Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

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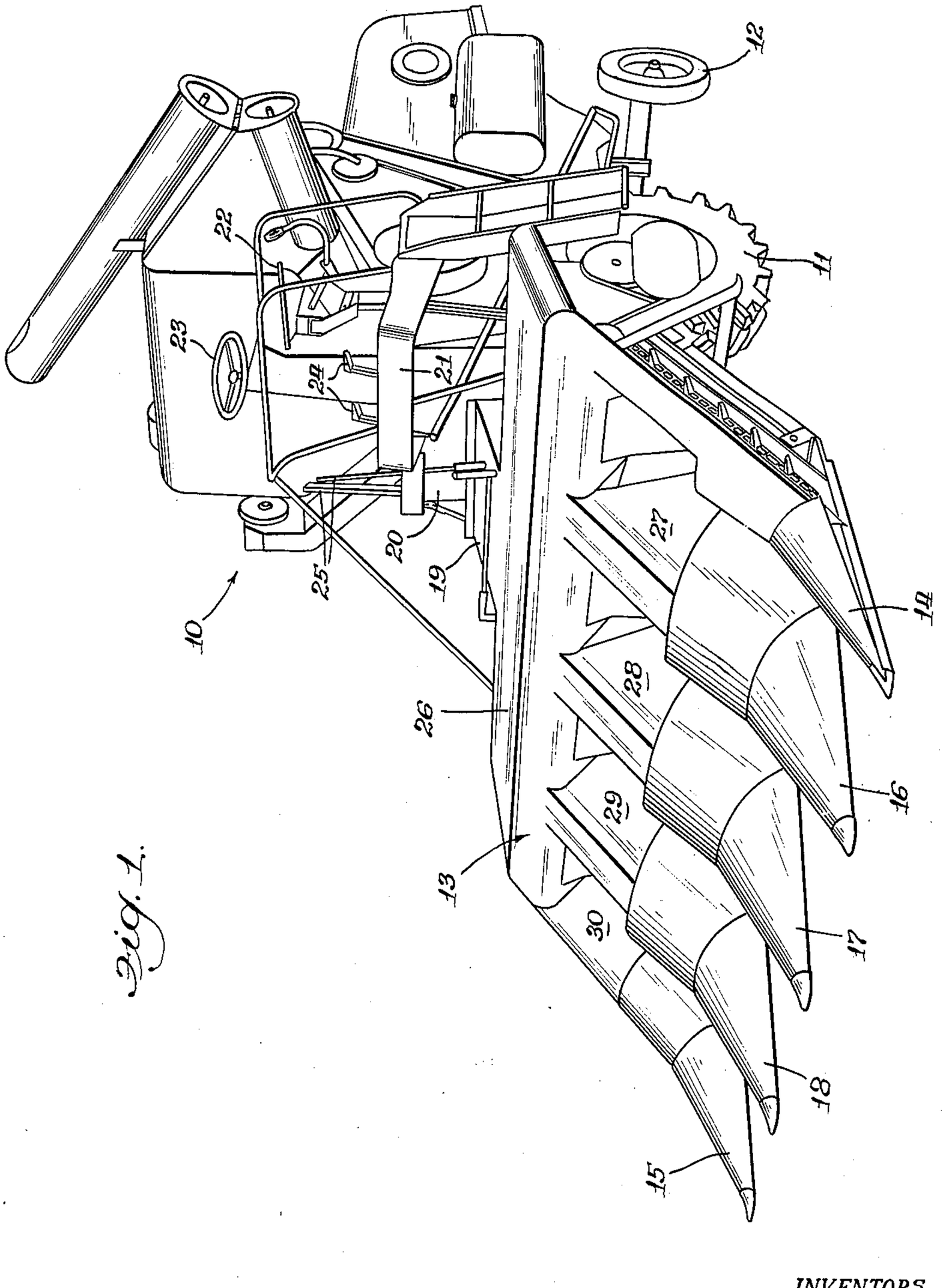

Fig. 1.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

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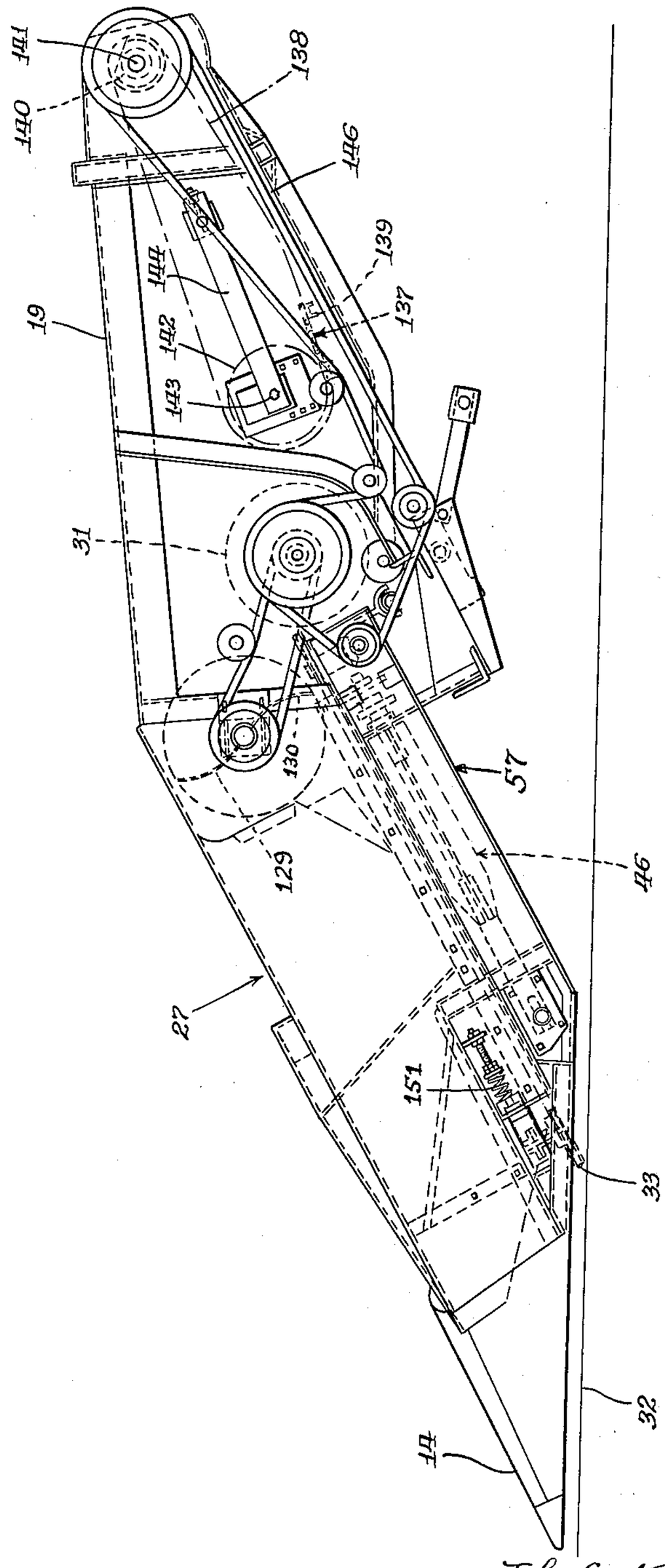

