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PATENTED NOV. 8, 1904.

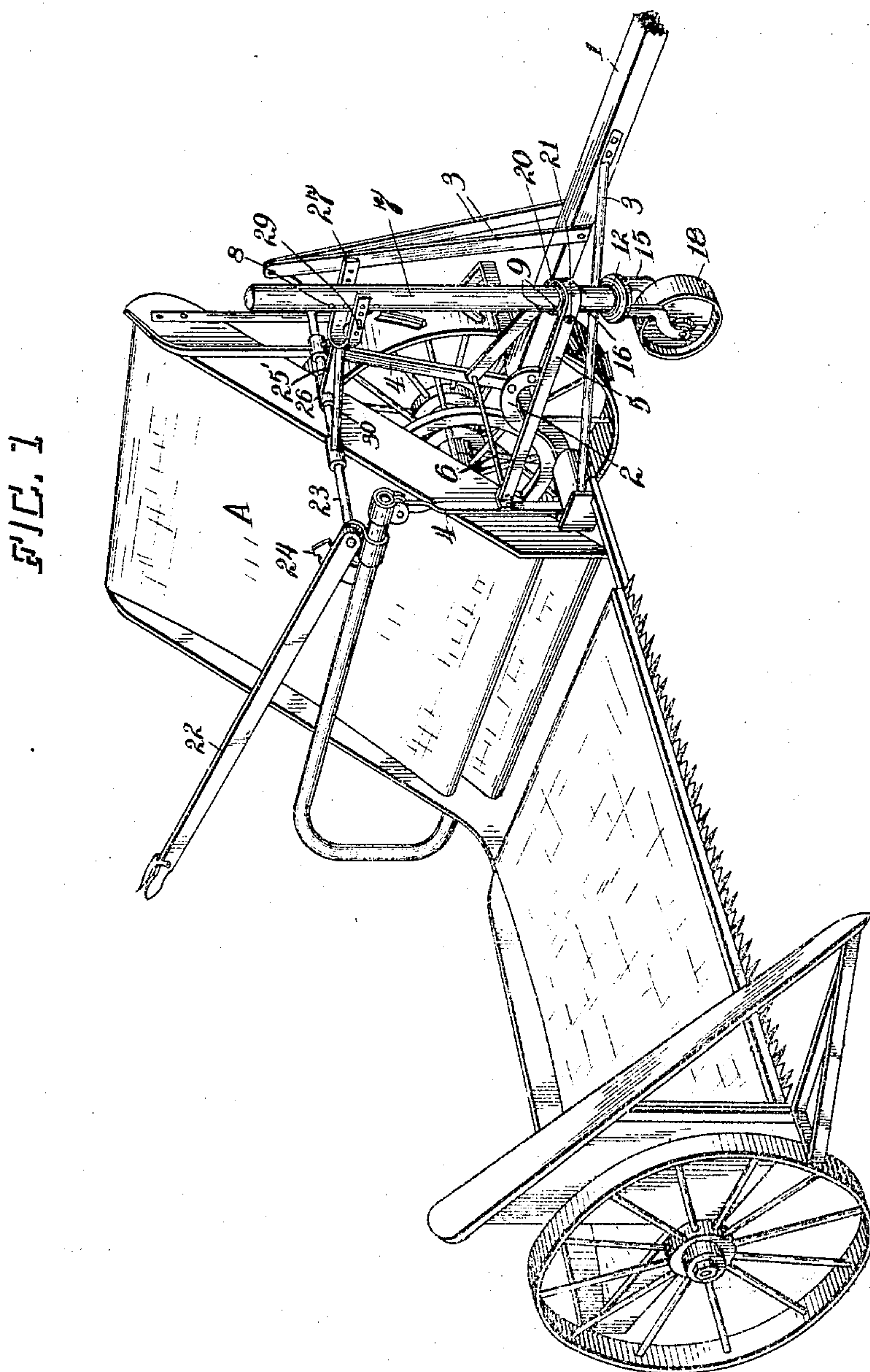
M. A. GROVE.

WEIGHT SUSTAINING AND ADJUSTING MEANS FOR HARVESTERS.

