

No. 767,347.

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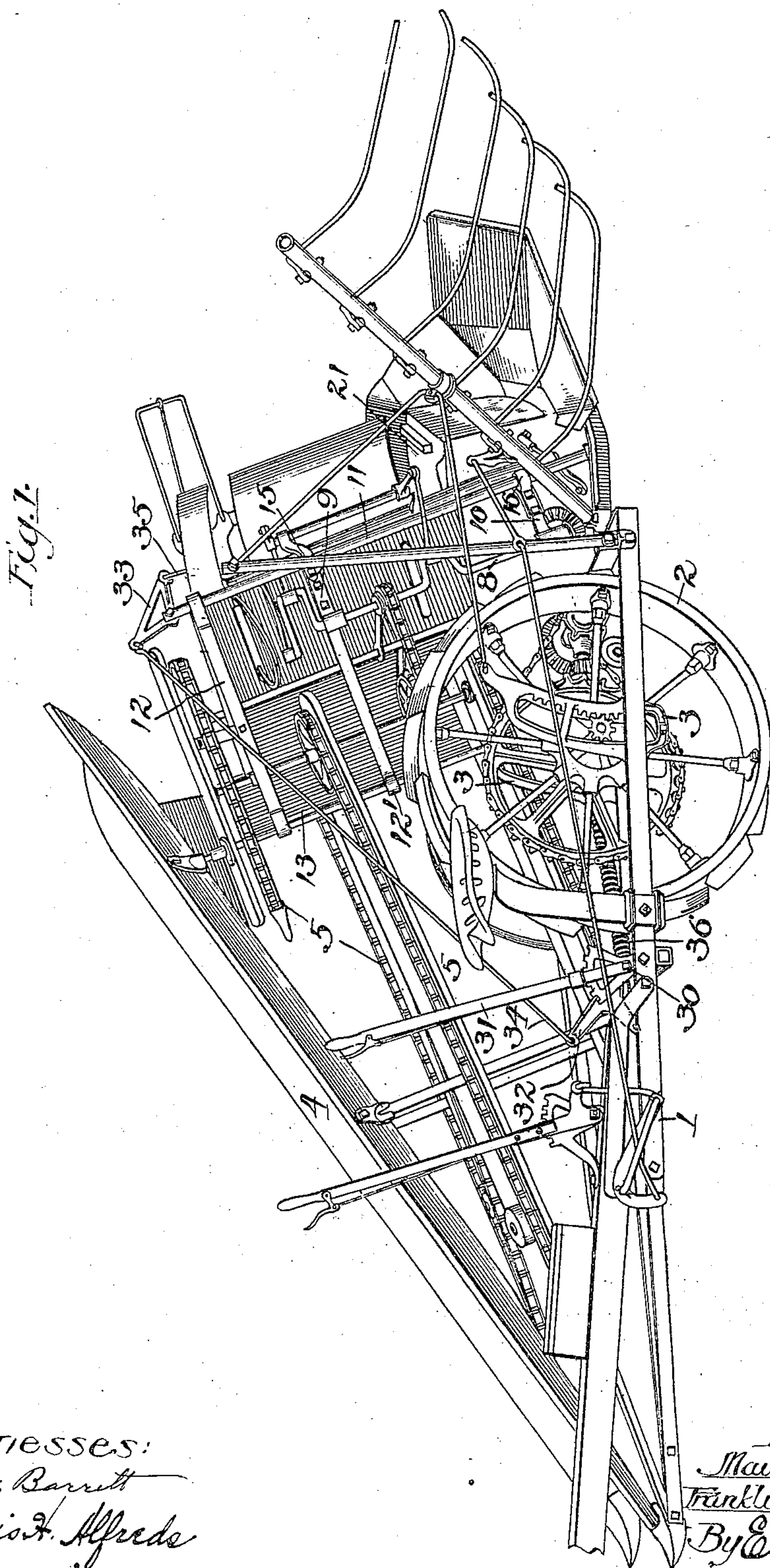
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CORN HARVESTER.

