

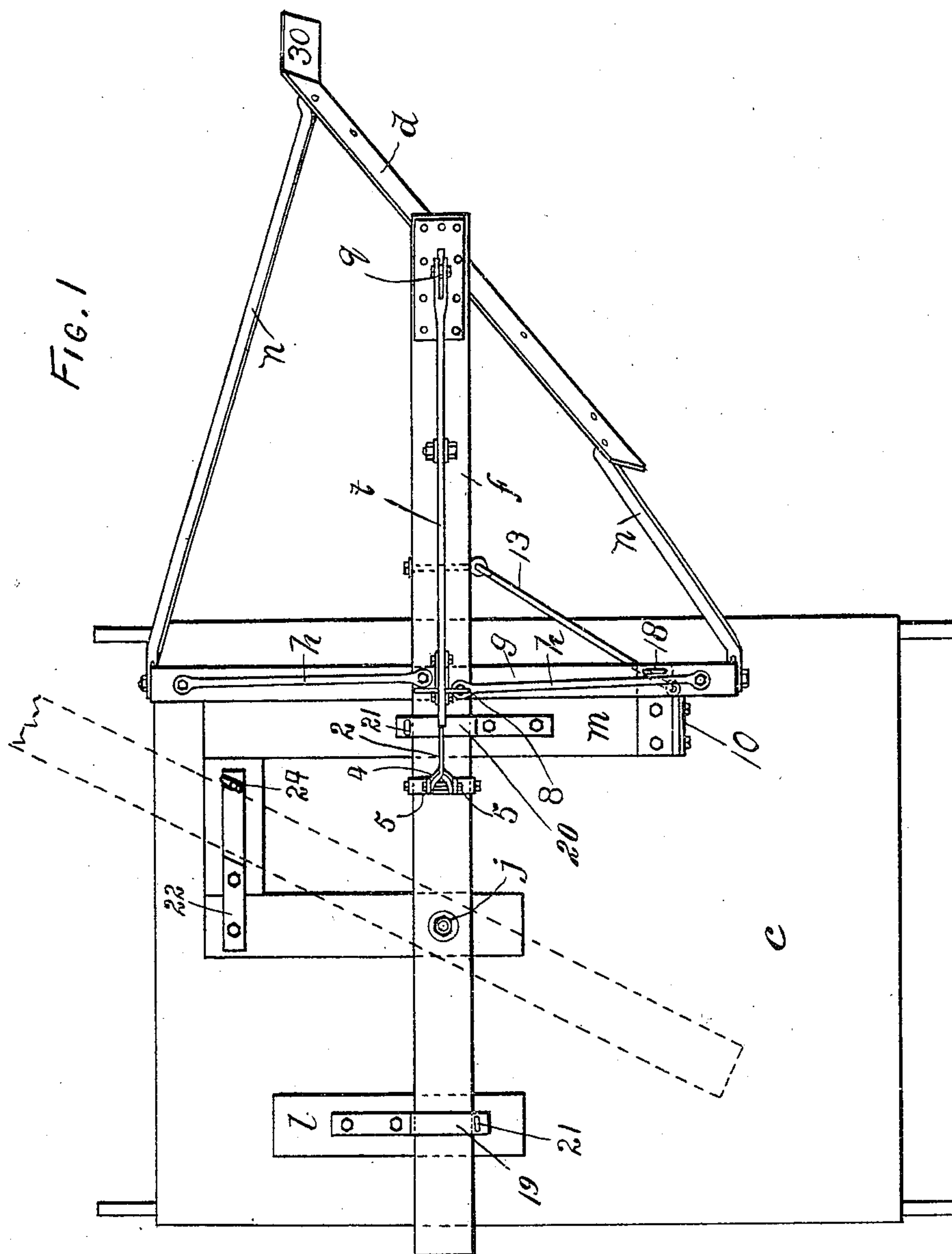
No. 816,223.

PATENTED MAR. 27, 1906.

J. H. DRINKWATER.
BALLAST TRIMMER.

APPLICATION FILED JULY 14, 1905.

