

May 23, 1933.

H. SYNCK

1,910,189

CORN PICKING AND HUSKING MACHINE

Filed Aug. 20, 1928

2 Sheets-Sheet 1

FIG 1

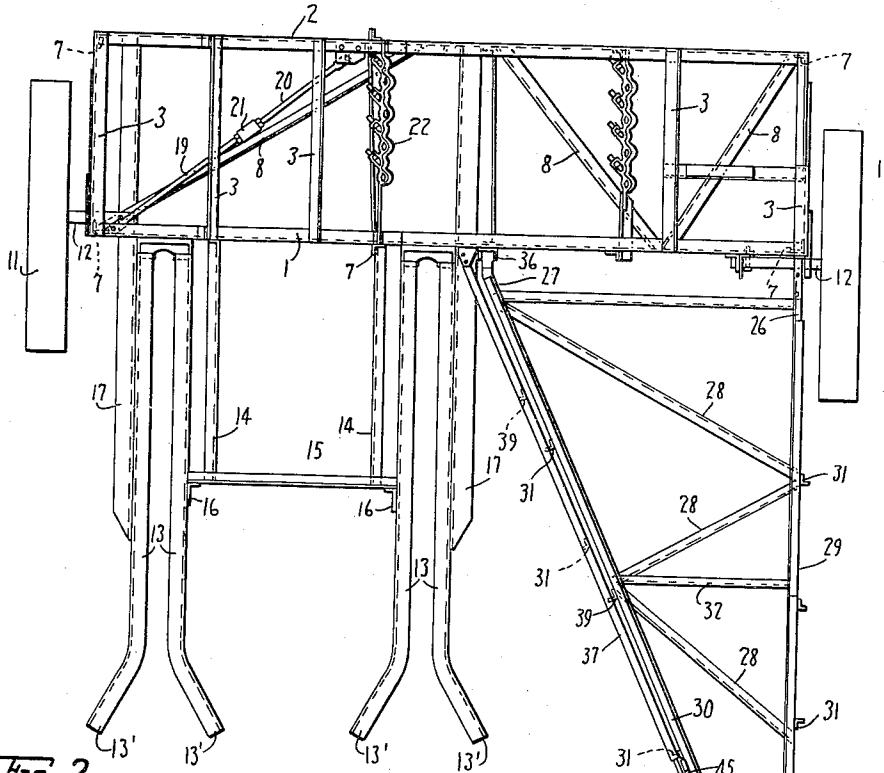


FIG 2

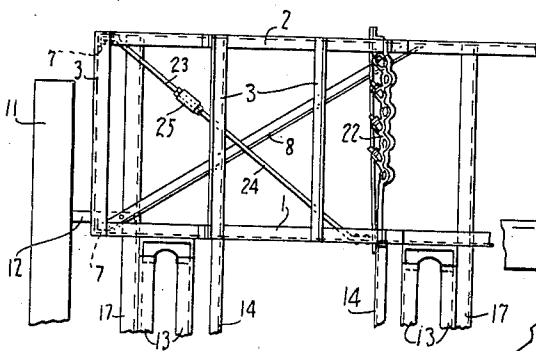


FIG 3

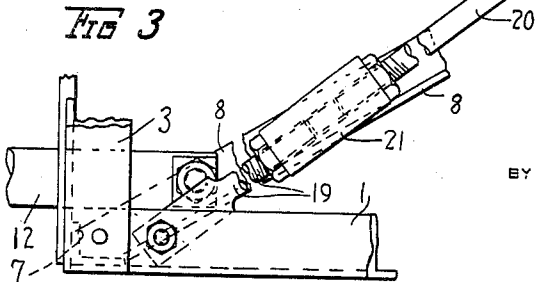
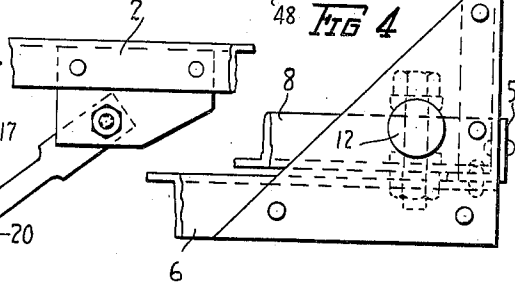


