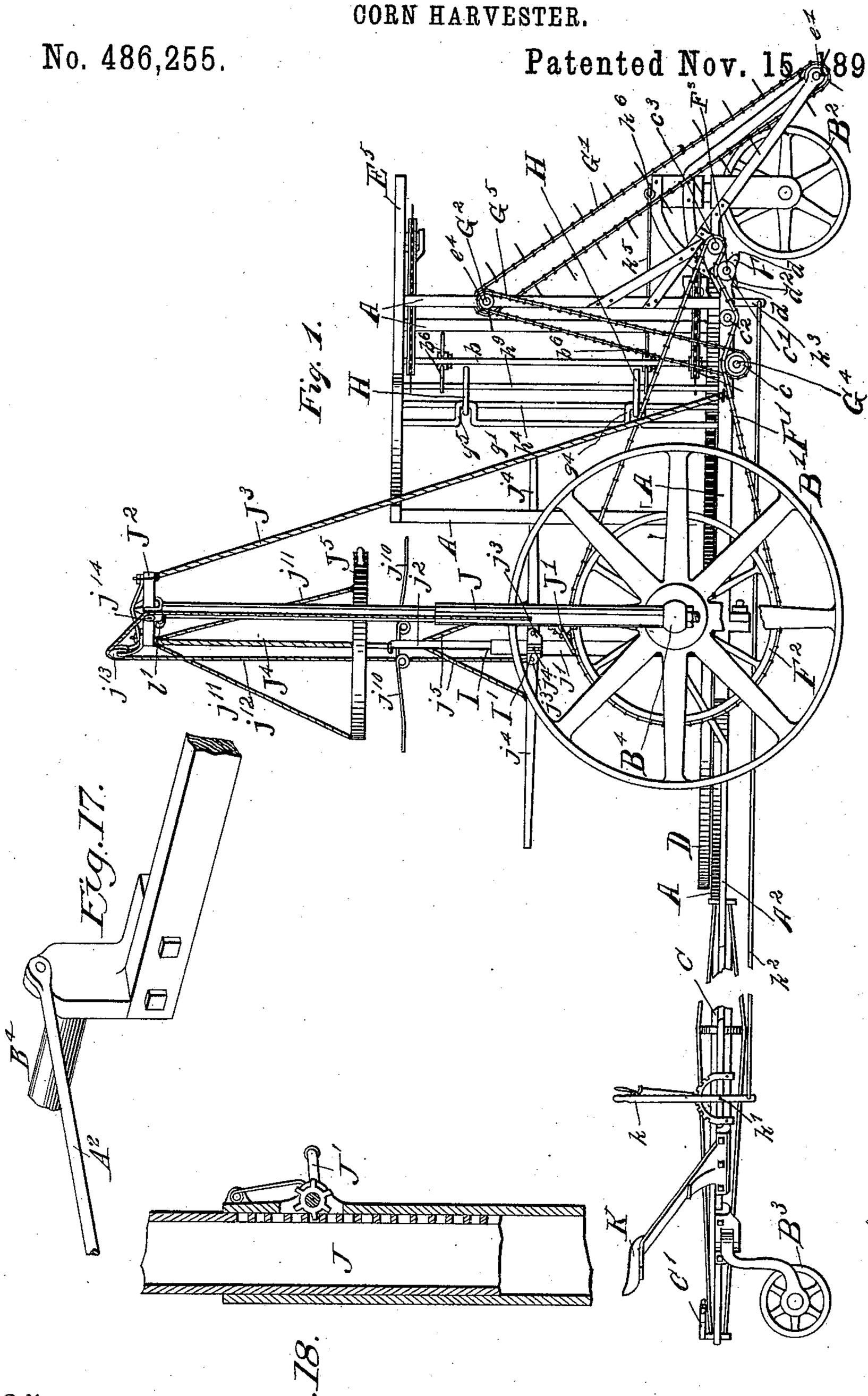
(No Model.)

4 Sheets—Sheet 1.

A. V. KISER.

CORN HARVESTER.

No. 486,255. Patented Nov. 15, 1892.



Witnesses
Frank Watt
W. C. Oster.

Inventor
Alvie V. Kiser
By his Attorneys
Staley & Shepherd

(No Model.) 4 Sheets—Sheet 2.

A. V. KISER.

CORN HARVESTER.

No. 486,255. Patented Nov. 15, 1892.

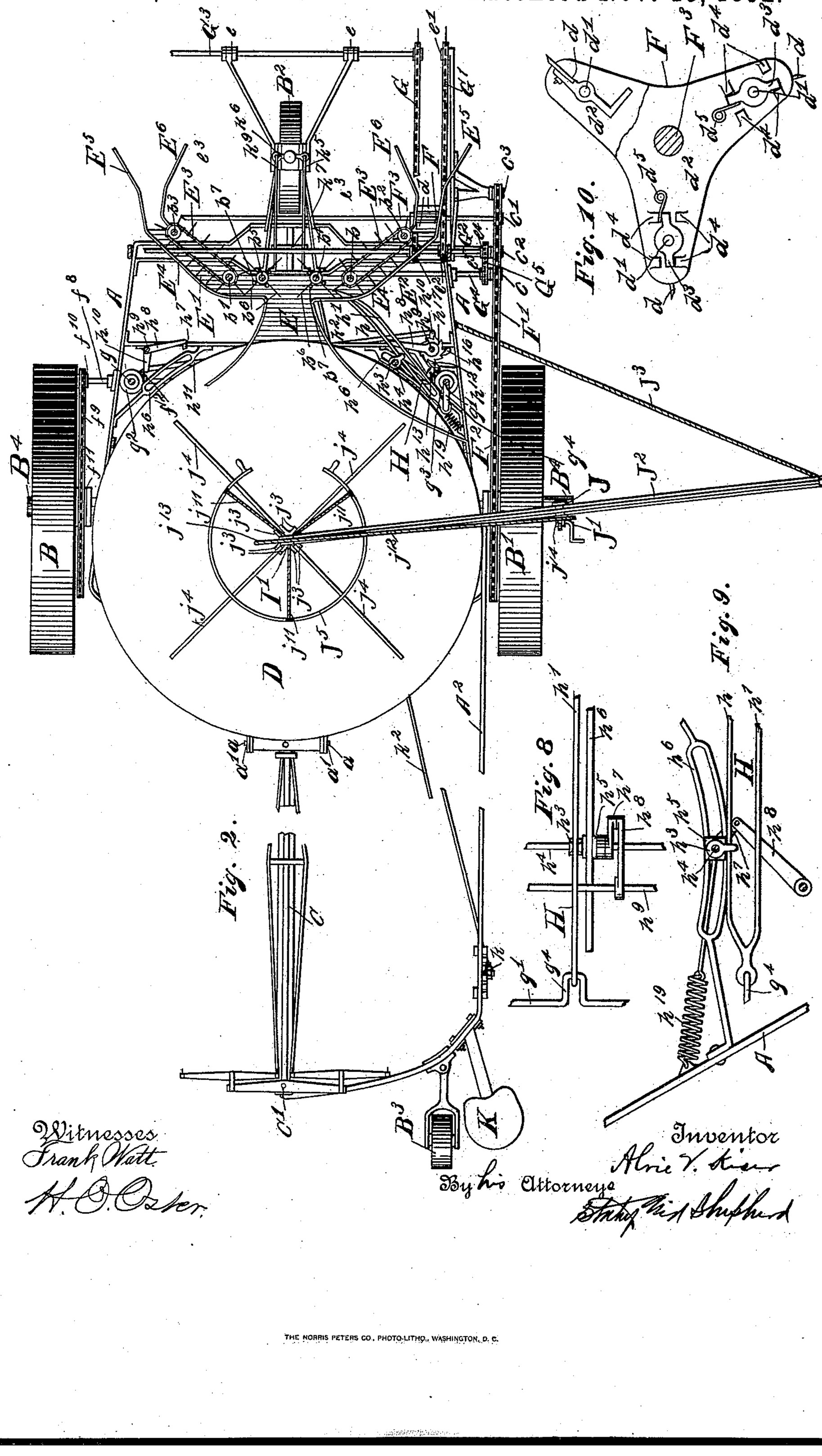


Fig. 1.