6 SHEETS—SHEET 1.



Witnesses

Alex Garvie.

Yours Truly

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Inventor

By Attorney,

Robt H. Swan

No. 816,223.

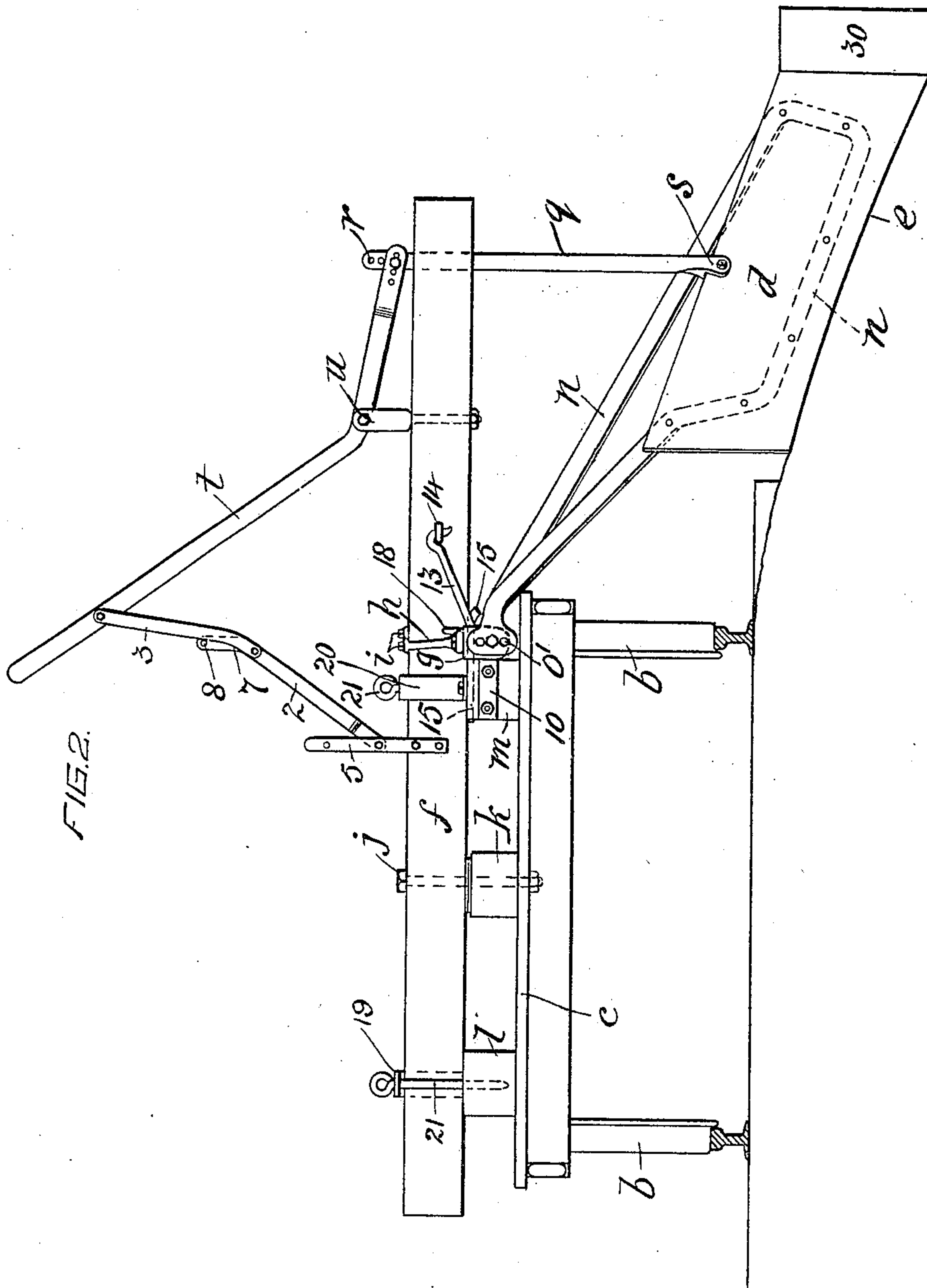
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6 SHEETS—SHEET 2.



