No. 797,974. PATENTED AUG. 22, 1905.

J. D. OLCOTT.

DUMP WAGON.

APPLICATION FILED JAN. 27, 1905.

Fig. 1

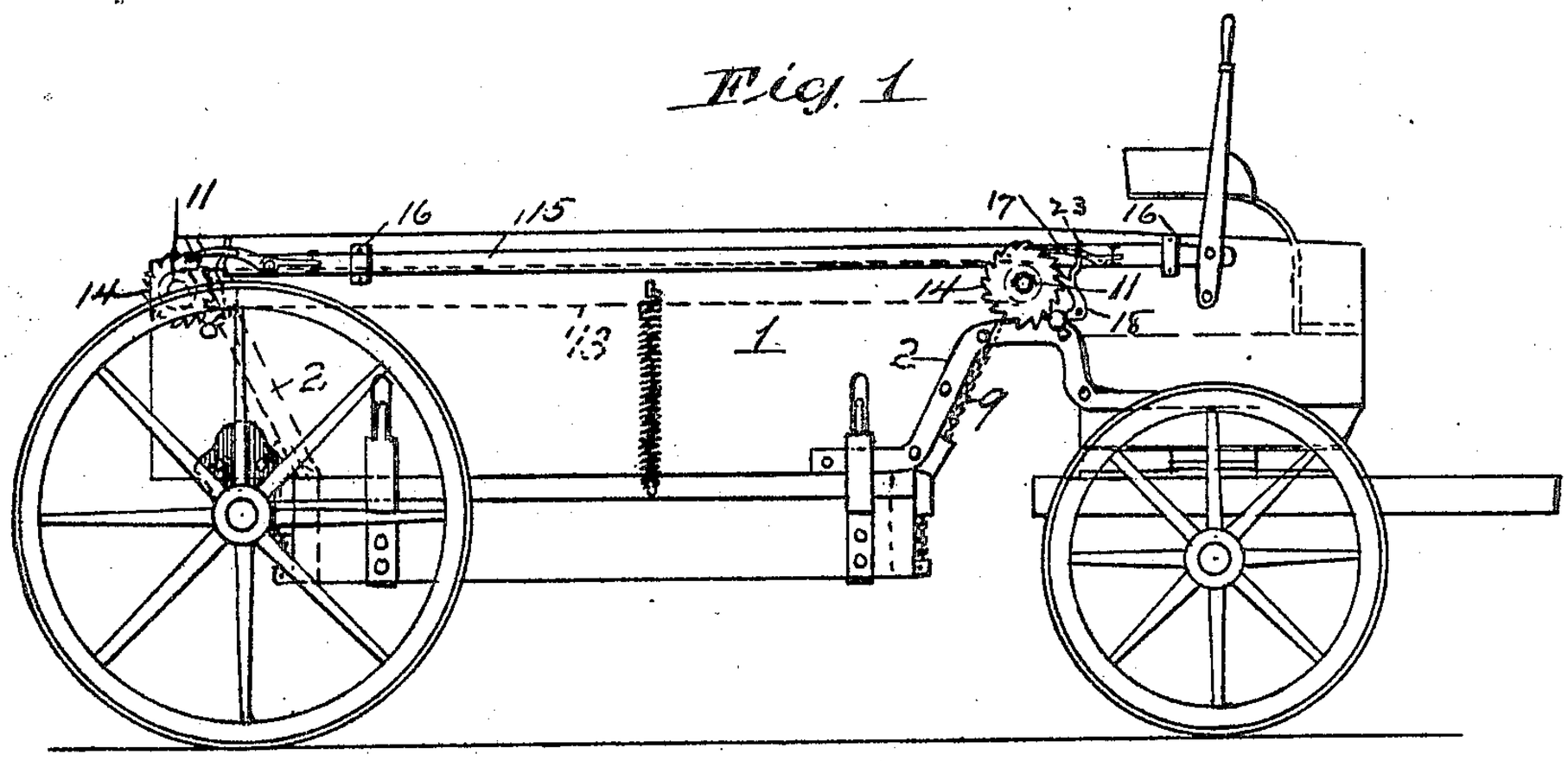


Fig. 2

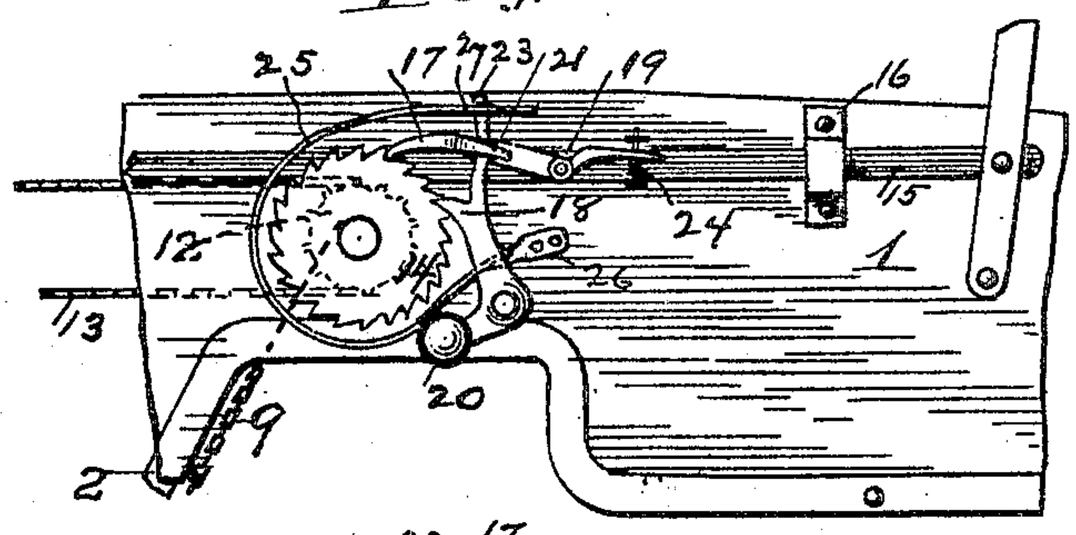


Fig. 3a

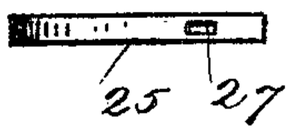


Fig. 6

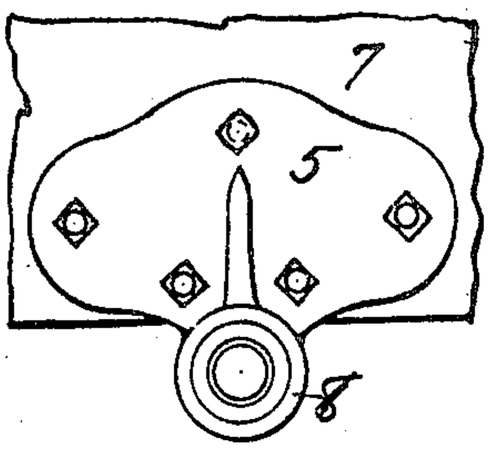


Fig. 3

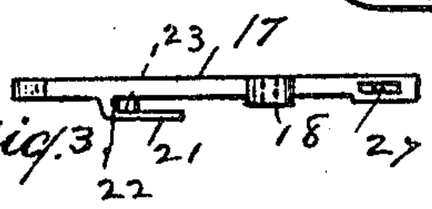


Fig. 4

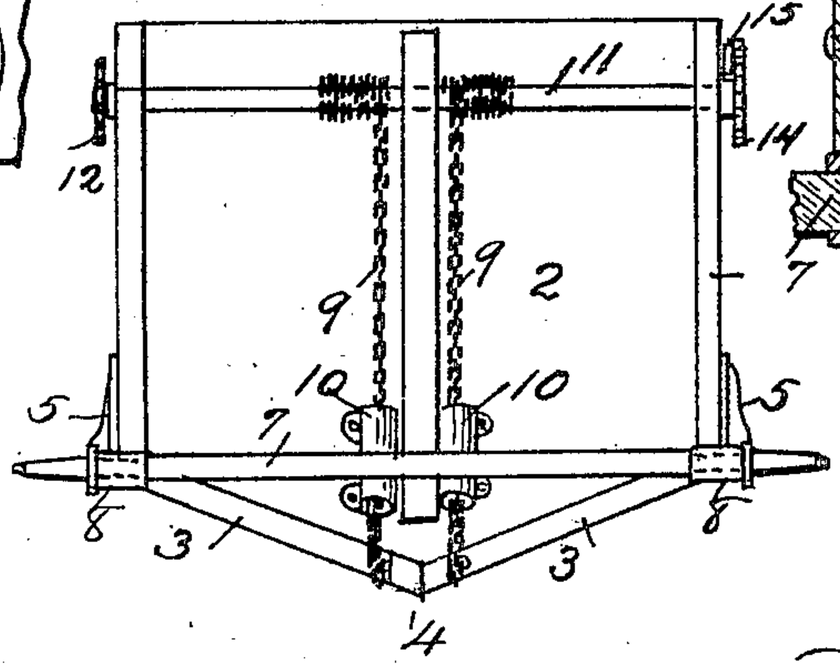
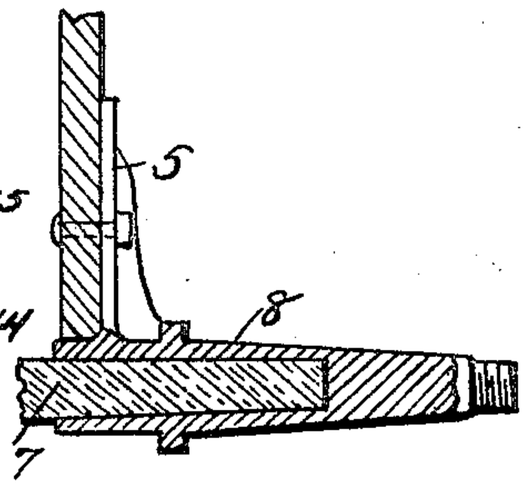


Fig. 5



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UNITED STATES PATENT OFFICE.

JOHN D. OLCOTT, OF NORWALK, OHIO.

DUMP-WAGON.

No. 797,974. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed January 27, 1905. Serial No. 242,829.

To all whom it may concern:

Be it known that I, JOHN D. OLCOTT, a citizen of the United States, and a resident of Norwalk, county of Huron, State of Ohio, have invented certain new and useful Improvements in Dump-Wagons, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to that description of dump-wagons in which drop-doors hinged to the lower edges of the wagon sides form the bottom and are arranged to fall downwardly to drop the load.

