Sept. 25, 1923. 1,469,157

M. D. KAST

HARVESTER FRAME CONSTRUCTION

Filed June 20, 1922 4 Sheets-Sheet 1

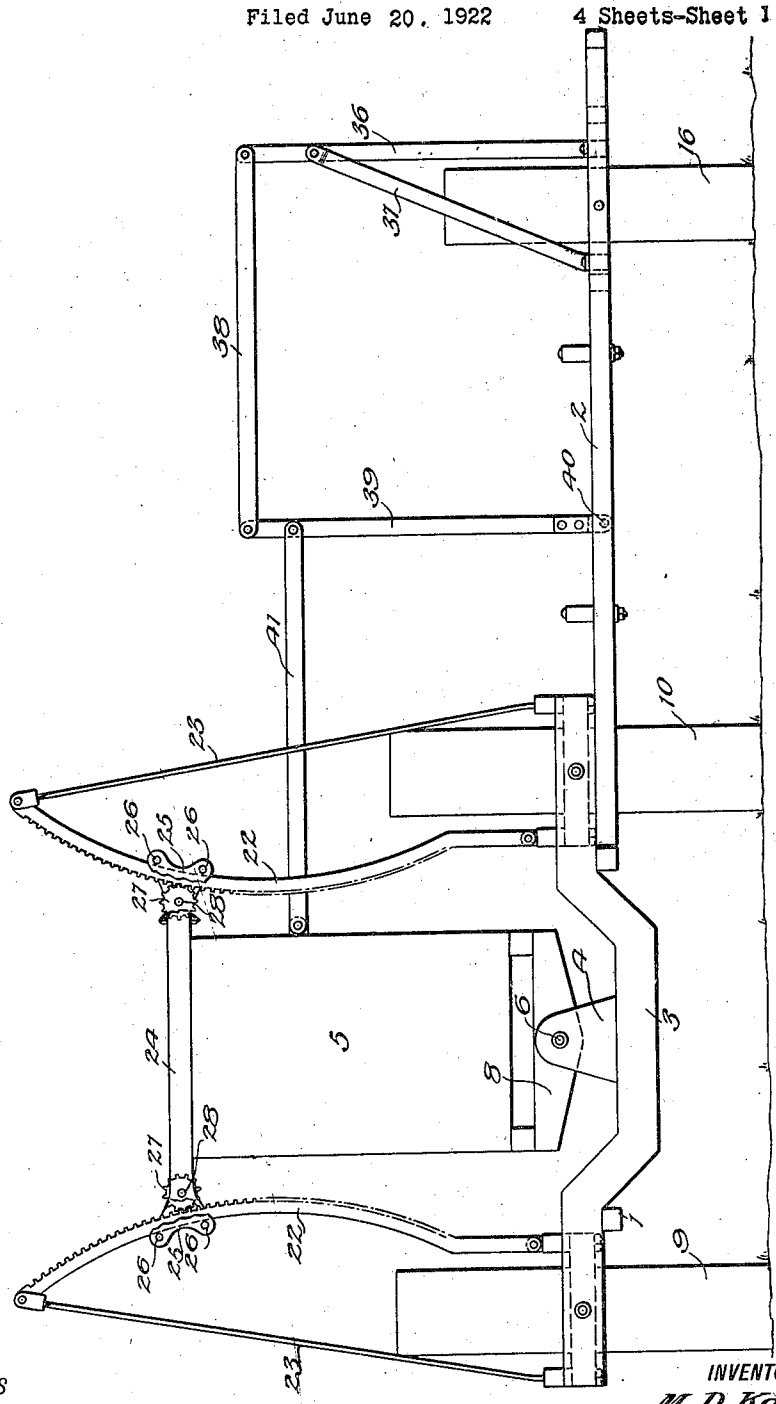


Fig. 1.

WITNESSES

Oliver W. Holmes

S. W. Foster

INVENTOR

M. D. Kast

BY Munn & Co.

