

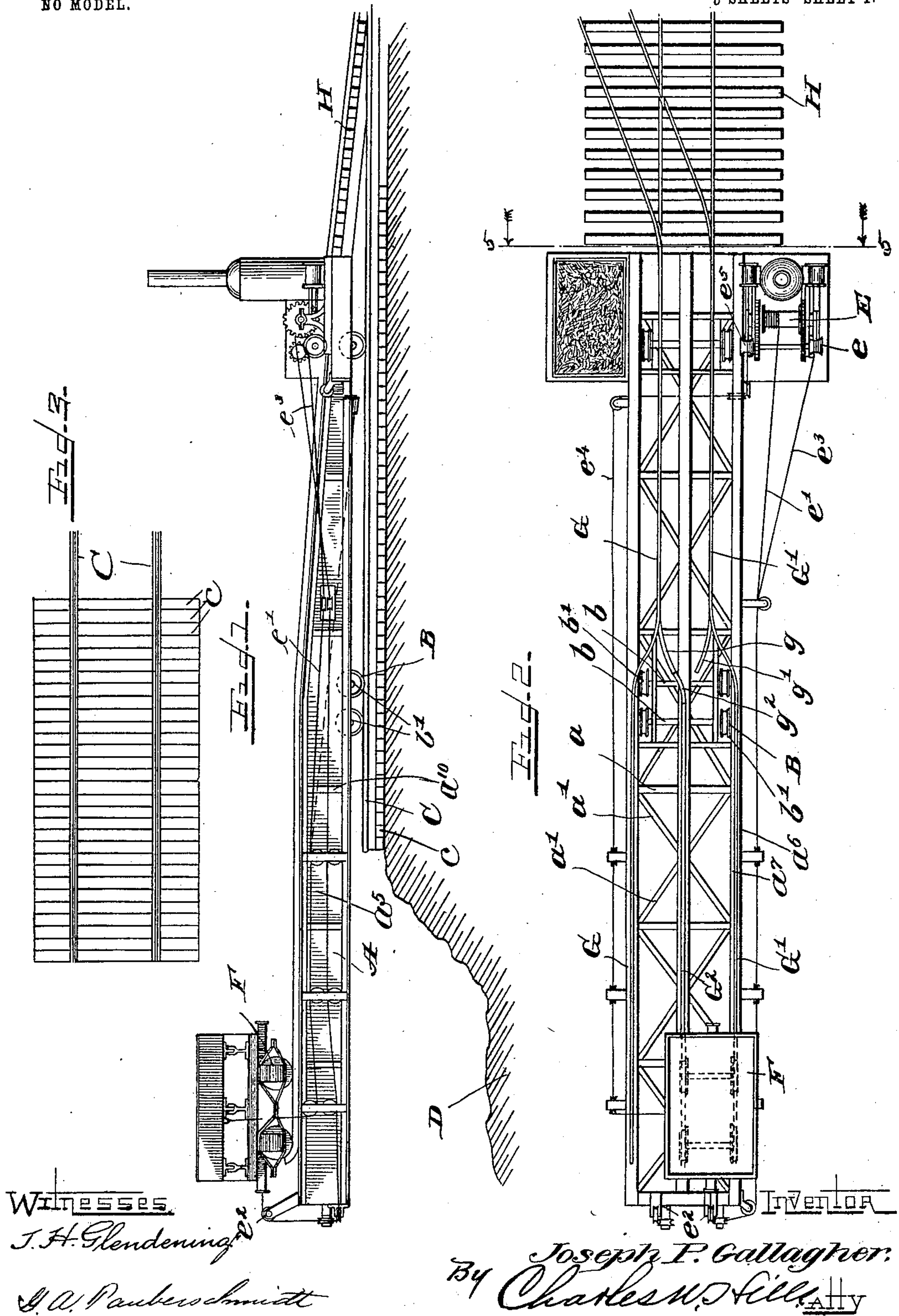
No. 725,696.

PATENTED APR. 21, 1903.

J. P. GALLAGHER.  
CANTALIVER FOR DUMPS.  
APPLICATION FILED JULY 10, 1901.

NO MODEL.

6 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.

Fig. 4.