Fig. 10.

Fig. 8

Fig. 2.

Fig. 9.

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(No Model.) 4 Sheets—Sheet 3.

A. V. KISER.

CORN HARVESTER.

No. 486,255. Patented Nov. 15, 1892.

Fig. 4.

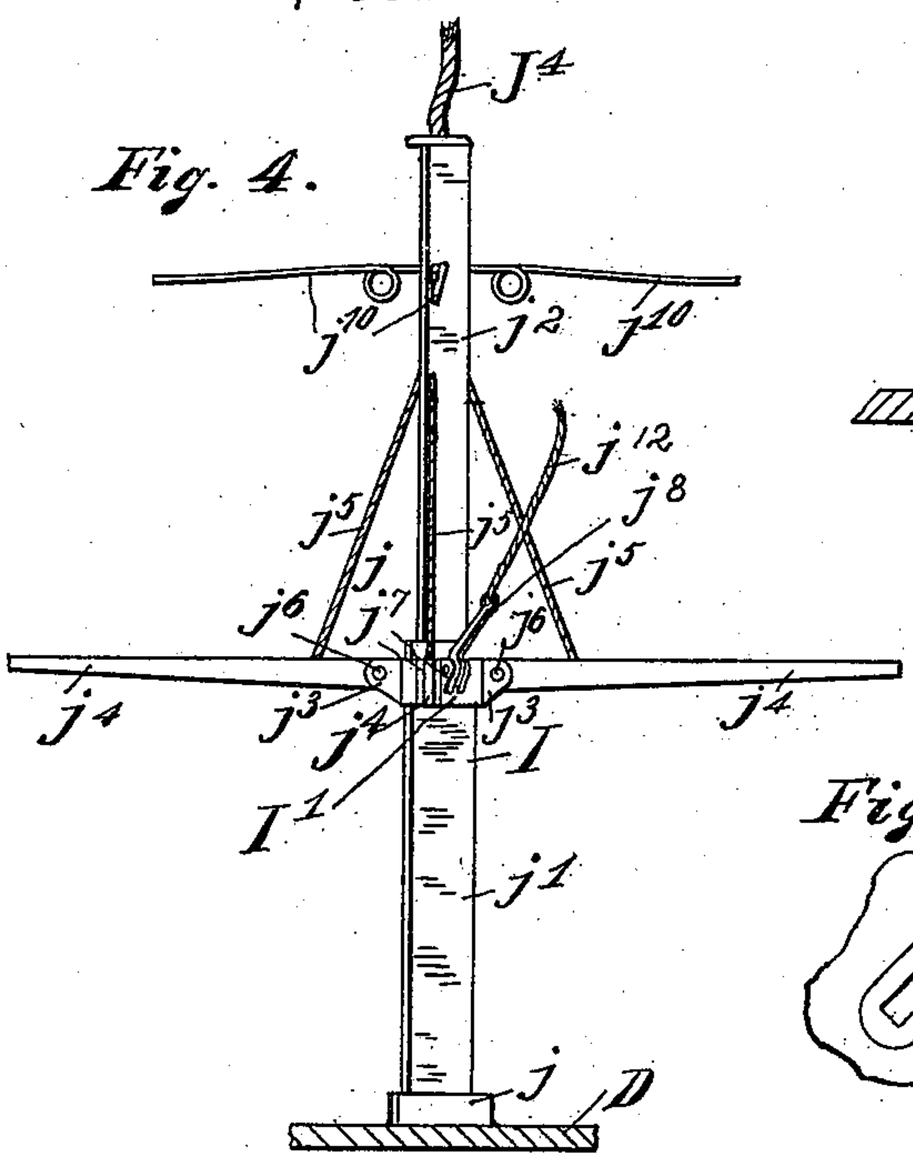


Fig. 5.

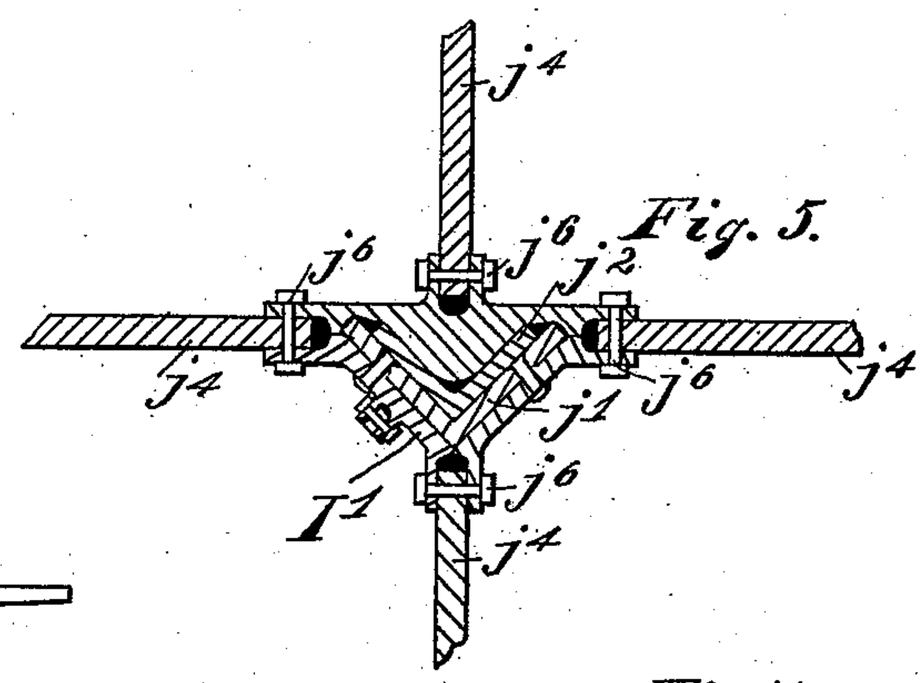


Fig. 6.

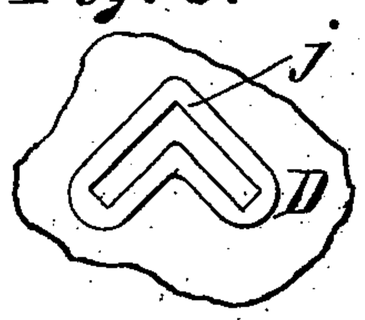


Fig. 7.

