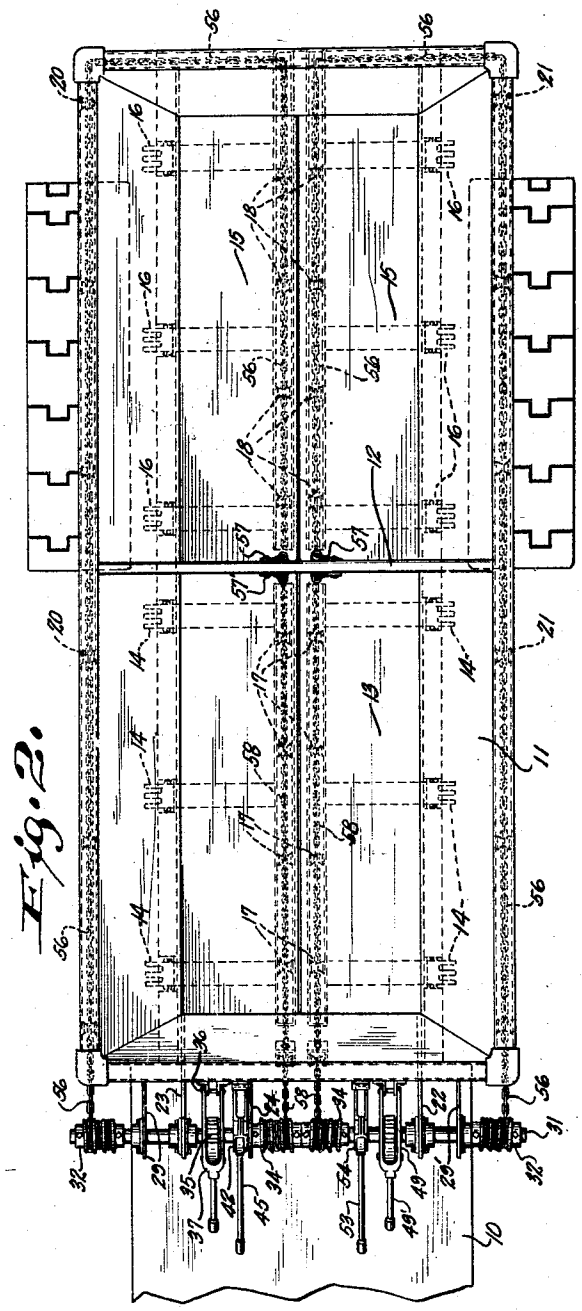


Fig. 2.

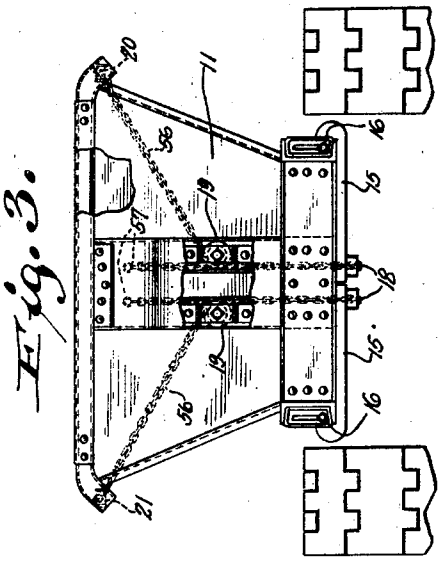


Fig. 3.

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Fig. 4.

