

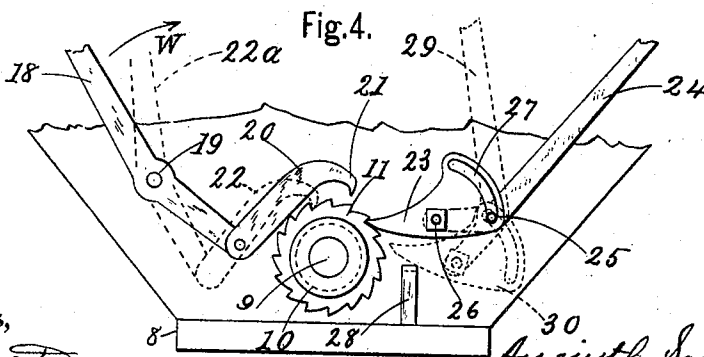
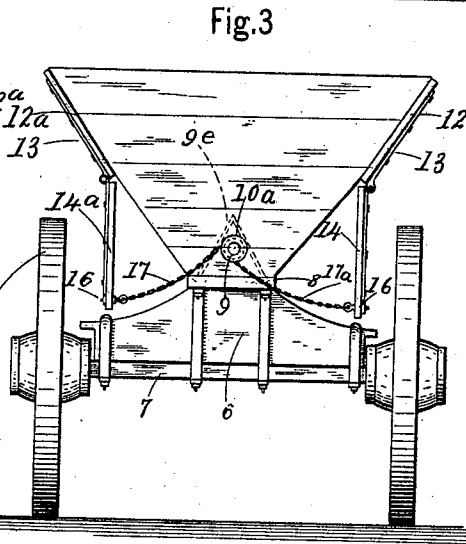
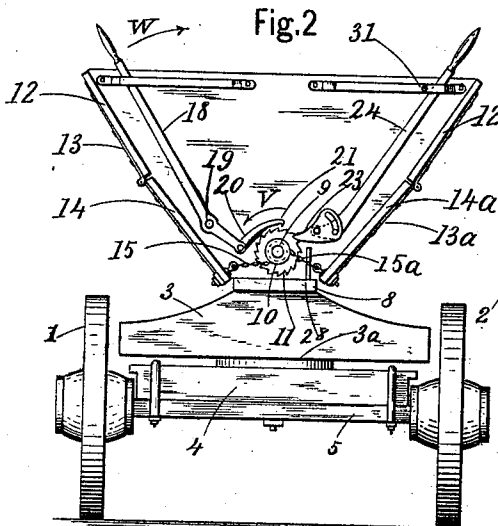
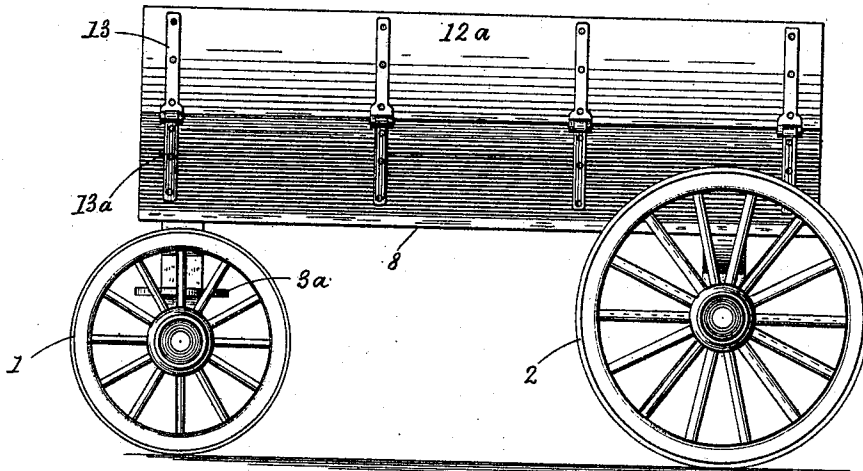
(No Model.)

A. C. SOMMER.
DUMPING WAGON.

No. 581,314.

Patented Apr. 27, 1897.

Fig 1



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UNITED STATES PATENT OFFICE.

AUGUST C. SOMMER, OF BUFFALO, NEW YORK.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 581,314, dated April 27, 1897.

Application filed August 5, 1893. Serial No. 601,689. (No model.)