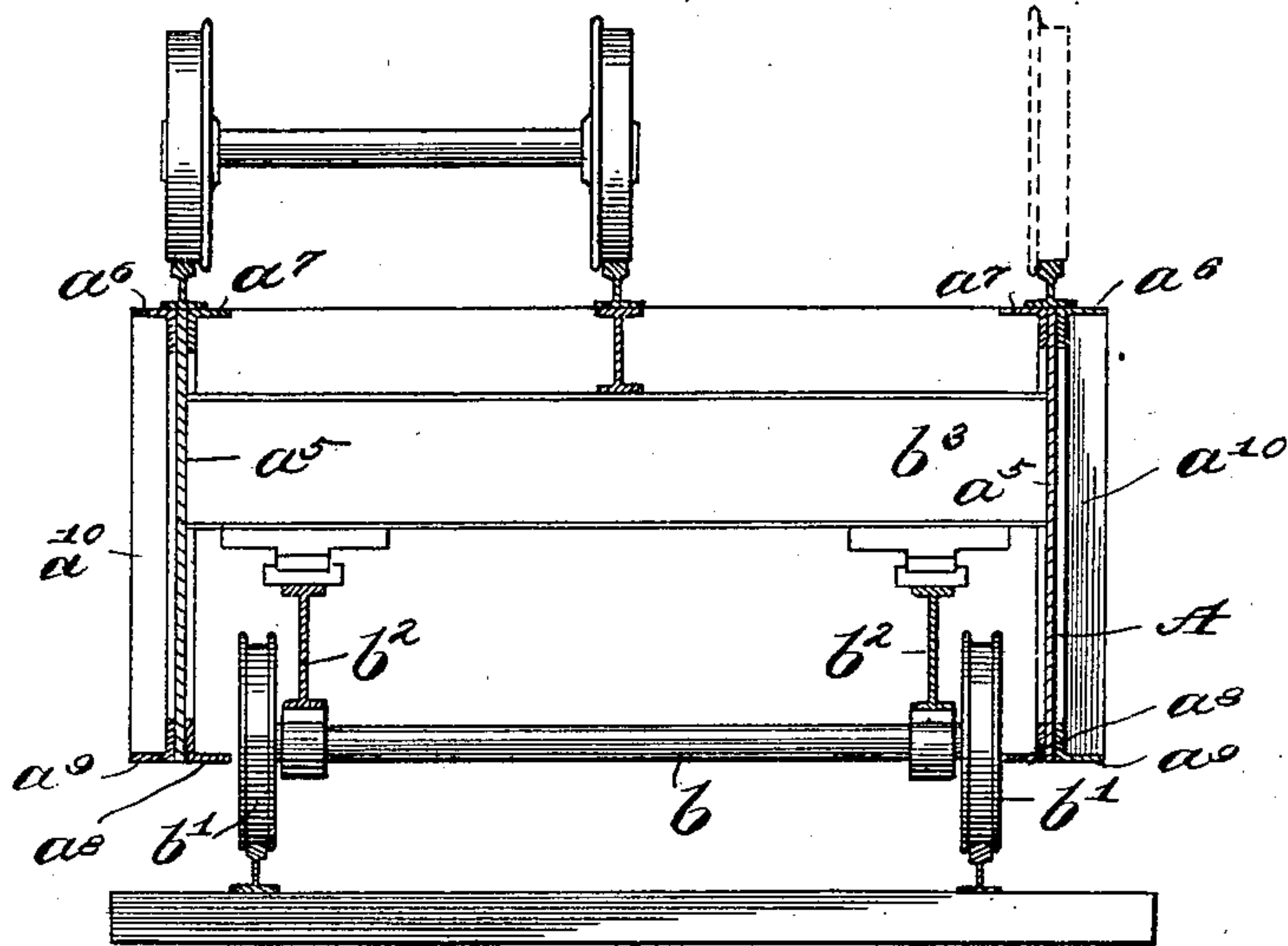