FIG 4



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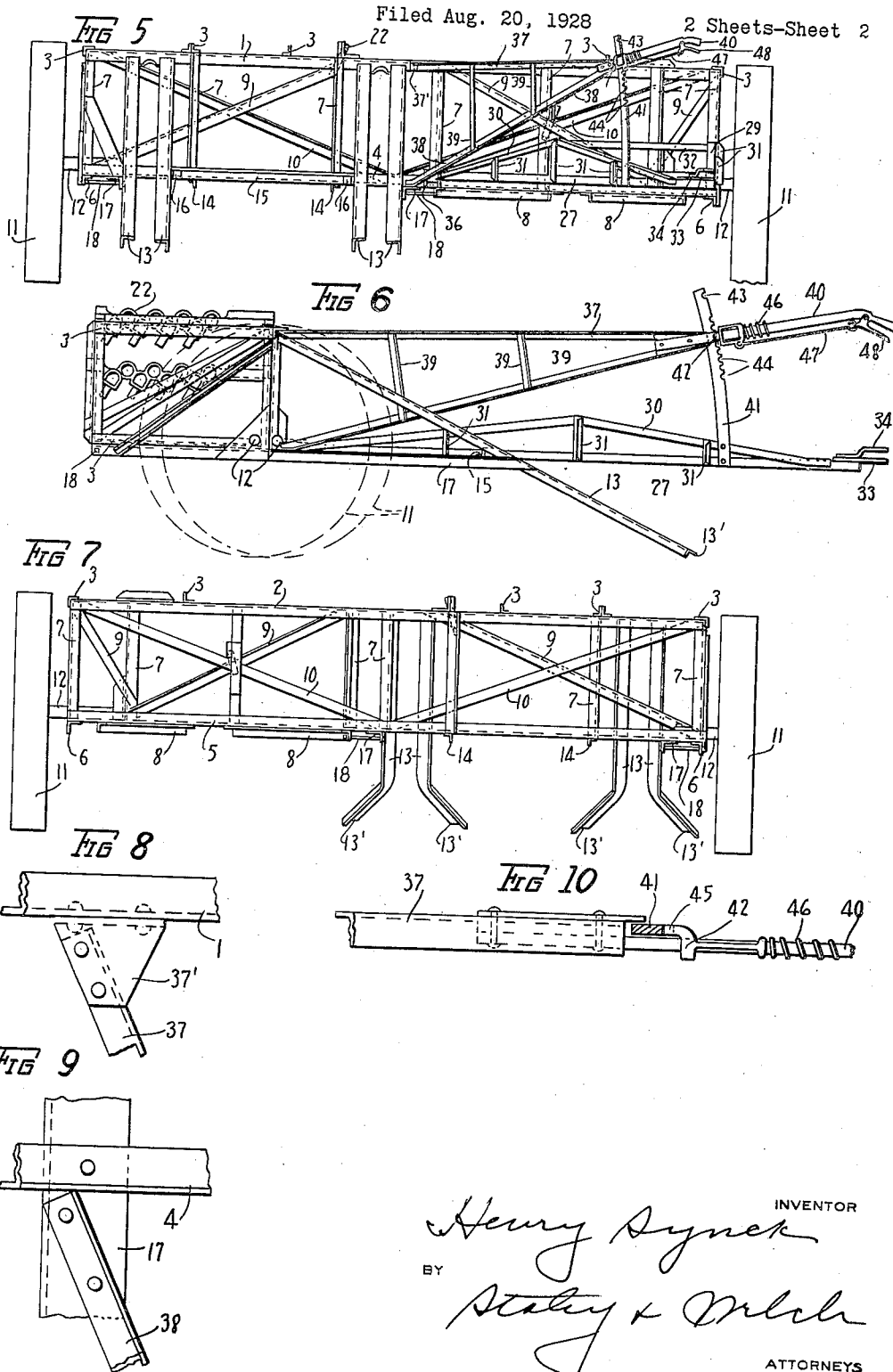
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CORN PICKING AND HUSKING MACHINE

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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

HENRY SYNCK, OF COLDWATER, OHIO, ASSIGNOR TO THE NEW IDEA SPREADER COMPANY, OF COLDWATER, OHIO, A CORPORATION OF OHIO

CORN PICKING AND HUSKING MACHINE

Application filed August 20, 1928. Serial No. 300,693.