The objects of the invention are to increase the capacity of the wagon-body, to strengthen and simplify its support upon the rear axle, and to provide a simple and efficient form of windlassing device and ratchet therefor.

The invention consists in the inclined drop-doors and lower edges of the end-boards, in the bracket-formed supports for the body upon the rear axle, and in the ratchet device for operating the windlass for raising and lowering the drop-doors and in the various forms of construction as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the wagon-body embodying my improvements. Fig. 2 is an elevation of a portion thereof, showing the ratchet device and a brake device by means of which the contents of the wagon can be spread over the surface of the ground. Fig. 3 is a plan view of the operating-pawl. Fig. 3ª is a plan view of brake-band. Fig. 4 is an enlarged rear end elevation of the device. Fig. 5 is a longitudinal section of the end of rear axle or "skein," showing the bracket connecting the same rigidly with the side-board of the wagon. Fig. 6 is a side view of a portion of wagon side, showing end of axle or skein.

In the views, 1 is the wagon-body, the end-boards 2 of which are inclined to extend backward at the upper end and are vertical for the lower portion thereof. The drop-doors 3 are shown hung for downward, outward, and upward movement outside the wagon-body similarly to the doors shown in a previous United States patent to me bearing No. 772,049, and they incline downwardly toward the center where they meet, as shown in Fig. 4. It will be seen also in this figure that the end-boards slope downward toward the center at 4 in a corresponding angle, so that the drop-doors will close tightly thereon. This angular drop of the doors before opening enlarges the lower portion of the wagon-body, so that it is enabled to carry a much larger load and lower down than is possible with the rectangular body.