APPLICATION FILED JUNE 4, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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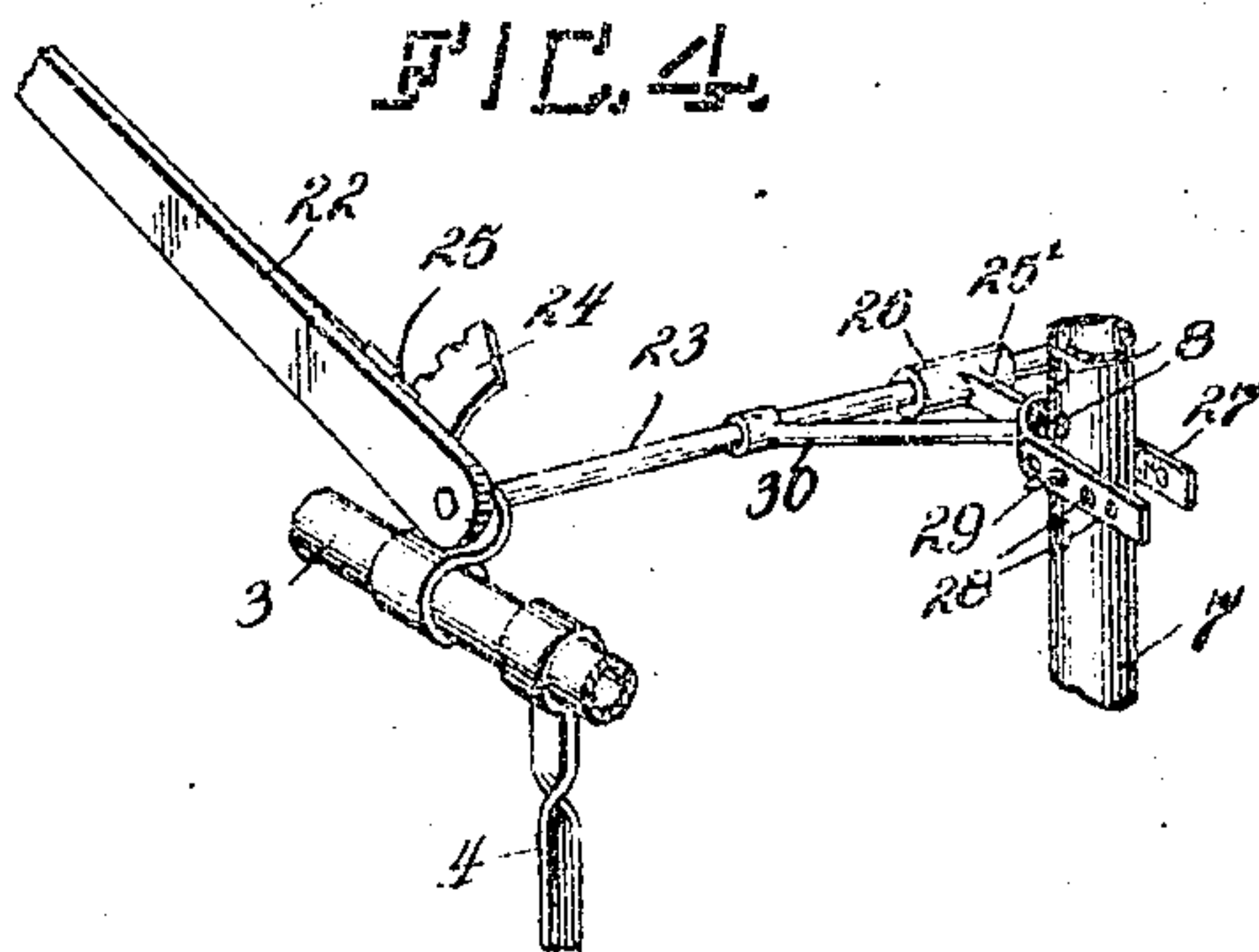