This invention relates to corn pickers, it more particularly relating to the construction of the supporting frame and the means for tilting the frame.

One of the objects of my invention is to provide a supporting frame for a corn picker machine which will be extremely light but at the same time rigid enough to prevent sagging in the middle and resist torsional stresses due to the weight of the various mechanisms mounted upon it; a further and more specific object being to provide means whereby such frame after the assembly of the various parts thereon, including the gathering and snapping devices, may be realigned if necessary to properly position said devices with relation to the ground line.

A further object of the invention is to provide for effectively supporting and tilting the frame to adjust the position of the gathering devices with relation to the ground.

In the accompanying drawings:

Fig. 1 is a top plan view of the frame construction and tilting device.

Fig. 2 is a top plan view of a portion of the same showing a modification.

Fig. 3 is an enlarged top plan of a portion of the frame, showing the brace members.

Fig. 4 is a partial end elevation, showing an axle mounting.

Fig. 5 is a front elevation.

Fig. 6 is a side elevation.

Fig. 7 is a rear elevation.

Fig. 8 is a fragmentary plan view, showing tilting lever secured to the frame.

Fig. 9 is a fragmentary plan view, showing tilting lever secured to the frame.

Fig. 10 is a fragmentary top plan view of latching arrangement on the tilting lever.

The particular type of corn picking machine embodying my improvements is one which is tractor drawn and in which the hitch devices are applied at one side of the machine and the gathering and picking mechanisms are supported on the opposite side of the machine. The natural tendency of the weight of these mechanisms is to drag that side of the frame downwardly thereon causing a torsion or twist in the frame which has the effect of throwing the mechanism car-

ried by the frame out of alignment and to also bring the outer gathering unit closer to the ground than the inner one where two gathering units are employed as in the present case. To overcome this difficulty I have incorporated in the frame construction bracing means for resisting or counteracting the tendency of the weight of the gathering and picking mechanism of a nature whereby distortion of the frame structure is prevented, or when distorted may be restored to and maintained in correct alignment.

The frame which I employ is of open box-like character constructed preferably of angle iron. The characters 1 and 2 represent front and rear upper cross rails connected together by longitudinally extending bars 3. The characters 4 and 5 represent front and rear lower cross rails connected by longitudinal cross rails 6 at the respective ends thereof. A series of vertical bars 7 connect the cross rails, and 8, 8 are a series of horizontal diagonal bars connecting the lower rails 4 and 5. The upper and lower front rails 1 and 4 are connected by diagonal bars 9, and the rear upper and lower frame bars 2 and 5 are connected by diagonal bars 10. The frame is supported on wheels 11 journaled on stub axles 12 which are secured to the frame in horizontal alignment with the front rails thereof so that the frame in tilting swings about the axes of the wheels.

In the present case two gathering and picking mechanisms are employed which are carried by that side of the frame opposite to the one to which the draft devices are secured. To support these mechanisms, the main frame is provided with two pairs of forwardly and downwardly extending members 13 having flared ends 13' secured at their upper ends to the main cross rail 1, and further braced and secured to the lower cross rails 4 and 5 by means of forwardly extending bars 14, across the outer ends of which is secured a bar 15 which in turn is secured to the inner members of the pairs of members 13 by means of angle irons 16.

