H. E. PURDY & E. W. MILLER.

CORN HARVESTER.

APPLICATION FILED MAR. 13, 1909.

981,223. Patented Jan. 10, 1911.

4 SHEETS—SHEET 1.

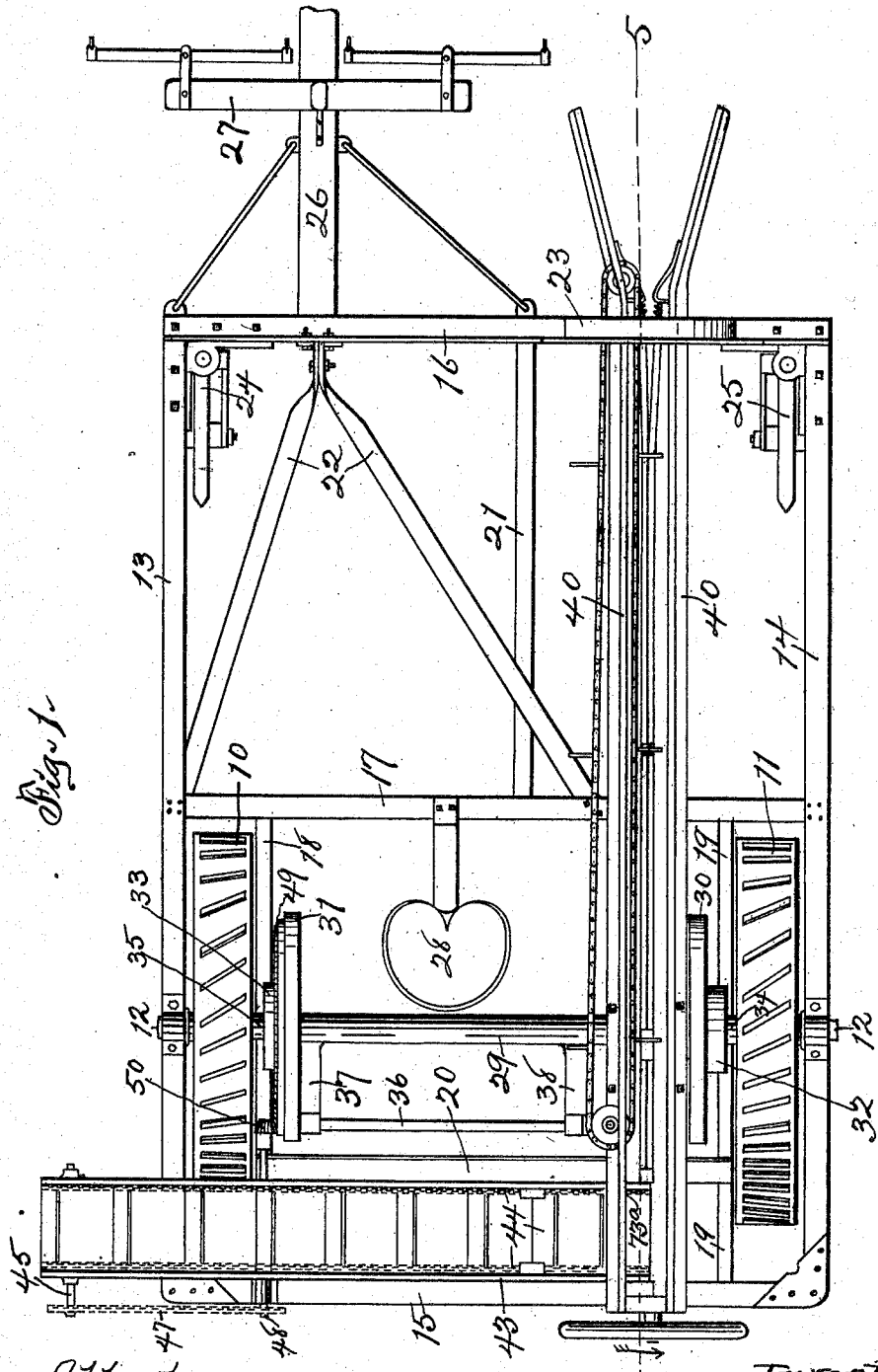

Fig. 1.