APPLICATION FILED FEB. 15, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



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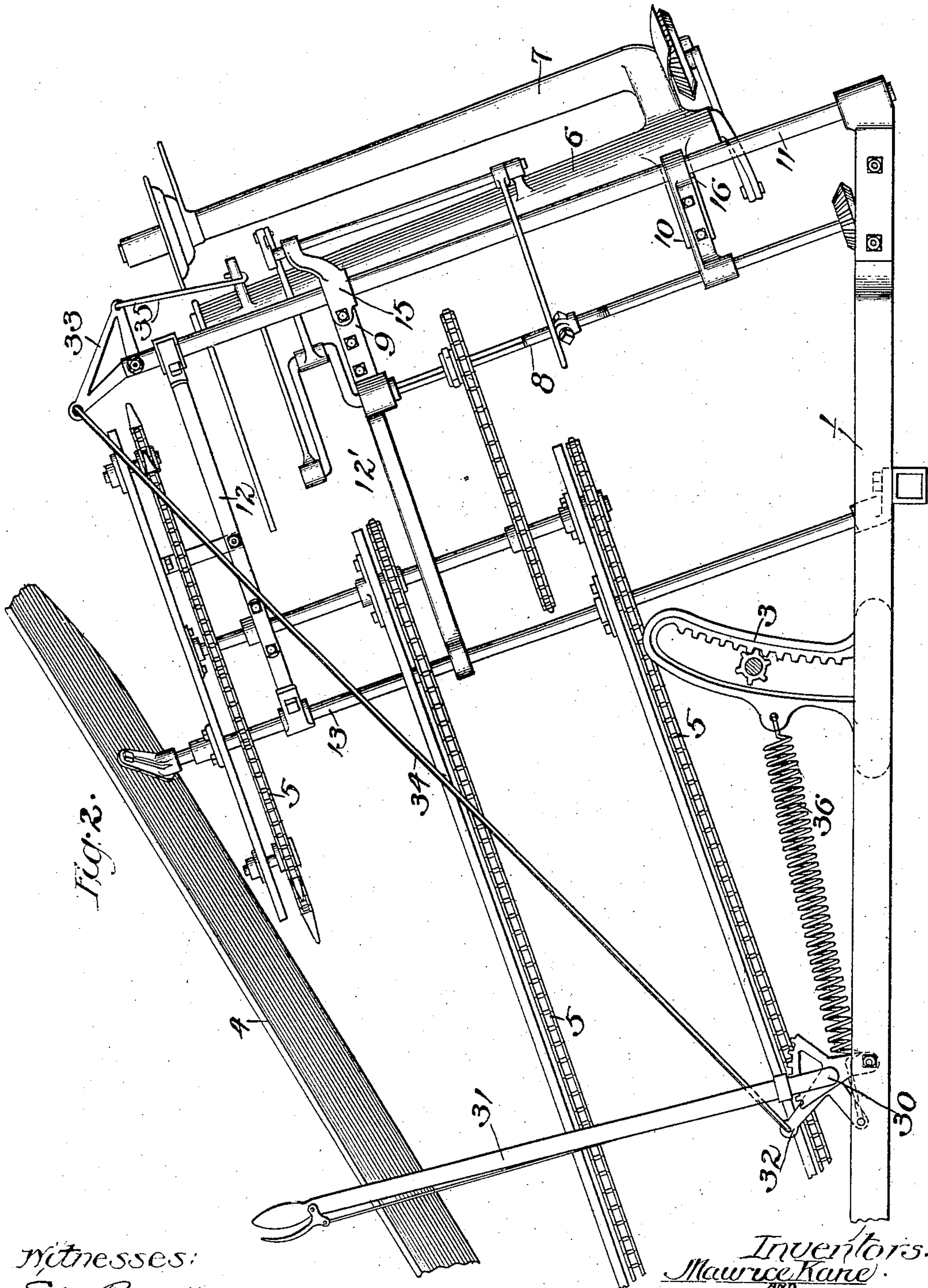
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

