

(No Model.)

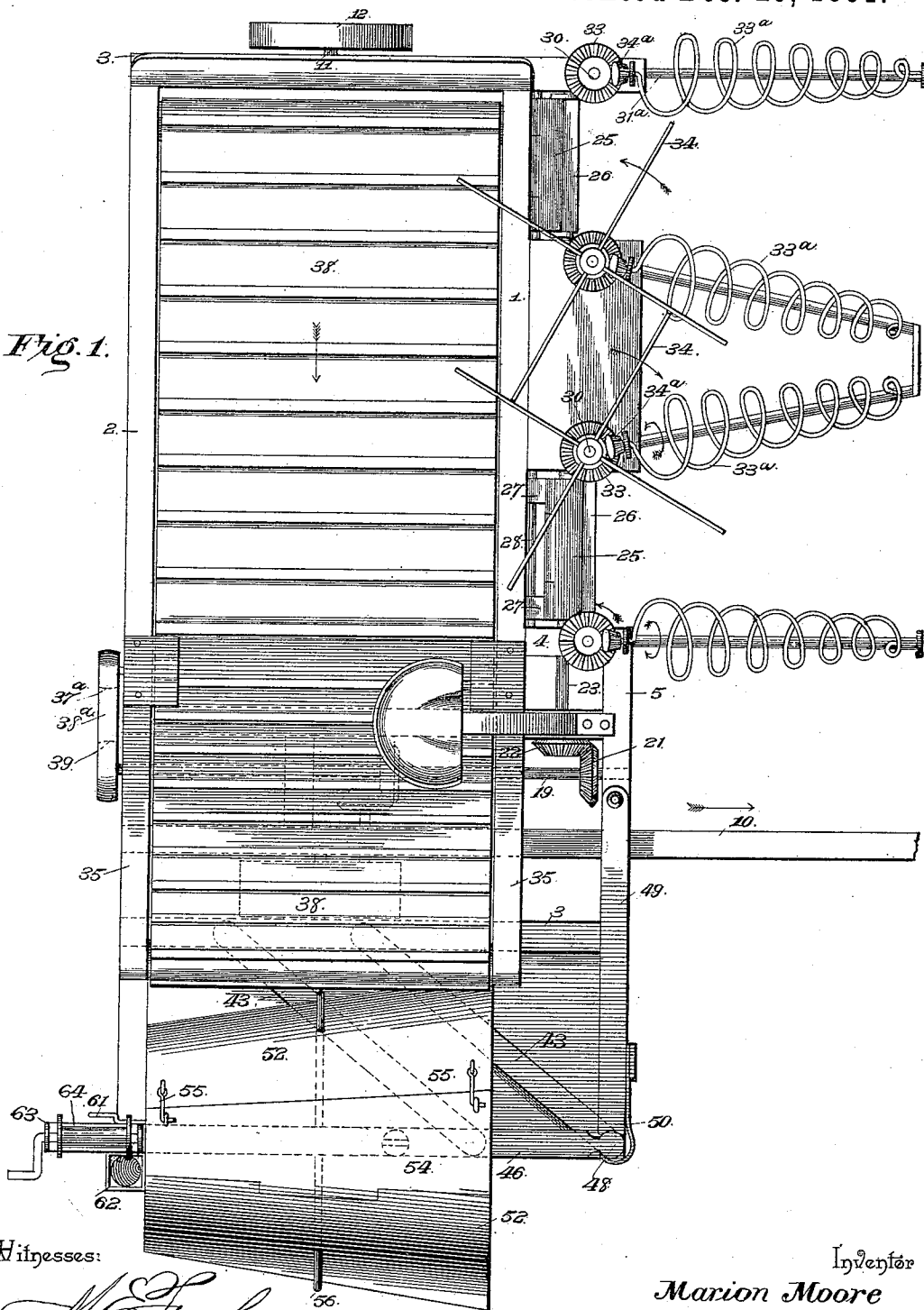
3 Sheets—Sheet 1.