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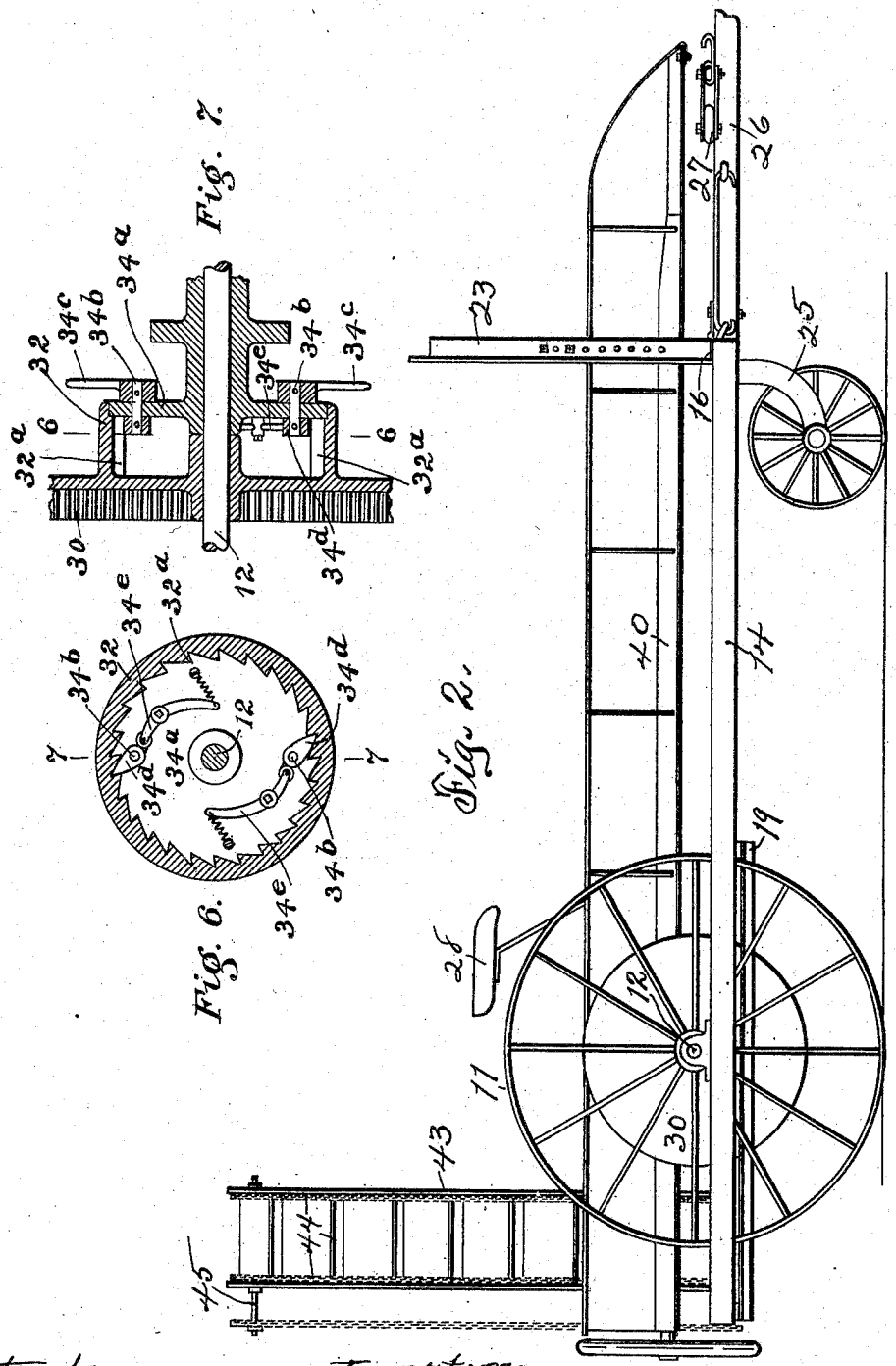

Fig. 2.

Fig. 7.

Fig. 6.