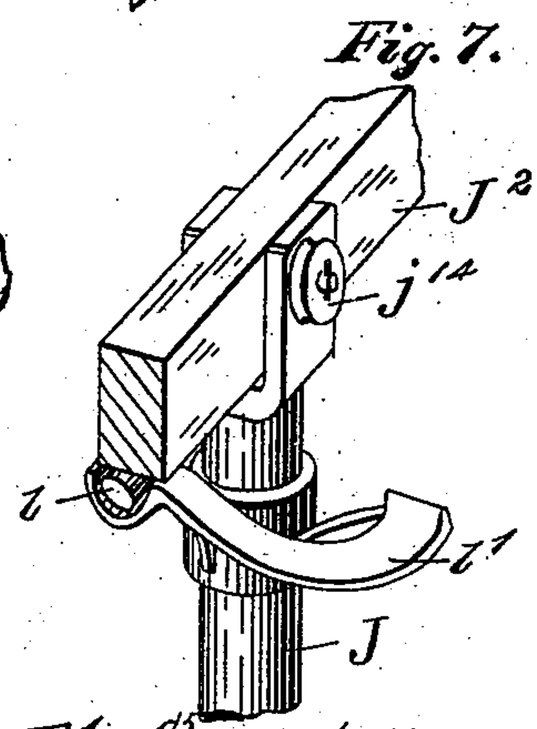
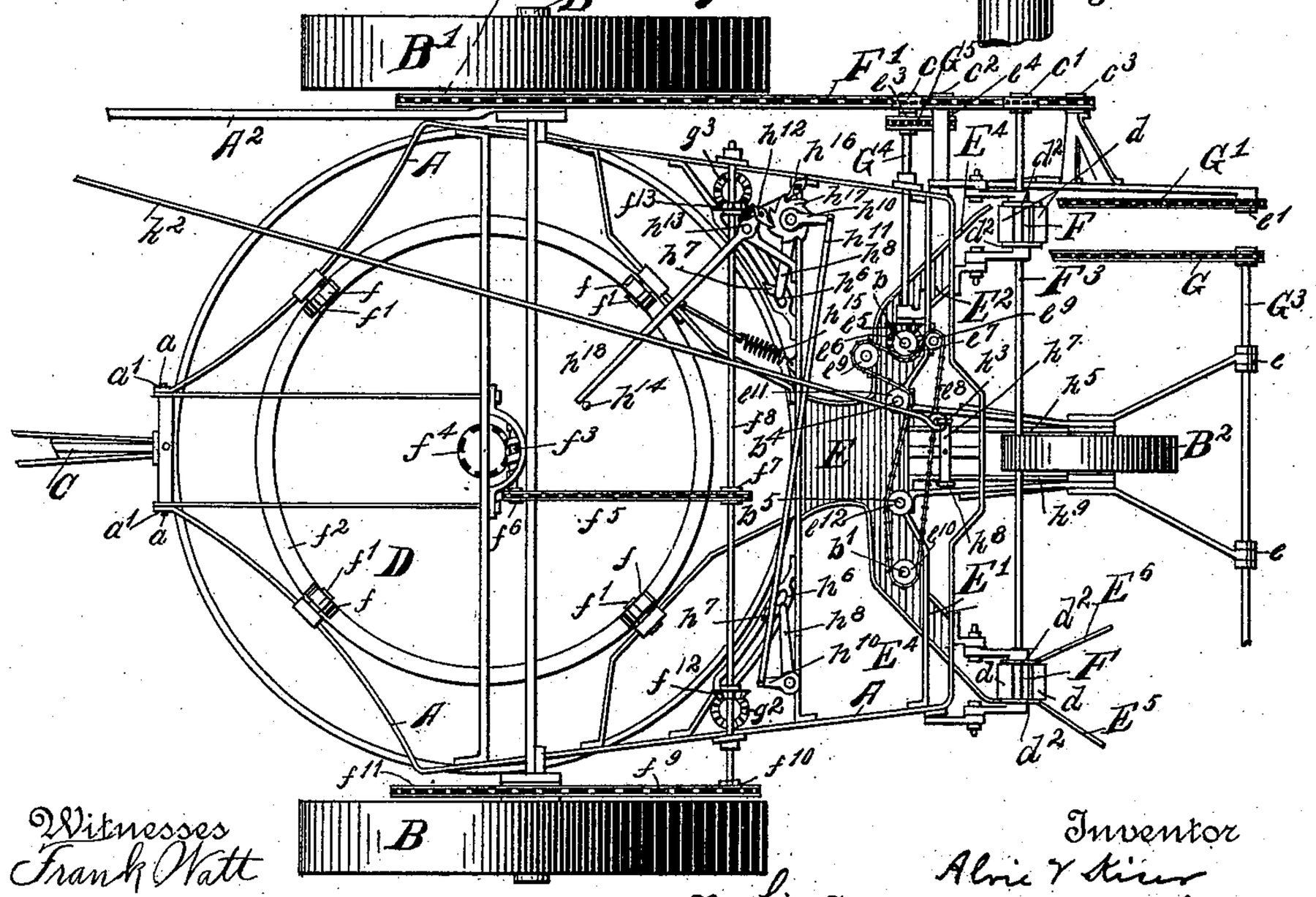


Fig. 3.



(No Model.) 4 Sheets—Sheet 4.

A. V. KISER.

CORN HARVESTER.

No. 486,255. Patented Nov. 15, 1892.

Fig. 11.

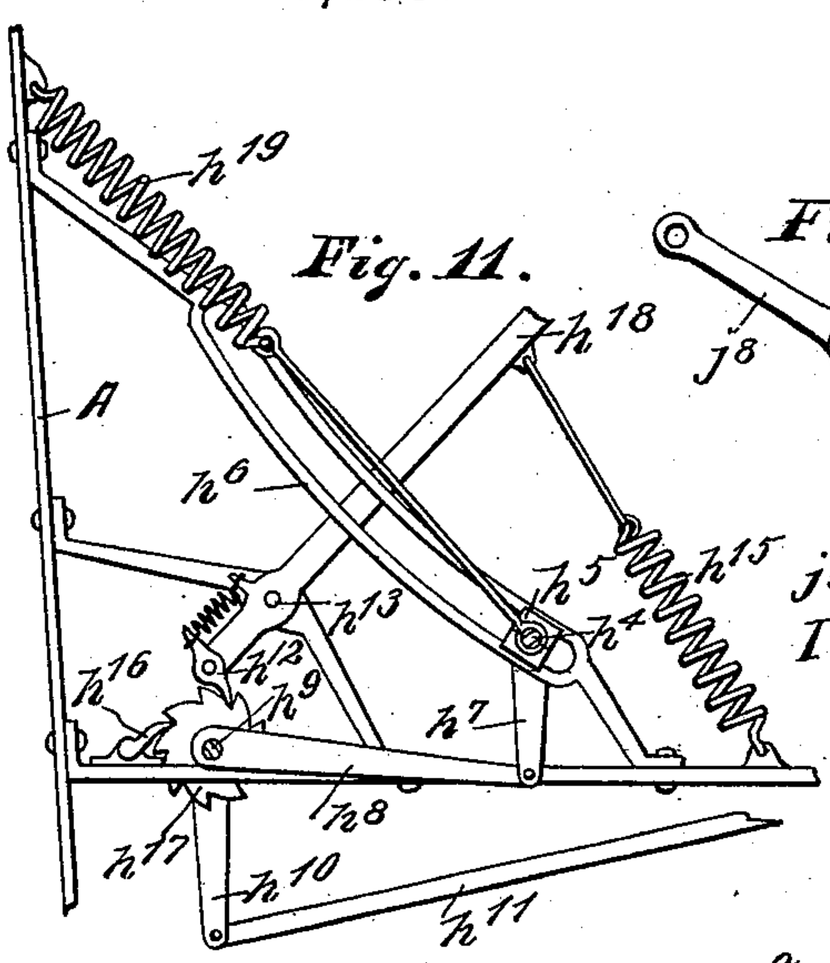
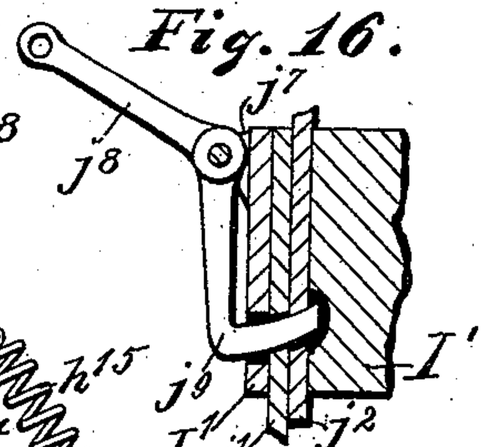