M. MOORE.
CORN HARVESTER.

No. 466,018.

Patented Dec. 29, 1891.

Fig. 1.



Witnesses:

M. Fowler
W. J. Duwall

By his Attorneys,

C. A. Snow & Co.

Inventor
Marion Moore

(No Model.)

3 Sheets—Sheet 2.

M. MOORE.
CORN HARVESTER.

No. 466,018.

Patented Dec. 29, 1891.

Fig. 2.

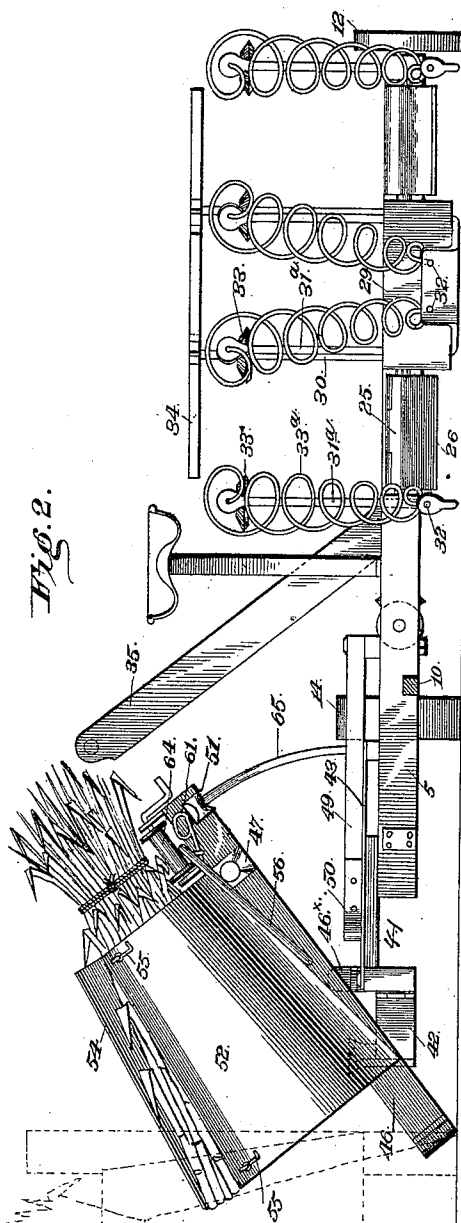


Fig. 6.

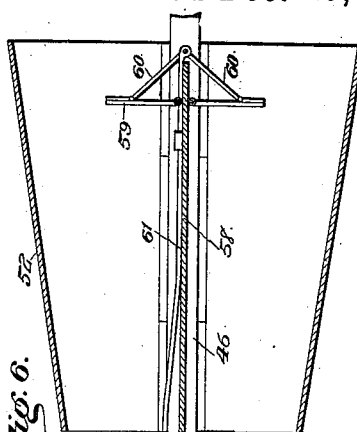
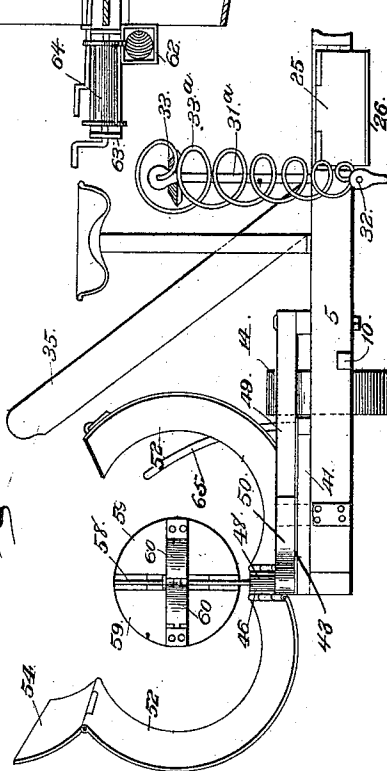


Fig. 3.



