

(No Model.)

2 Sheets—Sheet 1.

B. F. SWEET.
LUMBER WAGON.

No. 556,784.

Patented Mar. 24, 1896.

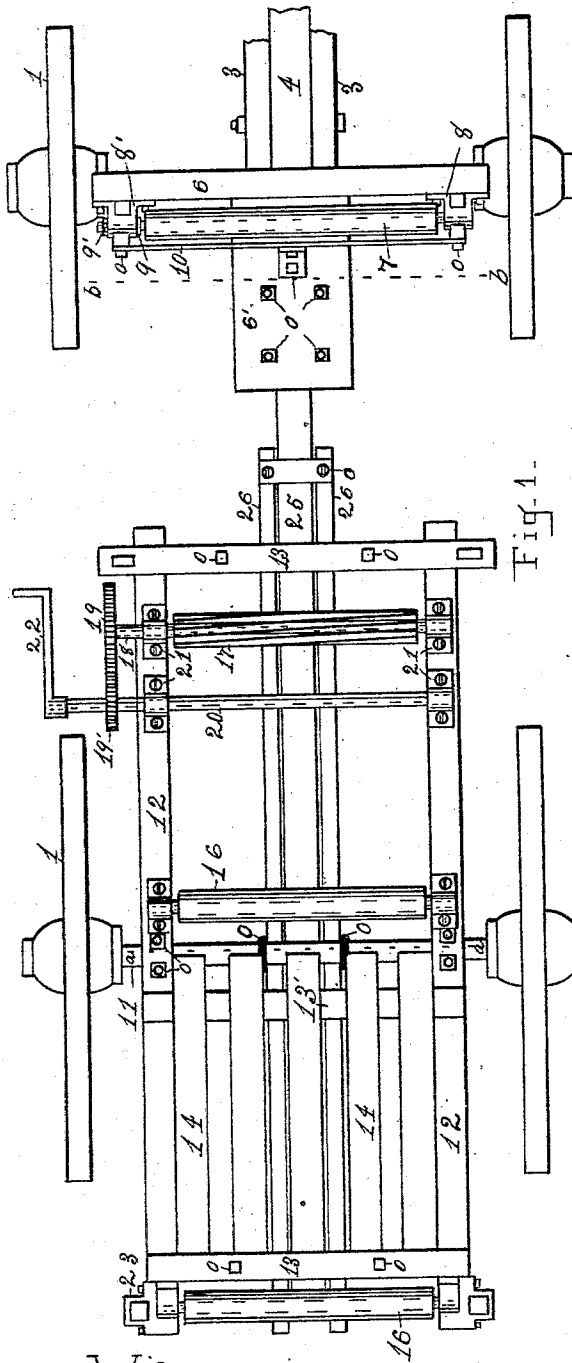


Fig. 1.