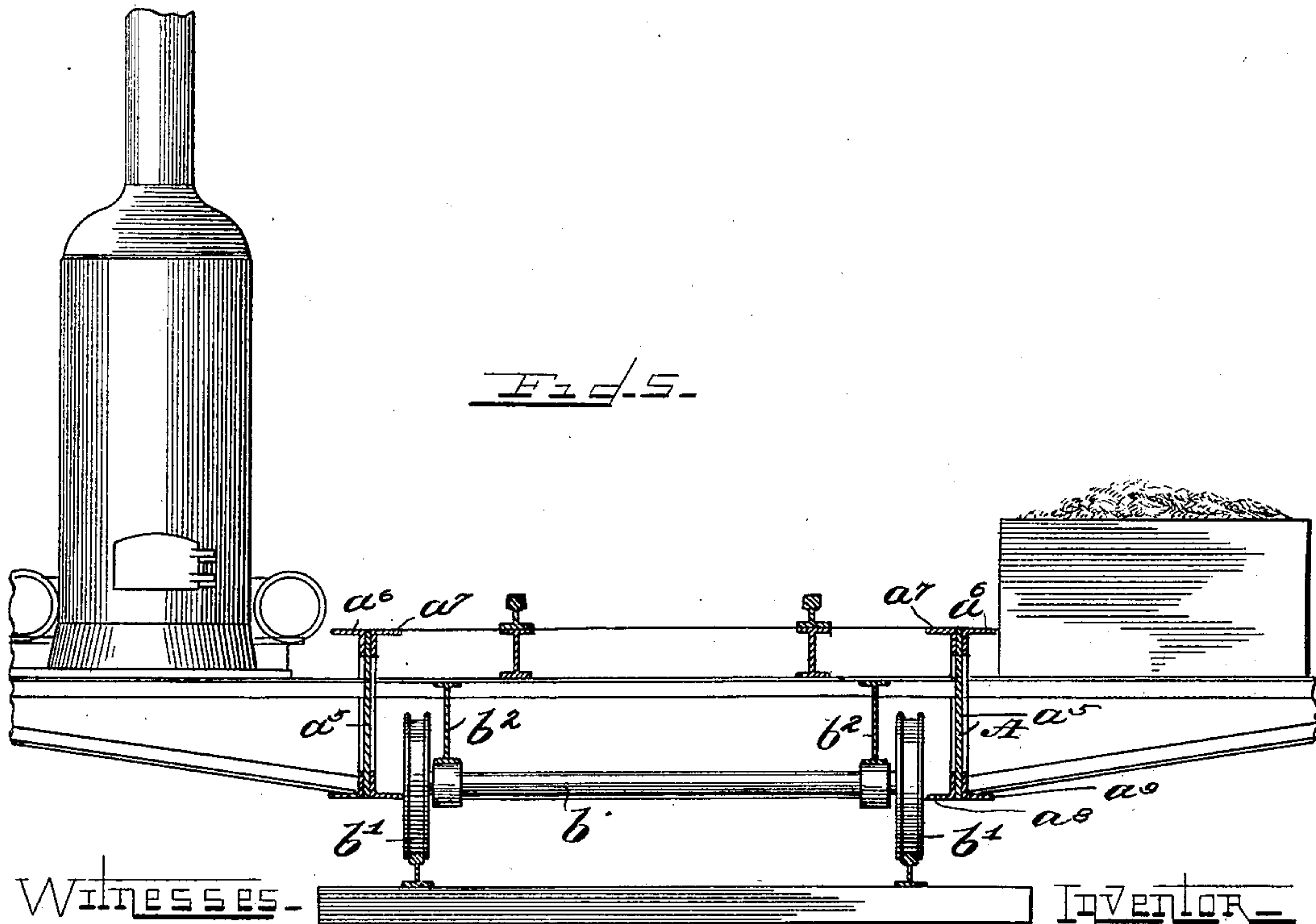