Two members 17 rigidly secured to the outermost members of the pairs of members 13 are pivotally secured to the lower cross

5 rail 4 and extend through underneath to the rear lower cross rail 5 to which they are adjustably attached, there being bolts 18 connecting the members 17 respectively with the members 6 and 8 by means of which the members 17 may be swung on their pivotal connection with the members 4 and the ends 13' of the outer members 13 thereby shifted to vary the width of the throats of the gathering frames; the members 13 having sufficient natural resiliency to permit of this.

10 The hitch or draft devices consist of a forwardly extending beam 26, a diagonally-extending beam 27, and diagonal cross bars 28 connecting and bracing the two beams. Each beam 26 and 27 is further braced by an upwardly bent member 29 and 30 respectively, each of which is rigidly secured at each end to their respective beams and connected by vertical struts 31 while a transverse connector member 32 is joined to both beams 29 and 30 at their high points. At the forward ends of the beams 26 and 27 is a plate 33 to which a clevis 34 is secured having an opening 35 throughout which a pin (not shown) is inserted.

30 The hitch device is pivotally connected to the forward part of the frame, the beam 26 being hinged to the stub axle 12 at the right hand side, while the beam 27 is hinged to the main lower cross rail, through the medium of a U-shaped bracket 36 secured to said cross rail.

35 A tilting arm consisting of a pair of bars 37 and 38 braced by struts 39 and to which a handle 40 is secured, extends to within convenient reach of the operator on the tractor (not shown) which is employed to draw the implement. The rear end of the tilting arm 40 is rigidly secured to the main frame, the upper bar 37 being rigidly secured to a bracket 37' bolted to the upper cross rail 1 (Fig. 8), while the lower bar is rigidly attached to the bar 17 (Fig. 9). A toothed segment 41 which cooperates with a latch 42 slidably mounted on the handle 40 is attached to both bars 27 and 30 and has an upper notch 43 and a series of other notches 44, the upper notch 43 serving to maintain the frame in position for transportation, while the series of notches 44 allow for various heights of the implement when in operation in the field. The latch 42 has a tooth 45 adapted to fit into any of the notches and is maintained therein by a spring 46; a link 47 connects the latch with a grip 48.

50 Since the forward part of the hitch is coupled to a fixed tractor drawn bar, and as the tilting arm is rigidly locked to the toothed segment 41 and the frame pivots on the wheels 11, it follows that the forward portions of the gathering units can be held a fixed distance from the ground, and that the outer gathering unit can be held as far from the ground as the inner gathering unit,

providing there is no torsion in the supporting frame. Since the draft member and tilting arm are to the one side of the frame and the overhanging gathering units to the other side, and the husking unit in the rear of the pivot line of the wheels and diagonally across, it is but natural that the frame is susceptible by the weight of the snapping units to torsion or twisting. It is of course essential that an open box-like frame must contain horizontal and vertical spacers, together with cooperating horizontal and vertical bracing means. In order to correct any torsion in an open box-like frame spaced and braced as here mentioned, one of the braces in the frame is made adjustable as to length. The preferable construction is to make the one horizontal and diagonal brace composed of rods 19 and 20 with turn buckle 21 whereby the brace may be adjusted as to length, as the adjustable brace, as it is the most directly located with reference to the outer gathering unit.

By this construction an extremely light and very strong frame is provided of a nature which will permit the frame parts to be originally so assembled and aligned as to properly adjust the gathering and picking mechanisms with relation to the ground line and also of such a nature as to provide for subsequently aligning the parts of the main frame in the event that that side of the frame which carries the two gathering and picking mechanisms should sag under the weights of the mechanisms and thereby distort the frame and cause a disalignment of the mechanism, it only being necessary to adjust the two-part brace member in order to effectively restore the parts of the frame to their original position. It will be understood that this frame carries not only the gathering and picking mechanisms, but also husking rolls and conveying devices and that it is important for the effective operation of such parts that the frame should be kept properly aligned; also, it is important where a plurality of gathering mechanisms are employed, that these mechanisms should be in uniform relation with the ground.

115 The diagonally arranged member of the draft device is the one which performs the major part of the operation of drawing the implement, the other longitudinally arranged draft member being more to stabilize and cause the implement to run in a true course. The points of the gathering units may be adjusted at any time with relation to the ground to enable them to pick up down corn stalks, and may be raised high above the ground when desired, for transportation purposes.