ATTORNEYS

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M. D. KAST

HARVESTER FRAME CONSTRUCTION

Filed June 20, 1922 4 Sheets-Sheet 2

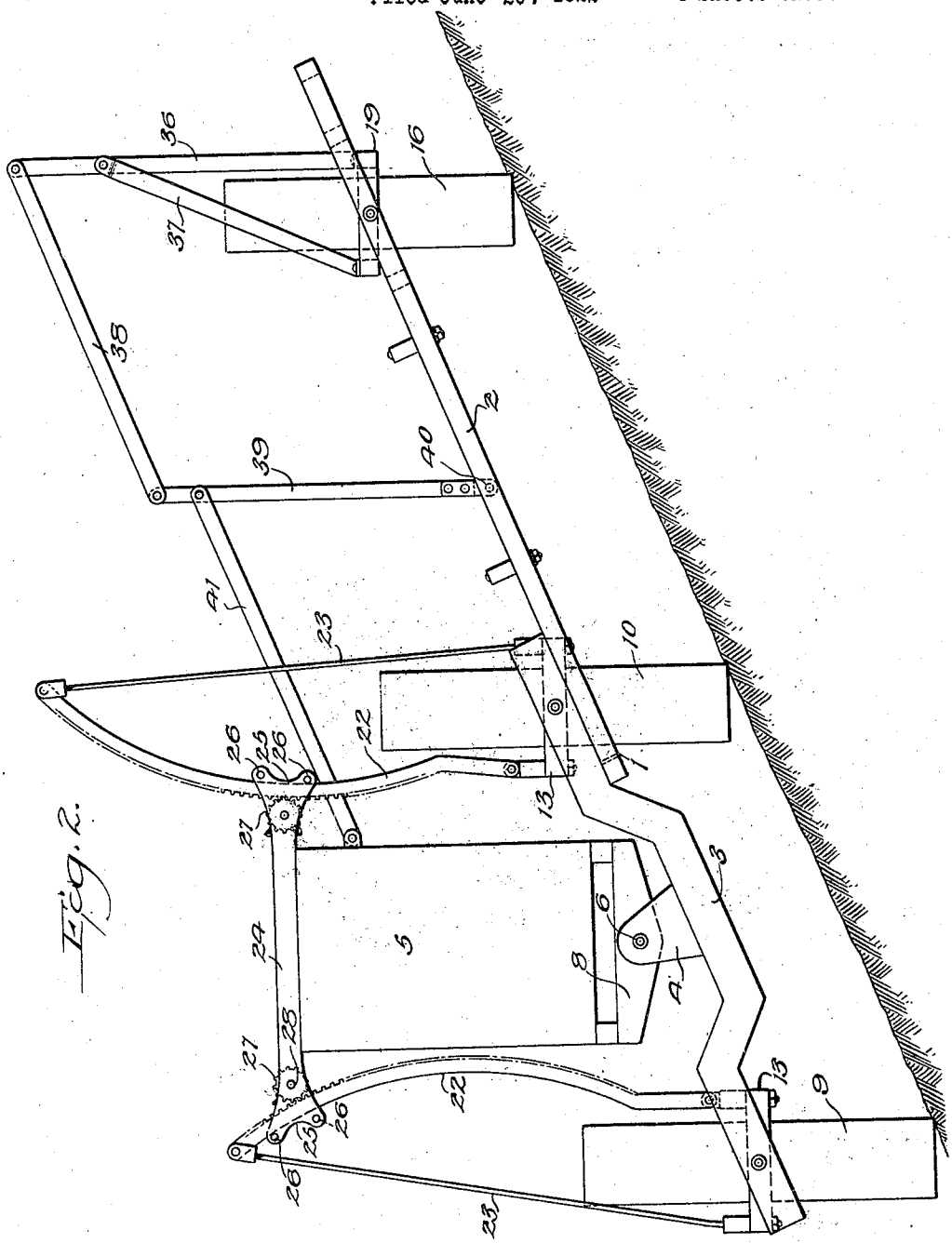


Fig. 2.