Fig. 5.



WITNESSES—

J. H. Glendening,

G. A. Pauberschmitt,

INVENTOR—

By Joseph P. Gallagher.  
Charles W. Hill, atty

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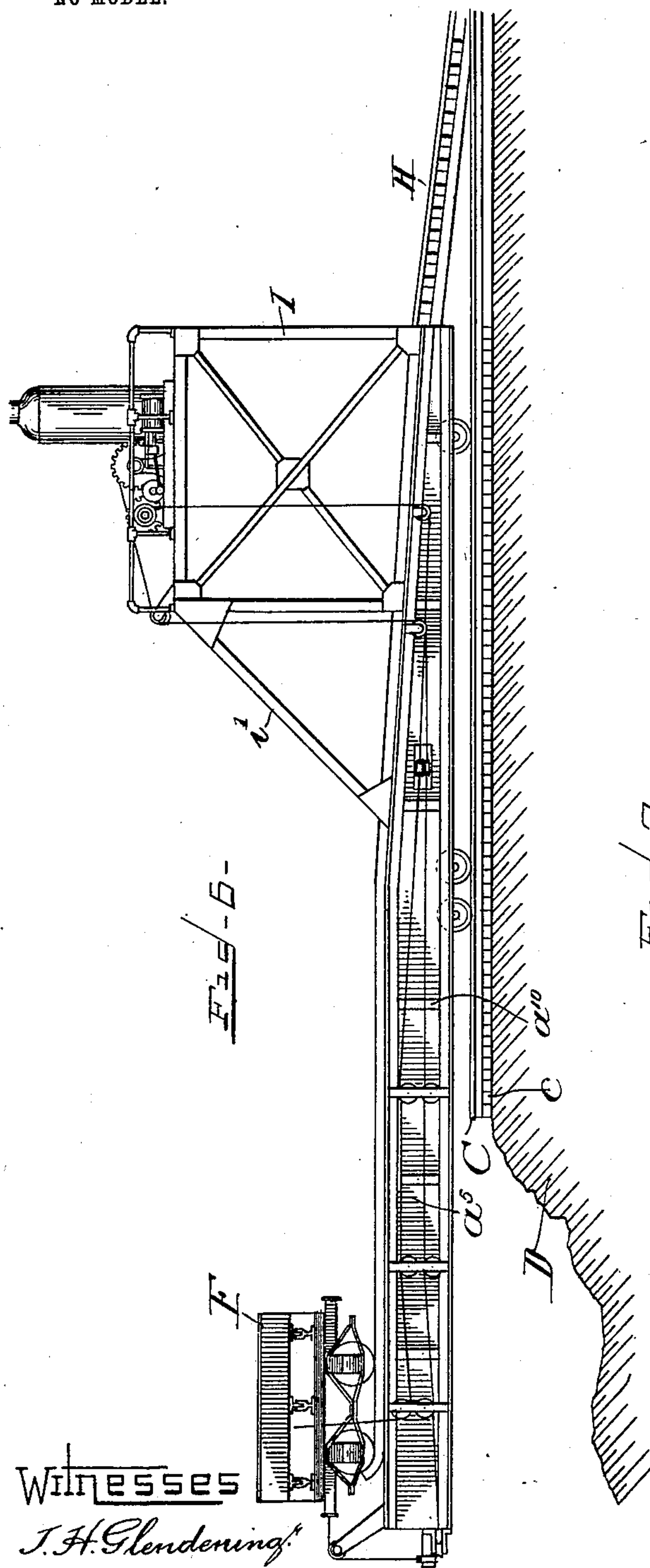