Witnesses
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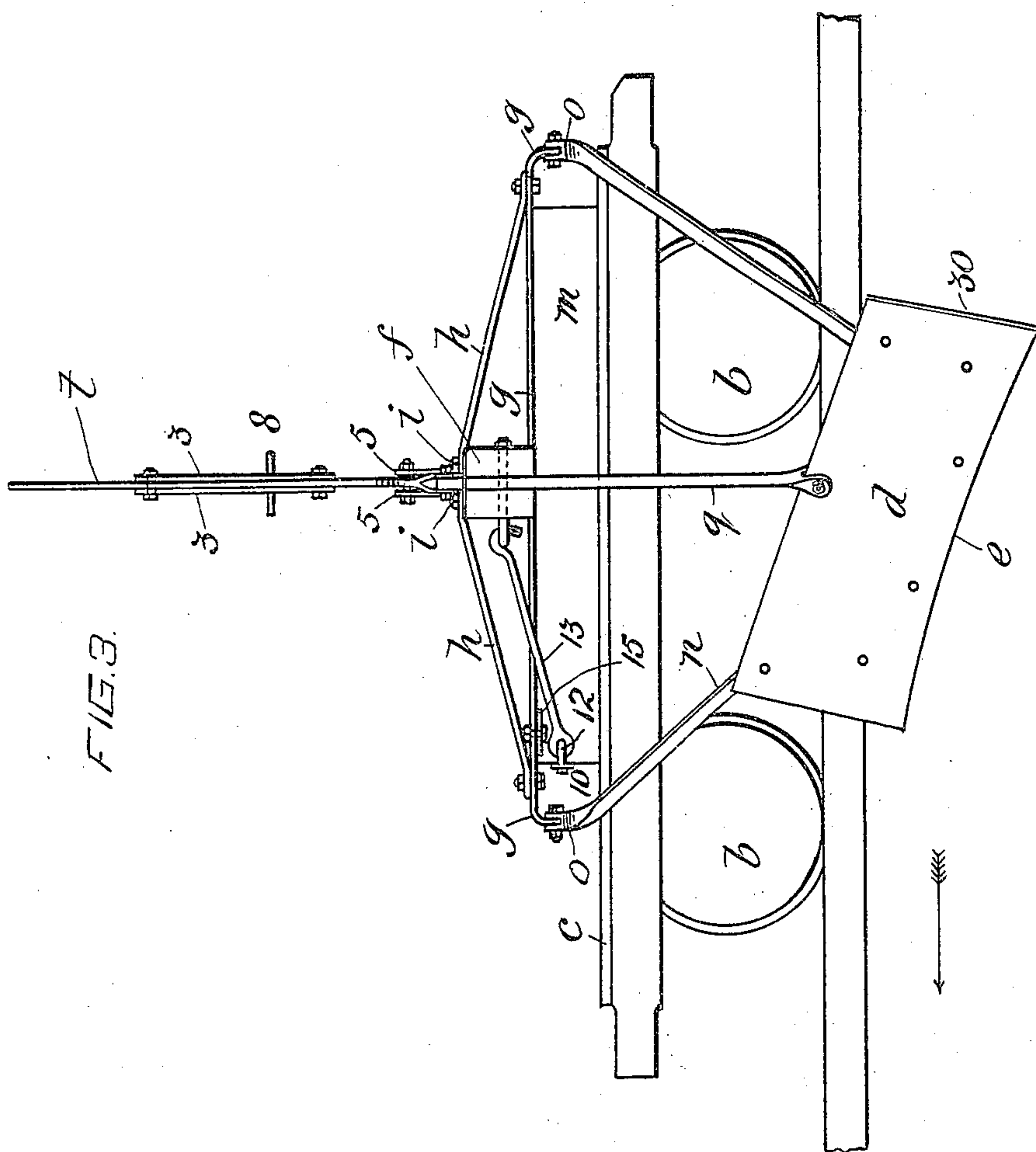
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6 SHEETS—SHEET 3.