Witnesses:

M. C. Fowler
W. J. Duwall

By his Attorneys,

C. A. Snow & Co.

Inventor
Marion Moore

(No Model.)

3 Sheets—Sheet 3.

M. MOORE.
CORN HARVESTER.

No. 466,018.

Patented Dec. 29, 1891.

Fig. 4.

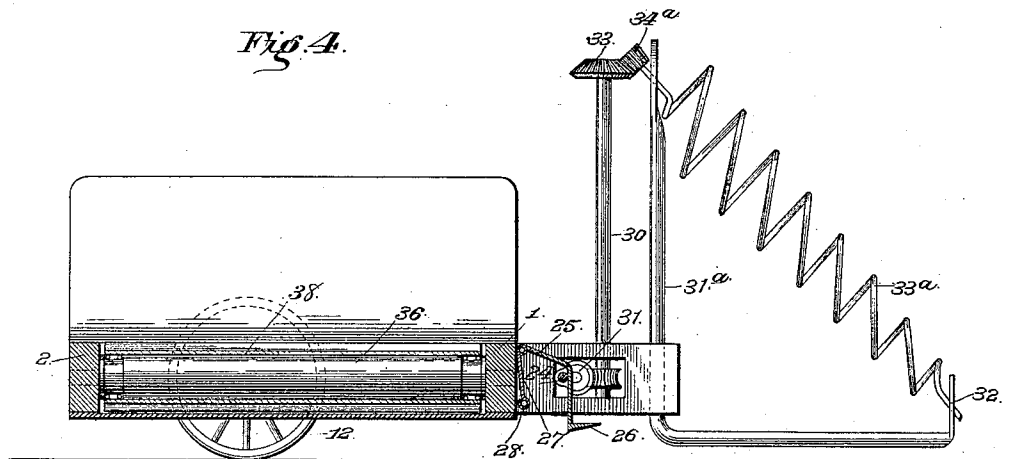


Fig. 5.

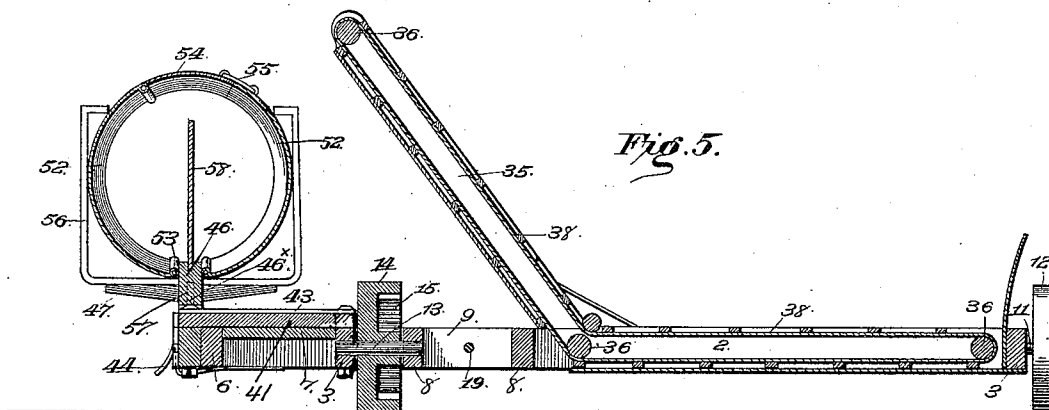


Fig. 7.