In order to rigidly support the rear-wheel axles upon the side-boards of the wagon since it is impossible in this class of wagons to employ a reach, the axles or skeins thereon are secured to or integral with the metal brackets 5, which are bolted directly to the sides, as shown in Figs. 4, 5, and 6, thus obtaining the greatest possible support and firmness of construction and obviating the use of the unusually heavy timbers commonly employed for this purpose. In these figures, 7 represents the wooden axles inserted within the skeins 8, and the skeins are cast integrally with the brackets. Any desirable form of construction, however, comes within the spirit of this invention.

The drop-doors are shown to be supported for closing and lowering by means of windlass-chains 9, which are attached to the ends of the doors at their outer edges. These chains pass through guiding-tubes 10 upon the end-boards of the wagon-body and which conform to its angular shape, so that the chains will not rub upon the rear axle or hang away from the body portion. The chains then pass over the windlass-shaft 11 at each end of the wagon-body. The windlass-shafts are shown mounted in the side-boards and in a single heavy bearing at the center of each end-board, which continues downwardly and serves to stiffen the board. On one side of the wagon sprocket-wheels 12 upon the outer ends of these windlass-shafts are connected by a chain 13 to insure uniform movement of the two windlasses. At their other ends the windlass-shafts are supplied with ratchets 14, which are operated in unison by means of the bar 15, mounted longitudinally upon guides 16 on the outer side of the side-board and by means of main operating and holding pawls 17 and 18 and the lever 19, pivoted to the side-board, where it will be most accessible to the hand of the operator. A double ratchet device is employed whereby one pawl will hold the ratchet from revolving, while the other is being advanced to engage with another tooth in advance and comprises the longer or main operating-pawl 17, which is pivoted upon the sliding bar 15 at 19 and engages with a tooth nearly at the upper edge

of the ratchet and the auxiliary holding-pawl 18 of which is pivoted below the center of the ratchet-wheel and engages a tooth near the center line. This pawl is provided with a weight or other tension device 20, which holds its edge against the disk until it is withdrawn therefrom by the action of the upper pawl 17, which is provided with a hook 21, having a shoulder 22, which engages with the vertically-extending arm 23 upon the lower pawl. It will then be seen that when the lever-pawl is thrown back to revolve the ratchet-wheel the upper pawl will engage and push back the ratchet and the lower pawl will engage the ratchet and prevent its reverse movement as soon as the lever is released. To disengage the lower pawl and release the windlass, the lever is thrown forward and the lower pawl is moved forward by means of its vertical arm, which is engaged by the shoulder 22 upon the upper pawl. By working the pawls carefully the windlass can be stopped before the complete opening of the drop-doors and the device can be used to spread the contents of the wagon through the incomplete opening. The forward end of the upper pawl is spring-pressed at 24 for tension to insure engagement of the pawl with the ratchet-teeth.

In order to permit the operator to hold the doors open at any desired width of opening to enable him to spread or scatter the load over a large surface, a brake strap or band 25 is secured at one end to the side-board at 26 and its other end is brought over the ratchet-disk and secured over the upwardly-extended arm of the holding-pawl at 27, so that when both pawls are released the arm will tighten the band over the edge of the ratchet-wheel and hold it from revolving as long as desired.

Having described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the side-boards of a dump-wagon of end-boards therefor, the said end-boards slanting inwardly as far as the lower edges of the side-boards, and then extending vertically downward, a rear axle passing behind the rear end-board, a metal bracket secured to each side-board in the rear of the end-boards and means for attaching the rear axle thereto, substantially as described.