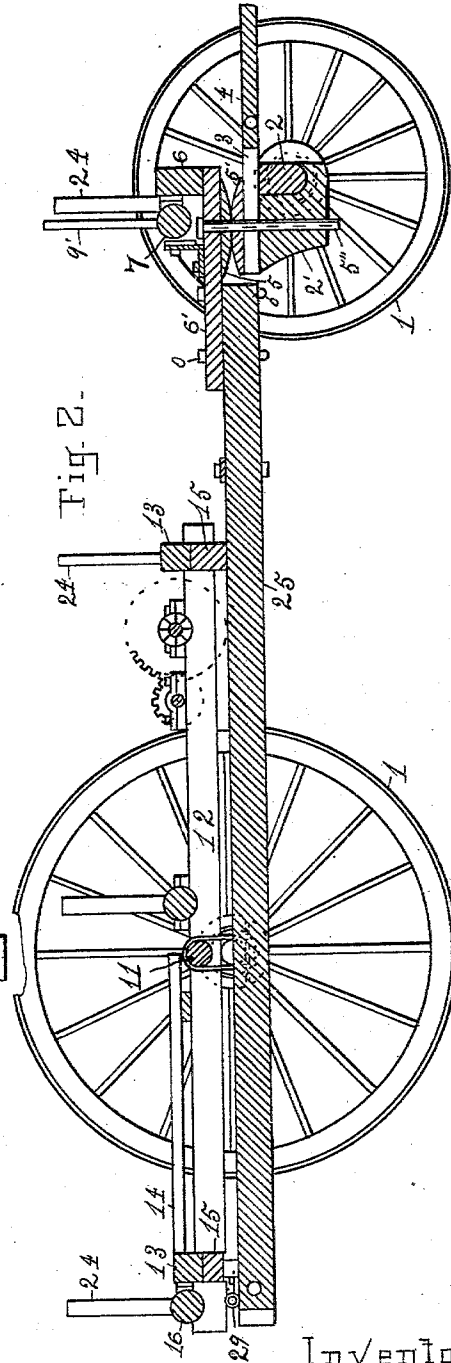


Fig. 2.

Witnesses.

E. H. Albee
Herman Miller

Inventor.

Benjamin F. Sweet.

By his Atty. *E. H. Albee*

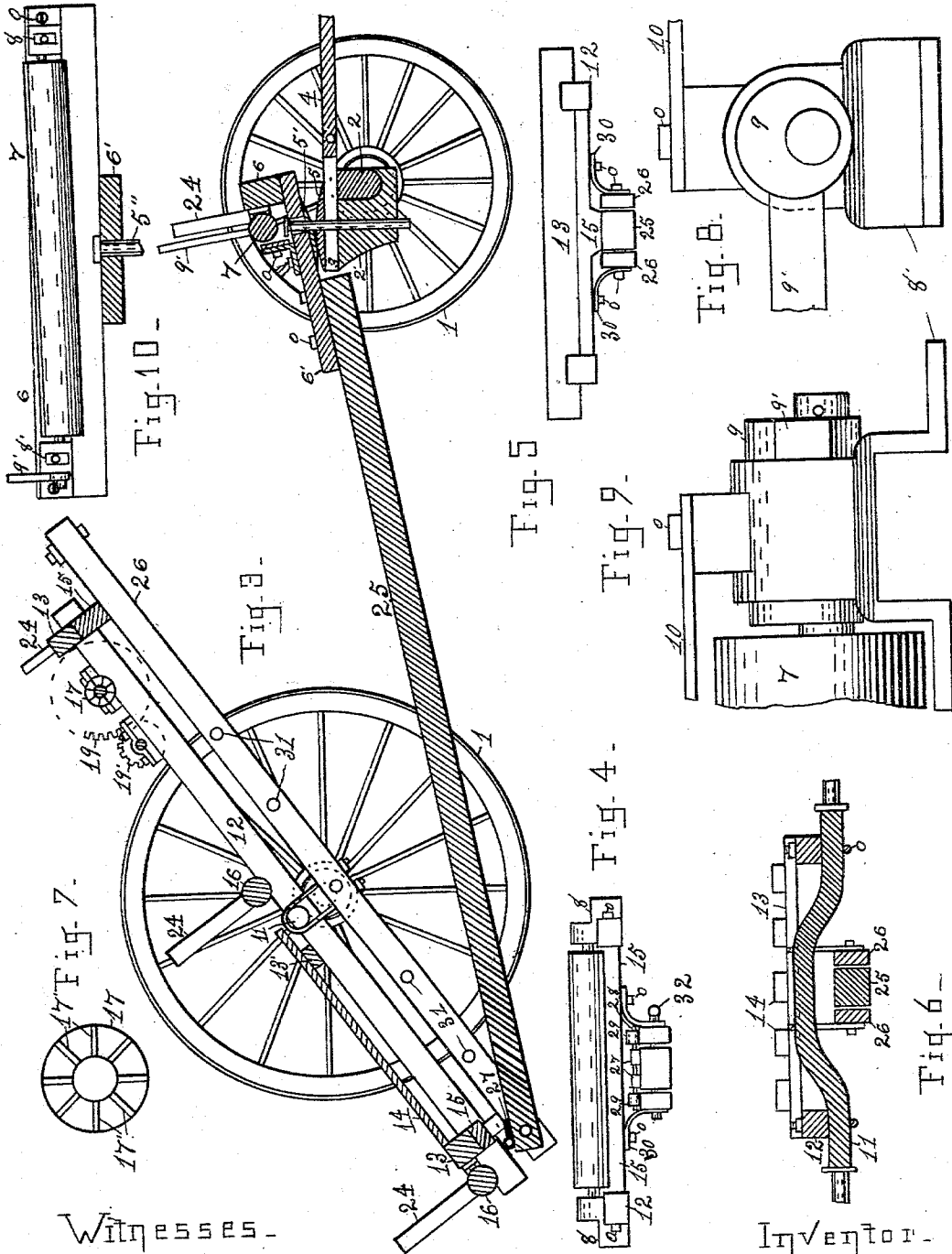
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Inventor.