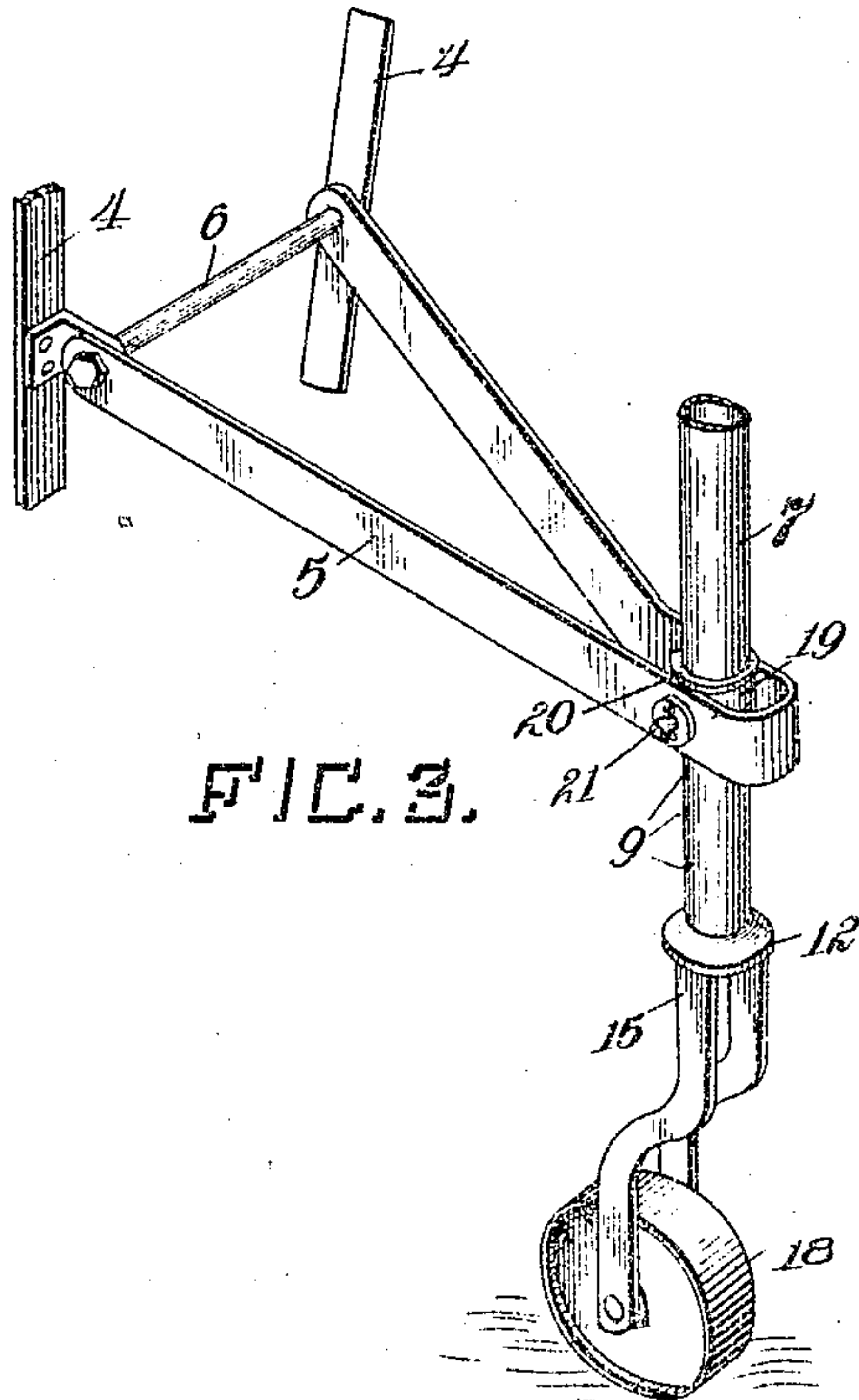
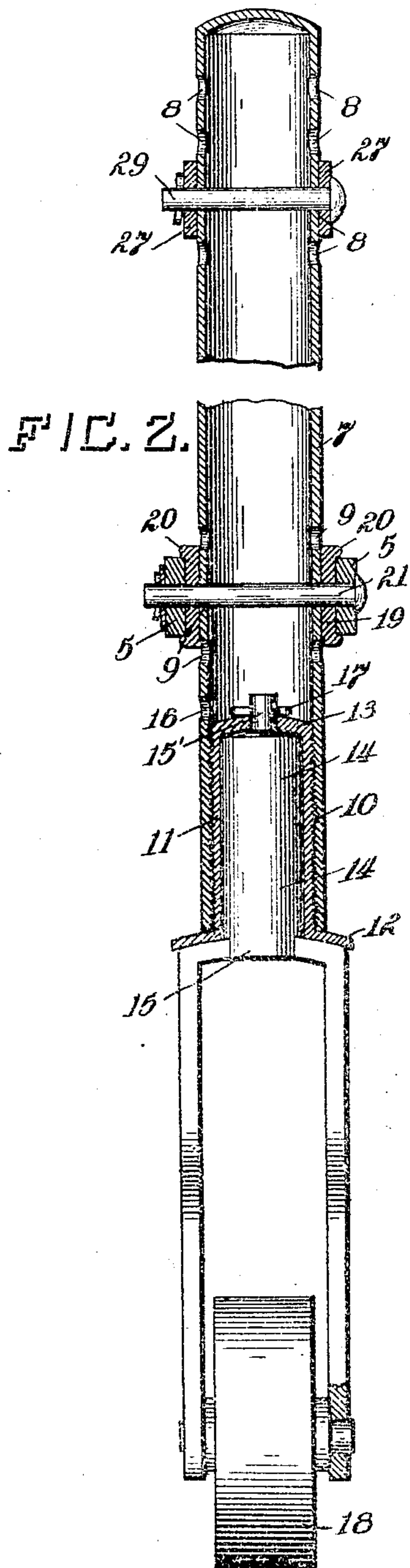
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NO MODEL.