2. The combination with a dump-wagon provided with drop-bottom doors, adapted to move downwardly and outwardly at their inner edges, of flexible means for closing said doors, at each end thereof, windlasses upon which said flexible means are wound, ratchets upon said windlasses, a sliding bar mounted upon the wagon-body adjacent to said windlasses, an operating-pawl pivoted thereon, a holding-pawl pivoted upon the wagon, and a lever for operating said sliding bar, the said operating-pawl being provided with a shoulder against which the said holding-pawl rests whereby said holding-pawl may be withdrawn from engagement with said ratchet by the action of the operating-pawl, substantially as described.

3. In combination with the body of a dump-wagon, bottom drop-doors therefor, a windlass-shaft at each end of said body portion, said shafts projecting at each extremity beyond the said body, windlass-chains upon said shaft, connecting with the ends of the respective drop-doors, sprocket-wheels upon the shafts, on one side of said body and an endless chain connecting them ratchet-disks upon the shafts on the other side of the body, a sliding bar upon said body adjacent to said ratchet-disks, an operating-lever therefor, an operating-pawl pivoted on said sliding bar for each ratchet-disk, a holding-pawl for each disk pivoted upon said body, and an engaging portion upon each operating-pawl adapted to release said holding-pawls on the return stroke of the said bar, substantially as described.

4. In a dump-wagon, the combination with the body and bottom drop-doors, of two windlass-shafts, flexible connections between the windlass-shafts and drop-doors, and a ratchet-wheel and double pawl device for each windlass-shaft, consisting of an operating and a holding pawl for each ratchet-wheel, a sliding bar on one side of the body adjacent to said ratchet-wheels, an operating-lever therefor, the said operating-pawls being pivoted upon said bar, and the said holding-pawls being pivoted upon the wagon side, each of said holding-pawls having an extended arm adapted to engage with the adjacent operating-pawl on its return movement whereby the movement of the bar to release said operating-pawl will release said holding-pawl, substantially as described.

5. In a dump-wagon, the combination with the body and drop-bottoms, of a windlass-shaft at each end of the body, flexible connections between windlass-shafts and said drop-doors, and a ratchet device for each windlass-shaft, consisting of a bar adapted to slide longitudinally upon the side of the wagon, a ratchet-wheel upon the extremity of each windlass-shaft, an operating-pawl for each ratchet, pivoted upon said bar, a holding-pawl for each ratchet pivoted upon the wagon side, the said holding-pawls being provided with extended arms adapted to engage the operating-pawls on the return stroke of the bar, and a sprocket-wheel on each windlass-shaft, and endless chain connecting said sprocket-wheels, substantially as described.

6. The combination in a dump-wagon, of a body formed of vertical side-boards, and end-boards inclined downwardly and inwardly as far as the bottom edges of the side-boards and thence extending vertically downward, and

having their bottom edges inclined to the center thereof, bottom drop-doors pivotally secured to said sides and adapted to engage the inclined edges of the end-boards when closed, flexible means for raising and lowering the drop-doors, a windlass-shaft upon each end-board, upon which said flexible means are wound, and guiding-tubes at the angle of each end-board through which said flexible means pass, substantially as described.

7. The combination in a dump-wagon of side and end boards, drop-doors, pivoted to the bottom edges of the sides, windlass-shafts upon the end-boards, flexible connections between the windlass-shafts and outer ends of said doors, a ratchet upon each windlass-shaft, a sliding bar adjacent to said ratchets upon the side of the wagon, an operating-pawl on said bar for each of said ratchets, and provided with a hook, a holding-pawl for each ratchet pivoted upon the wagon-body and having an extended arm arranged for engagement with said hook upon the operating-pawl, whereby both pawls can be withdrawn from contact with the ratchet when the bar is pulled forward, and a brake-strap, encircling one of said ratchets, and provided with a terminal opening through which the extended arm upon the holding-pawl passes, whereby when a further forward movement is given said sliding bar the strap will engage and hold the ratchet and hold the doors from downward movement, substantially as described.

In testimony whereof I hereunto set my hand this 18th day of January, 1905.

JOHN D. OLCOTT.

In presence of—
WM. M. MONROE,
GEO. S. COLE.