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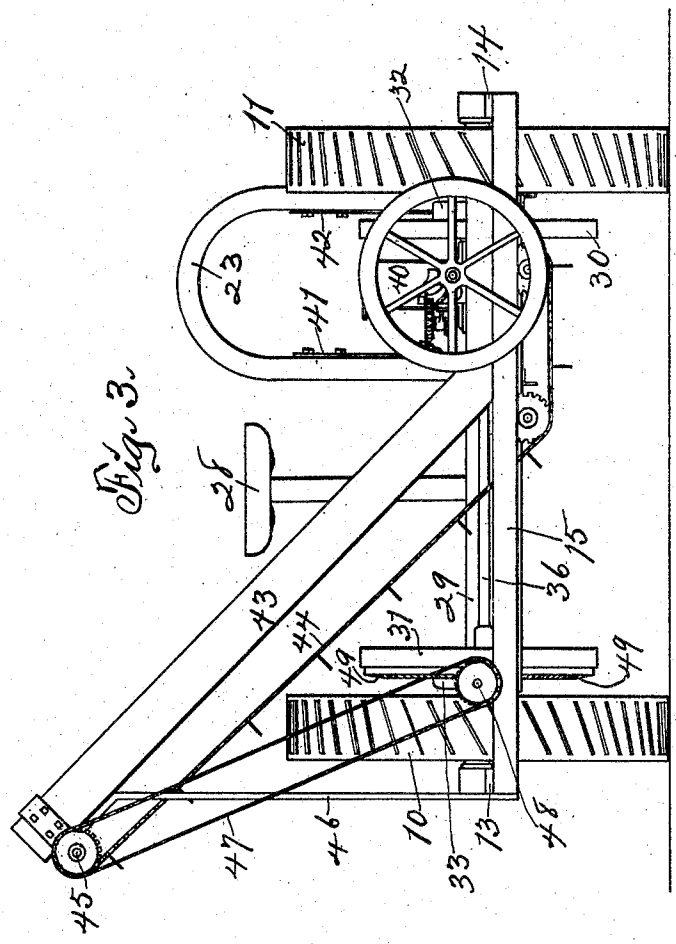
4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