Fig. 2.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963

E. K. KARLSSON ETAL

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CORN PICKER

Filed May 27, 1960

10 Sheets-Sheet 3

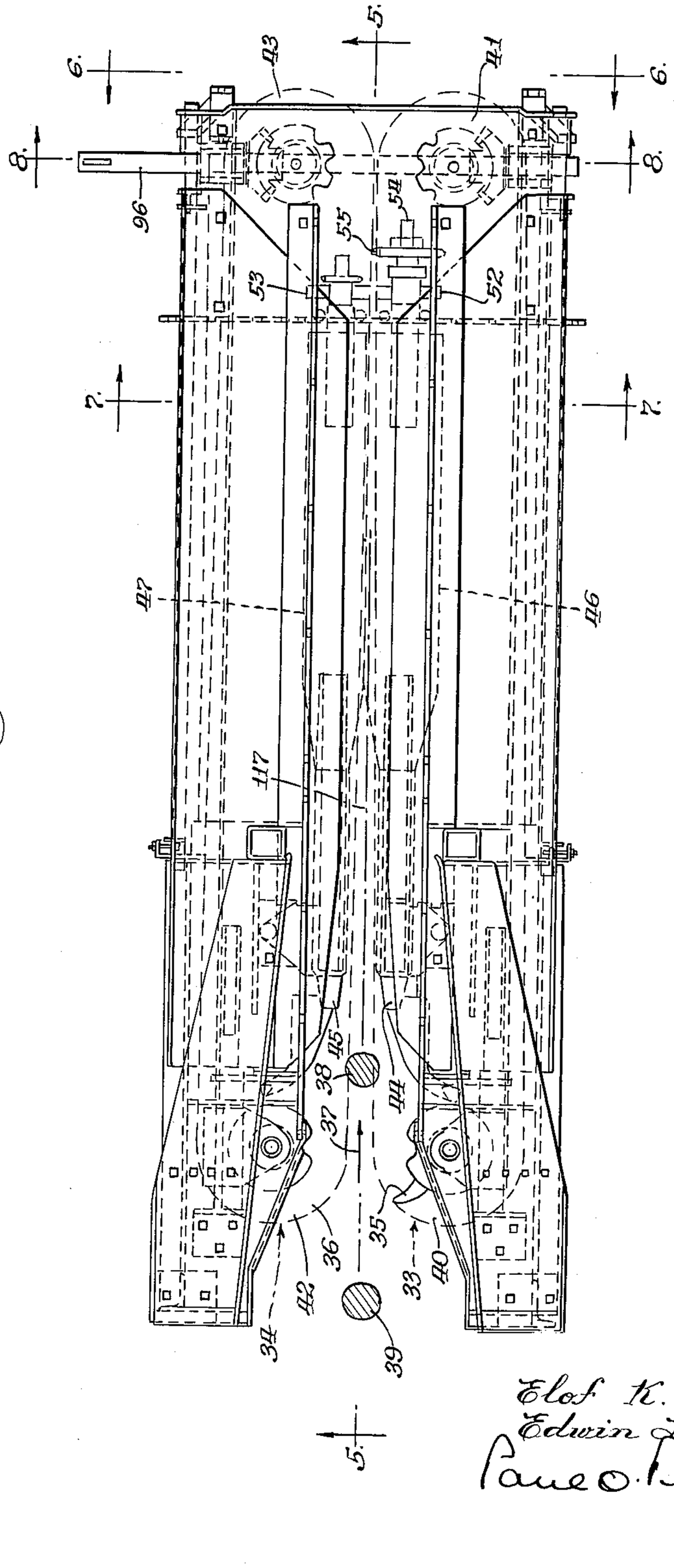

Fig. 3.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

Filed May 27, 1960 10 Sheets-Sheet 4

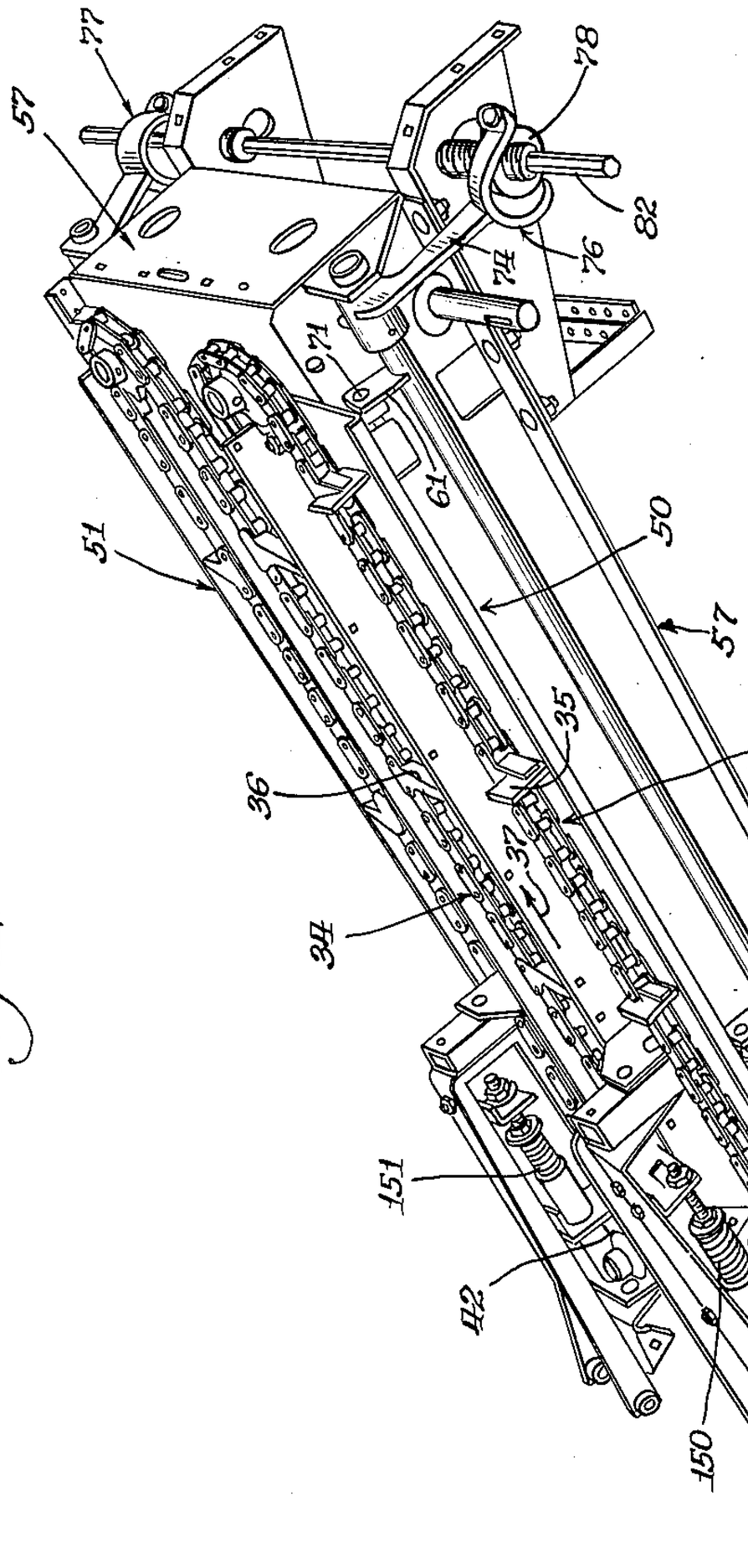

Fig. 4.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

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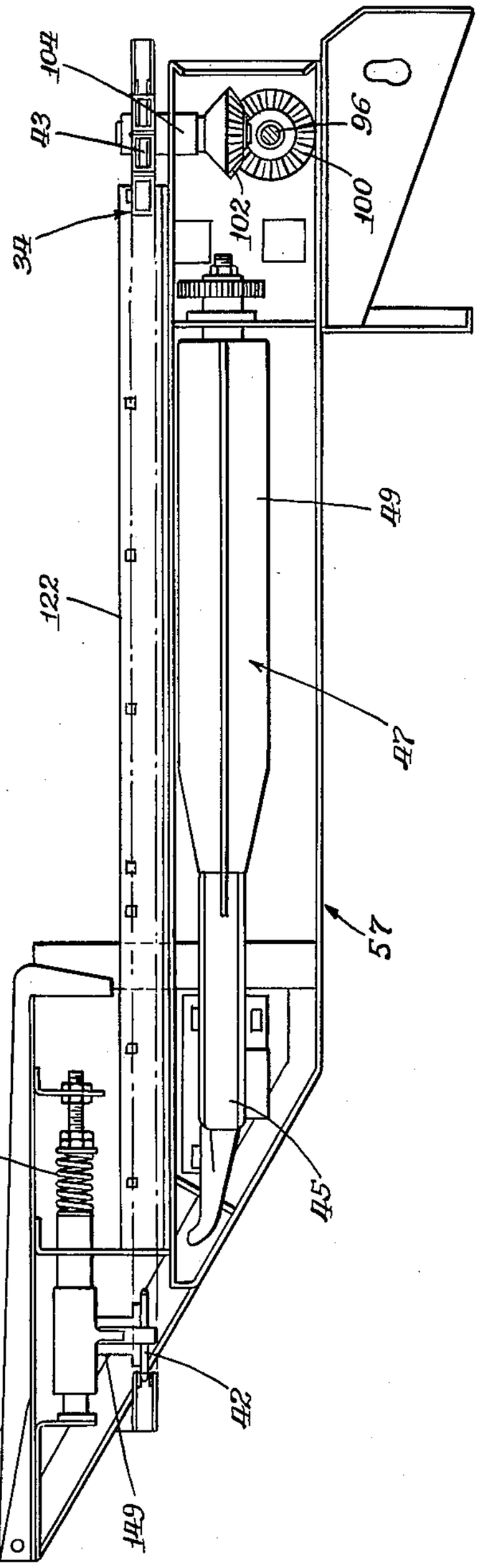
Fig. 5.



INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

Filed May 27, 1960 10 Sheets-Sheet 6

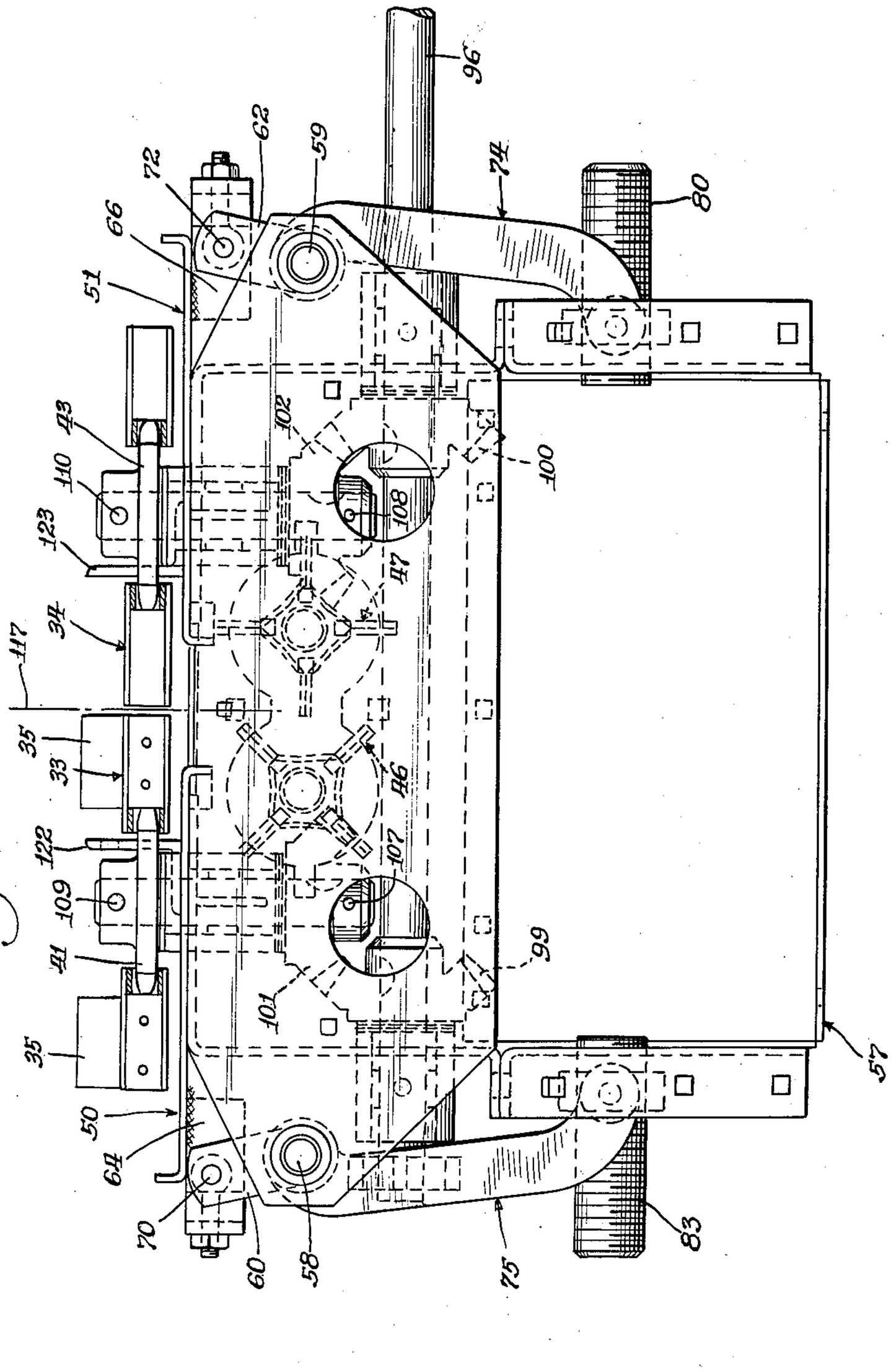


Fig. 6.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

Filed May 27, 1960 10 Sheets-Sheet 7

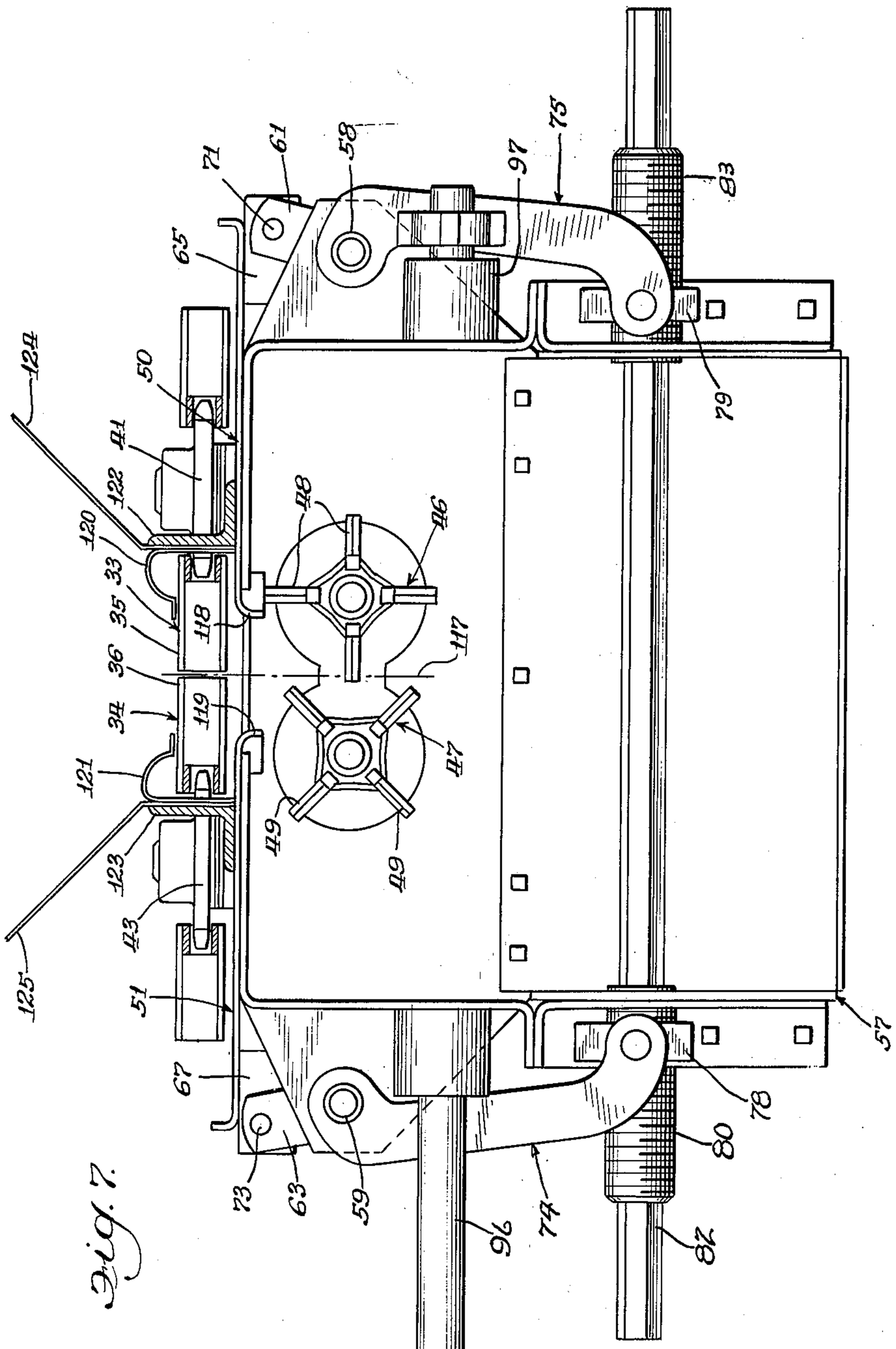


Fig. 7.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

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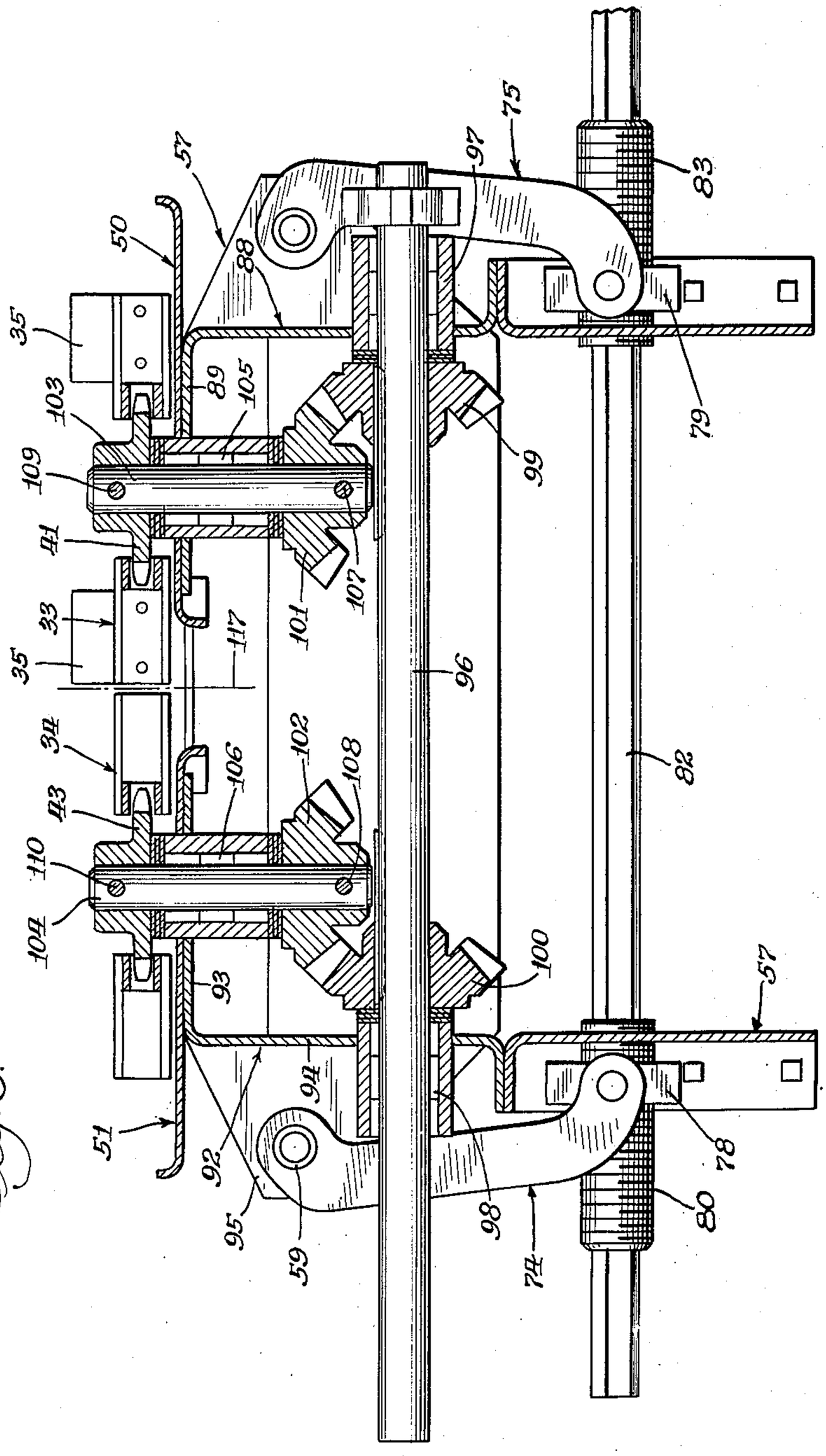

