R. M. WHITE.

DUMPING WAGON.

APPLICATION FILED MAY 31, 1911. RENEWED MAR. 1, 1912.

1,042,302.

Patented Oct. 22, 1912.

2 SHEETS—SHEET 1.

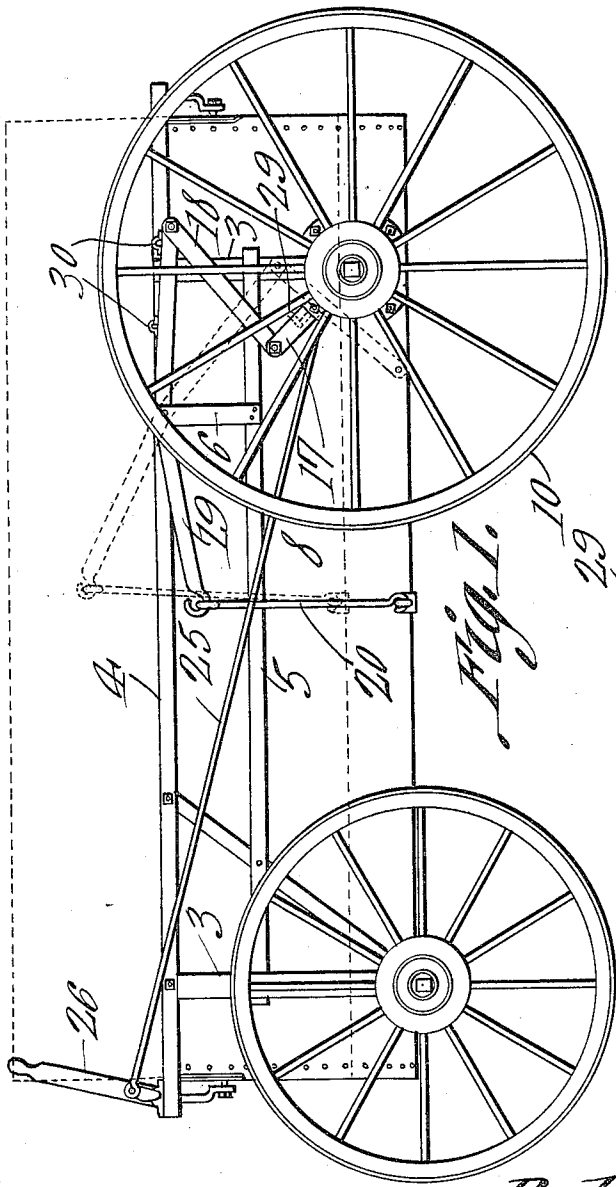

Fig. 1.

Fig. 3.

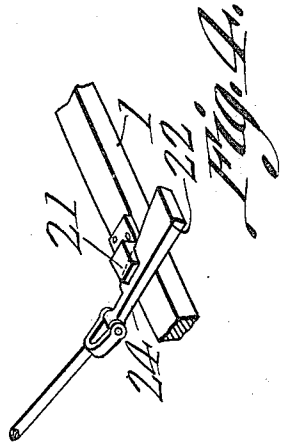

Fig. 4.