WITNESSES

Owen N. Holmes

S. W. Foster

INVENTOR

M. D. Kast

BY Munn & Co

ATTORNEYS

Sept. 25, 1923. 1,469,157

M. D. KAST

HARVESTER FRAME CONSTRUCTION

Filed June 20, 1922 4 Sheets-Sheet 3

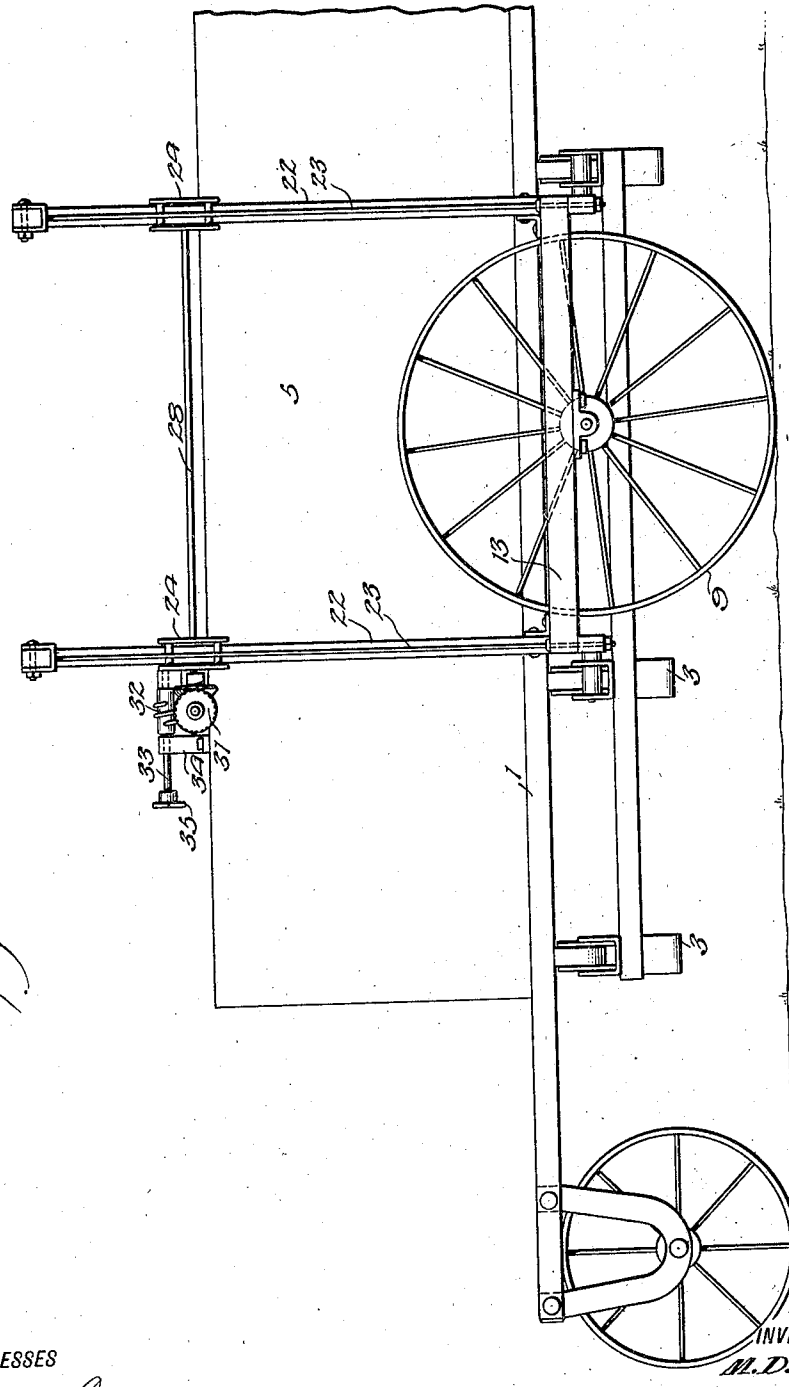


Fig. 3.