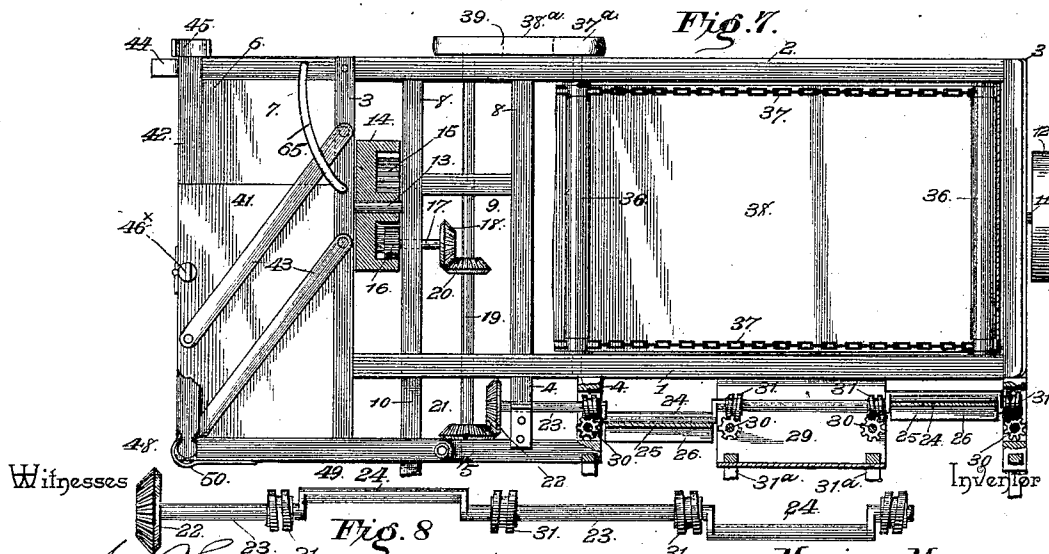


Fig. 8.

Witnesses

M. S. Souther
W. L. Linnell

By his Attorneys,

Marion Moore

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

MARION MOORE, OF AMANDA, OHIO, ASSIGNOR OF ONE-HALF TO SAMUEL METTLER, WILLIAM H. MOORE, AND JAMES C. BARR, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 466,018, dated December 29, 1891.

Application filed December 24, 1890. Serial No. 375,673. (No model.)

To all whom it may concern:

Be it known that I, MARION MOORE, a citizen of the United States, residing at Amanda, in the county of Fairfield and State of Ohio, have invented a new and useful Corn-Harvester, of which the following is a specification.

This invention has relation to corn-harvesters; and the objects in view are to provide a machine of cheap and simple construction that will harvest the corn, bundle the same into shocks, and which will spread the bases of the shocks so that they will readily stand after formation.

Various other additional minor features will hereinafter appear in the following description, and the novel features of the invention will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of a harvester constructed in accordance with my invention. Fig. 2 is a front elevation, the machine being in the act of delivering a shock. Fig. 3 is a front elevation of the machine while in operation. Fig. 4 is a longitudinal section between the gathering-arms. Fig. 5 is a vertical transverse section. Fig. 6 is a detail in horizontal section of the shock-cradle. Fig. 7 is a plan of the machine, the shock-cradle and elevator removed. Fig. 8 is a detail of the cranked cutter-shaft.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practicing my invention I employ a transversely-disposed oblong frame, comprising a front bar 1, a rear bar 2, and opposite end bars 3, connecting the front and rear bars, and to the former are secured the inner ends of a series of short bars 4, connected by a front bar 5, extending to one side of the adjacent end bar 3, and connected by a rearwardly-disposed end bar 6 to the corresponding end of the rear bar 2, and flush with the top of bars 3, 5, 6, and 2 is mounted a platform or covering 7. The front and rear bars are connected near their middle by a pair of rearwardly-disposed bars 8, which are in turn connected by a transverse bar 9. Secured to the under side of the frame work is the draft-pole 10, of usual construction.