Witnesses
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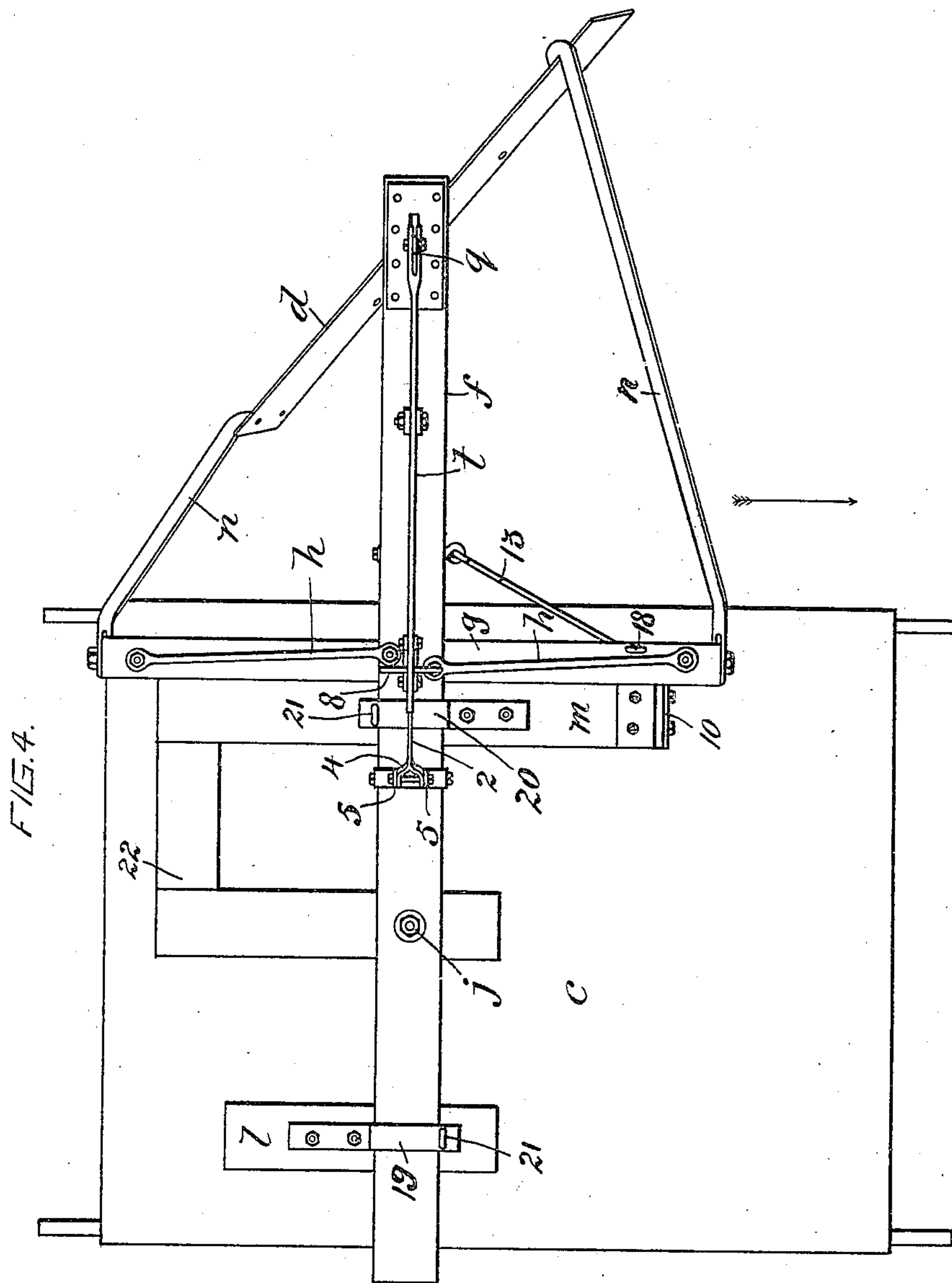
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6 SHEETS—SHEET 4.