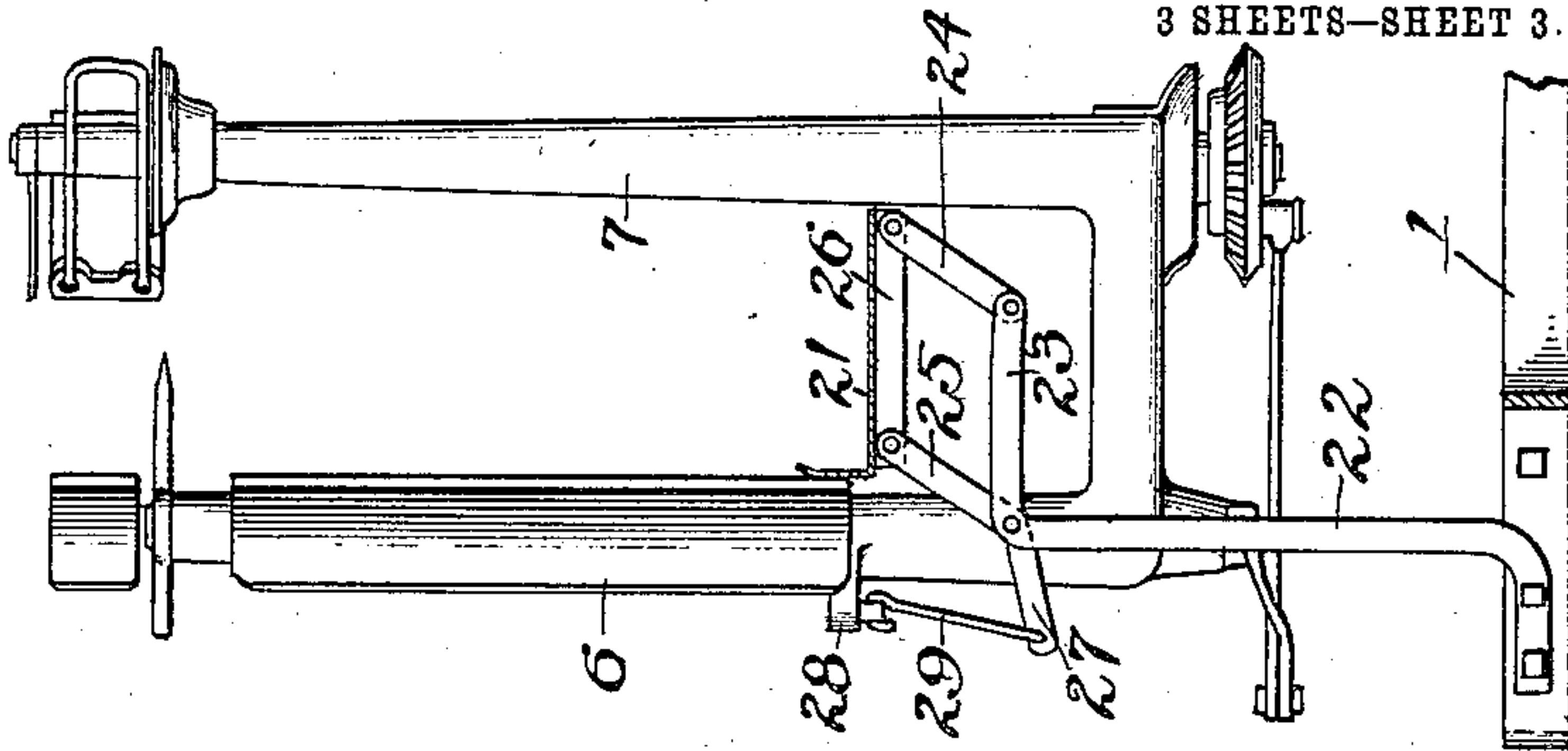
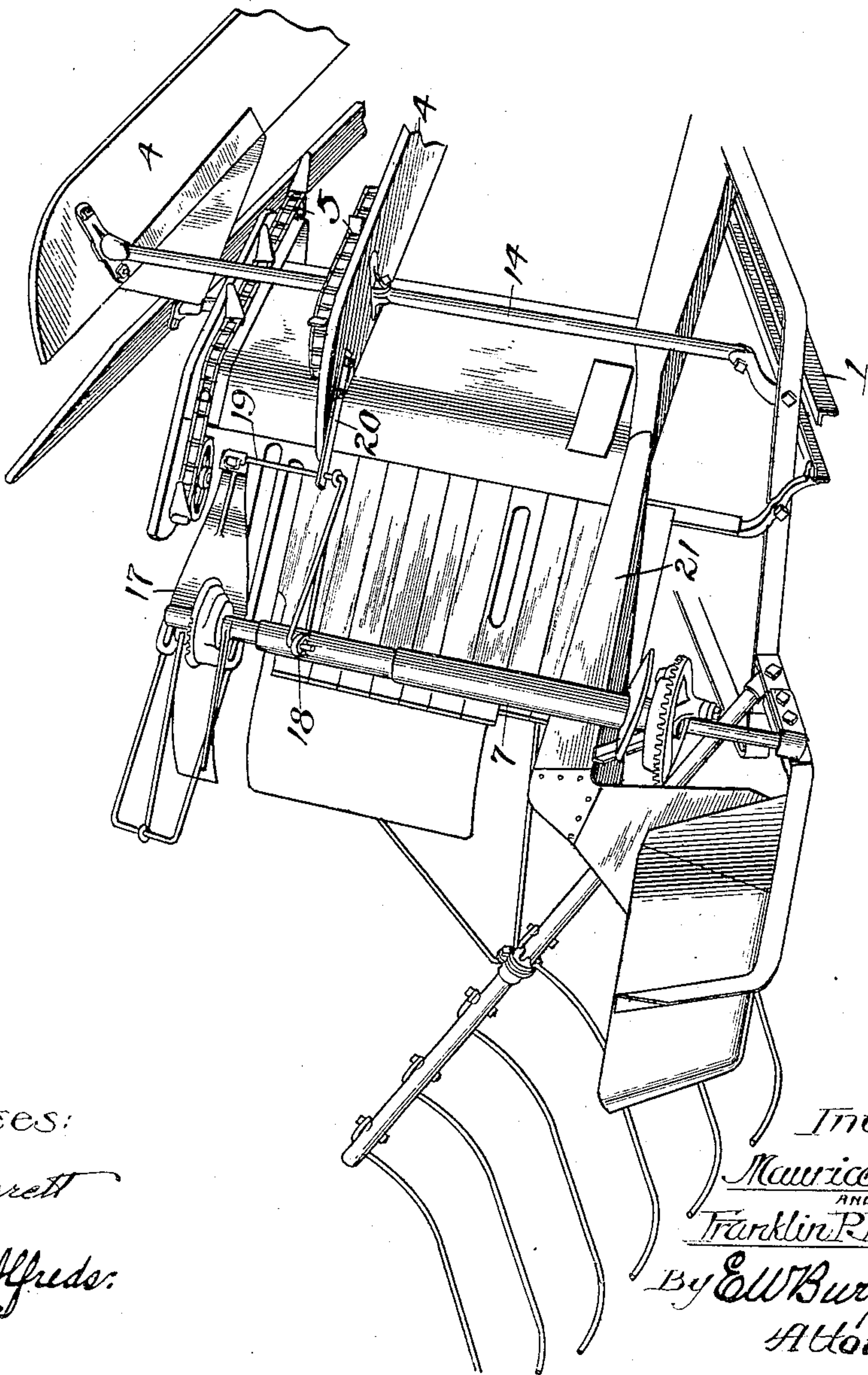