Fig. 16.



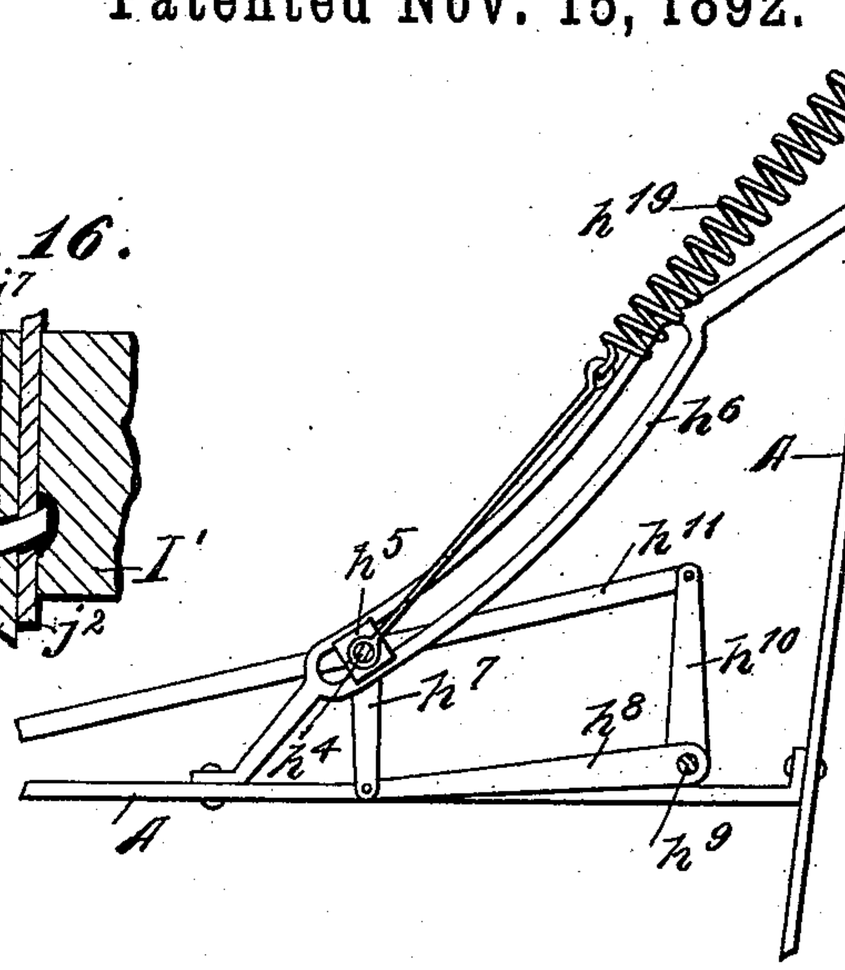


Fig. 12.

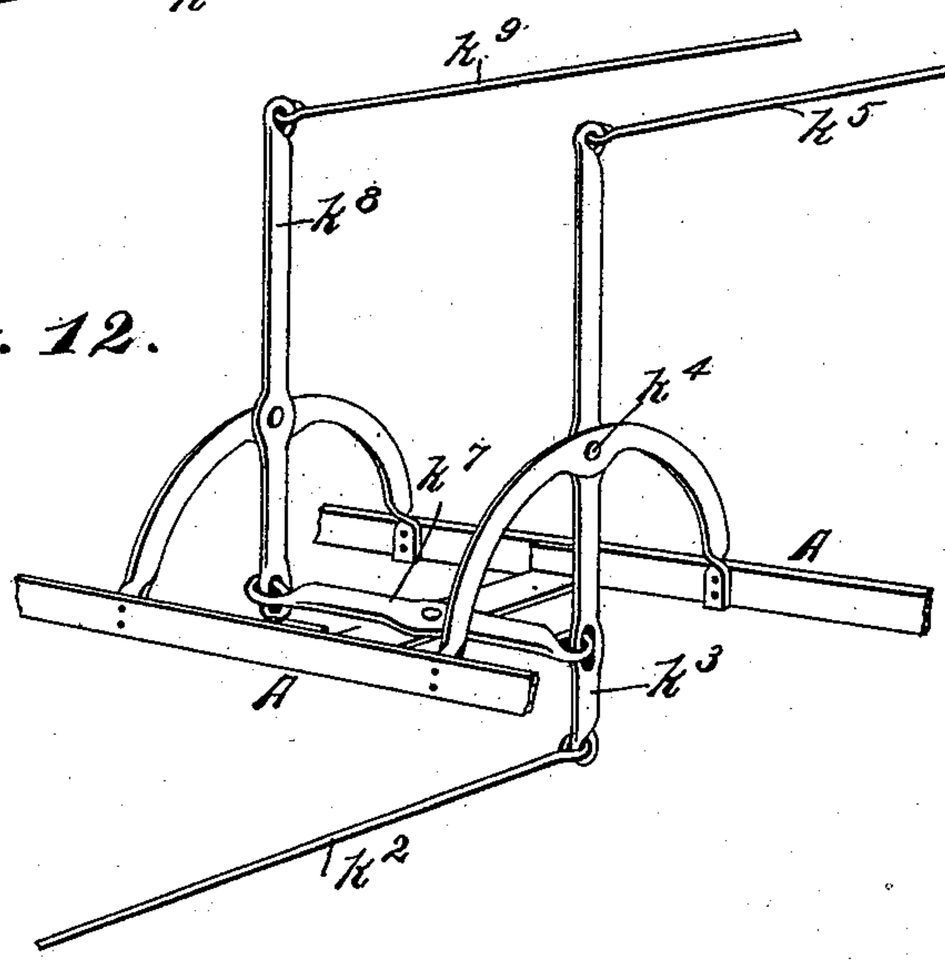


Fig. 15.