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By his Att'y. G. H. Albee

UNITED STATES PATENT OFFICE.

BENJAMIN F. SWEET, OF FOND DU LAC, WISCONSIN.

LUMBER-WAGON.

SPECIFICATION forming part of Letters Patent No. 556,784, dated March 24, 1896.

Application filed January 13, 1896. Serial No. 575,223. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. SWEET, a citizen of the United States, and a resident of Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented a new and useful Improvement in Four-Wheeled Vehicles or Wagons, of which the following is a specification.

My invention relates to the mechanism which is applied to a four-wheeled vehicle for unloading the same in bulk and without the labor of taking off said load piece by piece or lifting it over its wheels, and is particularly adapted for unloading from a wagon the various kinds of lumber, long timbers, logs, and loads of like material, its object being to lessen the time and labor of removing said loads, and also the liability of marring and breaking small strips of lumber or other material of little bulk; and it consists of a tilting rack which is mounted upon the rear axle, a reach which connects the front bolster and said rack, which is adjustable as regards its length relative to said rack, rollers upon the rack for sustaining the load thereon, and one near the front bolster which is arranged for transferring the weight of the load from the bolster to the roller, and also to a device for moving the entire load toward the rear of the vehicle until its weight in the rear of the rear axle overbalances that which is in front and allows the rack to tilt, the rear end of the load to strike the ground, the vehicle to be drawn forward, and the load to slide gradually down the upper surface of the rack and be laid upon the ground.

I am aware of many devices having been made which dump the material of the load, but do not know of one of a construction and operation in its essential features like this one.

My invention is shown in the accompanying drawings, in which—

Figure 1 is a plan of a vehicle embodying my invention. Fig. 2 is a vertical section longitudinally and centrally of Fig. 1. Fig. 3 is a vertical section similar to Fig. 1 with the rack tilted for allowing the load to slide from it. Fig. 4 is an elevation of the rear end of the rack. Fig. 5 is an elevation of its front end. Fig. 6 is a transverse section upon the line *a a* of Fig. 1. Fig. 7 is a transverse section of the roller for carrying the load back-

ward upon the rack. Fig. 8 is an end view of the journal-box in which one end of the roller for carrying the load backward upon the rack is journaled. Fig. 9 is a top view when in its position upon the forward bolster of said box; and Fig. 10 is an elevation of the bolster upon the line *b b* of Fig. 1, the strip in the rear of the bolster being omitted.

Similar numerals indicate like parts in the several views.