120 In Fig. 2 there is shown a modification in which a compression member is employed consisting of two parts 23 and 24 connected by a turn-buckle 25 which is threaded upon both of the brace members. In this case the

member 23 is connected to the outer end of the rear rail 2 and the member 24 to an intermediate portion of the front rail 1. To raise the forward part of the frame, the brace member is lengthened by turning the buckle 25, it being understood that the brace members are oppositely threaded.

Having thus described my invention, I claim:

1. In a corn picking machine, a main frame, carrying wheels upon which the forward part of said main frame is pivotally mounted, a draft member pivotally connected to the forward part of said main frame, and a tilting arm formed of two divergent members, one of which is rigidly connected to the upper part of said main frame and the other of which is rigidly connected to the lower part of said main frame, and means for adjustably connecting the forward end of said arm to said draft member.

2. In a corn picking machine, a main frame, carrying wheels upon which the forward part of said main frame is pivotally mounted, a draft member pivotally connected to the forward part of said main frame, and a tilting arm formed of two divergent members, one of which is rigidly connected to the upper part of said main frame and the other of which is rigidly connected to the lower part of said main frame, and means for adjustably connecting the forward end of said arm to said draft member comprising a toothed bar projecting from said draft member and a manually operated latch carried by said arm.

3. In a corn picking machine, a main frame consisting of cross, longitudinal and vertical members connected rigidly together to form a skeleton box-like structure of greater width than length whose top and bottom and front and rear ends are each of rectangular form, a supporting wheel at each side of said frame, forwardly extending supports for two sets of gathering devices at one side of said frame, and a diagonally extending brace member connecting a rear frame member with a front frame member on that side of the frame which carries said forwardly extending supports.

4. In a corn picking machine, a main frame consisting of upper and lower front and rear parallel cross rails, parallel longitudinal bars, parallel vertical bars, and diagonal bars all connected to form an open box-like structure whose top and bottom and front and rear ends are of rectangular form and whose width is considerably greater than its length, wheels at the ends of said frame for supporting the same, forwardly extending supports for two sets of gathering devices at one side of said frame, and a horizontal diagonally-extending brace member connecting a rear cross rail with a front cross

rail on that side of the frame having said support.

5. In a corn picking machine of the character described, a skeleton-like main frame having a rectangular shaped top and a similarly formed bottom in parallel relation to each other, parallel front and rear ends of a rectangular form, parallel running carrying wheels at the sides thereof, a pair of forwardly extending supports for gathering units attached to said main frame, one support being located near an outer side of said main frame and the other support closer to the center of said frame, a forwardly extending draft member located aside said supports and to which the main frame is adjustably connected for the purpose of varying the up and down position of the free ends of said supports with reference to the draft member, and bracing means to prevent torsion of said main frame so as to hold the extended ends of the outer supports at substantially even height from the ground with that of the extended end of the inner support.

6. In a corn picking machine, a structural main frame of considerably greater width than length formed of an open box-like construction whose ends are in parallel relation to each other and whose top and bottom are likewise disposed as well as the sides thereof so as to form a hollow compartment, a carrying wheel at each side of said frame, forwardly extending supports for gathering units on said frame, supports for a husking unit carried by said frame between the front and rear ends thereof, hitch devices connected to the forward end of said frame on the opposite side thereof from said gathering unit supports, and a diagonal brace to prevent torsion of the main frame.

7. In a corn picking machine of the character described, a skeleton-like main frame having horizontal and vertical surfaces of rectangular form, said frame being composed of horizontal cross and longitudinal members and vertical members, parallel running carrying wheels at the sides thereof, forwardly extending supports for gathering units attached to said main frame, one pair of supports being located closer to the center of the main frame, a forwardly extending draft member located aside said supports and to which the main frame is adjustably connected for the purpose of varying the up and down position of the free ends of said supports with reference to the draft member, and bracing means in said frame consisting of diagonally spaced horizontal and vertical members some which are in compression and some which are in tension to prevent torsion in said main frame so as to hold the extended ends of the outer pair of supports at substantially even height from

the ground with that of the extended inner pair of supports.