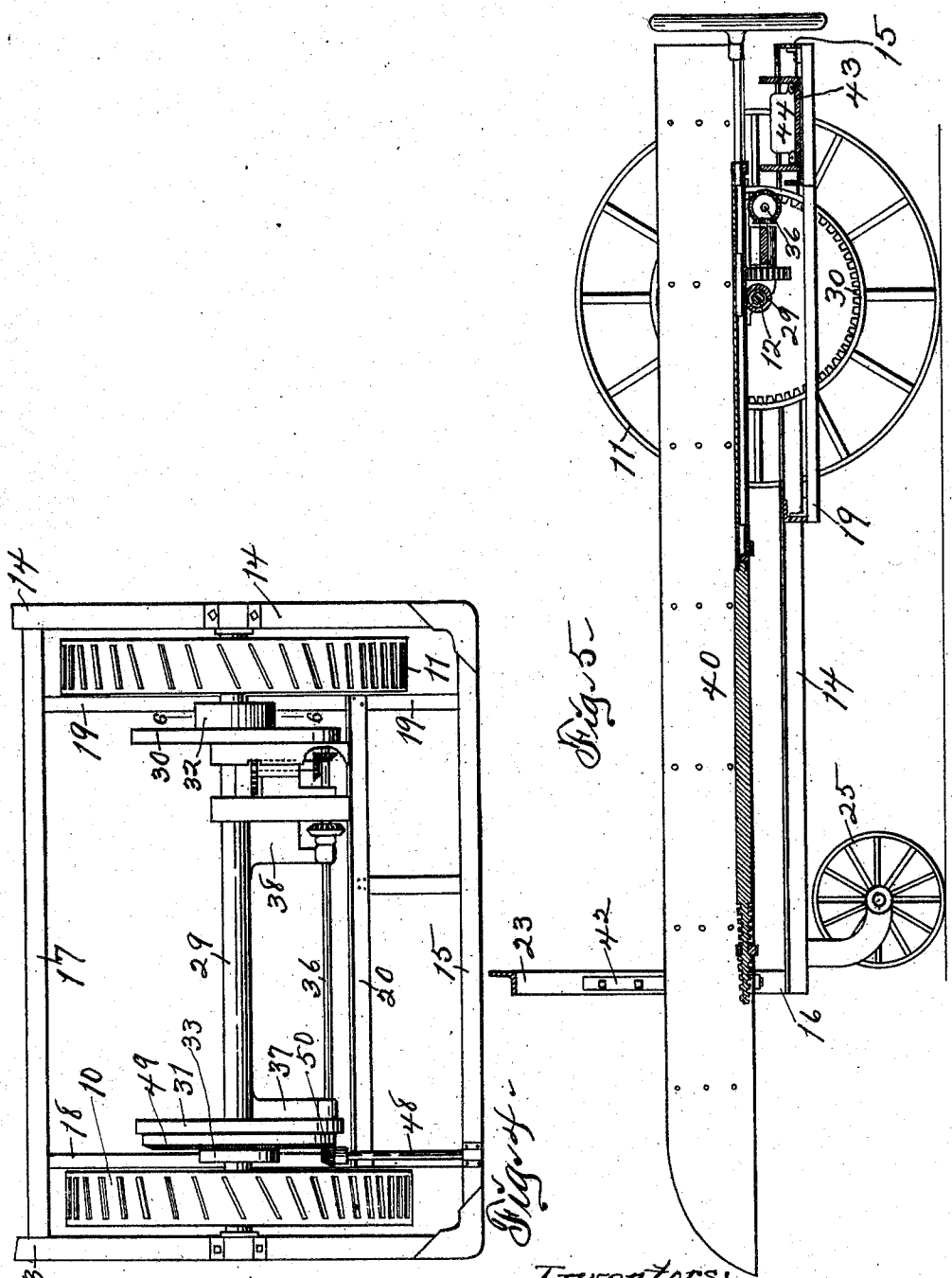

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

HIRAM E. PURDY, OF ROCKWELL CITY, AND ERLE W. MILLER, OF DES MOINES, IOWA, ASSIGNORS OF FOUR-TENTHS TO SAID PURDY, TWO-TENTHS TO J. H. BRADT, ONE-TENTH TO T. W. McCREARY, ONE-TENTH TO E. Z. SMITH, ONE-TENTH TO A. F. DEAN, AND ONE-TENTH TO G. L. BROWER, ALL OF ROCKWELL CITY, IOWA.

CORN-HARVESTER.

981,223. Specification of Letters Patent. **Patented Jan. 10, 1911.**

Application filed March 13, 1909. Serial No. 483,615.

To all whom it may concern:

Be it known that we, HIRAM E. PURDY and ERLE W. MILLER, both citizens of the United States, residing at Rockwell City and Des Moines, in the counties of Calhoun and Polk and State of Iowa, respectively, have invented a new and useful Corn-Harvester, of which the following is a specification.

The object of this invention is to provide an improved construction for portable corn harvesters.

A further object of this invention is to provide improved means for driving corn snapping, corn husking and corn elevating devices.

A further object of this invention is to provide improved means for receiving and elevating husked corn.

Our invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in our claims and illustrated by the accompanying drawing, in which—

Figure 1 is a plan of the complete mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is a rear end elevation of the same. Fig. 4 is a detail plan, partly in section, of a portion of the mechanism. Fig. 5 is a vertical section on the indicated line 5—5 of Fig. 1. Fig. 6 is a cross-section on the indicated line 6—6 of Fig. 4, on an enlarged scale. Fig. 7 is a cross-section on the indicated line 7—7 of Fig. 6.

The snapping and husking mechanisms and conveying devices illustrated and described herein form the subject matter of a companion application executed by us on even date herewith and pending concurrently in the Patent Office, to which application reference is hereby made.

In the construction of the mechanism as shown, the numerals 10, 11 designate traction wheels, which also serve as supporting wheels and carry the major portion of the weight of the machine. An axle 12 is mounted loosely in the wheels 10, 11 and a rectangular frame is mounted loosely on the axle. The rectangular frame is constructed of side bars 13, 14, end bars 15, 16, a cross bar 17 connecting central portions of the side bars, longitudinal bars 18, 19 connecting the cross bar 17 and end bar 15, a cross bar 20 connecting the longitudinal bars 18, 19, a draft bar 21 connecting the cross bar 17 and end bar 16 and brace bars 22 connecting the cross bar 17, side bar 13 and end bar 16. An arch 23 is formed in and at one side of the center of the forward end bar 16 of the frame. Casters 24, 25 are swiveled to and support forward corners of the frame. A tongue 26 is fixed and braced to the end bar 16 of the frame on the opposite side of the center thereof from the arch and draft animals may be attached to said tongue by swingle-trees 27. One of the braces from the tongue 26 engages the forward end of the draft bar 21. A seat 28 is mounted on the cross bar 17. A gear-frame 29 is pivoted on and extends longitudinally of the axle 12 between the traction wheels 10, 11. Internal gears 30, 31 are mounted loosely on the axle 12 and abut end portions of the gear-frame 29. Tubular hubs 32, 33 are formed on the internal gears 30, 31 and said hubs are connected by ratchet and pawl devices of conventional form to hubs 34, 35 of the traction wheels 11, 10. The hubs 34, 35 are formed with peripheral flanges 34^a (Fig. 7) within and loosely fitting the tubular hubs 32, 33. Rock shafts 34^b are journaled in the flange 34^a at diametrically opposite points and are operated by hand levers 34^c on the outer ends thereof. Pawls 34^d are mounted on the inner ends of the rock shaft 34^b and engage at times with ratchets 32^a on the hubs 32, 33. The pawls 34^d are held in either position in which they may be placed manually by spring-pressed levers 34^e fulcrumed on the flange 34^a. Thus is the motion of the traction wheels transmitted to the internal gears 30, 31 and thus is provision made for differential travel of the traction wheels.