0 indicates bolts in the several parts of the vehicle; 1, the wheels; 2, the forward axle; 2', an attachment of the axle; 3, hounds between which the tongue is held; 4, the tongue; 5 5', rocker-plates; 5'', the king-bolt; 6, the forward bolster; 6', an attachment which extends toward the rear of the vehicle from the bolster; 7, the forward roller; 8 8', stake-holders and journal-boxes for said roller; 9, an eccentric collar for holding one end of the roller; 9', a handle for operating said collar; 10, a tie-plate which connects the outer ends of the journal-boxes 8 and 8'; 11, the rear axle; 12, the side rails of the rack; 13 13', cross-girts of the rack; 14, apron-strips upon the rack; 15 15', blocks under the girts of the rack; 16, rollers upon the rack; 17, a spiral winged roller; 18, the shaft of said roller; 19, a spur-gear; 19', a pinion for engaging said gear; 20, the pinion-shaft; 21, journal-boxes; 22, a detachable crank; 23, stake-holder and journal-boxes for the rear rollers; 24, stakes; 25, the reach; 26, the reach-pocket; 27, clips which are bolted upon the reach; 28, a rod which is held by said clips; 29, friction-rollers upon said rod; 30, brackets depending from the girts of the rack for supporting the reach-pocket; 31, holes in the reach-pocket; 32, a pin for connecting the reach and its pocket.

The forward bolster is supported above the forward axle 2, and the forward end of the reach is rigidly attached to the bolster, or to a rear extension 6' of the bolster, the king-bolt 5'' passing through the extension and axle attachment 2' for allowing the free swinging of the axle under the load. The axle and bolster are each provided with plates 5 5', having their engaging faces convex for allowing the rear end of the reach to rise and fall during the unloading operation.

Variations may be made in the construction of the bolster and wear-plates 5 and 5' with-

out departing from the principles of this invention.

Just in the rear of the bolster a roller 7 is arranged, one end of it being journaled in a bearing 8, so that the upper surface of that end of the roller is slightly above the bolster, (see Fig. 10,) the journal of the other end being carried in an eccentric collar 9, which is provided with a lever-handle 9', which collar when in its normal position supports the roller, so that its upper surface for the greater part of its length is slightly below the upper edge of the bolster, but by about a quarter-revolution of said collar raises the roller so that its upper surface for its entire length is higher than the bolster, whereby the forward end of the load is raised clear of the bolster and rests upon said roller. The ends of this roller are journaled in the castings 8 and 8', which are provided with a slot 8'' for holding a stake and with a circular aperture for one end of the roller. The bearing of one end of the roller is fitted loosely into said aperture in the casting 8 and of the other end into a collar 9, the collar being journaled in the casting 8' and its outer surface being eccentric with the roller-shaft. The castings 8 and 8' are similar excepting that the aperture for receiving the collar in the casting 8' is larger than the one in 8 for receiving the roller-shaft. This eccentric bearing is shown in Figs. 8 and 9. By operating the handle 9', which is integral with the collar, the collar can be partially revolved for raising or lowering the roller. Other simple devices may be used for transferring the weight of the load from the bolster to a roller or to rollers, but this is found to be easy of operation and quick of action.

A strip of iron 10 connects the outer ends of the castings 8 and 8'.

A bar of iron bent upward midway its ends for the passage of the reach and its pocket represents the rear axle; but axles of other material or form may be used which may be suited to the particular duties required of the vehicle.

The rack consists of side rails 12, girts 13 13' and longitudinal strips 14, the side rails being firmly secured to the axle at a point nearest their rear end, so that the rack will naturally lie in a horizontal position with its forward end resting upon the reach.

Underneath the rack a reach-pocket is arranged which consists of two strips or bars 26, said bars being suspended below the axle and girts of the rack by brackets 30, a space being left between said bars for the reach, and also between them and the axle and girts for the passage of rollers 29, which are carried by the reach and roll along the upper edge of the bars 26 and hold the reach from falling when its pin for connecting it with the pocket is withdrawn for the purpose of changing the length of the reach. These bars are provided with a series of holes 31 along the greater portion of their length and the

rear end of the reach with a corresponding one for receiving a pin 32 for connecting the reach to the pocket at the desired point for adapting the vehicle for the length of material to be carried upon it.

The reach being connected with the rack only at a point near its rear end, the rack is free to tilt at whichever one of the holes in the reach-pocket its connection may be made.