8. In a corn picking machine, a main frame constructed to have some degree of flexibility, a carrying wheel adjacent each end thereof, a forwardly-extending support for a pair of gathering units carried by said main frame, the support for one unit being located at a point near one side of said frame and the other support located closer to the center thereof, and a diagonally-extending adjustable tension member connected with that side of said main frame carrying said supports to align the main frame and hold the outer end of the outer support at a substantially even height from the ground with that of the outer end of the inner support.

9. In a corn picking machine, a main frame consisting of upper and lower front and rear cross rails, longitudinal bars and vertical bars all connected to form an open box-like structure at considerably greater width than length having some degree of flexibility, supporting wheels upon which said frame is tiltably mounted, forwardly extending supports carried at one side of said frame for two sets of gathering devices, and a horizontal diagonally-extending member adjustable as to length connecting the two upper cross rails at that side of the frame which supports the gathering devices whereby the extremity of that side of the frame may be raised in relation to the ground to align the supports for the gathering mechanism.

10. In a corn picking mechanism, a main frame, carrying wheels upon which said main frame is pivotally mounted, a draft member pivotally connected to the forward part of said main frame, a tilting arm rigidly connected with said main frame and projecting in the direction of said draft member above the same, an upwardly extending member rigidly connected with said draft member, and means for latching said tilting arm in different positions of adjustment to said upwardly extending member.

11. In a corn picking mechanism, a main frame, carrying wheels upon which said main frame is pivotally mounted, a draft member pivotally connected to the forward part of said main frame, a tilting arm rigidly connected with said main frame and projecting in the direction of said draft member above the same, an upwardly extending toothed member rigidly connected with said draft member, and a manually-operated latch carried by said tilting arm for engagement with the teeth of said toothed member.

12. In a corn picking machine, a supporting structure, carrying wheels upon which said structure is mounted, a draft member pivotally connected to said structure, a tilting arm rigidly connected directly with said structure and partly at least sustained there-

by and located in a plane above said draft member, an upwardly extending member directly supported by said draft member, and means for directly latching said tilting arm in different positions of adjustment to said upwardly extending member.

13. In a corn picking machine, a supporting structure, carrying wheels upon which said structure is mounted, a draft member pivotally connected with said structure, a tilting arm rigidly connected directly with said structure and partly at least sustained thereby, said tilting arm comprising a member which is connected with the upper part of said structure and a brace member connected with and projecting at an angle to said first member and having a connection with the lower portion of said structure, an upwardly extending member carried by said draft member, and means for latching said tilting arm in different positions of adjustment to said upwardly extending member.

14. In a corn picking machine, a supporting structure, carrying wheels upon which said structure is pivotally mounted, a draft member pivotally connected to said structure, a tilting arm rigidly connected directly with said structure and partly at least sustained thereby and located in a plane above said draft member, an upwardly extending toothed member supported by said draft member, and a detent carried by said tilting arm engageable with said toothed member to hold said tilting arm in different positions of adjustment.

15. In a corn picking machine, a supporting structure, carrying wheels upon which said structure is mounted, a draft member pivotally connected with said structure and a tilting arm rigidly connected directly with said structure and partly at least sustained thereby, said tilting arm comprising a member which is connected with the upper part of said structure and a brace member connected with and projecting at an angle to said first member and being connected with the lower portion of said structure, and means for holding said tilting arm in different positions of adjustment.

16. In a corn picking machine, a supporting frame, carrying wheels upon which said frame is mounted for tilting movement, a draft member pivotally connected to said frame, a tilting arm connected directly with said frame to tilt same and sustained at least partly thereby and located in a plane above said draft member, an upwardly extending member directly supported by said draft member, and means for latching said tilting arm in different positions of adjustment to said upwardly extending member.

In testimony whereof, I have hereunto set my hand this 18th day of July 1928.

HENRY SYNCK. 130