Fig. 6 -

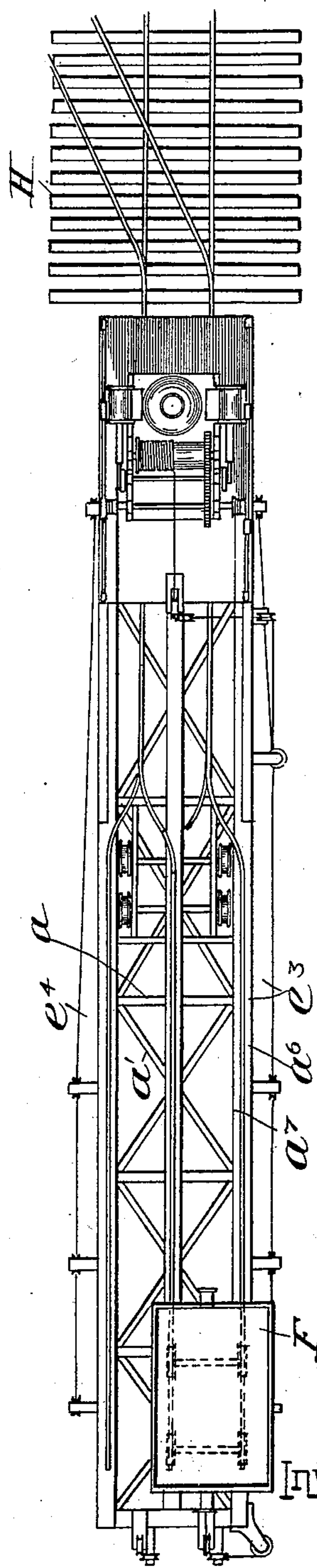


Fig. 7 -

Witnesses

J. H. Glendening

L. A. Paubuschmitt

Inventor

By Joseph P. Gallagher:  
Charles W. Stiles  
Att'y



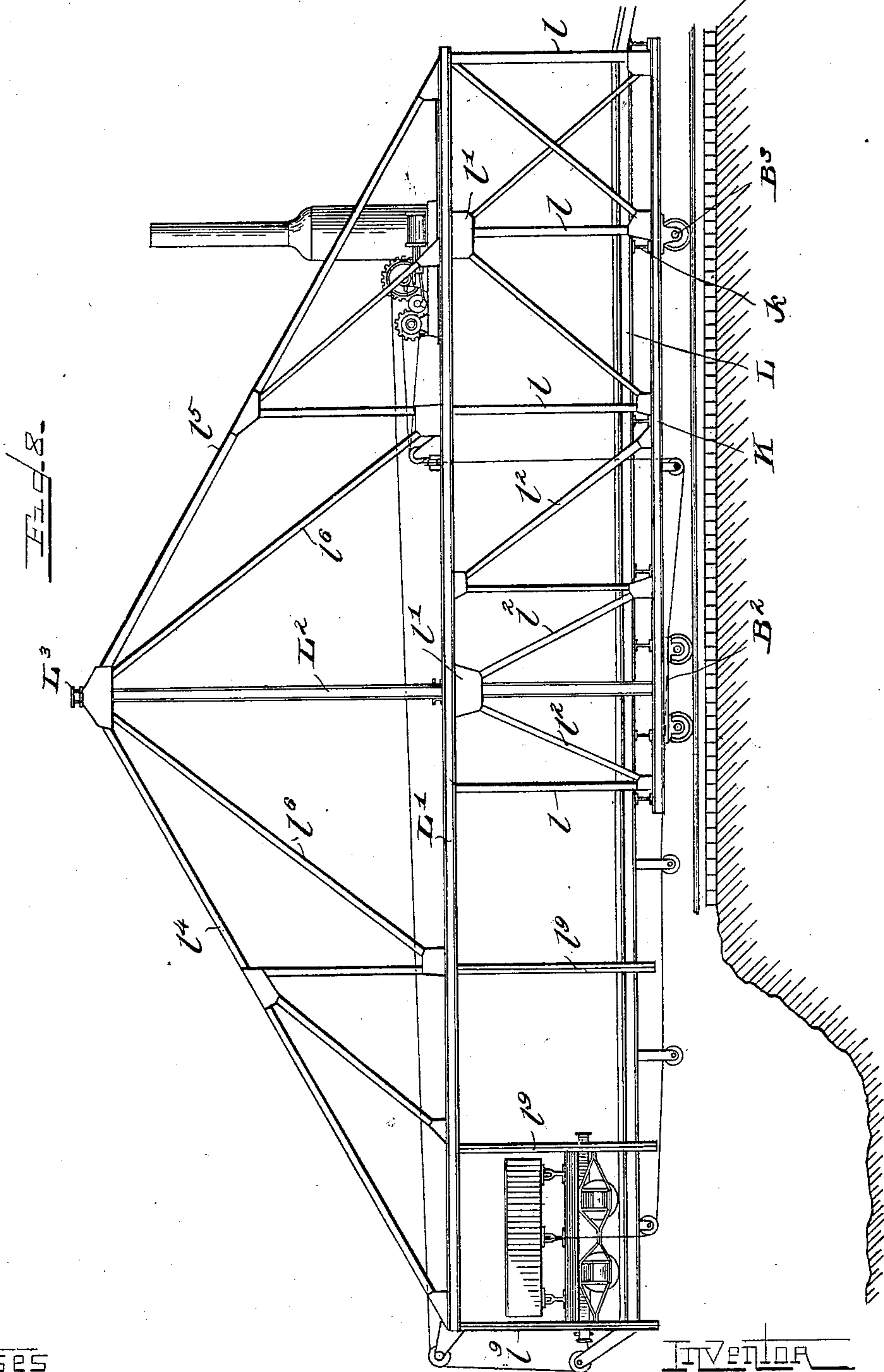
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5 SHEETS—SHEET 4.



