

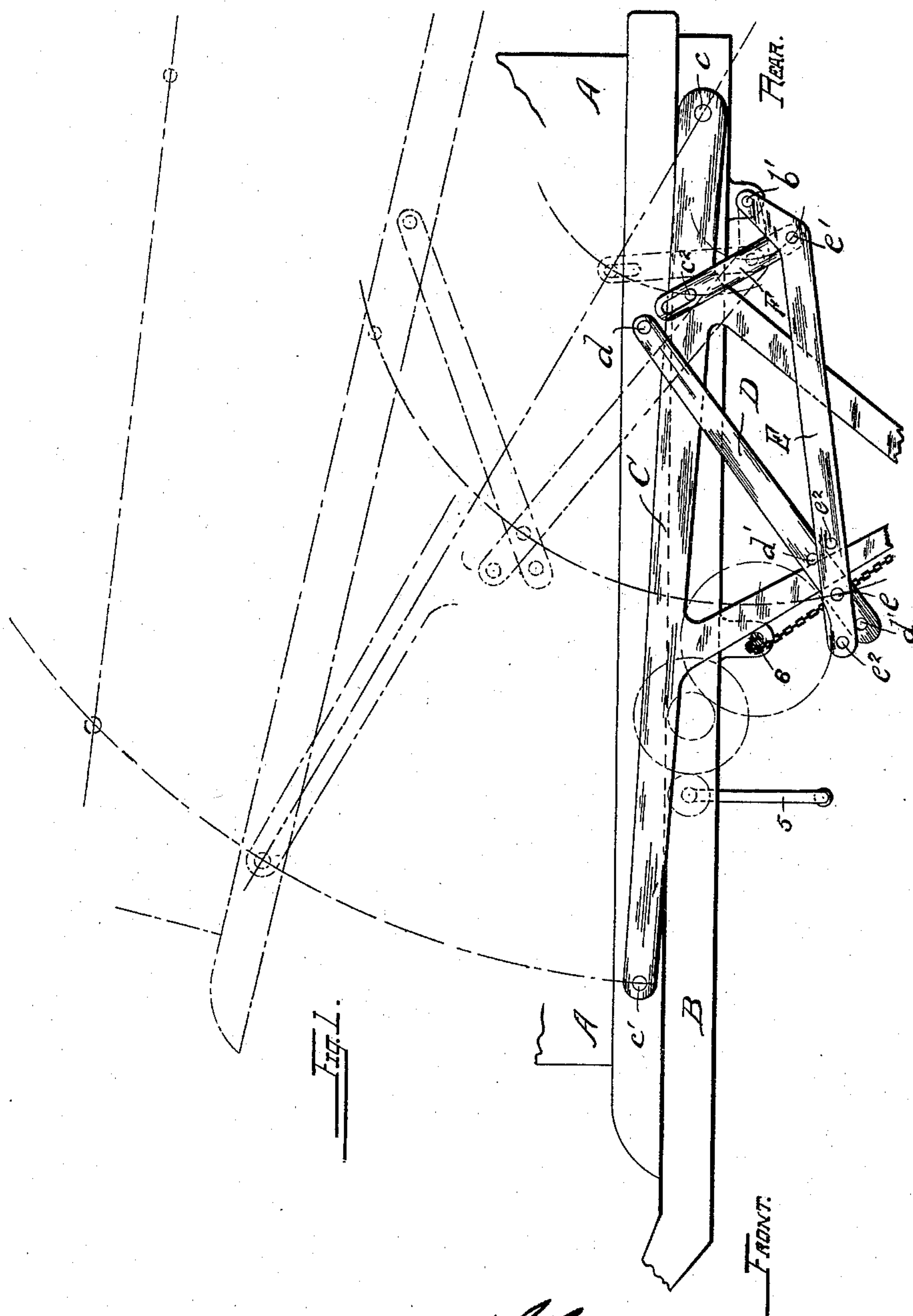
(No Model.)

3 Sheets—Sheet 1.

W. G. STEWART.  
DUMPING WAGON.

No. 474,872.

Patented May 17, 1892.