2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

MERRILL A. GROVE, OF LEWISBURG, PENNSYLVANIA.

WEIGHT SUSTAINING AND ADJUSTING MEANS FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 774,173, dated November 8, 1904.

Application filed June 4, 1904. Serial No. 211,182. (No model.)

To all whom it may concern:

Be it known that I, MERRILL A. GROVE, a citizen of the United States of America, residing at Lewisburg, in the county of Union and State of Pennsylvania, have invented certain new and useful Improvements in Weight Sustaining and Adjusting Means for Harvesters, of which the following is a specification.

It is well known that binders as usually constructed are so arranged that the framework of the machine or its mechanism is, in effect, pivoted upon the journals or axles of the wheels and that the greater weight of the machine is located in front of its pivotal point. A portion of this weight is offset or counterbalanced by the driver when seated on the machine, the seat generally extending rearwardly of the pivotal point; but when the driver is not on the seat or when the machine is moving over uneven ground or going downhill the great weight of the machine is thrown on the pivoted tongue, which tongue is supported by the neck-yokes or collars on the draft-animals, so that, in brief, the great weight of the machine is brought to bear on the necks of the animals, causing sores and seriously damaging the worth and effective work of such animals. My improvement is designed to obviate these disadvantages by providing a means for supporting the weight of the machine independently of the tongue, and, furthermore, my improvement effects at the same time a means for adjusting the height of the cutter-bar, thus obviating the necessity of providing a special mechanism therefor; and to these ends my invention consists of a weight sustaining and adjusting device which is effective in operation, strong and durable, yet simple and easily operated, as well as inexpensive, the device being in the nature of an attachment easily and quickly securable to any of the leading makes of binders or harvesting-machines without necessitating a special structure.

The invention also serves as a front truck-wheel when conveying the binder to or from a storage-place, and in applying my improvement to a binder the tilting-lever of such binder serves to adjust the device.

My invention further consists in certain novel details of construction and combinations

of parts, such as will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a partially-dismantled binder, showing my improvement attached thereto. Fig. 2 is a view in vertical section through my device; and Figs. 3 and 4 are detail views of the truck-frame and the adjusting-link, respectively.

A indicates a binder of any approved type, the tongue 1 thereof being pivotally secured to the stud 2 and having the supporting-braces 3 3 pivotally connecting the tongue and frame in the usual manner.

4 4 indicate supporting-standards forming a portion of the frame of the machine, and to these standards is pivotally secured a lower yoke 5, constituting the truck-frame of my improvement, the truck-frame being preferably of the conformation shown in Fig. 3—that is, approximately V-shaped—the free ends of the arms forming the truck-frame being secured to the standards 4 4 and connected with each other by means of a rod-bolt 6, which not only retains the frame in pivotal connection with the standards, but also serves to brace the truck-frame and prevent it from spreading.

The post of the adjusting means passes between the arms of the truck-frame, the post preferably, although not necessarily, comprising a tube 7, having a plurality of series of apertures 8 9 formed therein for purposes hereinafter set forth. This tube at its lower end is interiorly screw-threaded, as at 10, and is adapted to receive the exteriorly-threaded cylinder or thimble 11, the latter provided with an annular guard or shoulder 12, against which the lower end of the tube 7 engages. The cylinder at its upper end is provided with a perforated collar 13, which may be forged thereto and which closes the bore of the cylinder except for the perforation, and the pintle 14 of a caster 15 is received within the cylinder or box and is adapted to rotate freely therein, the upper end of the pintle provided with a transversely-apertured stub 15', projecting through the perforation in the collar, the tube 7 provided with a transverse opening 16 therein through which the key 17 is in-

serted and placed in the aperture in the stub, the key retaining the caster against disengagement from its boxing. The caster consists of the usual fork between the arms of which is
 5 pivotally secured a caster-wheel 18, adapted to rest upon the ground and support any weight placed upon the post 7.