WITNESSES

Oliver W. Holmes

A. W. Foster

INVENTOR

M. D. Kast

BY Munn & Co

ATTORNEYS

Sept. 25, 1923. 1,469,157

M. D. KAST

HARVESTER FRAME CONSTRUCTION

Filed June 20, 1922 4 Sheets-Sheet 4

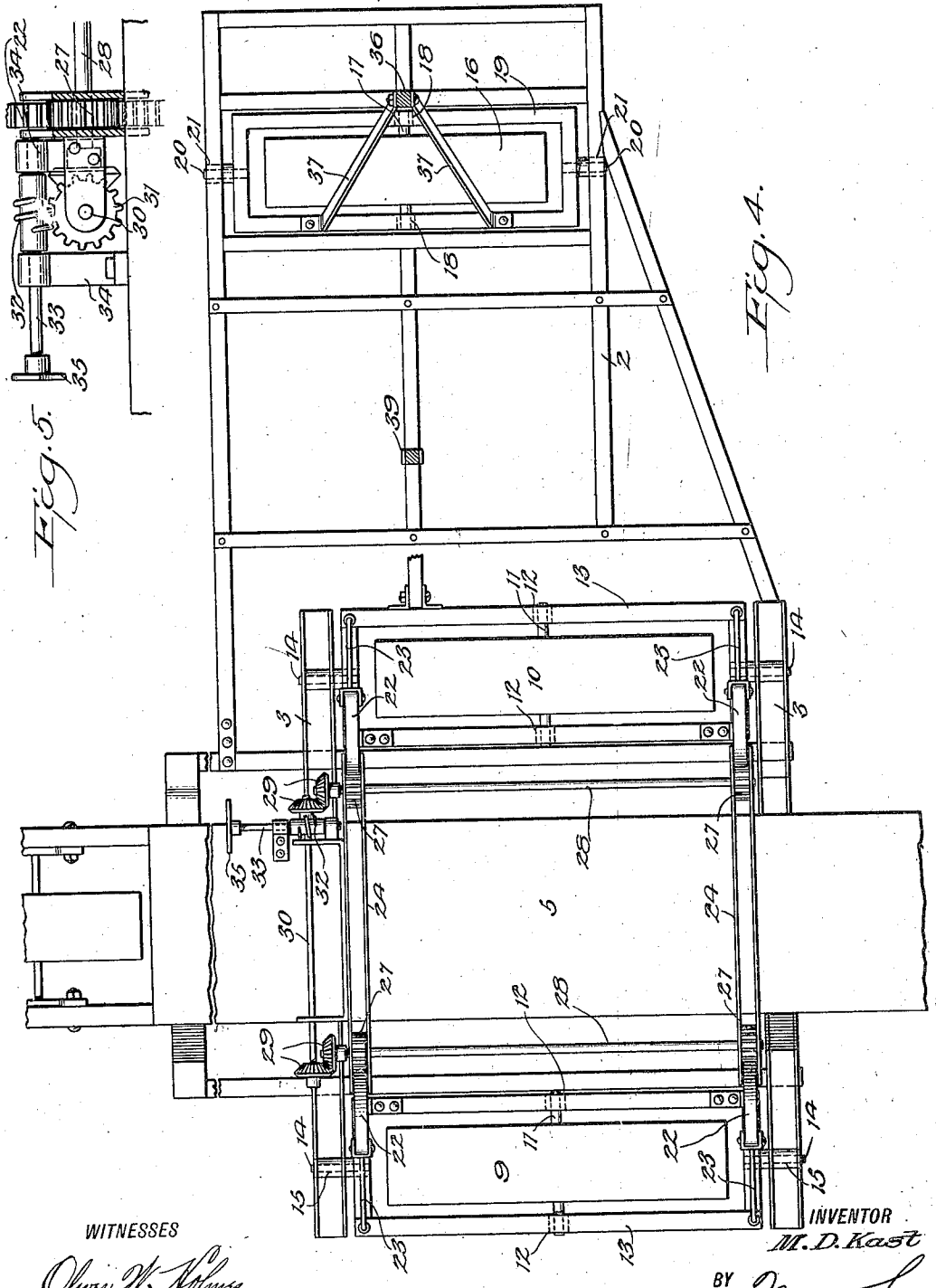


Fig. 4.