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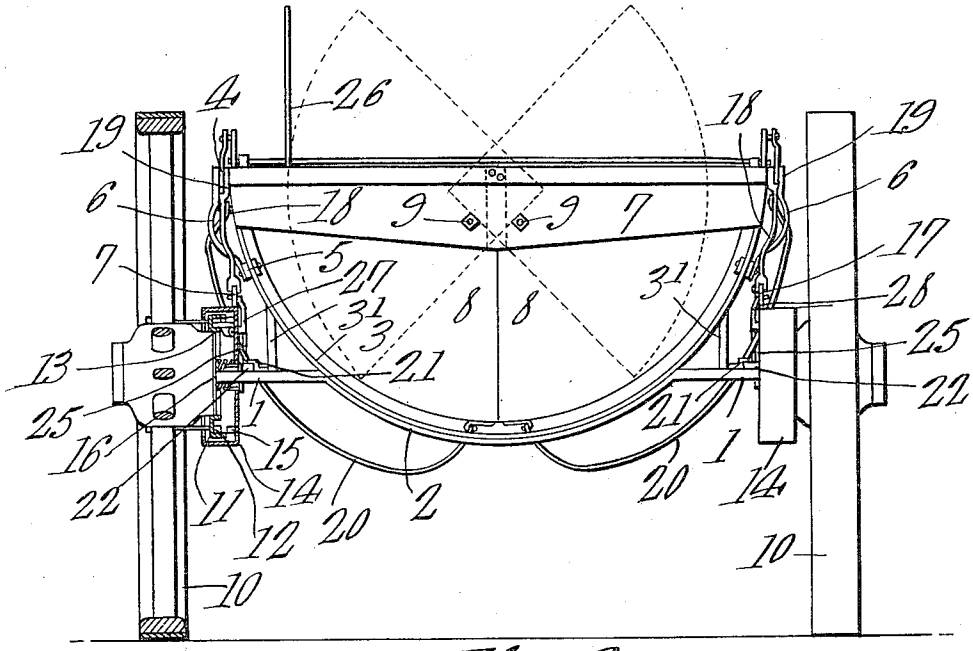

Fig. 2

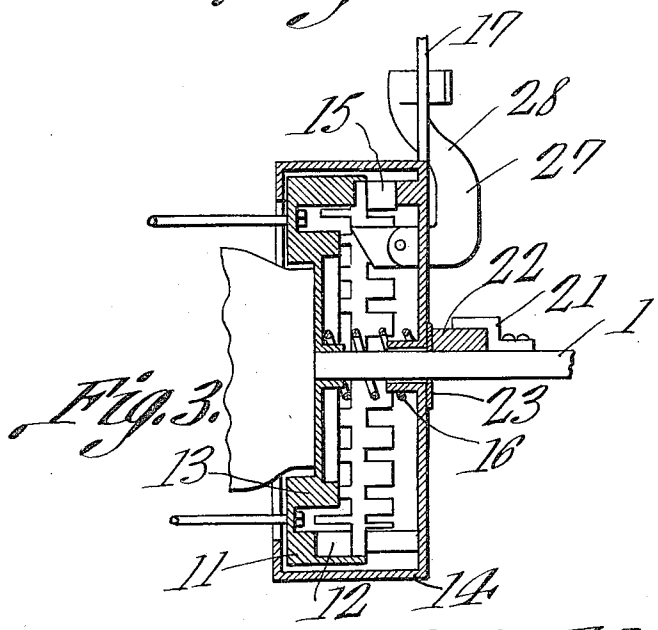

Fig. 3.

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UNITED STATES PATENT OFFICE.

ROBERT MARSHALL WHITE, OF PORTSMOUTH, OHIO, ASSIGNOR OF ONE-HALF TO EARL T. ADAMS, OF PORTSMOUTH, OHIO.

DUMPING-WAGON.

1,042,302. Specification of Letters Patent. Patented Oct. 22, 1912.

Application filed May 31, 1911, Serial No. 630,506. Renewed March 1, 1912. Serial No. 680,812.

To all whom it may concern:

Be it known that I, ROBERT M. WHITE, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented a new and useful Dumping-Wagon, of which the following is a specification.

This invention relates to dumping wagons, its object being to provide a wagon of this type the body of which is made up of segmental sections shiftable relative to each other, said sections being mounted to swing about axes extending in the direction of the length of the wagon, there being means under the control of the driver whereby motion is transmitted from one or more of the supporting wheels of the wagon for the purpose of shifting the sections to open positions.

A further object is to provide means whereby, after the sections have been opened during the forward movement of the wagon said sections will be automatically released and will swing to shut positions.