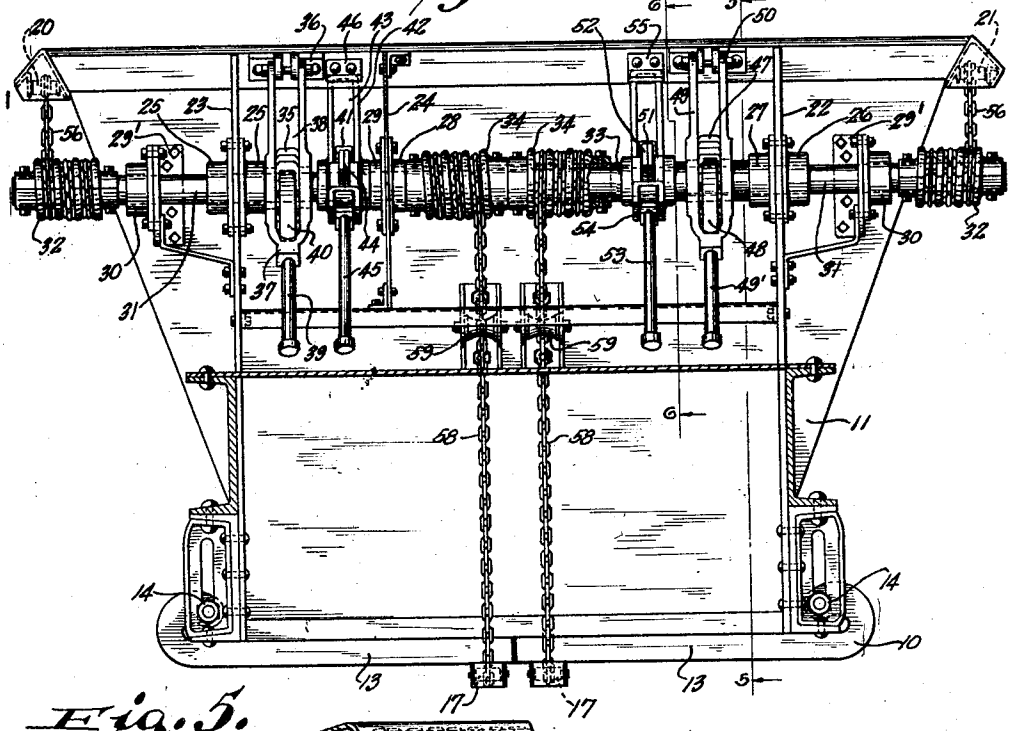


Fig. 5.

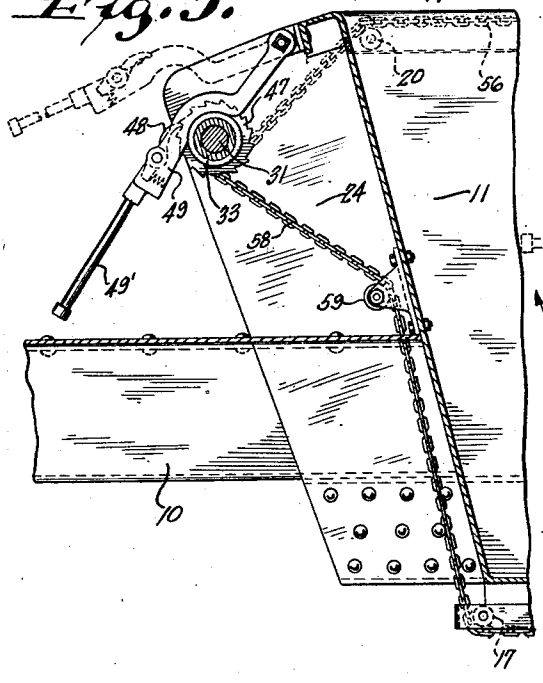
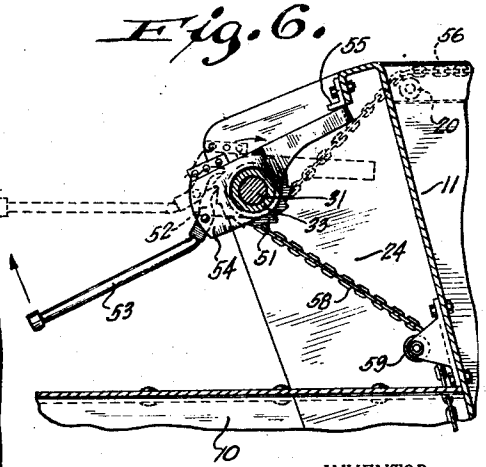


Fig. 6.



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UNITED STATES PATENT OFFICE

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DUMP BODY DOOR OPERATING MECHANISM

Application filed October 25, 1928. Serial No. 314,943.

This invention relates to improvements in dump body door operating mechanism.

It is one of the objects of this invention to provide an improved dump body door operating mechanism which greatly simplifies the dumping operation, and which permits the selective opening of doors where there are two sets, and which also permits the opening of both sets of doors simultaneously if desired.

A further object of this invention is to provide improved ratchet and dog mechanism for maintaining the doors in the closed position, and also for maintaining them in any intermediate position as they are being closed.

It is a further object of this invention to provide an improved dump body door operating mechanism in which the operating levers are readily accessible from the front of the vehicle.

A more specific object of this invention is to provide a device of the class described in which one set of doors is operated by means of chains windable upon worms on a shaft, and in which the other set of doors is operated by means of chains windable upon worms on a drum surrounding said shaft.

It is a further object of this invention to provide an improved dump body door operating mechanism which is simple in construction and operation, and well adapted for the purpose described.