Witnesses

*E. A. Kelly.*  
*Cameron E. Strauss.*

*W. G. Stewart*

Inventor



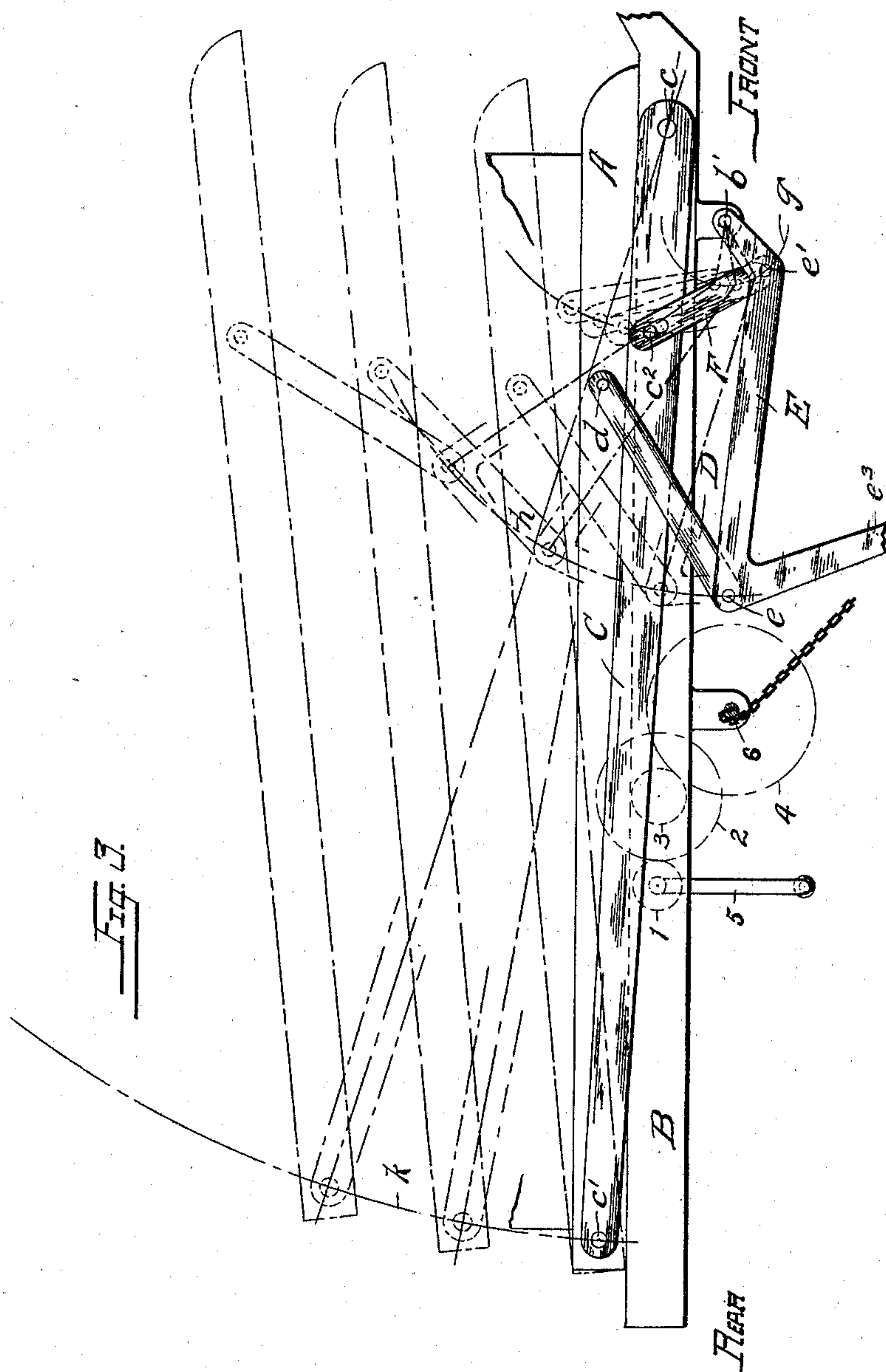
(No Model.)

3 Sheets—Sheet 3.

W. G. STEWART.  
DUMPING WAGON.

No. 474,872.

Patented May 17, 1892.



Witnesses  
E. A. Kelly.  
Cameron E. Strauss.

W. G. Stewart

Inventor



# UNITED STATES PATENT OFFICE.

WALTER G. STEWART, OF READING, PENNSYLVANIA.

## DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 474,872, dated May 17, 1892.

Application filed June 29, 1891. Serial No. 397,779. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER G. STEWART, a citizen of the United States, residing at Reading, in the county of Berks, State of Pennsylvania, have invented certain Improvements in Dumping-Wagons, of which the following is a specification.

This invention relates to that class of dumping-wagons in which the body is attached to the frame or running-gear by means of pivoted elevating-arms, through the medium of which the body is raised.

The main objects of my invention are to provide a wagon of this class in which a maximum lift of the body may be attained and a proper incline for varying elevations may be automatically secured and maintained during the operation of dumping, and at the same time to positively raise and support the body at points front and rear and from a single pair of elevating-arms and a single operating mechanism, the length of said arms being only limited by the length of the wagon. The frequent necessity for high lifts and the advantage of delivering from a sufficient height and incline are obvious, as is also the importance of relieving the operator of all adjusting or locking operations, such as are ordinarily required. These desirable results are secured in a simple and inexpensive manner by means of my invention, which is fully described in connection with the accompanying drawings, showing a preferred construction, and the novel features of which are specifically pointed out in the subjoined claims.

Figure 1 is a side elevation of a portion of a dumping-wagon embodying my invention. It represents the wagon-body lowered, and also in dotted lines somewhat raised front and rear. Fig. 2 is a similar view representing the wagon-body elevated a considerable distance at the front and just beginning to elevate at the rear, and also indicates in dotted lines a nearly maximum elevation of the whole body. Fig. 3 shows a modified arrangement.

The whole of the elevating mechanism, excepting the operating-gear, is preferably placed between the frames, and in order to reveal the arrangement of the parts more clearly the drawings show the inner face of the off frame. The body A and frame B are

merely indicated by a few essential lines, their particular construction being evidently of no importance.