Fig. 5.

WITNESSES

Oliver W. Holmes

A. W. Foster

INVENTOR

M. D. Kast

BY Munn & Co.

ATTORNEYS

Patented Sept. 25, 1923. 1,469,157

UNITED STATES PATENT OFFICE.

MORGAN DURYEAS KAST, OF PENDLETON, OREGON.

HARVESTER-FRAME CONSTRUCTION.

Application filed June 20, 1922. Serial No. 569,644.

To all whom it may concern:

Be it known that I, MORGAN D. KAST, a citizen of the United States, and a resident of Pendleton, in the county of Umatilla and State of Oregon, have invented a new and Improved Harvester-Frame Construction, of which the following is a full, clear, and exact description.

This invention relates to improvements in harvester frame constructions, an object of the invention being to provide a frame construction which permits a proper leveling of the frame regardless of the angle or side hill inclination, and which maintains the wheels in a vertical position, and the frame relatively low to the ground and at the same distance from the ground at all leveling positions.

A further object is to provide a frame of the character stated, in which the weight of the separator is supported directly on the main frame and not on the leveling elements.

A further object is to provide a frame of the character stated, which permits of proper leveling either on flat ground, or on side hills, or inclined surfaces, either with the header frame above or below the main frame.

A further object is to provide a harvester frame construction which embodies novel elements of construction, and novel leveling mechanism which insures a proper leveling of the frame under all conditions.

With these and other objects in view, the invention consists in certain novel features of construction and combinations, and arrangement of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view in rear elevation illustrating my improved frame with the wheels on level ground, the sickle and reel being omitted from the illustration.

Figure 2 is a view similar to Figure 1 but showing the frame when the wheels are running on a side hill or inclined surface.

Figure 3 is a view in side elevation.

Figure 4 is a sectional plan view.

Figure 5 is an enlarged detail view illustrating the leveling shaft and its adjacent co-operating parts.

1 represents the main frame and 2 the header frame of my improved construction. These frames, 1 and 2, are rigidly secured together and may be formed in various ways, but are preferably composed of cross bars as indicated.

The main frame 1 is made with transverse girders 3 having blocks 4 thereon, on which the separator 5 is pivotally supported by means of a shaft 6, said shaft being projected through cross bars 8 at the bottom of the separator 5.

9 and 10 represent the main wheels of main frame 1. These wheels 9 and 10 are mounted on axles 11 which latter are supported in suitable bearings 12 in wheel frames 13. The wheel frames 13 are of general oblong shape, are positioned longitudinally of the main frame 1 at opposite sides thereof, and are provided at their front and rear ends with trunnions 14, which are mounted in bearings 15 in cross girders 3 so that the wheel frames 13 have a pivotal mounting relative to the main frame.

The header frame 2 adjacent its outer end, is supported by wheel 16. This wheel 16 is mounted to turn on an axle 17, the latter supported in suitable bearings 18 in a wheel frame 19. The wheel frame 19 is provided at its forward and rear ends with trunnions 20 mounted in suitable bearings 21 in the header frame 2, so that said frame 19 has a pivotal mounting relative to the header frame 2.

Each of the main wheel frames 13 is provided with a pair of gear segments 22, which are secured at their lower ends to the frames 13 and at their upper ends are connected by brace rods 23 with said frames 13, so that the segments 22 are rigidly supported.

The separator 5 at its upper portion is provided with a pair of cross bars 24, the latter having bifurcated ends 25 straddling the segments 22 and having cross pins 26 engaging the rear faces of the segments 22, to maintain pinions 27 in mesh with the segments.

These pinions 27 are secured to shafts 28 having suitable mounting in the bars 24 and connected at their forward ends by beveled gears 29 with a transverse shaft 30. This shaft 30 has a worm wheel 31 secured thereon, which is in mesh with the worm 32 on a drive shaft 33, the latter being supported in suitable brackets 34 on the separator 5 and having an operating device 35 at its free end

to manually turn the shaft 33 to vary the incline of the harvester frame, as will more fully hereinafter appear.