Fig. 3.



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UNITED STATES PATENT OFFICE.

MAURICE KANE, OF CHICAGO, ILLINOIS, AND FRANKLIN P. BURKHARDT,
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CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 767,347, dated August 9, 1904.

Application filed February 15, 1904. Serial No. 193,689. (No model.)

To all whom it may concern:

Be it known that we, MAURICE KANE, residing at Chicago, (Austin Station,) in the county of Cook and State of Illinois, and FRANKLIN P. BURKHARDT, residing at Springfield, in the county of Clark and State of Ohio, citizens of the United States, have invented certain new and useful Improvements in Corn-Harvesters, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

Our invention relates to corn-harvesters that are designed to cut and bind one row at a time and follows the general type of that class that convey the stalks rearwardly and upwardly from the cutting mechanism in substantially a vertical position to an automatic binder vertically arranged in rear of the stalk-passage leading from said cutting mechanism, the butts of the stalks being supported in their movement to the binder attachment by an adjustable bottom or "butt-chute" pivoted in rear of the cutting mechanism and extending into the binder attachment, forming a bottom or floor therefor.

The objects of our invention are, first, to provide means for adjusting the binder attachment upward or downward to accommodate it to the variable length of stalks; second, to provide means whereby the butt-chute will be automatically adjusted in an opposite direction from that of the binder attachment, and, third, to provide a counterbalancing mechanism to assist the operator in manipulating the parts to effect said adjustment and generally to construct a corn-harvester that will be both compact and strong, composed of few parts, and adapted to meet the requirements of machines of this class.