To all whom it may concern:

Be it known that I, AUGUST C. SOMMER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Wagons, of which the following is a specification.

My invention relates to improved mechanism for carrying and dumping sand, stone, gravel, &c., from wagons; also, to certain details in the construction of the body of the wagon, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved wagon. Fig. 2 represents a front elevation showing the dumping-doors closed and the wagon in position for carrying its load. Fig. 3 represents a rear end elevation showing the dumping-doors open. Fig. 4 is an enlarged detail view of the dumping mechanism, showing also a portion of the front of the wagon.

Referring to the drawings in detail, 1 represents the front wheels; 2, the rear wheels; 3, the upper front bolster; 3^a, the fifth-wheel; 4, the front bed-piece, and 5 the front axle. (See Fig. 2.) 6 represents the rear bolster, and 7 the axle upon which it rests, all of which are constructed in the usual and well-known manner.

On the top of the front and rear bolsters is rigidly secured a bed-piece 8, extending from one end of the wagon to the other. An iron shaft 9, extending the whole length of the bed-piece 8, is mounted thereon in suitable bearing-boxes, the ends of the said shaft terminating in the enlarged portions 10 and 10^a. A ratchet-wheel 11 is also mounted upon the front end portion of the shaft.

The body of the wagon is formed with upper sides 12 12^a, which incline inward toward each other from the top downward. To the lower sides of the permanent side portions 12 and 12^a are hinged, by strap-hinges 13 13^a, the lower side pieces or dumping-doors 14 14^a. The hinged side pieces 14 and 14^a are each connected at the front of the wagon with the enlarged portion or winding-drum 10 by means of chains 15 and 15^a, one end of each chain being rigidly secured to the enlarged

portion 10 and their opposite ends to the lower corners of the said hinged side pieces 14 and 14^a at or about the points 16. (See Fig. 3.) The dumping-doors 14 and 14^a are also connected at their lower rear corners by chains 17 and 17^a, extending therefrom and rigidly secured to the enlarged portion 10^a of the shaft 9, substantially as shown in Fig. 3.

From the above-described construction it will be seen that if the shaft 9 be turned in the direction of the arrows V the chains 15 and 15^a will be wound up on the enlarged portions at each end of the shaft 9 and will thereby bring the hinged pieces 14 and 14^a from the position shown in Fig. 3 to the position shown in Fig. 2. In this position the wagon-body is closed and ready to receive a load of stone, gravel, or other material. It will be noticed that the shaft 9 is provided with a protecting-cover 9^e. (Shown by dotted lines in Fig. 3.)

The office of the inverted-V-shaped portion 9^e is not only to shield and protect the shaft 9, but also to form an inclined slideway, so that every portion of the load will drop from the wagon when the dumping-doors are opened. The turning of the shaft 9, and the consequent winding of the chains 15 and 15^a upon the enlarged end portions thereof, is effected by means of the ratchet-wheel 11 and a lever 18, pivoted to the front of the wagon by a pin 19. (See Figs. 2 and 4.) This lever extends up to the top of the wagon to within convenient reach of the driver, who operates it by a backward-and-forward movement. The said lever 18 is provided at its lower end with a pivoted pawl 20. The construction of the lever 18 and its pivoted pawl 20 is such that when in the position shown in Figs. 2 and 4 the pawl is at the limit of its forward movement, and consequently its hooked end 21 is out of engagement with and away from the ratchet-wheel 11, but when the lever is moved in the direction of the arrow W (shown in Figs. 2 and 4) the pawl 20 will engage with the ratchet-wheel teeth and turn the shaft 9, substantially as indicated by the dotted lines 22 in Fig. 4. As the ratchet-wheel 11 is thus turned its teeth pass under and are retained by the pivoted pawl 23, while its operating handle or lever 24 is in the position shown in Fig. 2.

The construction of the lever 24 and its pawl 23 will be more clearly explained by reference to Fig. 4. The lever 24 is pivoted to the wagon front by a pin 25. To the lower end of lever 24 is pivoted, by a pin or bolt 26, the pawl 23. At the rear of the pawl 23 is a curved slot 27, through which the pin 25 extends. Below the pawl 23 is a standard or stop 28. The office of this standard 28 is to prevent the end of the pawl 23 from dropping too far down. The construction of the lever 24 and its pawl 23 is such that when the lever is in the position shown in Figs. 2 and 4 the pawl acts as a retaining-pawl, but when said lever 24 is in the position of the dotted lines 29 in Fig. 4 the pawl 23 is in the position shown by the dotted lines 30 and is entirely out of engagement with the ratchet-wheel 23, so that the shaft 9 is free to turn, thereby allowing the load to open the hinged side pieces or dumping portions 14 and 14^a, substantially as shown in Fig. 3, and instantly dump the load.