With the above and other objects in view, the invention consists of the improved dump body door operating mechanism and all its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawings, in which the same reference characters designate the same parts in all of the views:

Fig. 1 is a perspective view of a dump wagon trailer with the improved door operating mechanism in connection therewith:

Fig. 2 is a plan view of the trailer, part being broken away;

Fig. 3 is an end view thereof, part being broken away;

Fig. 4 is an enlarged detail view of the door operating mechanism as attached to the front of the dump body;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 4; and

Fig. 6 is a sectional view taken on line 6—6 of Fig. 4.

Referring to the drawing, the numeral 10 designates a trailer having a dump body 11. The dump body is formed with a central partition 12 which divides it into two compartments. The front compartment is provided with a pair of lower doors 13 which are hinged to the body at 14. The rear compartment is formed with a similar pair of lower doors 15 which are hinged to the body at 16. The doors 13 are provided on their lower side with a plurality of pulleys 17 and the doors 15 are provided with similar pulleys 18. At the rear end of the dump body is a pair of pulleys 19 and along each side of said body near its upper edge are pulleys 20 and 21.

At the front end of the dump body there are partitions 22, 23 and 24. The partition 23 is provided with bearings 25 on each side, and the partition 22 is formed with bearings 26 and 27. The partition 24 has bearings 28 and 29 on each side thereof. Bearing brackets 29′ carrying bearings 30 are secured to the body at the side of the partitions 22 and 23. Journaled in the bearings 30, 25 and 26 is a shaft 31 having worms 32 rigidly secured to each end thereof. Surrounding said shaft, and journaled in bearings 27 and 28, which have larger bores than the other bearings, is a drum 33. The said drum loosely surrounds the shaft 31. All of the bearings are preferably of the roller bearing type to eliminate friction. Secured rigidly to the drum 33 is a pair of worms 34.

The small shaft 31 has rigidly secured thereto a ratchet wheel 35. Pivotally secured at one end to a bracket 36 is a lever 37. Said lever has a bifurcated portion 38 and an operating handle 39. Pivoted within the bifurcated portion is a dog 40 which is adapted to engage the teeth of ratchet wheel 35.

Positioned adjacent the ratchet wheel 35, and also rigidly secured to the shaft is a

second ratchet wheel 41. A housing 42 surrounding the hub of the ratchet wheel has a bifurcated portion 43 within which a dog 44 secured to the end of an operating lever 45 is positioned. The inner end of the housing 42 is adapted to engage a stop member 46, secured to the dump body to limit upward movement of said housing.

Rigidly mounted on the drum 33 is a ratchet wheel 47 which is engaged by a dog 48 pivotally mounted in a lever member 49. The said lever has one end pivoted to the dump body as at 50, and has an operating lever 49′ extending from its other end. This lever, ratchet wheel and dog are similar in construction to the lever 37, ratchet wheel 35 and dog 40.

Rigidly secured to the drum 33 adjacent the ratchet wheel 47 is another ratchet wheel 51 which is engaged by a dog 52 carried by the end of an operating lever 53. The said operating lever 53 and dog are pivoted within a housing 54. The said housing is similar in construction to the housing 42. A stop member 55, secured to the body, is adapted to limit the upward movement of the housing.

Chains 56 having one end secured to the worms 32 on the small shaft extend over the pulleys 20 and 21, across the rear end of the dump body and over the pulleys 19, underneath the pulleys 18 on the rear doors and to the partition 12 where they are secured as at 57. Chains 58, having one end secured to the worms 34 on the drum 33, pass over pulleys 59 underneath the pulleys 17, and have their ends secured to the partition 12 as at 57′.

The operation of the device is as follows: When it is desired to open the doors of the rear compartment the lever 37 is moved upwardly. This causes the dog 40 to disengage the ratchet wheel 35 and allows the shaft 31 to rotate within the drum, due to the weight of the doors pulling upon the chains 56. After the contents of said compartment has been discharged, to close the doors the lever 37 is dropped back into engaging position, and the lever 45 is operated to cause the dog 44 to engage the teeth of the ratchet wheel 41, to rotate the shaft so that the chains 56 will be wound upon the worms 32. This causes the doors to close. Upon each movement of the lever handle 45 the doors will be prevented from slipping backward because of the fact that the dog 40 slipping over the teeth of the ratchet 35 locks the doors in any position.

When it is desired to operate the doors of the front compartment, the levers 53 and 49′ which control the drum 33 are operated in a similar manner.

From the foregoing description it may be seen that the improved dump body door operating mechanism is simple in construction and operation, and adapted very well for the purpose described.