Fig. 8.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

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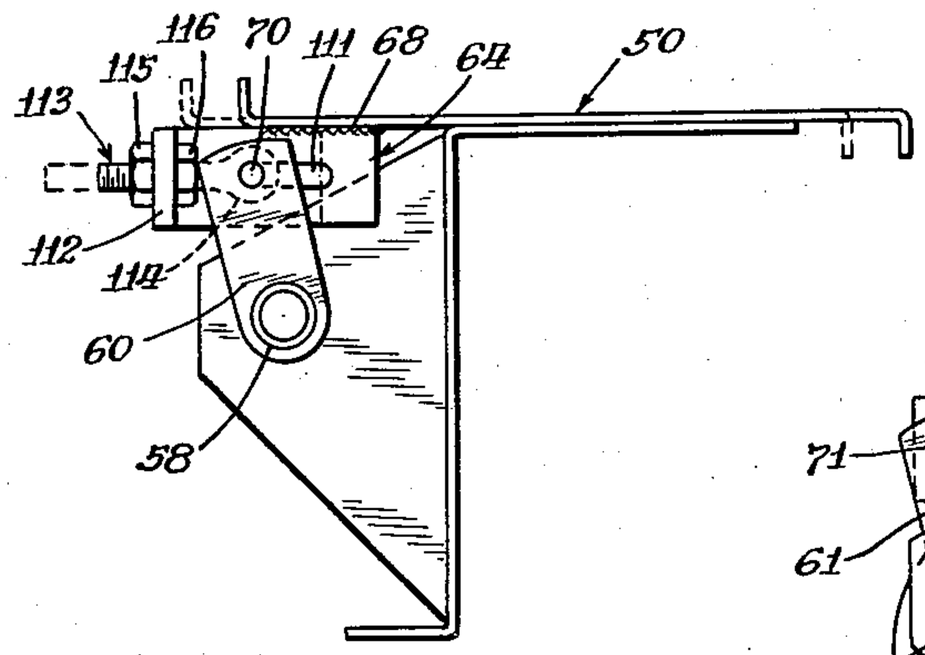

Fig. 10.

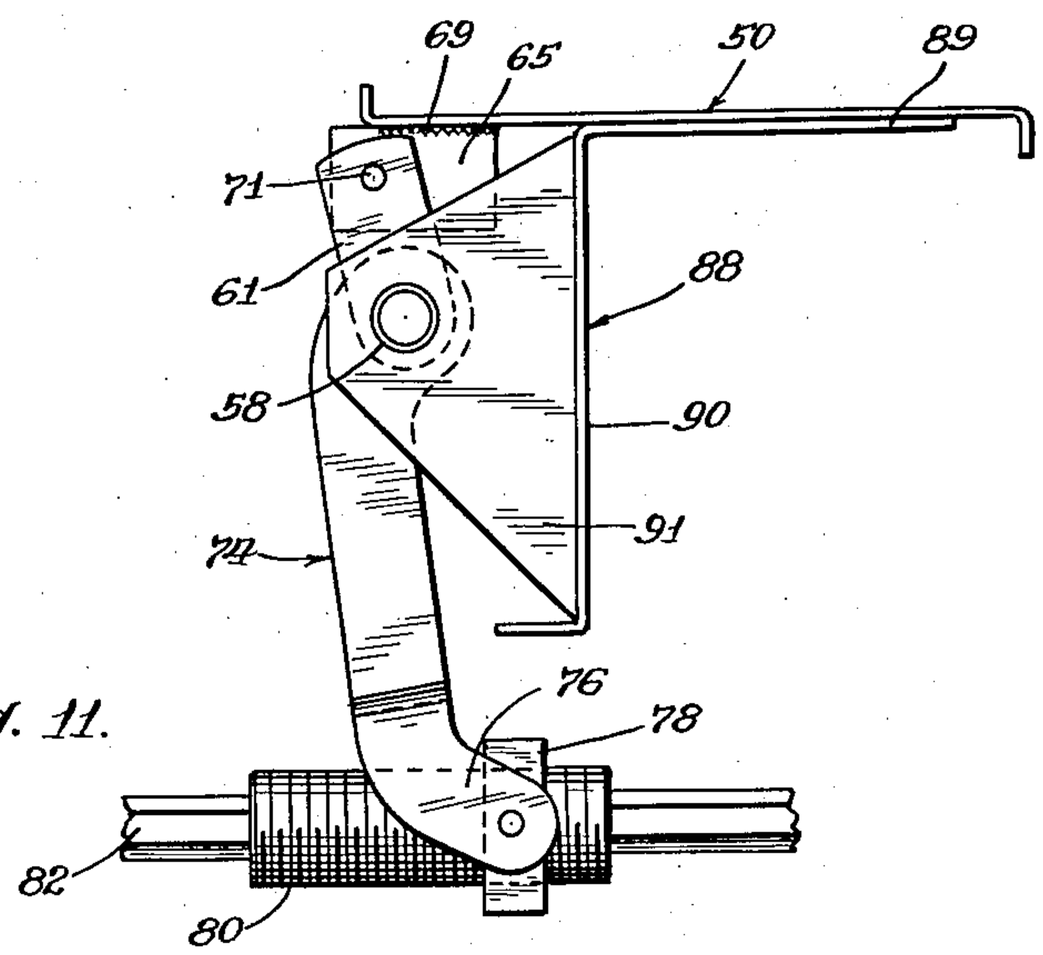

Fig. 11.