Upon a shaft 11, located at the left-hand side of the machine, is mounted for rotation

a ground-wheel 12, and upon a shaft longitudinally opposite the shaft 11, and journaled in the bars 3 and 8 and designated as 13, is mounted a drive-wheel 14, which wheel is provided with an internal gear 15, which engages and drives a small gear 16, mounted upon a short shaft 17 and carrying at its inner end a beveled pinion 18. Motion is imparted from the beveled pinion 18 to a rearwardly-disposed shaft 19, through the medium of a pinion 20, mounted on the shaft 19 and driven by the gear. The shaft 19 is provided at its front end with a bevel-pinion 21, which engages and drives a similar pinion 22, located at the inner end of a transversely-disposed cutter-shaft 23, mounted in suitable bearings located at the front of the frame-work. The cutter-shaft near its ends is provided with cranks 24, and loosely connected at their centers to these cranks are right-angularly-bent plates 25, to the lower ends of which are secured cutters or chopping-blades 26 outwardly and slightly upwardly disposed. The upper ends of the plates are hinged to the upper ends or pairs of straps 27, the lower ends of the straps being hinged, as at 28, to the front bar of the frame-work.

Between the knives the shaft is covered by a forwardly-disposed platform 29, in the outer corners of which are journaled a pair of vertical rotatable shafts 30, having pinions within the platform meshing with and driven by worms 31 of the cutter-shaft. A similar pair of shafts 30 are secured to the front of the platform at each side of the first-mentioned pair, and are also provided with gears engaged and driven by worms upon the cutter-shaft. Each of the vertical shafts 30 is provided near its upper end with a beveled pinion 33, and the two inner shafts at their upper ends above the pinions with radial gathering-arms 34.

In front of each of the vertical shafts 30 is secured an L-shaped standard 31^a, the outer ends of which are upturned and each end provided with a bearing-opening 32. In each of the opposite bearings of each standard is mounted for rotation an inclined spiral feed-shaft 33^a, the upper ends of the shafts extending beyond their bearings and there provided with small pinions 34^a, engaged with

and driven by the pinions of the shafts 30. The two central L-shaped standards have their horizontal branches converged toward each other and connected, so that they combine with the outer L-shaped standards to form converging guides for guiding the stalks of corn to the cutters or choppers, after which they are caught by the revolving arms of the shafts 30 and thrown upon the endless carrier, which I will now proceed to describe.

35 designates a pair of opposite inclined side bars of an endless carrier, between the upper ends of which, between their lower ends, and between the outer ends of the front and rear bars 1 and 2 are mounted rolls 36, over which pass opposite endless chains 37 and an endless apron 38, designed to receive the stalks as deposited by the radiating gathering-arms and elevate the same over the discharge end of the elevator. The central roll of the rolls 36 has its shaft extended in rear of the bar 2 and there provided with a pulley 37^a, which is driven by a short endless belt 38^a, leading from a pulley 39, mounted upon the rear end of the shaft 19.

41 designates a movable platform or table provided at one side with a hinged arm 42 for supporting the cradle while being filled, as will hereinafter appear, said platform being mounted upon the fixed platform 7 at one end or side of the machine, and being connected at the inner edge of the same to the bar 3 by a pair of straps 43, pivoted at their outer ends to the platform 41, diagonally disposed to the rear of the machine and pivoted at their rear ends to the bar 3. The platform 41 is locked in position by means of a spring-catch 44, which takes over the under edge of the hinged arm 42, which latter at its extremity is provided with a notched standard or saddle 45, which supports the small end of the cradle, hereinafter described, and at the outer rear corner of the platform is located a swiveled rotatable key 46^x. The mechanism just described is designed to support in a movable manner the cradle in which the shock is formed subsequent to the delivery of the stalks by the elevator over its delivery end into the cradle. The cradle consists of a central beam 46, provided with a transverse rest-bar 47 to steady it, the front end of the central beam terminating in a rounded tenon or head 48, removably connected by spring 50 with the outer end of a swinging bar 49, pivoted to the front bar 5 of the frame-work. Behind the transverse bar 47 a recess is formed in the under side of the bar 46, and therein located is a loose roller 51. The cradle consists of two halves 52 of a cone-shaped cylinder, hinged at their lower edges, as at 53, to the opposite sides of the bar 46, one-half of said cylinder being provided at its upper edge with a hinged door 54, designed to form a continuation of the cradle when locked in position by means of a pair of hooks 55, secured to the opposite section. The cylinders are adjusted so as to open and