The operation of the dumping apparatus is as follows: The operator from his seat unlocks the lever 24, it being held in position by any well-known locking device, for instance, the pin 31, (shown in Fig. 2,) and throws it forward into the position shown by the dotted lines in Fig. 4. This releases the pawl 23 from engagement with the teeth on the ratchet-wheel, allows the shaft to rotate freely in its bearing-boxes, the chains to unwind, the dumping-doors to swing open, and the load to fall by force of gravity from the wagon. When the wagon is entirely emptied of its contents, the operator throws the lever 24 back and brings the pawl 23 again into engagement with the ratchet-wheel teeth. He then rewinds the chains upon the enlarged ends of the shaft by means of the lever 18 and pawl 20. In order to bring the swinging dumping-doors as close as possible in their place against the sides of the wagon, the pawl 20 is held in engagement with the ratchet-teeth by the operator holding the lever 18 by one hand, while with the other hand the lever 24 is thrown forward in the position shown by the dotted lines in Fig 4 and then pulled back again and locked in substantially the position shown in Fig. 2. This operation causes the pawl 23 to engage the next lower tooth on the ratchet-wheel, and thus, as before stated, brings the dumping-doors closer and firmer against the sides of the wagon.

I claim—

1. In a dumping-wagon, the combination with the wagon-body provided with hinged dumping-doors, of operating mechanism consisting of a shaft running longitudinally in suitable bearings the entire length of the wagon, winding-drums at each end of said shaft, chains fastened at one end to the winding-drums and at the other to the hinged dumping-doors, a ratchet-wheel at the forward end of said shaft for rotating the same, a lever and pawl for actuating the said ratchet-

wheel and a combined tightening and locking lever and pawl for forcing the said dumping-doors tightly against the wagon sides, and locking them in said position, as set forth.

2. In a dumping-wagon, the combination with the wagon-body provided with hinged dumping-doors, of operating mechanism consisting of a shaft running longitudinally in suitable bearings the entire length of the wagon, winding-drums at each end of said shaft, chains fastened at one end to the winding-drums and at the other to the hinged dumping-doors, a ratchet-wheel at the forward end of said shaft for rotating the same, a lever and pawl for actuating the said ratchet-wheel and a combined tightening and locking lever and pawl for forcing the said dumping-doors tightly against the wagon sides, and locking them in said position, the said combined tightening and locking lever and pawl also engaging with the ratchet-wheel and thus acting as a stop to prevent the unclosing of the dumping-doors when the actuating lever and pawl are disengaged from said ratchet-wheel during the operation of closing the doors, as set forth.

3. In a dumping-wagon, the combination with the wagon-body and the swinging dumping-doors thereof, of an operating-shaft, chains connecting the said shaft to the said dumping-doors, a toothed ratchet-wheel at one end of said shaft, an operating lever and pawl for rotating the said shaft, winding the chain thereon and thus drawing the doors against the wagon-body, a lever and mechanism connected thereto for forcing the said dumping-doors more firmly in their position against the wagon-body and locking them in said position, the said operating lever and pawl being normally raised out of engagement with the ratchet-wheel so that the doors may be released and the load dumped by the disengagement of the locking-lever mechanism, as set forth.

4. In a dumping-wagon, the combination with the wagon-body provided with dumping-doors, of operating mechanism consisting of a shaft, enlarged portions forming winding-drums at each end of said shaft, chains fastened to the drums at one end and to the dumping-doors at the other, a ratchet-wheel at the forward end of said shaft, a lever and pawl for rotating said shaft, a locking and releasing lever, a pivoted slotted pawl at the lower end of said locking and releasing lever, and a standard for limiting the downward movement of the ratchet-wheel-tooth engaging end of the said pivoted pawl, said pawl not only acting as a locking device but as a tightening device, drawing the dumping-doors more firmly against the wagon sides, substantially as described.

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