WITNESSES

J. H. Glendening,

G. A. Pauberschmidt,

INVENTOR

Joseph P. Gallagher.  
By Charles W. Stees  
ATTY

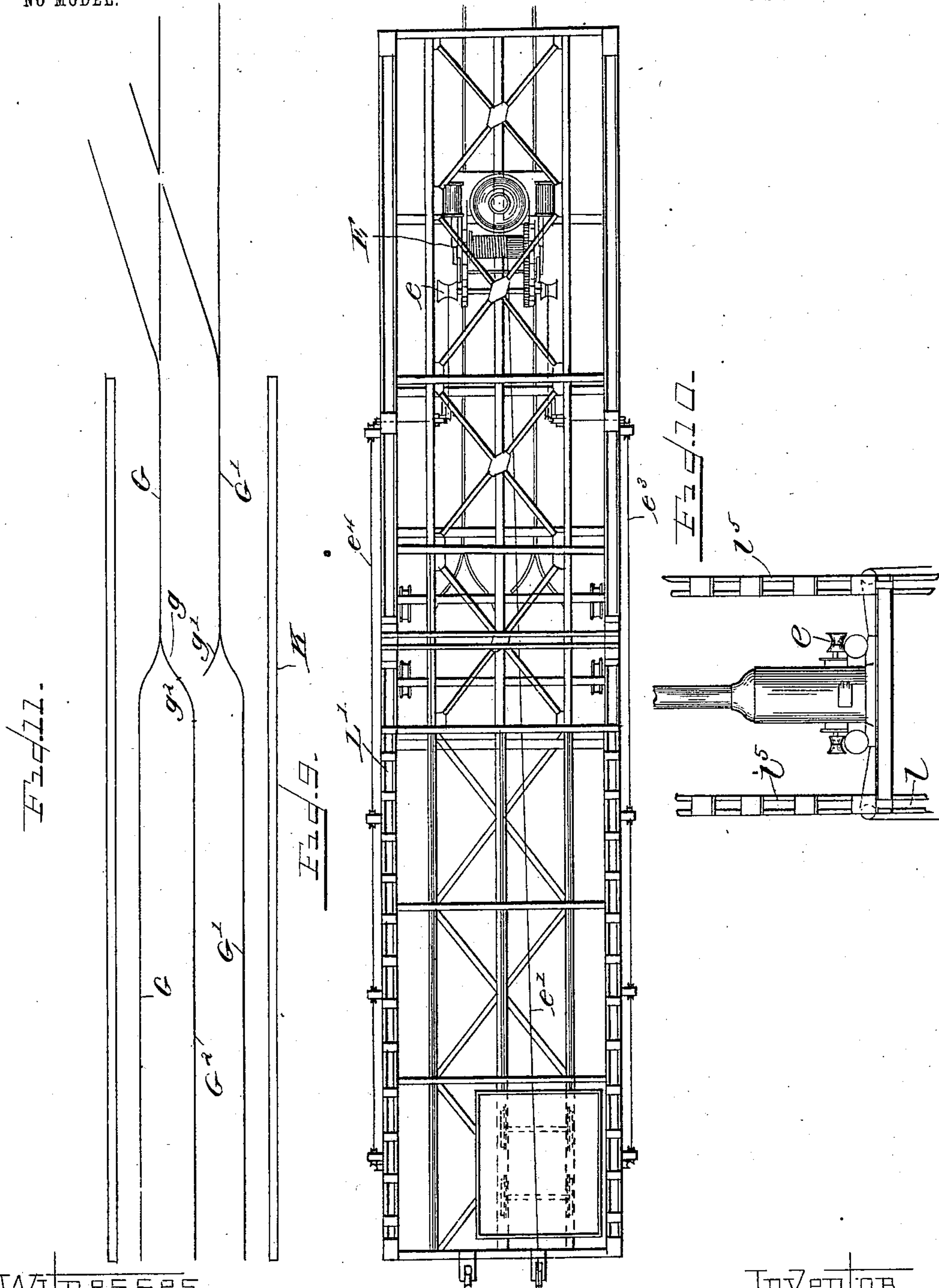
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NO MODEL.

6 SHEETS—SHEET 5.



Witnesses—

J. H. Glenderung

S. A. Paulschmitt

Inventor—

Joseph P. Gallagher.  
By Charles W. Hill

Att'y



# UNITED STATES PATENT OFFICE.

JOSEPH P. GALLAGHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO LORIMER & GALLAGHER CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## CANTALIVER FOR DUMPS.

SPECIFICATION forming part of Letters Patent No. 725,696, dated April 21, 1903.

Application filed July 10, 1901. Serial No. 67,748. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH P. GALLAGHER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cantalivers for Dumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to an automatic grading device adapted for use in railway construction or the like in which material is to be deposited in advance of the completed grade to make a fill or the like. Heretofore in many fills it has usually been found necessary to provide a false work of timbers or the like, forming a trestle upon which a dumping-car may be run out to a dumping position. This is objectionable owing to the expense necessary to building such trestles, the material of which the same is composed being a total loss, inasmuch as it is left in the grade when the fill is complete.

The object of this invention is to provide a comparatively light cantaliver movable along the railway-track and adapted to extend over the fill sufficiently to permit dumping therefrom without the use of a trestle or other permanent construction to carry the dumping-car.

The invention embraces many novel features; and it consists of the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a detail illustrating the track-foundation. Fig. 4 is an enlarged transverse section of the cantaliver, taken on Fig. 2, near the outer end of the same, and with parts near the inner end of the cantaliver omitted. Fig. 5 is an enlarged section taken on line 5 5 of Fig. 2. Fig. 6 is a view similar to Fig. 1, but showing the hoisting mechanism elevated above the track. Fig. 7 is a plan view of the same. Fig. 8 is a side elevation illustrating another form of the cantaliver. Fig. 9 is a

top plan view of the same. Fig. 10 is a rear elevation. Fig. 11 is a plan view of the track.

As shown in said drawings, A indicates a cantaliver provided on its top with a track and supported centrally on a truck B, adapted to move on a track C, which extends longitudinally of the dump (indicated at D in Fig. 1) and the track-rails of which are rigidly secured to the transverse timbers *c*, which are laid in close contact with each other, as shown in Fig. 10. As illustrated in Figs. 1 and 4, the cantaliver embraces longitudinal side members or sills of a desired length secured parallel with each other to each by means of the cross sills or beams *a* and braced laterally by means of the diagonal braces *a'*. The cantaliver is of sufficient width for said side members A thereof to extend beyond the truck-wheels downwardly on each side of the trucks, as shown in Figs. 2, 4, and 5.