On the wheel frame 19 a post 36 is mounted and secured in upright position by diagonal braces 37. The upper end of this post 36 is connected by a link 38 with an upright 39, the latter being pivotally connected at its lower end to the header frame 2 as shown at 40. The upright 39 is connected by a link 41 with the separator 5, so that the separator and post 36 are compelled to move, and are maintained, in parallelism.

In other words, the angular disposition of all the wheel frames is maintained in all positions by reason of the arrangement of parts above described, and such angular disposition of the wheel frames, and necessarily the wheels carried thereby, is effected through the medium of the drive shaft 33 and co-operating parts.

It will be noted by comparison of figures 1 and 2 that in either a horizontal position or in an inclined position, the wheels are all maintained in a vertical position and the frames are at the same distance from the ground, and I would have it understood that while I have illustrated the header frame as in the highest position in Figure 2, the mechanism will function the same and with equal efficiency if the header frame is lowermost.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A construction of the character described, comprising a main frame, a header frame secured to the main frame, wheel frames pivotally connected to the main frame and the header frame, wheels supporting said wheel frames, and mechanism compelling all of said wheel frames to pivot in unison.

2. A construction of the character described, comprising a main frame, a header frame secured to the main frame, wheel frames pivotally connected to the main frame and to the header frame, wheels supporting said wheel frames, a separator pivotally connected and supported on the main frame, and means compelling a uniform simultaneous pivotal adjustment of the separator and the wheel frames.

3. A construction of the character described, comprising a main frame, a header frame secured to the main frame, wheel frames, trunnions at the forward and rear ends of the wheel frames, one of said wheel frames being located adjacent the free end of the header frame and others of said wheel frames located at opposite sides of the main frame, wheels supporting said wheel frames, a separator pivotally supported on the main frame, upright devices on all of the wheel frames, and mechanism for adjusting the angle of the main frame and the header frame relative to the wheel frames whereby said main frame and header frame are maintained at the same distance from the ground in all positions of adjustment.

4. A construction of the character described, comprising a main frame, a header frame secured to the main frame, wheel frames pivotally connected to the main frame and the header frame, wheels supporting said wheel frames, segments fixed to the wheel frames of the main frame, a separator pivotally supported on the main frame, cross bars on the separator connected to the segments, shafts carried by the cross bars, pinions on the shaft meshing with the segments, a post on the header wheel frame, devices pivotally connecting the post with the separator, and means for simultaneously turning the shafts to adjust the angular disposition of the main frame and the header frame relative to the wheel frames and the separator.

5. A construction of the character described, comprising a main frame, a header frame secured to the main frame, wheel frames pivotally connected to the main frame and the header frame, wheels supporting said wheel frames, segments fixed to the wheel frames of the main frame, a separator pivotally supported on the main frame, cross bars on the separator connected to the segments, shafts carried by the cross bars, pinions on the shafts meshing with the segments, a post on the header wheel frame, devices pivotally connecting the post with the separator, means for simultaneously turning the shafts to adjust the angular disposition of the main frame and the header frame relative to the wheel frames and the separator, said last mentioned means comprising a driven shaft, beveled gears connecting the driven shaft with the first mentioned shafts, a worm wheel on the driven shaft, a manually operated drive shaft, and a worm on the drive shaft meshing with the worm wheel.

6. A construction of the character described, comprising a main frame, a header frame secured to the main frame, wheel frames pivotally connected to the main frame and the header frame, wheels supporting said wheel frames, a separator pivotally supported on the main frame, a post on the header wheel frame, an upright pivotally connected to the header frame, links pivotally connecting the post and the separator with said upright whereby said parts are maintained in parallelism, and means for

adjusting the angle of the main frame and the header frame relative to said upright and post.

7. A harvester frame construction, comprising a main frame, a header frame secured thereto, wheels supporting the main frame and the header frame, means permitting angular adjustment of the frames relative to the wheels, a separator pivotally supported on the main frame, and mechanism for moving and maintaining the separator in parallelism with said wheels.

MORGAN DURYEAS KAST.