The elevating-arms C, as represented, are of an ordinary form, except that they extend nearly the whole length of the wagon, these long arms being preferable, because they permit a greater elevation than is possible with shorter arms. In Figs. 1 and 2 one end of each arm C is pivoted at *c* to the rear portion of the frame B, while the opposite end is pivoted at *c'* to the forward portion of the body. The rear portion of the body is connected by means of links D, pivoted thereto at *d* to one end *e* of supplemental elevating-arms E, the opposite end of each of which is pivoted to the frame at a point *b'* somewhat forward of the pivotal point *c* for the arm C and below the latter. Connecting-bars F are pivoted at one end to an intermediate point *c<sup>2</sup>* of each arm C and at the other end to an intermediate point *e'* of each arm E. The upper ends of these connecting-bars are shown as slotted at *c<sup>2</sup>* for a limited distance, and a number of holes *e<sup>2</sup>* and *d'* in the ends of the links D and supplemental arms E permit a variable connection between them.

The operating-gear is indicated by dotted circles 1 2 3 4, representing meshing gear-wheels, through the medium of which and the crank 5 the chain-shaft 6 is rotated and the elevating-arms raised in the usual manner, the chain connection to the end of the lifting-extension *c<sup>3</sup>* of the arms not being shown.

The operation of the machine when arranged and proportioned as described and shown is as follows: When it is desired to raise the body from the lowered position represented in full lines in Fig. 1, the crank 5 being continuously turned, the arms C are raised directly, carrying the front portion of the body up sufficiently to secure a proper incline for dumping, as represented in full lines in Fig. 2, the rear end meanwhile resting upon the frame. The pins at *c<sup>2</sup>* on the arms having by this time traveled upward to the end of the slots *e<sup>2</sup>* begin to pull upon the bars F and through them to carry upward the supplemental arms E, the connection *e'* with which travels around *b'* on the curve *g*, while the outer connection of the arm E, with the link D, travels around the same center *b'* on



the larger path  $h$ , thus positively raising the rear portion of the frame. A third position of the movable wagon is indicated in Fig. 1 by dotted lines and a fourth or nearly maximum elevation in Fig. 2. It will be noticed that with the connections shown the angle or incline of the body gradually decreases as its height increases, the rear gaining in elevation on the front after it begins to rise.

It is evident that the proportions and relative location of the parts may be greatly varied from the particular arrangement shown and that different maximum elevations and relative heights front and rear may be readily attained, and also that the manner of operating may be modified. In Fig. 3, for instance, I have illustrated an arrangement very similar to that already described, but in which the elevating-arms C are pivoted to the rear end of the body instead of the front end, and the multiplying-gear is connected directly to the arms E, through which the front of the body is raised to secure the desired incline before the arms C are raised at all, the connecting-bars F being in compression instead of tension, as previously. Instead of the incline of the body decreasing as its height increases, as before, substantially the same incline is maintained at different heights. If desired, however, the incline may be just as readily increased. In Fig. 1 I have provided different holes to vary the lengths of the arms E and links D, if it be desired to change the proportionate rear elevation.

Other modifications can obviously be readily made by an expert to provide for different conditions and requirements, and therefore I do not limit myself to the particular construction shown; but

What I claim is—

1. The combination, with the frame or running-gear and the movable body, of main elevating-arms pivoted to the frame and arranged to lift directly one end of the body, and elevating mechanism for the opposite portion of the body, operatively connected to said elevating-arms at a point intermediate between the connections of said arms with the frame and body, respectively, substantially as set forth.

2. The combination, with the frame or running-gear and the movable body, of main elevating-arms pivoted to the frame and arranged to lift directly one end of the body, the opposite portion of the body being linked to supplemental arms pivoted to the frame and operatively connected to said elevating-arms at a point intermediate between the connections of said arms with the frame and body, respectively, substantially as set forth.

3. The combination, with the frame or running-gear and the movable body, of main elevating-arms pivoted to the frame and arranged to lift directly one end of the body, the opposite portion of the body being linked to supplemental arms pivoted to the frame and operatively connected by slotted bars to said elevating-arms, substantially as set forth.

4. The combination, with the frame or running-gear and the movable body, of main elevating-arms pivoted to the frame and arranged to lift directly one end of the body, the opposite portion of the body being linked to supplemental arms pivoted to the frame at a point nearer its center than the pivotal connection of the elevating-arms and operatively connected intermediately of their lengths to said elevating-arms, substantially as set forth.

5. The combination, with the frame or running-gear and the movable body, of main elevating-arms pivoted to the frame and arranged to lift directly one end of the body, the opposite portion of the body being adjustably linked to the supplemental arms pivoted to the frame and operatively connected to said elevating-arms, whereby the automatic elevation of said portion of the body may be varied, substantially as set forth.

6. A dumping-wagon consisting of a frame or running-gear, a movable body, elevating-arms C, supplemental arms E, links D, connecting-bars F, and an operating-gear, all arranged and adapted to operate substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER G. STEWART.

Witnesses:

ED. A. KELLY,  
CAMERON E. STRAUSS.