Witnesses
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6 SHEETS—SHEET 5.

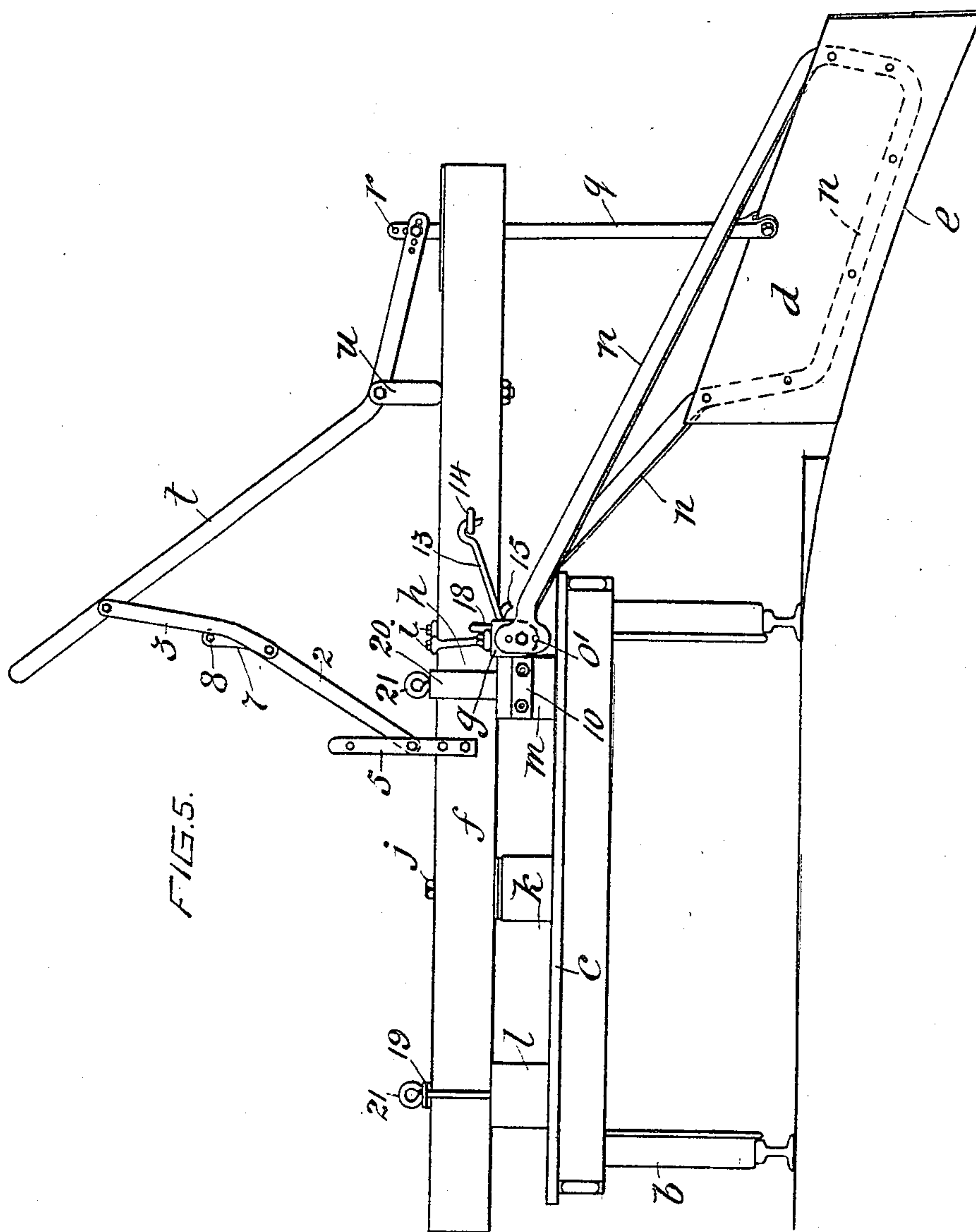


FIG. 5.

Witnesses
Alva Currie.