An apertured sleeve 19 surrounds the post, the sleeve provided with beads 20 20, adapted
 10 to engage the truck-frame to prevent longitudinal movement of the sleeve, and a pin 21 is adapted to pass through suitable apertures in the truck-frame 5, the sleeve, and one of the series of alined apertures 9 in the post, where-
 15 by to adjust the distance between the caster-wheel and the truck-frame when it is desired to cut the grain either extra high or extra low, the normal position of the pin 21 being at a point intermediate the ends of the series
 20 of apertures 9.

In machines of the binder type hereinbefore set forth it is usual to provide a tilting-lever 22, which operates a rock-shaft 23, connected with the cutter-bar by suitable mechanism, whereby the cutter-bar may be raised
 25 or lowered slightly to vary the height of cut as desired, a rack 24 and a pawl 25 serving to retain the lever and the cutter-bar in such adjusted position.

My improvement renders it unnecessary to provide this adjusting mechanism or connection between the rock-shaft and cutter-bar, although my device will work in conjunction therewith in the event that the machine is al-
 30 ready equipped with such mechanism. In either instance I provide an arm or upper yoke 25', one end of which is provided with a sleeve 26, keyed or otherwise secured on the rock-shaft 23, the opposite end of the arm being provided with a fork 27, embracing the
 40 post 7 and provided with a series of perforations 28, adapted to register with any one of the alined series of perforations or apertures 8 in the post, a pin 29 passing through the
 45 apertures and perforations to retain the parts in their adjusted position. These apertures 8 8 cooperate with the apertures 9 9 in adjusting the machine for a high or low cut, the normal position of the fork being midway between the ends of the series of apertures 8 8.
 50 The link is also provided with a brace 30, secured at one end thereto, the opposite end of the brace being connected to the rock-shaft 23. It is necessary to strengthen the upper
 55 yoke or link as much as possible, since the entire front weight of the harvester is supported by the link.

The operation of my device may be easily gathered from the foregoing; but, briefly, it
 60 is as follows: The adjustment of the truck-frame 5 and arm or yoke 25', with the post 7, is made previously to the operation of the machine, the lateral perforations in the fork 27 permitting a lateral as well as vertical ad-
 65 justment, and the machine is then driven out

of its storage-place, the caster-wheel resting on the ground, owing to the operation of the lever 22, and supporting the front weight of the machine, which is thereby raised a sufficient distance above the ground, if the cutter-
 70 bar is in its lowered or cutting position, to prevent the cutter-bar from contact with any obstructions. When the machine arrives at the field of grain to be harvested, the tilting-lever 22 is adjusted to retain the cutter-bar in
 75 the desired position to cut the grain, either high or low or medium, the main adjustment having been effected previously, however, as above explained, the caster-wheel when the machine is in operation taking the jars from
 80 the tongue as well as supporting the front weight of the machine. Should the driver get off his seat at any time, the equilibrium of the machine is at once destroyed and the heavier front weight of the machine swings
 85 it forward on the axles as a fulcrum, which weight would have to be supported by the tongue and on the necks of the horses were it not for my improvement. In case the driver wishes to alter the height of cut when
 90 harvesting he operates the lever 22, which rocks the shaft 23, and raises or lowers the arm 25', thereby raising or lowering the cutter-bar by imposing a strain upon the post 7 and rocking the harvester on the axles of the
 95 wheels either up or down.

Further advantages resulting from the application of my improvements to harvesters are that the tongue 1 retains the same relation to the neck-yoke at any point in the adjust-
 100 ment of the machine and does not press upward thereupon, and in this respect it is to be noted that the tongue being stiff instead of broken the neck-yoke can be adjusted at the proper height and there retained. Again,
 105 when crossing a watercourse, for instance, or a gully the truck will be retained in any position to which it may be adjusted and will not drop into the ditch or gully, and in crossing the machine will rest upon the horses'
 110 necks and the cutter-bar will be prevented from scraping the edges of the watercourse, which with a broken tongue is impossible.