A driving shaft 36 is mounted for rotation in bearings 37, 38 projecting rearward from the gear-frame 29 and pinions (not shown) on end portions of said shaft are received within and mesh with the internal gears 30, 31. One of these pinions is shown and described in our companion application above mentioned.

A forked frame 40 is mounted on the gear-frame 29 and extends the full length of and projects at each end beyond the rectangular frame of the machine. The forked frame

40 is located above and crosses the end bar 15 and cross bars 17 and 20 and extends through the arch 23. L-bars 41, 42 are bolted to and adjustable vertically on the sides of the arch 23 and the laterals thereof extend beneath and are adapted to support the forward end portion of the forked frame 40 at any desired elevation, thus providing for level or inclined location of said forked frame. The forked frame 40 carries snapping rolls, husking rolls, conveying devices, a fly wheel, and gear connections driven by the drive shaft 36, and are fully described in our companion application above mentioned.

An elevator boot 43 is mounted in inclined position transversely of the rear end portion of the main frame and the lower end portion thereof is below an opening 73ª in the rear end portion of the forked frame 40 and is adapted to receive husked corn from the rolls in said frame. A drag conveyer 44 is mounted for travel in the boot 43 and is driven in a common manner by a shaft 45 journaled transversely of and beneath the upper end of said boot. The upper end portion of the boot 43 is carried by a standard 46 rising from the left rear corner of the main frame. The shaft 45 is driven by sprocket gearing 47 from a counter-shaft 48 journaled in suitable bearings on the end bar 15 and longitudinal bar 18. A bevel gear 49 is formed on the internal gear 41 and meshes with a bevel gear 50 on the forward end of the counter-shaft 48.

A wagon may be driven alongside this machine and receive husked corn from the top of the elevator boot 43.

In practical use of this machine the forked frame 40 is adjusted, as to inclination, by raising or lowering the L-bars 41, 42 in the arch 23 according to the condition of the corn to be harvested. If the corn is badly "down" the forward end portion of the forked frame 40 would be brought into close relation with the ground in order that it may gather and pick up the corn stalks. Then the machine is driven across the field, the driver occupying the seat 28, and the snapping and husking devices remove the ears of corn from the stalks and husk them and the conveying devices carry the ears of corn along the snapping and husking devices and discharge them through the opening 73ª as described in our companion application above mentioned. When the corn is discharged through the opening 73ª it falls into the boot 43 and is elevated and discharged at the upper end of said boot by the drag conveyer 44.

The machine may be provided and constructed with multiple forked frames 40 adapted to straddle more than one row simultaneously without departing from the spirit of our invention.

We claim as our invention—

1. A corn harvester, comprising traction wheels, an axle therein, a main frame carried by said axle, spur gears loosely mounted on said axle, one of said spur gears formed with a bevel gear, ratchet connections between said spur gears and the traction wheels, a forked frame mounted for oscillation on the axle, snapping, husking and conveying mechanisms carried by said forked frame, gear connections between said spur gears and the snapping and husking mechanisms and the conveying mechanism, an elevator mounted rigidly on and extending transversely of and upwardly from said main frame, and driving connections between said bevel gear and the elevator.