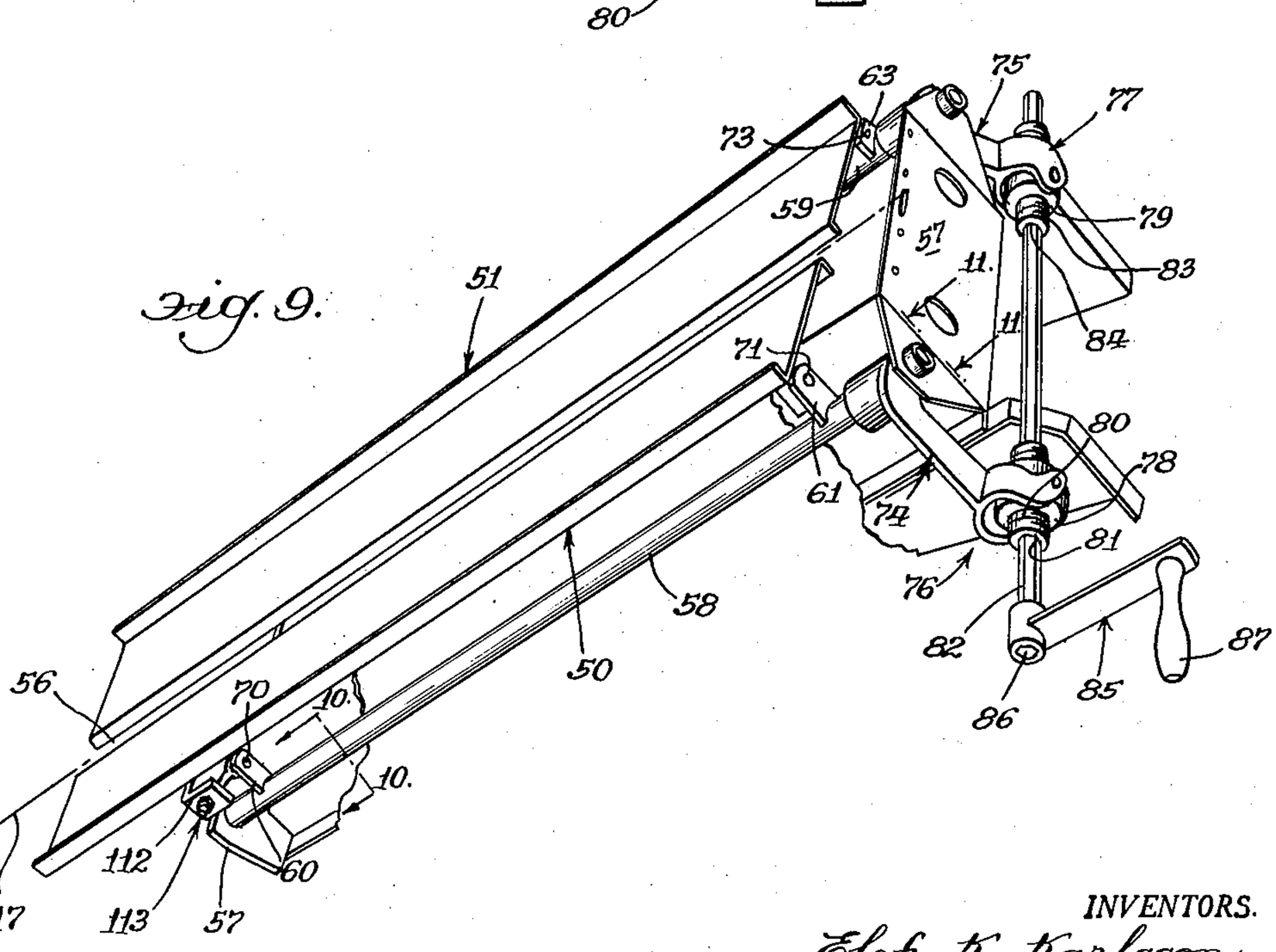

Fig. 9.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

Aug. 27, 1963 E. K. KARLSSON ETAL 3,101,579

CORN PICKER

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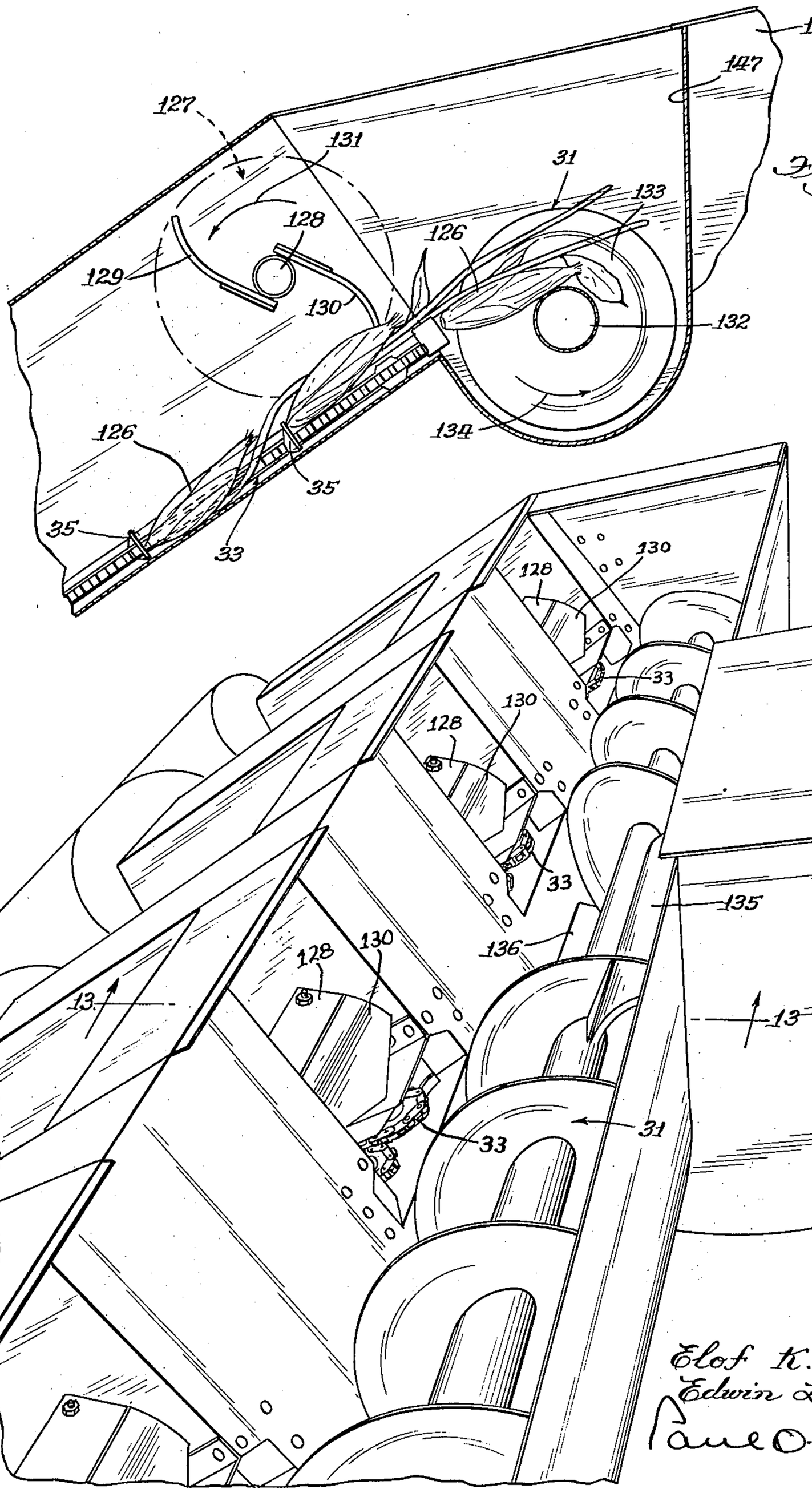

Fig. 13.

Fig. 12.

INVENTORS.
Elof K. Karlsson
Edwin L. Stevens
Paul O. Pippel
Atty.

United States Patent Office

3,101,579
Patented Aug. 27, 1963

3,101,579

CORN PICKER

Elof K. Karlsson, Moline, and Edwin L. Stevens, Rock Island, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey

Filed May 27, 1960, Ser. No. 32,313
7 Claims. (Cl. 56—18)

This invention relates to a new and improved corn picker.

Corn pickers have existed in substantially their present form for many years. It has been a common expedient in corn pickers to employ cooperative rolls to cause a stalk engaged between the rolls to be pulled downwardly until such time as the ear on the stalk reaches the juncture between the snapping rolls, whereupon the ear being too large to pass between the rolls is pulled from the stalk. The snapped ears are then taken from other mechanisms of the machine to husk the snapped ears and, in some machines, to remove the kernels of corn from the cob. The surface conformations of the cooperative snapping rolls become extremely important when it is considered that the stalks must be positively engaged and forced down between the rolls. If the rolls are too aggressive there is a tendency to bite into and damage a portion of the heel of the ear on the stalk. If, on the other hand, the rolls are not sufficiently aggressive there is a possibility the stalk will be lost and not only will the stalk drop out of the machine but also the ear on the stalk. It is thus important that the rolls be sufficiently aggressive and arranged in interengaging fashion so that the stalks will be firmly gripped throughout their downward movement and yet not sufficiently aggressive so that the ears will be damaged during the snapping operation. It is extremely difficult to find an intermediate position of aggressiveness such that the desired conditions will be fulfilled. In recent years there have come into use elements called stripper plates which are used over aggressive snapping rolls, or what now must be termed stalk feeding rolls. These stripper plates prevent engagement of the ears of corn with the aggressive feeding rolls and yet the pulling of the stalk downwardly between the rolls causes a snapping of the ears as they engage the stripper plates.

It is a principal object of the present invention to provide a corn picker snapping unit with stripper plates that adjust simultaneously in an equidistant amount from the center line of a row of corn.

Still another important object of this invention is to equip a corn picker with stripper plates over stalk feeding rolls and wherein the opening between the stripper plates remains directly over the point of engagement of the cooperative stalk feeding rolls despite the fact the stripper plates are capable of a relatively wide range of adjustment toward and away from each other to open and/or close the opening between the stripper plates.

Another and still further important object of this invention is to provide adjustable means in a corn picker for varying the spacing between cooperative stripper plates which are disposed over aggressive stalk feeding rolls.

Another and further important object of this invention is the provision of a transversely disposed polygonally shaped actuator rod having spaced apart threaded sleeves rotatable therewith and fixed against separate longitudinal movement, nuts engaging the threaded sleeves, and linkage means actuated by said nuts for moving the stripper plates toward or away from each other upon rotation of the actuator rod.

Another and still further important object of this invention is to provide an aggregating means for snapped ears of corn in a corn harvester.

Still another important object of this invention is to

equip a corn harvester with row picking units and with a transversely disposed ear aggregating auger.

A still further important object of this invention is the provision of an ear aggregating transversely disposed auger arranged for disposition relative to the ear discharge surface of the picking units such that the ears will be delivered into that portion of the auger screw flight above the auger core and beneath the top surface thereof.