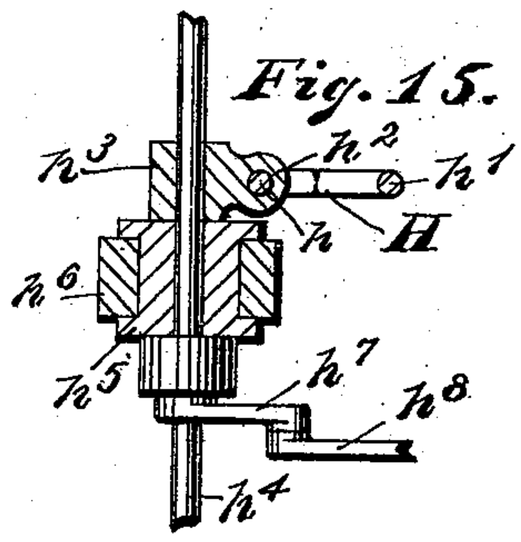


Fig. 13.

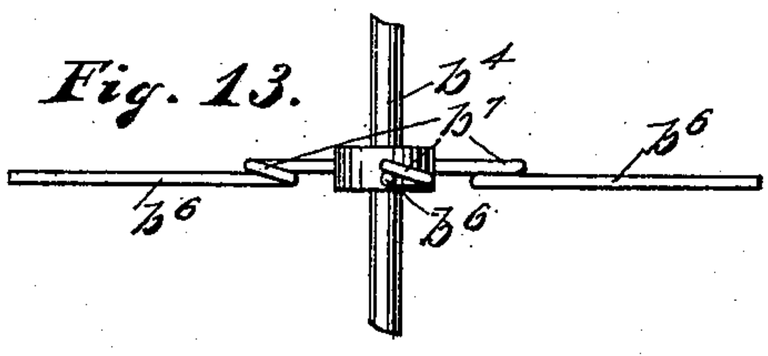
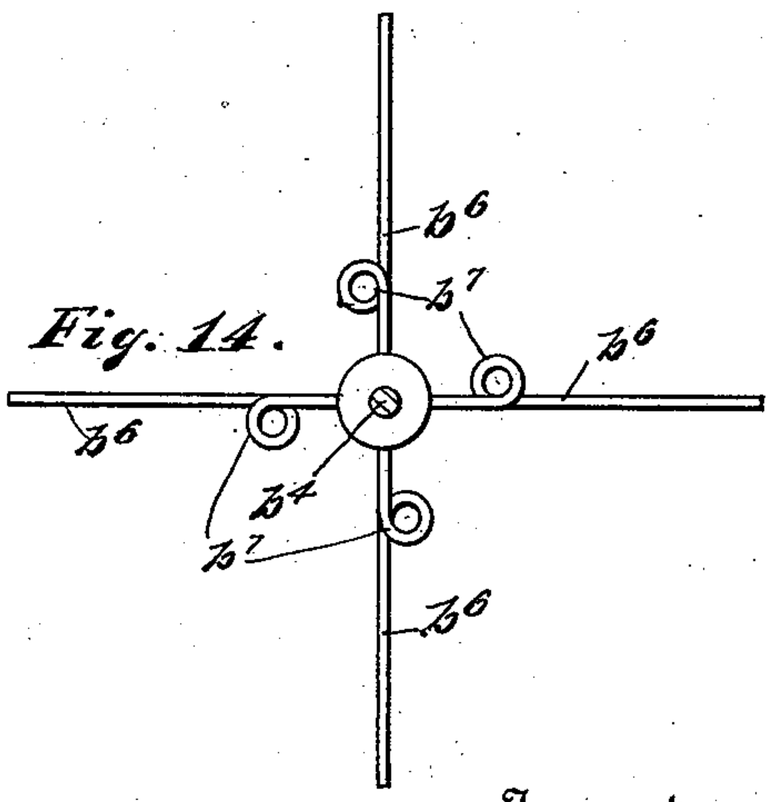


Fig. 14.



Witnesses
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H. O. Osler

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By his Attorneys
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UNITED STATES PATENT OFFICE.

ALVIE V. KISER, OF WEST LIBERTY, OHIO.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 486,255, dated November 15, 1892.

Application filed March 31, 1892. Serial No. 427,166. (No model.)

To all whom it may concern:

Be it known that I, ALVIE V. KISER, a citizen of the United States, residing at West Liberty, in the county of Logan and State of Ohio, have invented certain new and useful Improvements in Corn-Harvesters, of which the following is a specification.

My invention relates to improvements in corn-harvesters; and it especially relates to improvements on that class of machines shown and described in my Letters Patent, No. 459,006, issued September 8, 1891.

My invention consists in the various constructions and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a plan of the same, some of the parts which would appear in duplicate being omitted or broken away for perspicacity. Fig. 3 is a bottom plan of the same. Fig. 4 is a detail view in elevation of the shock supporting and forming devices. Figs. 5 and 6 are details of the same. Fig. 7 is a view in perspective of a portion of the shock raising and discharging device. Figs. 8 and 9 are detail views of the packers and their adjusting mechanism. Fig. 10 is a detail of the cutting apparatus. Fig. 11 is a partial plan view showing the adjusting devices for the packers. Fig. 12 is a perspective view of a portion of the guiding mechanism in detail. Figs. 13 and 14 are respectively an elevation and plan of the revolving yielding fingers forming a portion of the carrying mechanism for the cut stalks. Fig. 15 is a detail view of a portion of the packer-adjusting mechanism. Fig. 16 is a detail view in section of a portion of the shock-forming post. Fig. 17 is a detail showing the pivotal connection between the respective parts of the frame. Fig. 18 is a detail view in section of the two-part supporting-post forming a portion of the shock-forming mechanism.

Like parts are indicated by similar letters of reference in the several views.

In the said drawings, A A represent the main frame, from which all the operating parts are supported. This frame is supported at each side on carrying-wheels B B′, which also serve to impart the motive power to drive the different operative parts, as hereinafter more fully specified. The front portion of the frame is further supported by an adjustable supporting-wheel B^2, which also serves as a guiding-wheel, means being furnished, as hereinafter more fully specified, by which the angular position of said wheel may be changed to cause the machine to change direction.

The power to drive the machine is applied at the rear of the main wheels B B′, preferably through the medium of a tongue C, provided with suitable trunnions *a a*, pivoted in bearings *a′ a′*, formed in the main frame A A. The tongue C is connected at the rear to a projecting L-shaped auxiliary frame A^2, which is pivoted to the main frame, as shown in Fig. 17, and extends backwardly from the said main frame at one side of the machine only and is supported at the rear by a caster-wheel B^3. The power to drive the machine may be supplied to the tongue C by horses or otherwise through the medium of a double-tree C′ in an ordinary manner.