A further object is to provide a wagon body the shiftable sections of which never approach nearer the ground when dumping the load.

Another object is to provide a dumping wagon which will not discharge the load in a high pile but will, instead, travel forward during the dumping operation so as to spread the load over a comparatively long area.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of a wagon having the present improvements embodied therein. Fig. 2 is a rear elevation of the wagon, a portion of one wheel and clutch being shown in section. Fig. 3 is an enlarged section through the clutch. Fig. 4 is a perspective view of the shifting wedge. Fig. 5 is a perspective view of the shifting dog.

Referring to the figures by characters of reference 1 designates the axles of the wagon, said axles having downwardly extended bowed intermediate portions 2 supporting arcuate frame members 3 each of which is preferably substantially semi-circular and may be provided with any suitable arrangement of braces 3′. The frame members 3 support side strips 4 and 5 connected in any suitable manner, as indicated at 6, the upper side strips 4 being extended beyond the frame members 3 and connected at their terminals by cross strips 7 constituting hangers for the body sections of the wagon.

Each body section, which has been indicated at 8, is segmental and projects between the hangers or cross strips 7. The two body sections are oppositely disposed so as to normally contact to form a substantially cylindrical wagon body. The pivots 9 of the sections are located adjacent the upper inner corners of the sections and those portions of the end walls of the sections projecting between the hangers 7 are off-set, one of the sections being off-set inwardly while the other is off-set outwardly so that, when the sections are tilted in opposite directions about their respective pivots, these off-set portions are free to lap.

Each of the rear wheels 10 of the vehicle has a drum 11 fixedly connected to the hub thereof, said drum carrying a toothed clutch member 12 and a bearing ring 13, said ring being concentric with the teeth of the clutch member and being surrounded thereby. Another drum 14 embraces and is slidably mounted on the drum 11 and is also slidably mounted on the axle 1 and is mounted to rotate freely thereon. Drum 14 has a toothed clutch member 15 adapted to engage the clutch member 12 but normally held out of engagement therewith by a spring 16.

An arm 17 is fixedly connected to and extends radially from the drum 14 and is connected, by a link 18, to one end of a lever 19 fulcrumed on the adjacent side strip 4, the other end of said lever being connected, by an arcuate rod 20, to the lower portion of the adjacent body section 8. A guide bracket 21 is secured on the axle 1

close to drum 14 and a shifting wedge 22 is slidably mounted therein and is designed to bear against a ring 23 mounted on the drum 14. A tongue 24 extends forwardly from the wedge 22 and is connected, by a rod 25, to a controlling lever 26 mounted upon the front portion of the vehicle.

A dog 27 extends through and is pivotally connected to the drum 14, one end of this dog being beveled and adapted to work against the ring 13 while the other or outer end of the dog has a curved arm 28 terminating in a backwardly extending cam extension 29.

Because of the positions of the pivots 9 relative to the side portions of the sections 8, it will be apparent that the weight of the load contained within the sections 8 will serve to maintain said sections normally pressed together. Spring 16 holds the clutch member 15 normally out of engagement with the clutch member 12 and wheel 10 is therefore free to rotate without producing a corresponding movement of the clutch member 15 and drum 14. When it is desired to dump the contents of the wagon the operator pulls forwardly on the wedge 22 by shifting lever 26 and drum 14 is therefore moved toward the drum 11 and the clutch member 15 brought into engagement with the clutch member 12. Further rotation of the wheel 10 will therefore cause the two clutch members to rotate in unison and as these members are formed with teeth, they will be maintained by friction in engagement with each other as long as the wheel 10 is rotating. During the rotation of the drum 14, the arm 17 will be swung downwardly, thus pulling on lever 19 through link 18 and causing rod 20 to swing the body section 8 upwardly to open position. The arm 28 and dog 27 also move with the arm 17 and as link 18 gradually folds upon the arm 17 it moves against the cam extension 29 on the arm 28 and gradually shifts it laterally, thus swinging the dog about its pivot and causing its end to bear against ring 13 and thus force the two clutch members apart. The body sections 8 will therefore swing by gravity to their normal or closed positions and the drum 14, arm 17, and lever 19 will also return to their initial positions. It is to be of course understood that the wedge 22 is to be pushed back to its first position immediately subsequent to the movement of clutch member 15 into engagement with clutch member 12 so that it will not interfere with the return movement of the drum 14 when the dog 27 is actuated in the manner set forth. As the body sections 8 are mounted for swinging movement, it will be apparent that they can be easily shifted to open or closed positions irrespective of the load carried. Moreover as it is necessary for the wheels to revolve and the wagon to move forward in order to cause the wagon to dump the load, it will be seen that the load will not be dumped in a high pile as ordinarily but will be gradually spread out as the wagon is moved forward.