The aforesaid objects of our invention consist in the construction, arrangement, and combination of parts hereinafter described and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings, in which similar reference-numerals indicate like parts

in the different views, Figure 1 is a side elevation of a corn-harvester of the type described and embodying our improvements. Fig. 2 is an elevation of Fig. 1 inside of the vertical plane of the drive-wheel. Fig. 3 is a rear end elevation of Fig. 1, and Fig. 4 is a detail of a part of Fig. 3.

The same reference-numerals designate the same parts throughout the various views.

1 is the main or wheel frame of the harvester, supported in part by the drive-wheel 2 and the usual grain-wheel (not shown) and adjustably held in the side castings 3 in a well-known manner.

The usual guide-boards 4 and gathering and forwarding chains 5 form the stalk passage-way through which the stalks are conveyed in a substantially vertical position to the binder attachment located at its rear end. The binder attachment is one of the common U-shaped type having the upstanding tubular arms 6 and 7, the packer-shaft 8, supported and journaled in the arms 9 and 10, forming a part of the binder-frame.

11 is an upstanding tubular frame-piece having its lower end secured to the frame 1 and its body portion connected to different parts of the fixed frame in a manner to support it against any lateral strain to which it may be subjected, as by the straps 12 and 12', connecting its upper end with the tubular frame-piece 13, that supports the rear ends of the guide-boards forming one side of the stalk-passage, the parts forming the opposite side of said passage being supported in part by the tubular frame-piece 14, as shown in Fig. 3.

The arms 9 and 10, that support the packer-shaft, are provided with eye portions 15 and 16, surrounding the frame-piece 11 and adapted to slide thereon.

17 is the breast-plate, suitably connected with the arm 7 by the braces 18.

19 is a rail corresponding in part to the usual spring-rail of the common grain-binder and is connected with the framework of the harvester by means of the strap 20, through the rear end of which it is adapted to slide.

Having the binder attachment connected in

the above-described manner to the harvester-frame, it is free to be adjusted thereon to a limited extent.

The butts of the stalks are supported upon
 5 a movable bottom 21, pivoted at its lower and forward end in rear of the cutting apparatus and extending upward and rearward to the binder, where it is supported upon a system
 10 of jointed bars forming a lazy-tongs combination having its operative ends connected, one with the movable binder-frame and the other with the frame of the machine, the following being a more detailed description of its construction: A Z-shaped arm 22 is se-
 15 cured at its lower end to the frame 1, with its upper horizontal arm 23 extending transversely and in a plane below that of the movable bottom 21. 24 and 25 represent links pivoted on the bar 23 and having their upper
 20 ends joined by the horizontal bar 26, upon which rests the movable bottom 21, the four members forming a parallelogram. The link 25 is provided at its lower end with a horizontally-extending arm 27, that is connected
 25 with an ear 28 on the arm 6 of the binder-frame by the link 29. When the binder-frame is adjusted to a higher plane for the purpose of binding stalks of greater length, the link 29, connecting the binder-frame with the link
 30 27, that is pivoted to the fixed arm 22, will rock said link on its pivot and through its connections with the other members of the parallelogram lower the bar 26 and allow the bot-
 35 tom 21 to fall. If the binder-frame be lowered, the same mechanism will operate to raise the movable bottom. Thus it will be seen that we have provided a mechanism that operates automatically with the movement of the binder-frame from a higher to a lower
 40 plane to move the bottom in the opposite direction.

The mechanism for adjusting the binder upward or downward consists of a rock-shaft 30, supported in bearings on the main frame. To
 45 one end of the shaft is secured the lever 31, having the usual thumb-lever and sliding detent connected therewith and engaging with the usual notched sector-rack concentric with the axis of the lever to secure it in any de-
 50 sired adjustment within the range of the sector-rack. At the other end of the rock-shaft is secured the bell-crank lever 32. At the upper end of the tubular frame-piece 11 is pivoted the bell-crank lever 33, and the link 34 connects the
 55 bell-crank lever 32 with one arm of the lever 33, the other arm being connected to the binder-frame by means of the link 35. The counterbalancing-spring 36 is connected at one end to the side casting 3 and at the other
 60 end to one arm of the bell-crank lever 32 and operates to counterbalance the weight of the binder attachment as applied to the adjusting-lever 31.