Arranged above the main frame A A and supported thereon, preferably between the supporting and driving wheels B B′, is a revolving table D, on which the cut stalks are gathered and formed into a shock. In front of this table and arranged flush therewith is a small platform E, which is branched outwardly and forwardly into passages E′ E^2, along and over which the cut stalks are carried in their passage from the cutting-knives, as hereinafter more fully described. The cutters F are arranged at the outer and forward ends of these extended passages, as shown in Figs. 2 and 3, the cutters on one side of the machine only being shown in Fig. 2. Arranged along one side of each of the passages E′ E^2 is a series of conveying-chains E^3, each chain of a series being arranged vertically above the other and provided with suitable engaging-teeth to engage the stalks and carry them along said passage. Two of these chains are preferably used on each side of the machine, one adapted to engage the stalks near the bottom and the other the upper part of said stalks. These chains pass over suitable sprocket-wheels at each end and receive their motion from vertical driving-shafts *b b′*, which support the chains in the rear, the front of said chains being

preferably supported on loose sprocket-wheels b^2 b^3, mounted in suitable bearings on the projecting portions of the frame. The carrying-chains E^3 operate in conjunction with stationary guide-bars E^4, arranged on the opposite side of the passages from said chains, said guide-bars being extended forwardly and outwardly in the form of fingers E^5, opposing fingers E^6 being also provided which extend inwardly and forwardly from a point near the outer support of the carrying-chains, so as to form a V-shaped opening or passage into which the uncut stalks are directed as the machine advances. The cutters F are located immediately below the said projecting fingers and are preferably operated directly from the driving-wheel B′ by a driving-chain F′, which passes over a suitable sprocket-wheel F^2 on said wheel, thence over the sprocket-wheels c c' and the idlers or tighteners c^2 c^3. The sprocket-wheel c' is located on the shaft F^3, which carries the cutters, which shaft extends entirely across the machine near the front and carries both the cutters F, located on opposite sides of the machine, so as to cut two rows of standing stalks at one operation as the machine advances.

The cutters F consist, essentially, of pivoted knives d, having at each end suitable journals or trunnions d', journaled in end plates d^2, rigidly secured to the shaft F^3, so as to revolve therewith. One or both of the journals of each of the cutting-knives extend through the end plate, which supports it, and is provided on the outside of said end plate with a rigidly-secured cross bar or lever d^3, the projecting ends of which operate between lugs or projections d^4, formed on said end plate. These lugs are so arranged that a limited movement of the knife is permitted upon its trunnions or journals between the respective lugs. A small spring d^5, bearing against the projecting arm or lever d^3, holds said knife in its normal position with the outer edge of the knife slightly inclined in the direction in which the knife revolves. The result of this construction is to provide a limited rotary movement of the knife upon its trunnions when it comes in contact with the stalks to be severed, this movement being in the opposite direction from the forward rotary movement of the knife, causing the knife to be slightly extended and producing a substantially-straight diagonal cut across the stock instead of on the arc of a circle, represented by a revolution of the knife. As soon as the knife has passed through the stalk the spring returns it to its normal position.

To provide for guiding and carrying the stalks positively into the V-shaped opening formed by guides E^5 E^6, and thus come in contact with the cutting-knives, and particularly the down stalks, I provide at each side of each of the cutting-knives an elevating and carrying chain G G′. These chains extend downwardly and forwardly at an angle and are supported at the top by a transverse shaft G^2. The inner guiding-chains G are supported at the bottom by a transverse shaft G^3, journaled in suitable bearings e, supported on extended portions of the main frame. The outer conveying or carrying chains G′ are supported at the bottom by loose sprocket-wheels e', supported on extended portions of the frame. The transverse shaft G^2 is supplied with suitable sprocket-wheels e^2 to support and drive said chains, one sprocket-wheel being used for each chain. The shaft G^2 receives its motion from a parallel shaft G^4 in a lower portion of the main frame, which shaft is driven by the sprocket-wheel c from the main driving-chain F′, before referred to, motion being conveyed from the shaft G^4 to the shaft G^2 by a driving-chain G^5, which passes over suitable sprocket-wheels e^3 e^4 on the respective shafts. The shaft G^4 is provided at its inner end with a beveled gear e^5, which meshes with a corresponding gear e^6 on the vertical shaft b, which carries the conveying-chains E^3 at one side of the machine. This vertical shaft b is also provided with a sprocket-wheel e^7, which transmits motion to a driving-chain e^8, which passes over idlers or tighteners e^9, thence over and around sprocket-wheels e^{10}, e^{11}, and e^{12}. The sprocket-wheel e^{10} is located on the bottom of the shaft b', which drives the other series of carrying-chains E^3. The respective sprocket-wheels e^{11} and e^{12} are located at the bottom of vertical shafts b^4 b^5, extending upwardly through the platform near a point where the respective passages E′ E^2 join the main platform E. These vertical shafts b^4 b^5 are provided with a series of yielding fingers b^6, adapted as the shafts are revolved to be moved across the respective passages E′ E^2 and engage the stalks conveyed by the carrying-chains e^2 e^3 and pack the same into the space between the guiding-bars E^4 on the main platform E, from whence they are delivered onto the revolving table D by oscillating packers H, in the manner hereinafter more fully described. These yielding fingers b^6 are formed, preferably, of steel wire or other resilient metal and are connected at their inner end by a suitable hub to the revolving shaft and project outward therefrom, their resilience being increased by producing a coil b^7 in each of said fingers.

The revolving table D is supported underneath by suitable supporting-wheels f, journaled on suitable studs or bearings f' on the main frame, the table D being provided on its under surface with a circular track f^2, which rests on said supporting-wheels. As the machine advances the table is continuously revolved through the medium of a worm f^3, which engages with a worm-gear f^4, connected to said table at the bottom, the worm f^3 being driven by a sprocket-chain f^5, which passes over a suitable sprocket-wheel f^6 on the worm-shaft and a driving-sprocket f^7 on a transverse shaft f^8, which extends entirely

across the main frame A A at the bottom. This shaft f^8 receives its motion from the master-wheel B through the medium of a sprocket-driving chain f^9 and suitable sprocket-wheels f^{10} f^{11} on the shaft and master-wheel, respectively. By the use of the worm-gear, as described, a very slow but continuous movement is secured for the table D as the machine advances.

At each side of the main frame, slightly in advance of the table D, are vertical crank-shafts g g', supported at or near their respective ends in suitable bearings in the main frame. Each of these crank-shafts g g' is provided at its lower end with beveled gears g^2 g^3, which mesh with similar gears f^{12} f^{13} on the transverse shaft f^8. The crank-shafts g g' are each provided with two cranks g^4 g^5, to which are journaled the rear ends of the oscillating packers H. The packers H are formed of metal, preferably in the nature of an open frame, the side pieces h h' of which may be formed of round iron or heavy wire joined together at the respective ends. One of the side pieces h of each packer extends through an eye or opening h^2 in a movable bearing h^3. These bearings h^3 are each journaled on an upright shaft h^4, supported in movable bearings h^5, adapted to move laterally in curved slotted supporting and guiding yokes h^6, secured to the main frame. This movable shaft h^4 is connected at the top and bottom by a pivoted link h^7 to projecting arms h^8, secured to a vertical shaft h^9, supported in the main frame parallel with and in close proximity to the crank-shafts g g'. Each of the vertical shafts h^9 is provided at or near its lower end with a crank-arm h^{10}, the respective crank-arms of the different shafts extending in opposite directions. These crank-arms are connected together by a transverse bar or rod h^{11}, so that a partial rotary movement imparted to one shaft will be transferred to the other shaft, but in the opposite direction. One of the shafts h^9 is further provided with a ratchet-wheel h^{17}, adapted to be engaged by a pivoted pawl h^{12} on the end of a vibrating lever h^{18}, pivoted at h^{13} and extended under the table D in the line of travel of a projecting stud or pin h^{14} in the bottom of said table, so that as the said table D makes a complete revolution the said stud or pin contacts with the projecting lever h^{18}, causing the said lever to be moved thereby, which movement is transmitted by the pivoted pawl h^{12} and its ratchet-wheel to the vertical shafts h^9. As soon as the stud h^{14} has passed the lever h^{18} said lever is returned to its normal position by a spring h^{15}, while the respective vertical shafts are held from returning in the opposite direction by a pawl h^{16}, pivoted on the main frame and adapted to engage with the ratchet-wheel h^{17} and prevent its movement except in a forward direction. This movement of the respective vertical shafts produces a corresponding movement of the supporting-bearings of the oscillating packers, so that at each revolution of the table a variation in the travel of the free ends of said packers is secured.