Importance is attached to the fact that when the body sections shift to dump the load, they do not move downwardly into the pile but are supported at all times at the same distance from the ground and are therefore held clear of the dumped material as the wagon moves forward.

If desired loops, such as indicated at 30, may be secured upon lever 19 so that, should the loaded wagon become stalled or should it be desired to dump the wagon while it is standing still, a crow bar or the like can be inserted through the loops and the load dumped by merely pressing down on the lever.

What I claimed is:—

1. A dump wagon including a wheel supported frame, body sections pivotally supported therein and normally closed together, means operated by one of the wheels, when rotating, for swinging one of said sections to open position, and coöperating means for automatically releasing said section from its operating wheel when opened to a predetermined point.

2. A dump wagon including a wheel supported structure, oppositely disposed body sections pivotally supported within said structure and normally held together by gravity, means operated by one of the supporting wheels for swinging one of said body sections upwardly to open position during the forward movement of the wagon, and means for automatically uncoupling said section from the wheel when the section is opened to a predetermined point.

3. A dump wagon including a wheel supported structure, oppositely disposed body sections pivotally mounted within the structure and normally held together by gravity in closed position, a clutch member revoluble with one of the supporting wheels, a clutch member normally spaced therefrom, means for shifting said spaced clutch member into engagement with the other clutch member, and means operated by the shiftable clutch member during the rotation thereof for elevating one of the body sections to open position.

4. A dump wagon including a wheel supported structure, oppositely disposed body sections pivotally mounted within the structure and normally held together by gravity in closed position, a clutch member revoluble with one of the supporting wheels, a loose clutch member adjacent thereto, means for shifting said loose member into engagement with the other clutch member, means operated by the rotation of the loose clutch mem-

ber for swinging one of the body sections upwardly to open position, and means for automatically disengaging the clutch members during the rotation thereof to release the opened body section.

5. A dump wagon including a wheel supported structure, oppositely disposed body sections pivotally mounted within said structure and normally held together by gravity in closed position, a clutch member revoluble with one of the supporting wheels, a loose clutch member adjacent thereto, means under the control of the operator for shifting the loose clutch member into engagement with the other member, a spreading device carried by said loose clutch member, and means for automatically shifting said spreading device to disengage the clutch members when the body section is raised to a predetermined position.

6. A dump wagon including a wheel supported structure, oppositely disposed segmental body sections pivotally mounted within the structure and held by gravity normally closed together, a clutch member revoluble with one of the supporting wheels, a loose clutch member adjacent thereto, yielding means for holding the clutch members normally disengaged, means under the control of the operator for shifting the loose member into engagement with the other member, means for transmitting motion from the loose clutch member when rotated, to one of the body sections to elevate said section to open position, a spreading device carried by the loose clutch member, and means thereon and movable against said motion transmitting means for automatically spreading the clutch members apart when the body section is raised to a predetermined position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT MARSHALL WHITE.

Witnesses:

W. M. WHITE,

A. L. GEST.