close by a U-shaped bail 56, pivoted at its center transversely in the bar 46 and having its opposite branches inwardly turned to bear against the opposite cylinder-sections. In front of the bail and in the under side of the bar 46 is formed an oblong socket 57, adapted to fit loosely over the upper end of the swiveled key 46^x. Between the cylinder-sections there is secured to the upper side of the beam 46 a vertical partition 58, to the front edge of which is hinged at opposite sides a pair of semicircular wings 59, having hinged near their outer ends a pair of straps 60, which straps are loosely pivoted at their inner ends opposite the front end of the partition to the front end of a rod 61, adapted to operate the wings by spreading them laterally from the partition or folding them substantially in line therewith. At one side of the beam 46 a small basket 62 is located, and in bearings 63 upon the upper side of the beam is mounted a windlass 64 to receive the tying-cords from the basket.

In operation, after the stalks have been fed to the cutters, cut, and delivered upon the endless apron they are carried by said apron over the delivery end of the same, where they are dropped into the cradle, the door of which is swung back and the sections of which are separated or swung open, so as to admit the stalks. The wings 59 are set so as to extend laterally from the partition, and the partition serves the function of equalizing the distribution of the stalks to the opposite cylinders. The butts of the stalks become disposed in a circle around the edges of the wings and are thus spread or diverged from the center of the shocks, so as to form a flared base upon which the shock can safely rest after its formation and withdrawal from the cradle. By pulling the rod the wings 59 are opened, and by pushing the rod it, through the medium of the connecting-bars 60, which are hinged both to the rod and wings, serves to close or swing the wings together in the direction in which the rod travels. During the operation of forming the shock the wings are spread, but after the shock has been formed they are closed. After a sufficient quantity of stalks has been deposited in the cradle, the binding-cord is passed around the end of the same, which, it will be observed, projects beyond the small end of the cradle, and by means of the windlass said binding-cords are drawn taut and their ends tied, after which they are cut and the operation of delivering the shock begins. The attendant grasps the handle 47 of the keel-piece or rib of the cradle and draws the same with the platform and cradle to the rear and to the right, and the cradle is then turned so that the broad end of the cradle is toward the carrier. When moving to this position, the keel-piece swings upon the pivot 46^x, and the bar or arm 49, swinging rearwardly upon its pivot, reaches a position nearly in line with

the keel and automatically disengages at its hook end with the rounded end of the keel. In the movement of the cradle the small end thereof is supported by the hinged bar 42 in the cradle, at the free end of which rests the roller on the under side of the rib. After reaching the position mentioned above, the movements of the cradle and bar 42 are continued until the small end of the cradle is to the front, at which time the roller of the keel thereof leaves the saddle of the arm 42, and the movement of the cradle serves to ride the roller and small end of the cradle up the inclined guide 65, so that the cradle is inclined until the rounded end of keel thereof rests upon the ground, the keel pointing toward the opposite side of the machine, after which the cradle and the shock are lifted to a vertical position. The cradle is now removed from the shock, which latter is left standing, and the parts replaced.

From the above it will be observed that I am enabled to construct a comparatively cheap and simple machine, adapted to automatically gather the stalks, chop the same, deliver the stalks upon an apron and thence into a shock-forming cradle, and finally deliver the stalks from the cradle, all in one continuous uninterrupted operation. It will also be noticed that the knives are outwardly and upwardly disposed, so that they cut upon an incline and in an upward direction away from the roots of the stalks, and hence have a tendency to facilitate a complete severance, more so than when chopping down, which is liable, provided the knives are not in prime condition, to mash the stalks or bend them to the ground.