Located centrally on the revolving table D is the shock-supporting post I, preferably formed of angle-iron and supported at the bottom in a socket j at the center of the table D. This post I is made of two parts j' j^2, secured together so as to telescope one with the other. This result is secured by the following construction: Near the top of the lower part j' of the post is secured a supporting frame or band I', adapted to entirely surround the post I and embrace both parts j' j^2 thereof. The inside of this band or frame is formed to correspond to the angular shape of the respective parts of the angle-iron post I. This frame or band is riveted or otherwise rigidly secured to the lower portion j' of the post I, the upper portion j^2 being adapted to slide through said band or frame in contact with the lower portion j'. This band or frame is provided with projecting lugs or ears j^3, to which are hinged projecting arms j^4, which are each supported in a normally-horizontal position by brace rods or ropes j^5, which extend upwardly from said arms and connect with the upper portion j^2 of the post I. I have shown this band or frame I', formed in parts adapted to be held together by connecting-bolts j^6, which form the hinged connections for the arms j^4. It is obvious, however, that the said frame may be made integral, if desired. Located on one side of the frame or band I', hinged between suitable projecting lugs or ears j^7, is a pivoted bell-crank arm or lever j^8, provided with a downwardly and backwardly extending finger j^9, which extends through said frame and the respective parts j' j^2 of the post I, and thus holds the telescoping parts of said post in their normal position. An upward movement of the outer end of said lever, however, withdraws said finger and permits the parts to telescope one with the other. In addition to the projecting arms j^4 I also provide yielding arms j^{10}, preferably formed of spring-wire or other suitable material and rigidly secured at their inner ends to the upper portion j^2 of the supporting-post I.

Arranged at one side of the main frame, and preferably supported from the axle B^4, is a two-part supporting-post J, the parts of which are adapted to telescope one with the other, the upper part being adapted to be raised and lowered by a rack-and-pinion device connected with a handle J', arranged and operated substantially the same as set forth in my prior application, above referred to. This post carries at the top a swinging beam J^2, the outer extremity of which is connected to the main frame by a rope J^3, of a certain definite length to hold the shock-forming devices in their proper position, and arranged at an angle to said beam and post, as described in my previous patent, above referred to. The two-part shock-supporting post

I is connected to the opposite end of said beam by a rope J^4. An open flexible ring J^5, arranged above the yielding fingers j^{10}, is also supported from the end of said beam by suitable supporting-ropes j^{11}, the said open ring being adapted to receive and support the upper ends of the incoming stalks, in the manner set forth in my said patent referred to. An operating rope or cord j^{12}, attached to the bell-crank lever j^8, passes up over a suitable supporting-pulley j^{13} on said beam, thence back and downwardly over a supporting-pulley j^{14} at the center of said beam, and is connected to the supporting-post J, in convenient reach of the operator.

The front supporting-wheel B^2 is a guiding-wheel and is adapted to be operated by a hand-lever k, located in proximity to the seat K. This operating-lever k is pivoted at k' to the main frame and is attached at its lower extremity to a connecting-rod k^2, which extends under the main frame and as attached at its forward end to a vertical lever k^3, pivoted at k^4 to a suitable supporting-stand on the main frame, and connected at its other end by a rod k^5 to a cross-bar k^6, connected to the pivoted hanger of the guiding-wheel B^2. The lever k^3 is further connected by a pivoted cross-bar k^7 to a vertical lever k^8, the upper extremity of which is connected by a rod k^9 to the opposite end of the cross-bar k^6 on the wheel-hanger, the construction being such that a movement in either direction of the lever k^3 produces a corresponding movement in the opposite direction of the lever k^8, thus turning the guiding-wheel in either direction to cause the machine to change direction.

The operation of the machine as thus described is as follows: As the machine advances, the corn enters into the V-shaped openings to the cutting-knives, being assisted by the downwardly and forwardly extending and carrying chains. The stalks are severed by the revolving knives and passed backwardly through the passages E' E^2, and are carried by the conveying-chains E^3 and the revolving fingers b^6 to the main platform, where they are engaged by the reciprocating packers and forced onto the platform D between the respective pivoted arms j^4 of the shock-forming post. When the machine is first started, the variable supporting-bearings of the oscillating packers are placed so as to give to said packers the greatest possible movement, enabling said packers to carry the stalks onto said table and deposit them within the ring J^5 against the extending radial arms of the shock-forming post. At each revolution of the table the variable bearings for the said packers are moved back one notch through the operation of the pivoted lever h^{18} and the pawl and ratchet connected thereto, which, through the medium of the vertical shafts h^9 and the extending arms h^8 and link h^7, cause said bearings to move laterally in the yoke h^6, and thus change the throw of said packers at each revolution of said table to compensate for the increase of the size of the shock thus formed about the post on said revolving table. When the shock is completed, it is elevated by raising the upper portion of the supporting-post by the rack and pinion, as described, until the small roller l is raised above the cam-shaped track l' at the top of said post, thus raising the shock clear of the platform, when by the peculiar angular arrangement of the supporting-rod J^3 the shock will be swung backwardly and laterally to a position at the side of the machine, the small roller l following the cam-shaped track l', which is made to conform to the movement of the swinging beam J^2, as determined by the angularly-arranged rope attached thereto, the cam-shaped track being adapted to assist in guiding and supporting the said beam in its movement about the supporting-post, caused by the weight of the shock, when the operator by drawing on the cord j^{12} disconnects the respective telescoping parts of the post, thus permitting the pivoted arms to drop down by the weight of the shock until they are withdrawn therefrom, after which the parts are replaced and the operation repeated, this operation of discharging being substantially the same as that described in my former patent referred to.

To provide for returning the supporting-bearings of the oscillating packers to their normal position after the shock has been discharged, I preferably employ springs h^{19}, connected at one end to the main frame and at the other end to the supporting-shafts h^4. As the supporting-shafts and their bearings are moved in the slotted openings in the main frame to change the throw of the packers, as before described, the springs h^{19} are changed. When the operation is completed and the shock discharged, these various parts are returned to their normal position by the elasticity of the springs h^{19} when the pawls h^{12} and h^{16} are released.