What I claim is:

1. Door operating mechanism for dump bodies having two compartments each provided with a pair of doors, comprising a shaft rotatably mounted on said dump body, a drum loosely surrounding said shaft, flexible members extending along opposite sides of the body and connecting opposite ends of said shaft with the doors of one of said compartments to provide a direct connection with each door from the side of the body on which each door is located, a pair of flexible members connecting said drum with the doors of the other of said compartments, means for rotating said shaft to wind the flexible member thereon to close the doors of one of said compartments, means for rotating said drum independently of the shaft to wind the other flexible member thereon to close the doors of the other of said compartments, and means in connection with said shaft and drum for locking the doors in the closed position.

2. Door operating mechanism for dump bodies having two compartments each provided with a pair of doors, comprising a shaft rotatably mounted on said dump body, a drum loosely surrounding said shaft, flexible members extending along opposite sides of the body and connecting opposite ends of said shaft with the doors of one of said compartments to provide a direct connection with each door from the side of the body on which each door is located, a flexible member connecting said drum with the doors of the other of said compartments, means for rotating said shaft to wind the flexible member thereon to close the doors of one of said compartments, means for rotating said drum independently of the shaft to wind the other flexible member thereon to close the doors of the other of said compartments, and a ratchet and dog means in connection with said shaft and drum for locking the doors in the closed position.

3. Door operating mechanism for dump bodies having two compartments each provided with a pair of doors, comprising a shaft rotatably mounted on said dump body, a drum loosely surrounding said shaft, flexible members extending along opposite sides of the body and connecting opposite ends of said shaft with the doors of one of said compartments, a flexible member connecting said drum with the doors of the other of said compartments, a ratchet wheel rigidly secured to said shaft, a lever member adjacent said ratchet wheel, a dog in connection with said lever member, said shaft and ratchet wheel being rotatable upon operation of said lever and dog to wind the flexible member on said shaft to close the doors of one of said compartments, a ratchet wheel

rigidly secured to said drum, a lever member adjacent said ratchet wheel, and a dog in connection with said lever, said drum and ratchet wheel being rotatable independently of the shaft upon operation of said last mentioned lever and dog to wind the flexible member on said drum to close the doors of the other of said compartments.

4. Door operating mechanism for dump bodies having two compartments each provided with a pair of doors, comprising a shaft rotatably mounted on said dump body, a drum loosely surrounding said shaft, flexible members extending along opposite sides of the body and connecting opposite ends of said shaft with the doors of one of said compartments, a flexible member connecting said drum with the doors of the other of said compartments, a ratchet wheel rigidly secured to said shaft, a lever member adjacent said ratchet wheel, a dog in connection with said lever member, said shaft and ratchet wheel being rotatable upon operation of said lever and dog to wind the flexible member on said shaft to close the doors of one of said compartments, a ratchet wheel rigidly secured to said drum, a lever member adjacent said ratchet wheel, and a dog in connection with said lever, said drum and ratchet wheel being rotatable independently of the shaft upon operation of said last mentioned lever and dog to wind the flexible member on said drum to close the doors of the other of said compartments, and ratchet and dog means in connection with said shaft and drum for locking the doors in the closed position.

5. Door operating mechanism for dump bodies having front and rear compartments, each provided with a pair of hinged lower doors, comprising a shaft rotatably mounted on said dump body, a drum loosely surrounding said shaft, a pair of flexible members connecting portions of said shaft on opposite sides of the drum with the same end of the doors of one of said compartments, a pair of flexible members connecting said drum with the same end of the doors of the other of said compartments, means for rotating said shaft to wind the flexible members thereon to close the doors of the first mentioned compartment, and means for rotating said drum to wind the flexible members thereon to close the doors of the last mentioned compartment.

6. Door operating mechanism for dump bodies having front and rear compartments each provided with a pair of hinged lower doors, comprising a shaft rotatably mounted on said dump body, a drum loosely surrounding said shaft, pulleys mounted along each side of said dump body, pulleys mounted along the lower sides of the front and rear compartment doors, flexible members extending from each end of the shaft over the pulleys on the sides of the dump body and underneath the pulleys on the rear compartment doors, the ends of said flexible members being secured to the dump body, flexible members extending from the drum underneath the pulleys on the front compartment doors, the ends of said flexible members being secured to the dump body, means for rotating the shaft to close the doors of the rear compartment, and means for rotating the drum independently of the shaft, to wind the other flexible member thereon to close the doors of the front compartment.

In testimony whereof, I affix my signature.

FREDERICK A. STREICH.