2. A corn harvester, comprising traction wheels, an axle in said wheels, a main frame on said axle and inclosing said wheels, a gear-frame pivoted on said axle, bearings on and extending rearward from said gear-frame, spur gears on said axle between the gear-frame and wheels, ratchet connections between said spur gears and the traction wheels, one of said spur gears formed with a bevel gear; a forked frame fixed to said gear-frame and arranged for oscillation therewith relative to said axle, snapping, husking and conveying mechanisms on said forked frame and operatively connected to said spur gears, elevating mechanism transversely of the frame, and operative connections between said elevating mechanism and said bevel gear.

3. A corn harvester, comprising traction wheels, an axle in said wheels, a main frame on said axle and inclosing said wheels, a gear-frame pivoted on said axle, spur gears on said axle between the gear-frame and wheels, ratchet connections between said spur gears and the traction wheels, one of said spur gears formed with a bevel gear, a forked frame fixed on said gear-frame and arranged for oscillation therewith relative to said axle, snapping, husking and conveying mechanisms on said forked frame and operatively connected to said gears, elevating mechanism transversely of the frame, operative connections between said elevating mechanism and said bevel gear, an arch at the forward end of the main frame, the forked frame extending through and adjustably connected to said arch.

4. A corn havester, comprising traction wheels, an axle loosely mounted in said wheels, a main frame loosely mounted on said axle and inclosing said wheels, a gear-frame pivoted on said axle, spur gears on said axle between the gear-frame and wheels, ratchet connections between said spur gears and the traction wheels, a forked frame fixed on said gear-frame and arranged for oscillation therewith relative to said axle, a driving shaft mounted for rotation in said gear

frame and geared to said spur gears, one of said spur gears formed with a bevel gear, snapping, husking and conveying mechanisms on said forked frame and operatively connected to said driving shaft, elevating mechanism transversely of the frame, and operative connections between said elevating mechanism and said bevel gear, together with casters supporting the forward end of the main frame.

5. A corn harvester, comprising traction wheels, an axle in said wheels, a frame on said axle and inclosing said wheels, a gear-frame pivoted on said axle, gears on said axle between the gear-frame and wheels and clutched to said wheels, a forked frame fixed to said gear-frame and arranged for oscillation therewith relative to said axle, snapping, husking and conveying mechanisms on said forked frame and operatively connected to said gears, elevating mechanism transversely of the frame, and operative connections between said elevating mechanism and one of said gears, the main frame formed with an arch at its forward end, the forked frame extending through said arch, and supports adjustably mounted in said arch and engaging said forked frame.

6. A corn harvester, comprising traction wheels, an axle in said wheels, a main frame on said axle and inclosing said wheels, a gear-frame pivoted on said axle, gears on said axle between the gear-frame and wheels and clutched to said wheels, a forked frame fixed to said gear-frame and arranged for oscillation therewith relative to said axle, snapping, husking and conveying mechanisms on said forked frame and operatively connected to said gears, elevating mechanism transversely of the frame, and operative connections between said elevating mechanism and one of said gears, the main frame formed with an arch at its forward end, the forked frame extending through said arch, and supports adjustably mounted in said arch and engaging said forked frame, together with casters supporting the forward end of the main frame.

7. A corn harvester, comprising traction wheels, an axle in said wheels, a main frame on said axle, casters supporting the forward end of said main frame, the forward end of the main frame formed with an arch, supports adjustably mounted in said arch, internal gears mounted loosely on said axle and clutched to the traction wheels, a forked frame articulating on the axle and extending through and engaging the supports in the arch, snapping, husking and conveying mechanisms on the forked frame and geared to said gears on the axle, a boot mounted in inclined position transversely of the rear end portion of the frame and adapted to receive corn through the rear end of the forked frame, a drag conveyer mounted in said boot, and drive connections between the drag conveyer and one of the gears on the axle.

8. A corn harvester, comprising traction wheels, an axle in said wheels, a main frame on said axle, casters supporting the forward end of said main frame, the forward end of the main frame formed with an arch, supports adjustably mounted in said arch, internal gears mounted loosely on said axle and clutched to the traction wheels, a forked frame articulating on the axle and extending through and engaging the supports in the arch, snapping, husking and conveying mechanisms on the forked frame and geared to said gears on the axle, a boot mounted in inclined position transversely of the rear end portion of the frame and adapted to receive corn through the rear end of the forked frame, a drag conveyer mounted in said boot, a counter shaft longitudinally of and journaled to the main frame, sprocket connections between said counter shaft and the drag conveyer, and bevel gear connections between said counter shaft and one of said gears.

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Witnesses:
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S. C. SWEET.