Having thus described my invention, I claim—

1. In a harvester, a revolving table, a reciprocating packer pivotally connected at one end to a revolving crank-shaft, and a movable pivot to change the travel of said packer, said movable pivot being operated by the rotation of said table, substantially as specified.

2. In a harvester, a revolving table and a reciprocating packer, a revolving crank-shaft connected to the end of said packer, a movable pivot for said packer, and operating mechanism between said table and movable pivot to successively move said pivot at each revolution of said table, substantially as specified.

3. In a harvester, a revolving table and a reciprocating packer, a revolving crank-shaft pivotally connected to said packer, and a movable pivot intermittently operated by the revolution of said table to automatically change the travel of said packer, substantially as specified.

4. In a harvester, the reciprocating packers each supported on a movable pivot-support and connected to a revolving crank-shaft, a revolving table adjacent to said packers, and means, substantially as described, for intermittently and simultaneously moving the pivotal supports of said packers by the revolution of said table, substantially as specified.

5. In a harvester, the continuously-revolving table, reciprocating packers operating adjacent to said table, movable pivot-supports for said packers, laterally-moving supporting-shafts to which said pivot-supports are pivotally connected, a pawl-and-ratchet mechanism attached to said shafts, and means, substantially as specified, for operating said pawl-and-ratchet mechanism from the revolving table to produce an intermittent lateral movement of said shafts at each revolution of said table, substantially as specified.

6. In a harvester, a continuously-revolving table, reciprocating packers operating adjacent to said table, movable pivot-supports for said packers, vertical shafts having crank-arms pivotally connected to said movable supports, said shafts being connected together so as to move simultaneously, a ratchet-wheel on one of said shafts, and a pawl to engage said ratchet, a projecting arm attached to said pawl and adapted to be engaged by a projection on the revolving table at each revolution thereof, and thus change the position of said movable pivot-supports, substantially as specified.

7. In a harvester, a continuously-revolving table, reciprocating packers adjacent to said table, pivotally connected to continuously-revolving crank-shafts, a supporting-shaft to which is pivotally connected supporting-pivots for said packers, said shaft being supported in laterally-moving bearings in the frame of said harvester, an operating-shaft in proximity to said supporting-shaft, said operating-shaft being provided with projecting arms pivotally connected to said supporting-shaft, a ratchet-wheel on said operating-shaft, a pivoted lever having a pawl to engage said ratchet-wheel, said pivoted lever being extended under said moving table and adapted to be moved by a projection on said table so as to produce a limited movement of said operating-shaft at each revolution of said table, substantially as specified.

8. In a harvester, reciprocating packers pivotally connected at one end to a revolving crank-shaft, a supporting-shaft having moving pivotal supports for said packers, said shaft being supported in laterally-moving bearings in the harvester-frame, operating-shafts connected by a link connection to said supporting-shafts, and means, substantially as described, for intermittently moving said operating-shafts to change the throw of said packers, substantially as specified.

9. In a harvester, a reciprocating packer formed of one or more metal strands, one of which is slidingly journaled in a movable pivot-support, a revolving crank-shaft, to which said packer is pivoted, supporting-shafts, to which the movable pivot-supports are pivotally connected, laterally-moving bearings for said supporting-shaft, and means, substantially as described, for producing a lateral movement of said supporting-shaft, and thus vary the throw of said packer, substantially as specified.

10. In a harvester, a revolving table and a central detachable post, said post being formed of two telescoping parts, to one of which parts are pivotally connected projecting radial arms, brace connections from said arms to the other part of said posts, and means, substantially as described, for detachably securing the respective telescoping parts together, substantially as specified.

11. In a harvester, a central shock-forming post formed of angle-iron and constructed in two telescoping parts, as described, an encircling band or frame at the upper extremity of one part, adapted to pivotally support projecting radial arms and to form a sliding connection with the remaining part of said post, brace connections from said radial arms to the movable part of said post, and a detachable connection between the respective parts of said post whereby a telescoping movement of said post causes the depression of said arms, substantially as specified.

12. In a harvester-cutter, a revolving shaft having supporting-heads thereon, pivoted knives in said supporting-heads, projecting fingers connected with said knives, and lugs or projections on said heads to engage with said fingers, and springs between one or more of said lugs and said fingers, substantially as specified.

13. In a cutter for harvester-knives, a revolving shaft having supporting-heads thereon, a pivoted knife or knives in said supporting-heads, and a finger connected to each of said knives, stationary projections or lugs to limit the movement of said fingers, and a spring between said fingers and lugs to permit a limited yielding movement of said knife or knives in the said head, substantially as specified.

14. In a harvester, a pivoted supporting and guiding wheel having a laterally-projecting arm connected centrally to the journal or pivotal support of said guiding-wheel, pivoted levers connected to the opposite ends of said laterally-projecting arm, a centrally-pivoted arm pivotally connected to each of said pivoted levers, and means for producing a movement of one of said pivoted levers, substantially as specified.

15. In a harvester, a main frame, a movable supporting-shaft journaled in bearings, said bearings being slidingly supported in slots in said main frame, a pivot on said supporting-shaft, and a movable packer slidingly connected to said pivot, a crank-shaft for operating said packer, and means for moving said supporting-shaft and its bearings in the

slotted openings in said frame to produce a diminishing movement of said packer, substantially as specified.

16. In a harvester, movable packers, each pivotally connected at one end to a revolving crank-shaft, a supporting-shaft having a moving pivotal support for each of said packers, said shaft being supported in laterally-moving bearings in the harvester-frame, operating-shafts having projecting arms, each connected by a link connection to one of said supporting-shafts, a pawl-and-ratchet movement for intermittently moving one of said operating-shafts, and a connecting-rod from said operating-shaft to the other operating-shaft, substantially as specified.

17. In a harvester, a shock-forming table or platform having a central detachable supporting-post, an oscillating beam connected at one end to said detachable post and secured to the frame at the other by a normally-stationary connecting-rope arranged at an angle to the plane of the central supporting-post, an extensible supporting-post for said beam, and a track or way on said beam-supporting post, adapted to release and guide said beam when its supporting-post is elevated, substantially as specified.

18. In a harvester, the oscillating shock-discharging beam pivoted centrally to a supporting-post and connected to the frame at one end by a normally-stationary rope arranged at an angle to the plane of the supporting-post, a connection from the opposite end of said beam to the shock supporting and discharging device, and a guiding and supporting track on said supporting post, adapted to normally retain and guide said beam, substantially as specified.

19. In a harvester, the main frame having a tongue pivotally connected to the rear thereof, a projecting L-shaped auxiliary frame extending backwardly from the main frame at one side of said tongue and connected thereto at the rear, said auxiliary frame being hinged to the main frame, substantially as specified.

20. In a harvester, the main frame, a backwardly-extending tongue pivotally connected thereto, a projecting L-shaped auxiliary frame extending backwardly from the main frame and connected to the rear end of said tongue, said auxiliary frame being pivoted to the main frame and supported at the rear by a caster-wheel, substantially as specified.

In testimony whereof I have hereunto set my hand this 16th day of March, A. D. 1892.

ALVIE V. KISER.

Witnesses:

PAUL A. STALEY,

FRANK WATT.