The truck B, as shown, comprises the parallel axles *b b*, provided on each end with track-wheels *b' b'*, each having a peripheral groove in the tread-surface adapted to engage the rail, thereby providing a flange on each side of the rail. Supported on said axles are the longitudinal I-beams *b<sup>2</sup>*, upon which engage the transverse beams *b<sup>3</sup>*, at the ends of which are rigidly secured the side members of the cantaliver. The said side members or sills may, if preferred, be constructed of I-beams of a desired size. As shown, however, a plate *a<sup>5</sup>*, of sheet-steel of a desired length, is provided along its margins with angle-bars *a<sup>6</sup> a<sup>7</sup> a<sup>8</sup> a<sup>9</sup>*, rigidly secured thereon, as shown in Figs. 4 and 5, and reinforced by transverse bars or plates *a<sup>10</sup>*, thereby affording maximum strength with minimum weight.

On the rear end of the cantaliver is provided the actuating means for the dumping car or cars, comprising a boiler and a hoisting-engine of any desired type adapted to actuate the drum E and the niggerheads *e e<sup>5</sup>* in a familiar manner. From said drum a line *e'* leads forwardly through sheaves secured at the side of the cantaliver and transversely of the end thereof and leads upwardly over the sheaves *e<sup>2</sup>*, which extend above the end of the track, to a position approximately in alinement with the draft-rigging of a car F



of any desired construction, but preferably adapted to dump from either or both sides, and is provided with a hook adapted to engage said draft-rigging. Lines  $e^3 e^4$  lead outwardly along the cantaliver through sheaves secured on opposite sides thereof from the niggerheads  $e e^5$ , respectively, which are provided with hooks on their outer ends to engage the opposite sides of a car when a laterally-dumping car is used. Said lines are applied oppositely on the respective niggerheads, so that one of the same unwinds while the other line is winding on, thereby permitting strain to be brought on either side of the car as preferred by the operator at the engine. The car may thus be dumped by lateral strain thereon from one line and righted by lateral strain from the other. Obviously any number of tracks may be provided extending longitudinally of the cantaliver to permit cars to run out thereon. As shown, two tracks are provided, one extending along each side of the cantaliver and each having one or the center rail in common. As shown, the track-rails  $G G'$  form a single track to near the point of support of the cantaliver. At the rear of the track  $B$  said rails diverge to double the width of gage, and an intermediate track-rail  $G^2$  is laid between the same. Curved rails  $g g'$  extend inwardly from said rails  $G G'$ , respectively, and a rotatively short curved track-rail  $g^2$  of a length sufficient to fill the space between the ends of the curved rails  $g g'$  and the rail  $G^2$  is provided, which when placed in position, as shown in Fig. 2, between the ends of the rails  $g$  and  $G^2$  permits the car to run out on the right side of the cantaliver and when reversed or placed between the ends of the rails  $g'$  and the rail  $G^2$  directs the car upon the left side of the cantaliver.

At the rear of the cantaliver an inclined track portion  $H$  is provided, one end of which rests upon the end of the cantaliver and registers with the track-rails  $G G'$ , the other end of which is continuous with the track for the dumping-cars. Conveniently a frog may be provided in said inclined section to permit empties to be switched out of the way of the incoming cars. Preferably said inclined section will be secured to the cantaliver and adapted to be moved therewith. Obviously, as described, the weight of the boiler, engine, hoisting mechanism, fuel, and water of the boiler forms a counterweight for the load at the outer end. As shown in Figs. 1, 2, and 5, the engine, boiler, and hoist mechanism may be supported on lateral wings at the rear of the cantaliver, said operating mechanism being supported on one side and fuel, water, and any desired weight supported on the other. Obviously, however, inasmuch as the most advantageous point of observation for the engineer is above the track the boiler, engine, and other operating machinery may be located above the track, and for this pur-

pose, as shown in Figs. 6 and 7, the frame  $I$  is secured on the rear end of the cantaliver and the operating mechanism is supported on a platform at the top thereof, thereby permitting the cars to pass beneath the same.