[Signature]

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Alvin M. Ware

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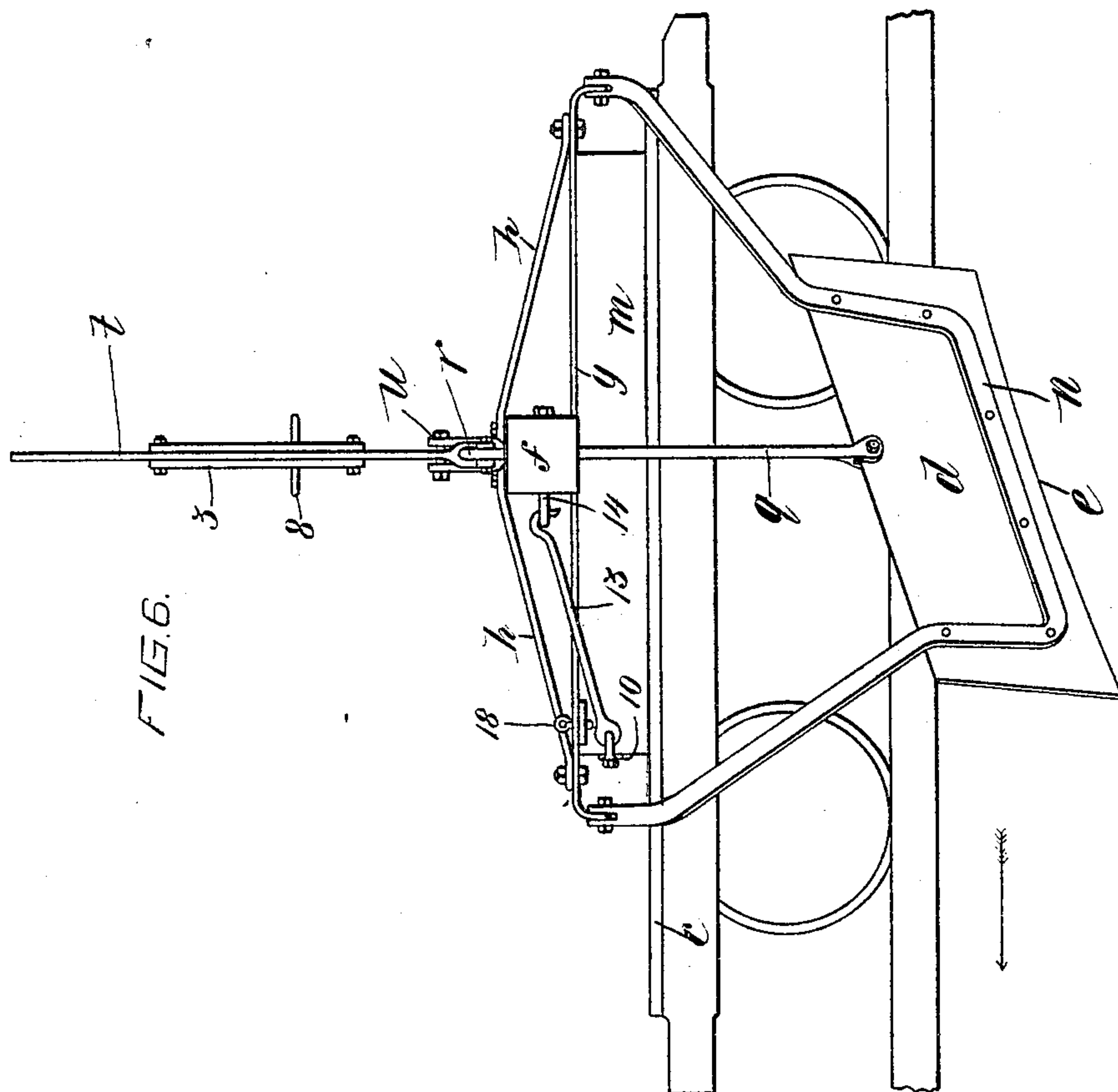
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J. H. DRINKWATER.

BALLAST TRIMMER.

APPLICATION FILED JULY 14, 1905.