Other and further important objects and advantages will become apparent from the disclosures in the following specification and accompanying drawings.

In the drawings:

FIGURE 1 is a perspective view of a corn picker of this invention;

FIGURE 2 is a side elevational view of the corn picker portion of this invention as shown in FIGURE 1;

FIGURE 3 is a top plan view of a corn picking unit forming a part of the device of FIGURE 2;

FIGURE 4 is a perspective view showing generally the top and side of the ear severing picker unit of FIGURES 2 and 3;

FIGURE 5 is a sectional view, partly in schematic form, taken on the line **5—5** of FIGURE 3;

FIGURE 6 is an end view taken on the line **6—6** of FIGURE 3 and on a scale enlarged with respect to the scale of FIGURE 3;

FIGURE 7 is a sectional view taken on the line **7—7** of FIGURE 3 and on a scale enlarged with respect to the scale of FIGURE 3;

FIGURE 8 is a sectional view taken on the line **8—8** of FIGURE 3 and on a scale enlarged with respect to the scale of FIGURE 3;

FIGURE 9 is a perspective view detail of the ear stripper plates used in this invention and showing the operating mechanisms therefor;

FIGURE 10 is a sectional view taken on the line **10—10** of FIGURE 9 and on a scale enlarged with respect to the scale of FIGURE 9;

FIGURE 11 is an end view detail taken on the line **11—11** of FIGURE 9 and on a scale enlarged with respect to the scale of FIGURE 9;

FIGURE 12 is a perspective view of a portion of the corn picker unit with parts removed to show interior construction; and

FIGURE 13 is a sectional view taken on the line **13—13** of FIGURE 12.

As shown in the drawings, the reference numeral **10** indicates generally a corn harvesting machine. The machine **10** is supported on relatively widely spaced-apart large traction wheels **11** and further carried by rear smaller dirigible wheels **12** by which the vehicle is steered and directed through a field of standing corn. The forward end of the corn harvester **10** is equipped with a corn head **13**, which in the present instance consists of four row type corn picking units. In other words, the corn harvester is capable of picking four rows of corn simultaneously. The corn head **13** includes outside divider elements **14** and **15** and intermediately disposed center dividers **16**, **17** and **18**. The four row corn head **13** is arranged and constructed as will hereafter be described with mechanism for removing ears of corn from standing stalks and thereafter elevating those snapped ears upwardly and rearwardly where they are aggregated in a central position and then fed rearwardly and slightly upwardly through a feeder housing **19** into a sheller or threshing mechanism carried within the large housing **20**. In the device as shown the corn head **13** performs the picking, elevating, aggregating and thence elevating of the harvested ears of corn. The corn head is attached to the threshing portion of a grain combine, which in this instance is used as the sheller for the ear corn. It should, however, be understood that the corn head **13** may consti-

tute the forward portion of any propulsion device such as, for example, a specially designed corn sheller. The grain combine shown in the drawings is included merely to show a complete machine but it does not constitute a part of the present invention. In order to further describe the environment of the invention the grain combine includes an operator's platform 21, a seat 22, a steering wheel 23, operating pedals 24, and operating levers 25.

The invention herein is concerned with the corn picking units and their construction. As stated previously, there are four such corn picking units shown in the corn head 13. A transverse bridge 26 extends across the upper ends of the four picking units, which for convenience will be designated 27, 28, 29 and 30. The picking unit 27 is flanked by the divider points 14 and 16, the picking unit 28 is flanked by the divider points 16 and 17, the picking unit 29 is flanked by the divider points 17 and 18, and the picking unit 30 is flanked by the divider points 18 and 15. The corn picked by each of the four units 27, 28, 29 and 30 is carried upwardly and rearwardly by suitable mechanism to be hereafter described, and then at the position of the transverse bridge 26 the ear corn is aggregated in a position at the center thereof adjacent the feeder housing 19 by means of a transversely disposed auger 31 as best shown in FIGURE 2.

For convenience the picker unit 27 shall be described in detail and is shown in relative detail in FIGURES 3 through 11 inclusive. As shown in FIGURES 1 and 2, the outside divider point 14 is arranged and constructed to slide over the ground as shown at 32. It is the function of the divider 14, and similarly the dividers 15, 16, 17 and 18, to guide standing and down stalks into one of the picker units 27, 28, 29 or 30. Following the stalks' entrance between adjacent divider elements, such as 14 and 16 for the picker unit 27, the stalks are thereafter grasped by cooperative fingered chain elements 33 and 34, as best shown in FIGURES 3 and 4. Fingers 35 on the chain 33 and fingers 36 on the chain 34 have their adjoining "runs" moving upwardly and rearwardly in the direction of the arrow 37 such that the stalks designated at 38 and 39, will be grasped between the fingers 35 and 36 and be carried rearwardly in the picking unit 27. The gathering chains 33 and 34 are clearly shown in FIGURES 3 and 4. The chain 33 is mounted on spaced-apart sprockets 40 and 41. Similarly the endless chain 34 is extended around spaced sprockets 42 and 43. As shown in FIGURES 6, 7 and 8 as in FIGURE 3, the inwardly extending fingers 35 and 36 of the gathering chains 33 and 34, respectively, approach each other at substantially the center line of the gathering unit 27 and, as previously stated, the stalks 38 and 39 carrying the ears of corn to be harvested are firmly but positively guided through the gathering unit by the cooperative chains 33 and 34. In order to make the gathering chains more aggressive in moving trash and stalks through the machine there is provided upwardly extending lugs 35*a* fixedly attached to the lugs 35.

Immediately to the rear of the forward ends of the chains 33 and 34 are the forward ends 44 and 45 of cooperative feed rolls 46 and 47 as best shown in FIGURE 3. These rolls 46 and 47 are shown in detail in FIGURES 5 and 7. The feed rolls 46 and 47 are what the industry terms very aggressive rolls as they include radially projecting spaced-apart blade-like members designated by the numeral 48 on the roll 46, and 49 on the roll 47. The radial blade members 48 and 49 are intercalated with each other such that one blade from one roll passes between the blades of the adjacent roll so that a stalk carried through the forward ends 44 and 45 of the rolls and into the scope of travel of the blades 48 and 49 will be positively pulled downwardly by a biting-in action from opposite sides of the stalk by each of the rolls in a stepped relationship so that the stalk is gripped at one side while it is held between spaced blades of the opposite roll and thence alternatively is bitten into by a blade of the other roll while it is held by spaced-apart blades of the first roll. This, of course, occasions very harsh treatment to the stalks and would tend to chop up and cause a loss or damage to ears of corn which might reach the juncture between the feeding rolls 46 and 47. However, as previously stated, the feeding rolls 46 and 47 are no longer the snapping rolls as in previous machines, but merely the means for pulling stalks down therethrough. The ears are in fact snapped or stripped from these stalks by reason of adjustable stripper plates 50 and 51. The stalk feeding roll 47 may be adjusted toward or away from its cooperative feeding roll 46 by means of an adjusting mechanism which has not been shown in detail herein as it is not a part of the present invention. The adjusting mechanism employed is similar in construction to the device of my previous Patent 2,645,075.

The cooperative feed rolls 46 and 47 have mating spur gears 52 and 53 respectively at their upper rearward ends such that when one roll is rotatably driven the other is simultaneously driven in the opposite direction. The roll 46 is provided with a further rearward extension 54 beyond the spur gear 52 and this extension 54 carries a sprocket 55 through which the rolls receive their drive.

As stated in the objects above, one of the principal purposes of the present device is to provide the stripper plates 50 and 51 with means for adjusting them toward and away from a line coinciding with a row of standing corn. The stalks shown at 38 and 39 in FIGURE 3 are illustrative of the conditions which the machine will encounter in the picking of corn. The stripping plates 50 and 51 are shown in substantial detail in FIGURES 9, 10 and 11. FIGURE 9 shows the plates 50 and 51 in relation to one another wherein they are spaced apart at the center thereof defining a longitudinal passage 56 through which the corn stalks 38 and 39 may pass. However, the plates 50 and 51 must be sufficiently close together to prevent passage of ears of corn which are growing on the stalks 38 and 39. This, then, prevents contact of the ears of corn with the aggressive feed rolls 46 and 47. In many instances it is desired to vary the width of the passage 56 between the plates 50 and 51 in order to accommodate different sizes and conditions of corn being picked. It is, however, desirable to maintain the width of the passage 56 relatively uniform from the lower forward ends of the plates 50 and 51 to the upper rearward ends of the plates.