What we claim as our invention, and desire to secure by Letters Patent, is— 65

1. In a corn-harvester the combination of the main frame, a rearwardly and upwardly extending stalk-passage, and means for conveying the stalks along said passage in substantially vertical position, an upright auto-
 70 matic binder adjustably supported in rear of said passage, means for adjusting said binder in the direction of the length of the stalks, an adjustable bottom forming a part of said binder and designed to support the butts of
 75 the stalks while being bound, an adjustable support for said bottom, said support being independent of the means for adjusting the binder and connected with the adjustable binder and the fixed frame of the machine in
 80 a manner to cause it to be adjusted by and simultaneously with and in an opposite direction to the movement of said binder.

2. In a corn-harvester the combination of the main frame and supporting-wheels, an up-
 85 right automatic binder adjustably supported upon the rear end of said main frame, means for delivering the corn to said binder in substantially vertical position, means for adjusting said binder in the direction of the length
 90 of the stalks, an adjustable bottom forming a part of said binder and designed to support the butts of the stalks, an adjustable support for said bottom independent of the means for adjusting the binder, comprising a parallel-
 95 motion device having one of its arms connected with the adjustable binder and one connected with a fixed part of the frame in a manner to cause the said support to be moved by and simultaneously with and in an opposite
 100 direction to the movement of said binder.

3. In a corn-harvester the combination of the main frame and supporting-wheels, an up-
 105 right automatic binder adjustably supported upon the rear end of said main frame, means for delivering the corn to said binder in substantially vertical position, means for adjusting said binder in the direction of the length of the stalks, an adjustable bottom forming a
 110 part of said binder and designed to support the butts of the stalks, adjustable means for supporting said bottom comprising a parallel-motion device having two horizontally-disposed arms connected by two parallel links
 115 pivoted thereto, the adjustable bottom resting upon one of the arms, the other arm secured to a fixed portion of the main frame and one of the links pivotally connected with the adjustable binder.

4. In a corn-harvester the combination of
 120 the main frame and supporting-wheels, an upright automatic binder adjustably supported upon the rear end of said main frame, means for delivering the corn to said binder in substantially vertical position, means for adjust-
 125 ing said binder in the direction of the length

of the stalks, an adjustable bottom forming a part of said binder and designed to support the butts of the stalks, adjustable means for supporting said bottom comprising a parallel-motion device having two horizontally-disposed arms arranged in the same upright plane, the lower arm having a depending leg secured to the main frame, the upper arm having the adjustable bottom resting thereon, parallel links pivotally connecting the two arms, one of said links being extended beyond its pivot with the lower arm and a link connection between the end of said extension and the adjustable binder.

5. In a corn-harvester the combination of the main frame and supporting-wheels, an upright automatic binder adjustably supported upon the rear end of said main frame, means for delivering the corn to said binder in substantially vertical position, means for adjusting said binder in the direction of the length of the stalks, an adjustable bottom 21 forming a part of said binder and designed to support the butts of the stalks, adjustable means for supporting said bottom comprising a parallel-motion device having the two horizontally-disposed members 26 and 23, said member 23 having the depending leg portion 22 secured to the main frame, two parallel links 24 and 25 pivotally connecting opposite ends of the members 23 and 26, the link 25 being extended

beyond its connection with the member 23, and a link 29 connecting said extension with the adjustable binder.

6. In a corn-harvester the combination of the main frame and carrying-wheels, the guide-boards extending rearwardly and upwardly from the front of said frame suitably supported at their rear ends by upright members secured to the main frame and forming between them a passage along which the stalks are conveyed in substantially vertical position, an adjustable upright binder located in rear of said passage and slidably supported on said upright members, a bell-crank lever pivotally supported on the upper end of one of the upright members of the frame, a lifting-lever pivoted on the main frame forward of the axis of the main wheel, means for securing said lever in any desired position, a counterbalance-spring connection between the lever and a fixed part of the frame, and link connections between said lifting-lever said bell-crank lever and said adjustable binder.

In witness whereof we hereto affix our signatures in presence of two witnesses.

MAURICE KANE.
FRANKLIN P. BURKHARDT.

Witnesses:

WILLIAM H. GUTHRIE, Jr.,
H. B. SPERRY.