6 SHEETS—SHEET 6



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES HAMILTON DRINKWATER, OF WINCHESTER, CANADA.

BALLAST-TRIMMER.

No. 816,223.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed July 14, 1905. Serial No. 269,746.

To all whom it may concern:

Be it known that I, JAMES HAMILTON DRINKWATER, of Winchester, county of Dundas, Province of Ontario, Canada, have invented certain new and useful Improvements in Ballast-Trimmers; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has for its object to provide a machine to travel along a railway-track and trim the surface of the ballast at either side of the track.

The invention may be said briefly to consist of a car upon which is carried an adjustable device adapted to impart to the surface of the ballast at either side of the track the proper sectional contour.

For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which similar reference characters indicate the same parts, and wherein—

Figure 1 is a plan view of my improved ballast-trimming machine. Fig. 2 is a front elevation thereof, and Fig. 3 is a side elevation. Figs. 4, 5, and 6 are similar views to Figs. 1, 2, and 3 of a modification of my invention.

The vehicle I prefer to utilize for carrying my improved trimming device proper consists of any ordinary push-car or lorry having wheels *b* and a platform *c*.

My improved trimming device consists of a flat oblong plate *d*, having one longitudinal side edge thereof concaved, as at *e*, or of any other preferred form. This formation depends upon the contour required to be imparted to the surface of the ballast. This plate is suspended from a swinging frame by a pair of hangers. The frame consists of a wooden beam *f* and a metallic cross-bar *g*, the latter being connected to the beam by a pair of trusses *h*, each secured at one end by bolts *i* to the beam and at their opposite ends to the ends of the cross-bar. The frame is pivoted, preferably, by a bolt *j* to the middle sill *k* of a series of three (the others being indicated at *l* and *m*) secured rigidly to the platform of the lorry. One of these hangers *n* is in the form of a loop, the ends *o* whereof are forked to straddle the ends of the cross-bar *g*, which are turned down for the purpose and are formed with a series of three bolt-holes *o'*, vertically arranged, the purpose thereof be-

ing to enable the hanger to be connected at different levels. The other hanger *q* consists of a straight bar having its upper end formed with a series of three bolt-holes *r* and its lower end forked, as at *s*, to straddle the plate *d*, to which it is connected midway of the length thereof.

A lever *t* is fulcrumed, as at *u*, to the beam *f*, and one end thereof is connected by a bolt to the upper end of the hanger *q*, while a toggle-bar, consisting of two parts 2 and 3, is connected at one end a short distance from the opposite end of the lever *t* and at its other end, which is forked, as at 4, between a pair of standards 5, bolted, as at 6, to the beam. The part 3 of the toggle-bar consists of a pair of links connected to opposite sides of the part 2 at one end and to opposite sides of the lever *t* at their other ends, the upper end of such part 2 being bent, as at 7, and provided with a cross-piece 8, the purpose of the bend being to allow this toggle-bar to swing past the center when the lever is raised, thereby preventing accidental lowering thereof, while the cross-piece 8 limits the movement of such toggle-bar past the center.

The sill *m* has a plate 10 secured to one end thereof and formed with an eye 12, to which a hook 13 is pivotally connected, such hook being adapted to engage an eyebolt 14, carried by the beam *f*, while a plate 15 is secured upon the top of sill *m* adjacent to the plate 10 and is of sufficient length to project laterally from the sill and support the cross-bar *g* when the frame and the trimmer carried thereby is in working position, such plate 15 also serving to prevent rocking of the cross-bar and serving as a lock, which it does with the co-action of a pin 18, inserted through the cross-bar and into one end of the said plate 15.

A pair of offset metal bars 19 and 20, respectively, are bolted to the sills *l* and *m* in positions to receive the beam *f* and prevent displacement in one direction from its working position, and a pair of pins 21, inserted through these bars into the sills *l* and *m*, prevent displacement of the beam in the opposite direction, while a third offset bar 22 limits the movement of the beam after the pins 21 have been withdrawn.