The device of this invention employs a frame-supporting structure 57 on which all of the elements are carried. In FIGURE 9 the frame-supporting structure 57 is shown as journally supporting generally longitudinally extending and forwardly and downwardly inclined tubular members 58 and 59. Each of the journalled rod members 58 and 59 includes upstanding ears or lugs as shown at 60 and 61 on the rod 58 and 62 and 63 on the rod 59. These ears or lugs 60, 61, 62 and 63 are weldably or otherwise fastened to the rods 58 and 59 so that when the rods are rotated the ears move with and swing through an arc the same degree of rotation made by the rods 58 and 59. Downwardly extending projections or lugs 64 and 65 are provided on the stripper plate 50 and similarly downwardly extending projections or lugs 66 and 67 are provided on the stripper plate 51. The depending bracket members 64 and 65 are shown in greater detail in FIGURES 10 and 11. The lugs 64 and 65 are attached by means of welds or the like 68 and 69 to the plate 50. It should be understood that the depending lugs 66 and 67 for the plate 51 are similarly weldably attached. Hinge pins 70 and 71 join the lugs 60 and 64 and the lugs 61 and 65 as shown in FIGURES 10 and 11 respectively. Similar hinge pins 72 and 73 join the lug members 62 and 63 on the rotatable rod 59 with the depending lugs 66 and 67 on the plate 51. It should thus be apparent that as the rods 58 and 59 are rotated in their journal mountings the plates 50 and 51 are moved in or out depending upon the direction of swinging movement of the lug or bracket members 60, 61, 62 and 63.

Manually operable means are provided for moving the stripper plates 50 and 51 either toward or away from one

another. Arm members **74** and **75** are fixedly mounted on the ends of the shafts **58** and **59** respectively. The lower ends of each of these lever members **74** and **75** is provided with a forked end **76** and **77** which carries a nut **78** and **79** respectively. The nut **78** forming a part of the lever **74** and its forked end **76** is threadedly engaged with a screw member **80** which is formed as a sleeve with a polygonally shaped axial central passage **81** to receive or slidably mount over a comparably polygonally shaped cross rod **82**. Similarly the nut **79** threadedly engages a sleeve screw **83** which is also provided with a polygonally shaped axial central opening **84** which rides on and over the comparably polygonally shaped rod **82**. A removable crank member **85** is provided with a socket attaching portion **86** to engage an outer end of the polygonally shaped rod **82** and with a hand engaging element **87** at the outer end thereof. When the hand crank **85–87** is rotated the levers **74** and **75** are swung through an arcuate path causing the rods **58** and **59** to be rotated. The externally threaded sleeves **80** and **83** have oppositely pitched threads so that when the crank **85** is turned by means of the hand engaging member **87** the actuating levers **74** and **75** are swung inwardly toward each other or outwardly away from each other to produce a uniform inward or outward movement of the stripper plates **50** and **51**. Thus there is a uniform movement of the plates about a center line through the space **56** between the plates and identical with the row on which the corn stalks **38** and **39** are being picked. It is therefore apparent that adjustment of the stripper plates is made relative to the center line of a row of corn, or to the row axis, and the spacing is uniform for both of plates **50** and **51** relative to such center line. In other words one plate does not move a greater distance away from the center line of the row than does its cooperative plate.

The frame-supporting structure **57** as shown in FIGURE 11 includes a bracket member **88** having a generally horizontally disposed top flange **89**, a generally vertically disposed flange **90**, and a rearwardly or outwardly extending flange **91**. The bracket **88** provides a journal support for the rod member **58** which as previously stated holds the upstanding lugs **60** and **61** for effecting an in-and-out movement of the stripper plate **50**. The top flange member **89** provides a general support for the stripper plate **50** in its sliding movement in or out from the center line of the row of corn. Actually the stripper plate **50** moves in a relatively low arc in its in-and-out movement by reason of the arcuate swinging movement of the lugs **60** and **61** about the rod **58**. However, the arcuate movement is so slight as to be not appreciable in the in-and-out movement of the plate **50** and in effect the plate does slide over the top flange **89** of the bracket **88** forming a part of the frame-supporting structure **57**. A comparable bracket **92** is provided on the other side of the machine to support the stripper plate **51**. The bracket **92** similarly has an upper flange member **93** on which the stripper plate slidably or arcuately moves inwardly and outwardly toward or away from the stripper plate **50**. Bracket **92** further includes a relatively vertically disposed flange **94** and a rearwardly extending flange **95** which journally carries the rod **59** about which the stripper plate is arcuately mounted.

The stripper plates have mounted thereover the gathering chains **33** and **34**, as previously described. The upper ends of the chains **33** and **34** receive driving power from a shaft **96** disposed transversely in the picking unit at the upper end thereof as shown in FIGURE 3. Means, not shown, are provided for imparting rotation to this transversely disposed shaft **96** which is journally mounted in spaced bearing members **97** and **98** (FIGURE 8) mounted in the frame-supporting structure **57**. Bevel gears **99** and **100** are keyed to the shaft **96** and engage respectively bevel gears **101** and **102** positioned at right angles to and over the bevel gears **99** and **100**. The gears **101** and **102** are affixed to shafts **103** and **104**, respectively, which are journalled in a vertical disposition in bearings **105** and **106**. These bearings **105** and **106** are of course supported in the frame-supporting structure **57** and have mounted at their upper ends the sprockets **41** and **43**. These sprockets, as previously described, form part of the gathering chain assemblies and by reason of their rotation impart rotational movement to the gathering chains **33** and **34**. The fastening of the bevel gears **101** and **102** to their shafts **103** and **104** respectively is accomplished by locking pins **107** and **108**. Similarly, the sprockets **41** and **43** at the upper ends of these same shafts **103** and **104** are fastened to the shafts by means of locking cross pins **109** and **110**.

The depending bracket **64** (FIGURE 10) which is welded to the underside of the stripper plate **50** is provided with an elongated slot **111** which is generally horizontally disposed and is adapted to receive the pin **70** which joins the lug **60** from the rod **58** to the bracket or depending member **64** on the stripper plate **50**. The bracket member **64** includes a right angled flange member **112**. An eyebolt **113** is positioned through the flange **112** and extends laterally with its eye portion **114** surrounding the pin **70**. Locknuts **115** and **116** flank the flange **112** on the eyebolt **113** to thereby hold the eyebolt in fixed adjusted position relative to the flange **112**. In the position of the device as shown in FIGURE 10, the pin **70** is held by the eyebolt in its extreme outer position of the elongated slot **111** whereas by adjustment the eyebolt could be repositioned with respect to the flange **112** by loosening and thereafter retightening the locknuts **115** and **116** such that the pin **70** may be shifted anywhere along the elongated slot **111** including the position at the extreme inner end. The stripper plate **50** and similarly the plate **51** may have a slight "toeing in" at its lower end so that the space **56** may not always be uniform throughout the full length of the stripper plates **50** and **51**. The adjustments as shown in FIGURE 10 are duplicated on the other side for stripper plate **51**, and thus it is possible to make small adjustments for the plates **50** and **51** to provide for some slight convergence or divergence of the plates.

For purposes of convenience in describing the movement of the stripper plates **50** and **51** toward and away from each other there is designated in the drawing a center line or row axis **117** shown in FIGURES 3, 6, 7, 8 and 9. This axis or row center **117** is a continuation of the row in which the stalk crops such as **38** and **39** are planted. Thus it is the center line on which the stalks enter the crop picking units between each pair of gathering points. This center line or row axis **117** indicates the relative positioning of the feed rolls **46** and **47** with respect to the stripper plates **50** and **51** in FIGURE 7 of the drawings. It is apparent that everything is symmetrically disposed about the row axis **117**. First the stalks **38** and **39** are grasped by the fingers **35** and **36** on the gathering chains **33** and **34** whereafter the stalks are delivered into the forward ends of the cooperative feed rolls **46** and **47**. At this point the radial ribs **48** and **49** on these rolls **46** and **47** which are intercalated with each other relative to the center **117** cause a downward pulling on the stalks between the spaced stripper plates **50** and **51** and between the gathering chains **33** and **34**. The inner edges of the stripper plates **50** and **51** are curved downwardly in a roll-like manner, as shown at **118** and **119**, whereupon there is a smooth surface presented to any ear of corn which may be on the stalks **38** and **39**. The ears of corn which are to be harvested by this machine do not get into the aggressive feeding rolls **46** and **47**, but rather the lateral space **56** between the plates **50** and **51** is such that the ears of corn cannot pass. When the ears of corn on the stalk reach the surface of the stripper plates **50** and **51** and the aggressive rolls **46** and **47** continue their downward pulling on the stalks **38** and **39**, the ears are snapped or stripped from the stalks and the gathering chains **33** and **34** continue moving the now snapped ears of corn upwardly and rearwardly in the combination

gathering and picking unit, as shown in FIGURES 6, 7 and 13.

As best shown in FIGURE 7, bracket means 120 and 121 are provided above the gathering chains 33 and 34 to insure holding the chains down in proximity to the upper surfaces of the stripper plates 50 and 51. Angle members 122 and 123 are part of the frame-supporting structure 57 and are arranged to carry the bracket or clip members 120 and 121 and also carry the supporting sheet metal shown at 124 and 125. These same angle members also hold the stripper plates from moving vertically. The lower portion of the sheet metal surface of the gathering units such as shown at 27, 28, 29 and 30 acts to guide standing corn into the picker while the upper portion directs ears of corn into the gathering chains. The snapped ears of corn 126 as shown in FIGURE 13 are moved by the fingers 35 on the gathering chains 33 upwardly into a beater-like rotor 127. This rotor member includes a transversely disposed shaft 128 and generally radially extending paddle members 129 and 130. The rotor is turned in the direction of the arrow 131 and is adapted to sweep down at the rearward end of the ears 126 as they reach the upper end of the gathering chains and kick or urge the ears 126 and any broken stalks into the upper half of the cross auger 31.