Near the forward end of the rack a roller 17 is placed, its surface being composed of thin bars 17', which are arranged lengthwise and spirally around it, its upper surface being higher than the forward girt of the rack, so that the material of the load will rest upon said roll. It is provided at one end with a gear 19, which is engaged by a pinion 19' upon the shaft 20, the shaft being fitted with a detachable crank 22, by the operation of which the entire load may be carried backward, the roller 7 being first elevated so that the load will rest only upon it and the rollers upon the rack.

When the load has been carried backward a distance sufficient so that the weight of the part in the rear of the rear axle exceeds that of the part in front, the rack will tilt and the rear end of the load will strike the ground, when upon starting the team the rack will be drawn forward, the forward end of the load will slide down the rack until it reaches the ground, and without any sudden drop of the load depositing it upon the ground without breakage or injury.

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

1. In a four-wheeled vehicle having a bolster pivoted upon its front axle and a rack mounted upon and adapted to be tilted upon its rear axle, the combination of a pocket consisting of two parallel bars arranged under and lengthwise of said rack having one or more holes therein transversely of said pocket, a reach adapted to lie between said bars, its forward end being connected with said bolster and its rear end adapted for connection with said pocket at any one of the aforesaid holes, whereby the distance between said axles may be changed and said rack may be tilted backward and the forward end of the load slide down said rack as the vehicle is drawn forward after tilting the same, substantially as described.

2. In a four-wheeled vehicle having a bolster pivoted upon its front axle and a rack mounted upon and adapted to be tilted upon its rear axle, the combination of rollers arranged transversely of said rack for supporting the load, a pocket for the reach consisting of two parallel bars arranged under and lengthwise of said rack, a reach connected with and extending rearward from the front bolster of said vehicle, and being adapted to normally lie between said bars, its rear end being hinged thereto and thereby permitting said rack to tilt and the load to slide down

the rack as the vehicle is drawn forward after tilting the same, substantially as set forth.

3. In a four-wheeled vehicle having a rack mounted upon and adapted to be tilted upon its rear axle and a bolster pivoted upon its front axle, the combination of rollers arranged transversely of said rack for supporting the load, a roller near the front bolster arranged to normally lie for the greater part of its length below said bolster and having means for raising said roller above the bolster and taking the load therefrom, a reach connected with and extending from near said bolster under said rack, a pocket consisting of two parallel bars arranged under and lengthwise of said rack for holding the rear end of said reach within the same, said end being hinged to said bars and thereby permitting said rack to be tilted and the forward end of the load to slide down said rack as the vehicle is drawn forward after tilting the same.

4. In a four-wheeled vehicle having a bolster pivoted upon its front axle and a rack mounted upon and adapted to be tilted upon its rear axle, the combination of rollers arranged transversely of said rack for supporting the load thereon, a reach connected with and extending from near said bolster and under said rack, a pocket arranged under and lengthwise of said rack for holding the reach within the same, the rear end of said reach being hinged to said pocket and thereby permitting said rack to be tilted, a roller having

means for revolving the same arranged transversely of said rack for engaging the load and upon turning said roller carrying the load backward and causing the rack to tilt and the load to slide down said rack as the vehicle is drawn forward after tilting the same, substantially as set forth.

5. A four-wheeled vehicle having a bolster pivoted upon its front axle and a rack mounted upon and adapted to be tilted upon its rear axle, the roller 7, having one end thereof arranged for an eccentric movement for raising said roller above said bolster, and for lowering the same for the greater part of its length below the upper surface of said bolster, the rollers 16, the roller 17 having mechanism by which it may be revolved, the reach 25, and the pocket 26 connected to said reach and being adapted for changing the point of said connection to any predetermined point thereon, said parts being arranged and combined for raising the forward end of the load from resting upon the bolster, carrying it backward until it tilts said rack and allows the load to slide down the rack as the vehicle is drawn forward after tilting the same, substantially as set forth and shown.

BENJAMIN F. SWEET.

Witnesses:

D. D. SUTHERLAND,
HENRY F. ROSE,
PAULINE BULLIS.