Having thus described my invention, what I claim is—

1. In a corn-harvester, the combination, with a horizontal cutter-shaft, means for operating the same, cranks formed in the shaft, cutter-plates hinged at their centers to the cranks and loosely connected at their rear ends to the frame-work of the machine, horizontal knives secured to the lower edges of the cutter-plates, and gears mounted on the cutter-shafts, of a series of vertical rotatable shafts mounted in suitable bearings, provided at their lower ends with gears engaged and driven by the gears of the cutter-shafts, pinions mounted on the upper ends of the shafts and gathering-arms mounted above the pinions, an L-shaped standard secured in front of each vertical shaft and provided at its ends with bearing-openings, and spiral shafts mounted in the bearing-openings of the brackets and each provided at its upper end with a beveled pinion engaged and driven by the gear of its adjacent vertical shaft, substantially as specified.

2. In a corn-harvester, the combination, with the cylindrical shock-forming cradle, a central partition therein, of a pair of wings hinged

to the opposite sides of the partition, and rods for operating the wings, so as to spread or fold the same, substantially as specified.

3. In a corn-harvester, the shock-forming cradle comprising a central bar or keel and opposite semi-cone-shaped sections of a U-shaped bail pivoted at its center transversely in the keel and having its terminals embracing the opposite exterior surfaces of the sections, substantially as specified.

4. In a corn-harvester, the combination, with the frame-work, a platform loosely mounted thereon, an arm pivoted at one end to the frame-work, and a pair of arms pivoted to the frame-work, diagonally disposed and pivoted to the platform, of a swiveled stud mounted in the platform, a keel-bar having a socket fitting the stud and adapted to be removably connected to the pivoted arm, opposite hinged sections connected to the keel, and means for locking the sections together, substantially as specified.

5. In a corn-harvester, the combination of the frame-work comprising the stationary table 7, the bar 49, pivoted at one side of the table and having the spring-clip 50, the sliding platform 41, the straps 43, pivoted at their outer ends to the outer edge of the movable platform and at their inner ends to the frame-work and diagonally disposed, the hinged bar 42, secured to the movable platform, the swiveled stud 46^x, mounted in the outer edge of the movable platform, the rib 46, provided at one end with a head or tenon adapted to engage with the spring-clip 50 and provided on its under side with a roller and a socket, the latter mounted upon the swiveled stud, the opposite hinged semi-cone-shaped sections, means for locking the same, and the curved guide-rods, substantially as specified.

6. The combination, with the frame-work, the platform 7, the movable table mounted thereon, and the straps loosely connecting the table and frame-work, of the cradle having a keel pivoted on the table and provided with a rounded head at one end, and the bar 49, pivoted to the frame-work and terminating in the hook 50 for engaging the head of the keel, substantially as specified.

7. The combination, with the frame-work, the fixed platform, and the movable table thereon, of the diagonally-disposed straps connecting the frame-work and table, the hinged arm 42 at one side of the table, the swiveled stud 46^x, mounted on the movable table, and the shock-forming cradle removably mounted thereon and supported removably at one end upon the hinged arm, substantially as specified.

8. In a corn-harvester, a shock-forming cradle consisting of two oppositely-hinged cylindrical sections and means for locking said sections together, one of the sections having a door 54, designed to form a continuation of

the cradle when locked in position, substantially as specified.

9. In a corn-harvester, the combination, with the oppositely-hinged sections forming
5 the shock-cradle, of a central partition located therein, and an operating-bail 56, carried by the partition and operating against the cylinder-sections, for the purpose set forth.

10. In a corn-harvester, the combination,
10 with the oppositely-hinged sections forming the shock-cradle, of a central partition located therein and carrying the means for opening the sections, said partition having a socket 57, and the swiveled stud 46* on the frame-

work to be engaged by the socket, as set 15 forth.

11. In a corn-harvester, the combination, with the oppositely-hinged sections forming the shock-cradle, of a central partition located therein, substantially as specified. 20

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

MARION MOORE.

Witnesses:

HENRY BALLHASER,
LEVI CLARK.