As shown in FIGURE 13, the auger 31 is provided with a central core member 132 and a screw flight 133. The auger 31 rotates in the direction of the arrow 134 to thereupon feed ears of corn from both sides to a central portion of the auger 31 which is provided with radially projecting blade or paddle members 135 and 136 from the central core 132 to cause a feeding or delivery of the aggregated ears of corn into the feeder housing 19 which, as best shown in FIGURE 2, is provided with an undershot type of feeder conveyor 137. The feeder conveyor 137 comprises spaced-apart endless chain members 138 having cross lugs 139 thereon. The upper ends of the chains are mounted on spaced sprockets 140 on a generally fixed shaft 141. The lower ends of the chains comprising the endless undershot conveyor 137 are mounted on spaced sprockets 142 which are mounted on a shaft 143 carried by arms 144. The arms 144 are arranged for hinged movement about a rearwardly spaced axis 145. Thus as a greater or lesser amount of material is fed to the undershot conveyor 137 the sprockets 142 and their carrying arms 144 are raised as necessary to permit various amounts of material to pass and be fed beneath the under flight of the chain 137 and thereupon deliver the material upwardly and rearwardly on the floor 146 of the feeder housing 19. From this point the ears of corn are fed to the threshing or separating units of the machine, as previously described.

The transition of the ears of corn 126 from the gathering chains 33 and 34 to the cross auger 31 is accomplished as stated by the beater members 127 which are disposed at the upper end of each of the gathering units 27, 28, 29 and 30. The relationship of the cross auger 31 with the upper end of the gathering units is such that the lower portion of the auger is substantially beneath the surface of the discharging level of the gathering units. As the ears 126 are kicked or nudged into the trough 147 defining the space in which the auger 31 rotates there is no tendency for the ears of corn to fall forwardly and thus out of the gathering units whereupon the ears of corn would be lost. Rather, the fact that the cross auger 31 is depressed in the trough 147 and the ears 126 are fed to the portions of the screw flight 133 above the auger core 132 tends to maintain control over the harvested ears of corn until they are safely delivered to a central aggregating section of the trough 147. Thereafter, as previously stated, the straight paddle members 135 and 136 on the auger act to feed the harvested ears into the undershot feeder conveyor 137 as previously described. The fact that the upper flight of the auger is in the same plane as the upwardly feeding gathering chains prevents a loss of control of broken stalks which are fed with the stripped ears. If the auger were further depressed broken stalks could bridge the top of the receiving hopper and cause a jamming of harvested material while if the auger were raised it would have a tendency to repel or back-feed material fed to it by the beater or paddle wheel 127. Thus the auger in its particular location functions to smoothly and uninterruptedly feed harvested corn and stalk material to the central section of the receiving hopper.

As best shown in FIGURES 4 and 5, the sprockets 40 and 42 are journally supported on brackets 148 and 149 which in turn are yieldably extended by means of coil springs 150 and 151. This mounting provides for a constant tensioning of the gathering chains 33 and 34 substantially uniformly at all times. Such constantly tensioned chains positively feed stalks upwardly and rearwardly into the stalk feeding rolls. Thereafter these same chains feed the snapped or stripped ears 126 upwardly and rearwardly for further treatment by the machine after they have been stripped from the stalks by means of the stripper plates 50 and 51.

In the operation of the machine of this invention the device is propelled through a field of standing corn such that the gathering points 14 and 16, 16 and 17, 17 and 18, and 18 and 15 each flank a row of corn so that standing corn stalks are fed into the combination gathering and picking units as illustrated in FIGURES 3 and 4 through which various sections have been taken to disclose the interior construction thereof. The stalks are first gripped by the inwardly projecting fingers 35 and 36 of the gathering chains 33 and 34. Following the gripping of the stalks by the gathering chains they are fed into the scope of the cooperative stalk feeding rolls 46 and 47. These rolls 46 and 47 with their radial ribs 48 and 49 alternately engage the stalk on the row center 117 to cause a positive downward pulling of the stalk. The stalk pulling continues until the ears of corn on the stalks are stripped from the stalks by the ears engaging the upper surfaces of the stripper plates 50 and 51. Following release or stripping of the ears from the stalks the gathering chains 33 and 34 now move the snapped ears 126, as shown in FIGURE 13, upwardly and rearwardly for eventual engagement by the paddle wheel or rotor 127. This rotor with its radial paddles 129 and 130 causes the corn to be impelled into the upper portion of a depressed cross auger 31. The differential in height between the discharge floor of the gathering unit and the floor of the trough 147 insures the retention of the corn within the trough for delivery to the center and thereafter to the feeder housing and the undershot conveyor 137. As previously explained, the undershot conveyor 137 takes the harvested ears of corn upwardly and rearwardly through the feeder housing 19 and delivers it to the separating mechanism in the housing 20. The adjustment of the stripper plates 50 and 51, as described in detail previously, is accomplished by the hand crank 85 which moves the plates inwardly and outwardly from the row axis of center 117. In the construction shown and described the movement of the plates is symmetrical about this row center 117 throughout the full length of the plates 50 and 51. Minor adjustments may be made in the convergence or divergence of the forward ends of the plates 50 and 51 by adjustment of the pins 70 in the elongated slots 111 by means of the eyebolt 113 as previously described.

I am aware that numerous details of construction may be varied throughout a wide range without departing from the principles disclosed herein and I therefore do not propose limiting the patent granted hereon otherwise than as indicated by the appended claims.

What is claimed is:

1. A corn picker for movement along the axis of a row of corn stalks comprising a frame-supporting structure, means on said frame-supporting structure for guiding and feeding standing corn stalks into said picker, a pair of cooperative stalk feeding rolls arranged and constructed

to pull said stalks downwardly, a pair of spaced-apart stripper plates disposed above said stalk feeding rolls, and means on said frame-supporting structure coupled to each of said stripper plates for effecting a concomitant and symmetrical displacement of each of said stripper plates with respect to said row axis to adjust the spacing between said stripper plates.

2. A corn picker comprising a frame-supporting structure, gathering means on said frame-supporting structure for guiding standing corn stalks in a row into said picker, a pair of cooperative stalk feeding rolls arranged longitudinally in said picker and parallel to the row of standing corn stalks with one of each of said pair of rolls positioned on each side of said row of standing corn stalks, a pair of longitudinally extending laterally spaced-apart stripper plates respectively disposed above said pair of cooperative stalk feeding rolls, and means on said frame-supporting structure coupled to each of said stripper plates for simultaneously adjusting the spacing of said stripper plates symmetrically about the row of standing corn as a center.

3. A corn picker as set forth in claim 2 in which the means for adjusting the spacing of said stripper plates includes a pair of longitudinally extending rods, one of said rods being journalled in said frame-supporting structure generally beneath each of said stripper plates, each of said stripper plates having downwardly depending brackets affixed to the bottom thereof at longitudinally spaced-apart positions, each of said rods having spaced-apart upwardly extending lugs affixed thereto, a hinge pin joining each of said depending brackets with an upwardly extending lug, and means for rocking each of said rods.

4. A corn picker as set forth in claim 3 in which the means for rocking each of said rods includes a transversely extending polygonally shaped rod, spaced-apart externally threaded sleeves slidably mounted along said polygonally shaped transverse rod, an arm depending from each of said longitudinal rods, a nut fastened to each of said depending arms at the lower end thereof, said nuts respectively engaging the externally threaded sleeves, and crank means engaging the polygonally shaped transverse rod to effect rotation thereof and related movement of

the stripper plates symmetrically inwardly or outwardly with respect to said center line.

5. A device as set forth in claim 3 in which at least a given one of the downwardly depending brackets includes a transversely disposed elongated slot, and means for adjustably positioning the hinge pin associated with said given bracket in said elongated slot to vary the angular relationship of the stripper plates.

6. A device as set forth in claim 5 in which said means for adjustably positioning said hinge pin comprises a generally horizontally disposed eye bolt threadedly engaging said given bracket and having its eye surrounding the hinge pin associated with said given bracket.

7. A corn harvester comprising a plurality of side by side corn picking and gathering units, means for stripping ears of corn from said stalks, gathering chains on said corn picking and gathering units arranged and constructed to guide and convey standing stalks into said corn picking and gathering units, and to convey stripped ears of corn upwardly and rearwardly in said corn picking and gathering units, a transversely disposed trough disposed across the upper end of said corn picking and gathering units, an auger coonveyor in said trough having a central core and screw flights therearound for aggregating said stripped ears of corn in one part of said trough, with the floor of said trough disposed below the adjacent floor level of the corn picking and gathering units and only the portion of said screw flights extending above said central core being at a level above said adjacent floor level, and ear corn paddle means in the corn picker and gathering units adjacent the juncture of said units with said transverse trough in cooperative relation with said auger conveyor to effect a positive movement of said ears from the corn picker and gathering units to said trough.

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