It will be observed that the main adjustment is first effected, and subsequently a nicer
 115 adjustment is secured by means of the lever. Many adjustments also are permitted by my construction, whereby it is possible to accommodate the device to any condition or height of grain.
 120

Many changes might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein
 125 set forth; but,

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

1. The combination with a harvester pro-

vided with a draft means, of a sustaining and adjusting device comprising a post, a ground-wheel connected to the post and resting on the ground, means independent of the draft means extending between and linking the post and harvester, and separate operative means connecting the harvester and post to adjust the cutter-bar and support the front weight of the harvester.

2. The combination with a harvester provided with a draft means, of a post independent of the draft means, a link pivotally secured to the harvester and to the post respectively, a rock-shaft carried by the harvester, a lever for operating the shaft and a connecting means independent of the lever extending between and connecting the post and rock-shaft for adjusting the harvester.

3. The combination with a harvester provided with a cutter-bar and a draft means, a rock-shaft and a tilting-lever connected with the rock-shaft, of a weight sustaining and adjusting member comprising a post, a ground-wheel carried by the post and resting upon the ground, a truck-frame pivotally connected with the harvester independently of the draft means and adjustably secured to the post and means connecting the post and rock-shaft for adjusting the cutter-bar and supporting the weight of the harvester.

4. The combination with a harvester provided with a cutter-bar and a draft means, of a weight-sustaining mechanism, a link and an arm connecting the weight-sustaining mechanism at two different points to the harvester and independent of the draft means, the mechanism in constant engagement with the ground, and means connected with the mechanism for imposing a leverage thereon to adjust the harvester and cutter-bar with relation thereto.

5. The combination with a pivotally-supported harvester provided with a tongue and a cutter-bar, of a ground-wheel, a post supported on the wheel, means extending between and linking the post and the harvester independently of the tongue, a rotatable shaft carried by the harvester, means carried by the shaft and adjustably secured to the post and means for operating the shaft to adjust the cutter-bar with relation to the post.

6. The combination with a harvester provided with a lever, a rock-shaft operated thereby and a cutter-bar, of a weight sustaining and adjusting mechanism comprising a truck-frame, pivotally connected to the harvester, a post adjustably connected with the frame, a ground-wheel carried by the post and resting on the ground, and an arm secured on the rock-shaft and adjustably connected with the post.

7. The combination with a harvester, of a truck-frame pivotally secured thereto, a post adjustably held in the frame, a link affording lateral and vertical adjustment with the post

and means connected with the link for adjusting the harvester.

8. The combination with a harvester, of a truck-frame pivotally connected therewith, a post provided with a plurality of series of apertures, means receivable in one series of the apertures for adjustably connecting the post and frame, a caster-wheel rotatably supported in the post, a link, means receivable in another series of apertures for adjustably connecting the link and post and means connected with the link for adjusting the cutter-bar.

9. The combination with a harvester, of a post, a truck-frame pivotally connected therewith, a rock-shaft, an arm secured to the shaft, a fork carried by the arm, and provided with a series of apertures extending laterally of the post, the post provided with a series of apertures extending in a direction transverse to the direction in which the apertures in the fork extend and with which the apertures in the fork are adapted to be aligned, a brace for the arm, and means removably received in the apertures in the arm and post for adjustably connecting them together.

10. The combination with a harvester, of a truck-frame pivotally connected therewith, a post connected with the frame, a boxing removably received in the post and provided with a perforation at one end, a caster, the pintle of which is received in the boxing, a stub on the pintle projecting through the perforation in the boxing and means for loosely connecting the pintle and boxing.

11. The combination with a harvester, of a post connected therewith, the post comprising a tube provided with a lateral opening therein, a cylinder removably received in the tube, a shoulder on the cylinder against which the tube impinges, the cylinder being partially closed at one end, a caster rotatably received in the cylinder, a perforated stub on the caster extending through the partially-closed end of the cylinder and a key insertible through the lateral opening in the post and received in the perforation in the stub to loosely connect the caster and post.

12. The combination with a pivotally-supported harvester, of a weight-sustaining mechanism consisting of a standard, a link pivotally connecting the standard and the harvester, separate means connecting the harvester and standard for imposing a leverage upon the latter, a ground-wheel, a pintle carried thereby, a thimble removably received in the standard, the pintle receivable in the thimble and means for removably connecting the thimble and pintle.

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

MERRILL A. GROVE.

Witnesses:

E. IRLAND LAWSHE,
GEORGE H. FISHER.