The operation of my device is as follows: In making a fill a foundation is provided for the cantaliver by first laying a floor of timbers transversely of the road-bed, then laying stringers thereon to support the track-rails, upon which said cantaliver may be moved outwardly to the desired position, and the inclined track portion  $H$  secured continuous to a track leading to a point from whence the material is to be obtained. Loaded cars are now delivered upon the cantaliver, which may be moved outwardly to the end thereof by the line  $e'$ , operated from the drum. When arrived at the dumping position, the lines  $e^3 e^4$  are secured on opposite sides of the car and strain brought upon one of the lines to dump the car. After the load is dumped strain is brought upon the other of said lines to right the car. The empty car may be then released from said lines and pushed back upon the switch and out of the way of incoming cars. This operation may be continued until the fill has been completed for the length of the projecting end of the cantaliver. Another section of track is then laid down, as before described, for the cantaliver and on which the same may be moved forwardly to repeat the operation before described.

In the construction illustrated in Figs. 8, 9, 10, and 11 the cantaliver is shown constructed upon a car provided at its front end with a four-wheeled truck  $B^2$  and at its rear end with a two-wheeled truck  $B^3$  and having bearings on each side of said wheels. I-beam sills  $K$  are supported on said trucks on each side thereof and adapted to support the cross sills or beams  $k'$ . On said cross-sills rest the longitudinal sills  $L$  of the cantaliver, which extend beyond the truck  $B^2$  for a desired distance and carry the track for the dumping-cars. A truss-frame, which carries the outer end of the sills  $L$ , is supported on said sills  $K$  and comprises vertical posts  $l$ , of structural iron or steel, connected at their tops with the longitudinal beams or girders  $L'$ , which may be an I-beam or may be constructed of plates, angle-bars, or the like to provide rigid though light construction. Connecting with the tops of said posts and with the bottoms of adjacent posts by means of gusset-plates  $l'$  are the braces  $l^2$ , which serve to rigidly bind said longitudinal members together and at the same time act to give the structure rigidity from vertical or lateral strain. A central vertical post  $L^2$  is provided on each side, extending above the forward truck, and affords connection at the top by means of a gusset-plate with the diagonal tension members  $l^4 l^5$ , the lower ends of which extend to and are connected with the front end and the rear end, respectively, of the beams or girders  $L'$  and



are rigidly secured thereto. Hangers  $l^9$  connect said girders  $L'$  with the corresponding sill  $L$  in advance of the truck  $B^2$ . Other diagonal tension members  $l^6$  extend from the top of said post downwardly and are engaged on said beams or girders above the tops of adjacent posts  $l$  or hangers  $l^9$ , from which uprights extend to and connect with the central portion of said tension members  $l^4$   $l^5$ . Transverse connections  $L^3$  are provided at the tops of said posts  $L^2$   $L^2$  and at convenient points along said tension members serving to tie the whole structure together. The hoisting mechanism, including the boiler and engine and the fuel and water supply therefor, are in this construction located upon a platform above the rear end of the cantaliver, as shown in Fig. 8. The track and dumping mechanism may be used as before described. Obviously the counterweight may be constructed in many different forms for the purpose specified, and many details may be varied without departing from the principle of my invention.

I claim as my invention—

1. In a device of the class described the combination with a track, of a truck supported thereon, a forwardly-projecting substantially horizontal cantaliver supported on the truck, parallel with the track, operative mechanism seated on the rear of the cantaliver forming a counterweight therefor, an inclined track-section leading upon the cantaliver and a dumping-car adapted to be moved along the cantaliver to a dumping position and means for operating the car.

2. In a device of the class described, the combination with a track of a truck supported thereon, a cantaliver supported on the truck with its front end extending longitudinally beyond the same, a track on the cantaliver, an inclined track-section connected therewith, a motor, and means operated by

the motor for dumping the contents of a car from either side of the cantaliver.

3. A grading device comprising a longitudinally-movable cantaliver, operating means on the rear thereof acting as a counterweight, a track on said cantaliver and cables driven from the operating means at the rear end of the cantaliver and acting to move a car to dumping position thereon and to dump the load therefrom.

4. In a device of the class described, a longitudinally-movable cantaliver, a track thereon, the rails of said track diverging to a width of double the gage near the outer end of the cantaliver, a third rail laid intermediate of said outer track-rails and a curved rail adapted to conduct the truck-wheel to the car from one of the side rails to said intermediate rails thereby forming a single track at one end of the cantaliver and a double track at the other end thereof and means operated at the rear end of the cantaliver for dumping material at the outer end thereof.

5. The combination with a track, of a truck thereon, a cantaliver carried on the truck and extending forwardly therefrom, operating means embracing a motor and winches carried on the rear end of the cantaliver and acting as a counterweight therefor, a track extending longitudinally of the cantaliver and cables leading from the winches and adapted to be engaged upon a car or the like and acting to move the car to the outer end of the cantaliver, dump the contents therefrom and return the car to the rear end of the cantaliver.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOSEPH P. GALLAGHER.

In presence of—

C. W. HILLS,  
L. J. DELSON.