The working strain of the trimmer is transmitted from the plate *d* through hanger *q* to the beam *f* and thence through hook 13 and plate 10 to the sill *m* and the lorry, through

the pins 21 to the sills *l* and *m* and the lorry, and through hanger *n* and cross-bar *g* and pin 18 to the plate 15, the sill *m*, and the lorry.

When the trimmer is not in use and it is desired to move the car, pins 21 and 18 are withdrawn and the frame is swung to the position shown in dotted lines in Fig. 1, where it is stopped by the offset bar 22, in which position it is held by pin 24.

When it is desired to trim a section of ballast by replacing the material of the surface which has become displaced by vibration or being washed down by rain and has consequently found its way to the foot of the slope, the plate *d* and hanger *n* are removed and a plate and hanger are substituted therefor, as shown in Figs. 4, 5, and 6. The plate in this case is formed without the angular portion 30. (Illustrated in Figs. 1, 2, and 3.)

When a machine is fitted as shown in Figs. 1, 2, and 3, a portion of the surface of the ballast is trimmed away and falls or rolls down to the foot of the slope, while when fitted as illustrated in Figs. 4, 5, and 6 the portion of surface caused in time by vibration or by being washed away by rain to find its way to the bottom of the slope the machine can be used to raise and redistribute the material thus displaced over the slope.

The angular portion 30 above mentioned constitutes an integral part of the form of plate *d* utilized for trimming away a portion of the surface of the ballast, and it extends horizontally. Its function is to trim away a level portion of the ballast at the foot of the slope.

What I claim is as follows:

1. A ballast-trimmer consisting of a lorry, a beam pivoted to the lorry, a trimming-plate, means whereby the plate is carried entirely by the beam, and a lever for operating the said plate, substantially as described and for the purpose set forth.

2. A ballast-trimmer consisting of a lorry, a beam pivoted to the platform of such lorry and adapted to be swung and projecting transversely from one side thereof, a cross-bar carried by the beam, a trimming-plate, a lever, a hanger connecting the plate to the opposite ends of the cross-bar, and a hanger connecting such plate to the lever, and means limiting the extent to which the beam can be swung.

3. A ballast-trimmer consisting of a car, a laterally-projecting frame, and an inclined plate carried adjustably by the frame and having its lower edge in the form of a concave

curve and adapted to act upon the ballast and trim away a portion of the surface thereof.

4. A ballast-trimmer consisting of a lorry, a swinging frame pivoted to the lorry, a trimming-plate pivotally hung from the frame, a lever fulcrumed on said frame and connected with the plate, and a toggle-bar connected at one end to the beam and at the other end to the lever, substantially as described.

5. In a ballast-trimmer the combination with the car and the swinging frame, of the stop 22 and pin 24 for holding the frame when swung out of its operating position, substantially as described.

6. A ballast-trimmer consisting of a car, a pivoted laterally-projecting swinging frame, an inclined trimming-plate carried adjustably entirely by the frame, and a lever fulcrumed on the frame and connected with said plate to operate same.

7. A ballast-trimmer consisting of a car having a series of sills secured rigidly upon the top thereof a beam extending over the sills and laterally beyond one side of the car, means pivotally connecting the beam and central sill allowing the beam to be swung, a pair of stops upon the other sills limiting the extent of swinging movement of the beam in one direction, detachable means limiting the movement of the beam in the opposite direction, an angular lever fulcrumed at its angle to the top of the beam, a pair of standards upon the beam, a toggle-bar connected at one end to the standards and the other end to the lever, an inclined plate, a hanger connected at one end to the top of the plate and at its other end to the lever a cross-bar carried by the beam, a pair of trusses connecting the cross-bar to the beam, a hanger in the form of a loop secured to the plate and having its opposite ends pivotally connected to the ends of the cross-bar.

8. A ballast-trimmer consisting of a push-car, a frame projecting laterally from the car, and an inclined ballast-trimming plate carried by the frame and adapted to act upon the ballast, such plate having a horizontally-extending portion.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES HAMILTON DRINKWATER.

Witnesses:

WILLIAM P. McFEAT,
FRED. J. SEARS.