

No. 723,962.

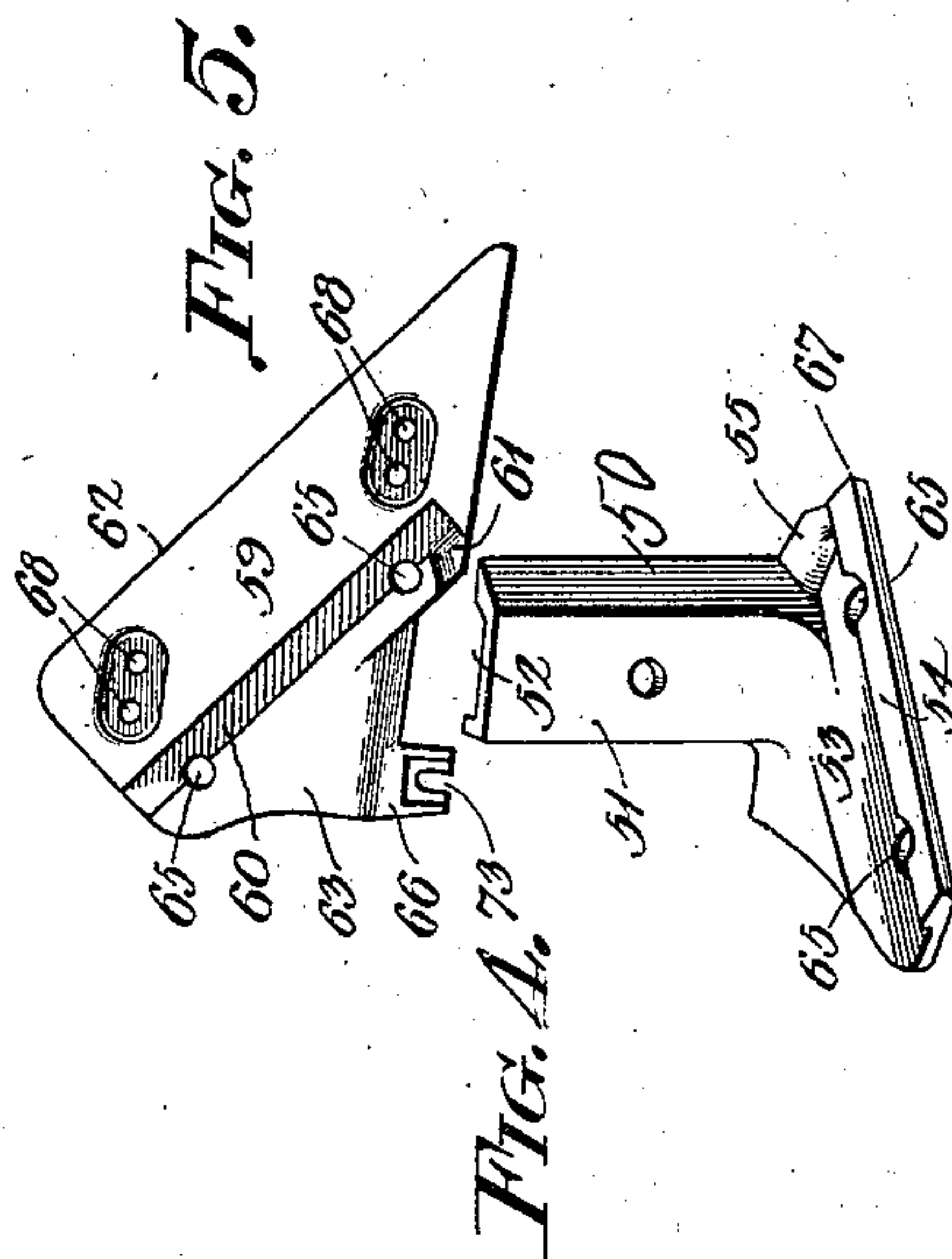
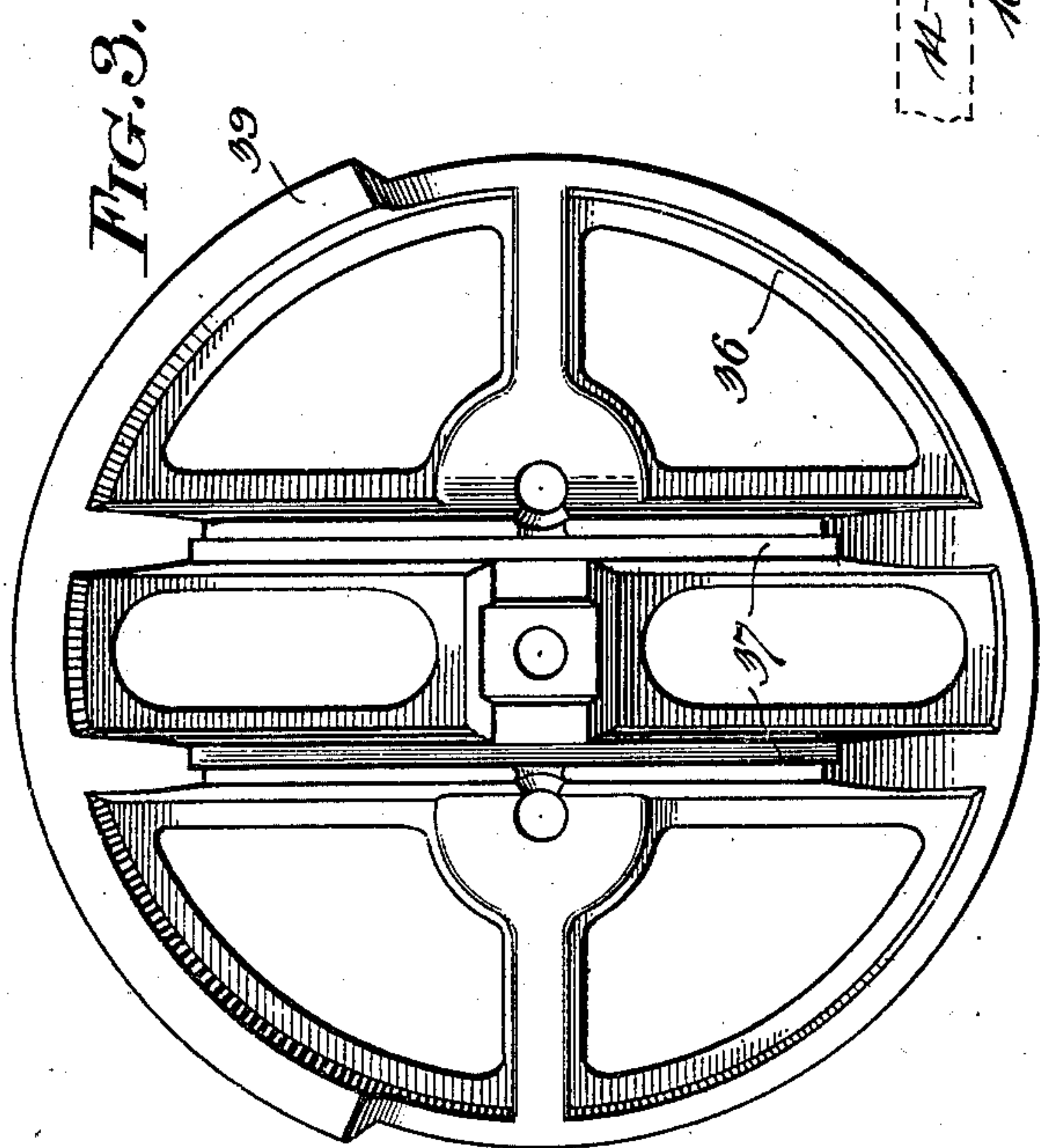
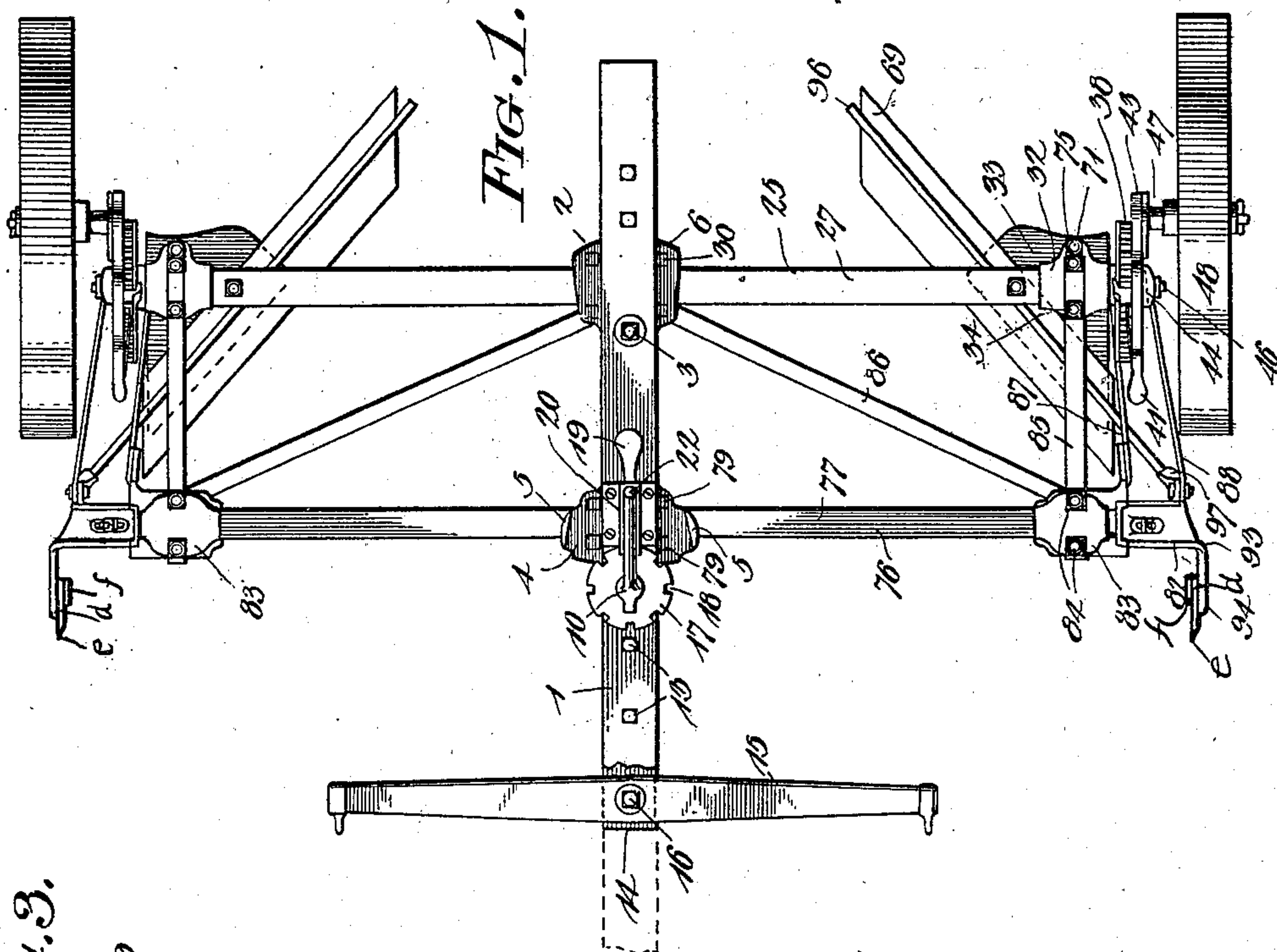
PATENTED MAR. 31, 1903.

W. H. WILDER.
BEAN HARVESTER.

APPLICATION FILED JAN. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses
J. Frank Leavelle
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3 SHEETS—SHEET 2.

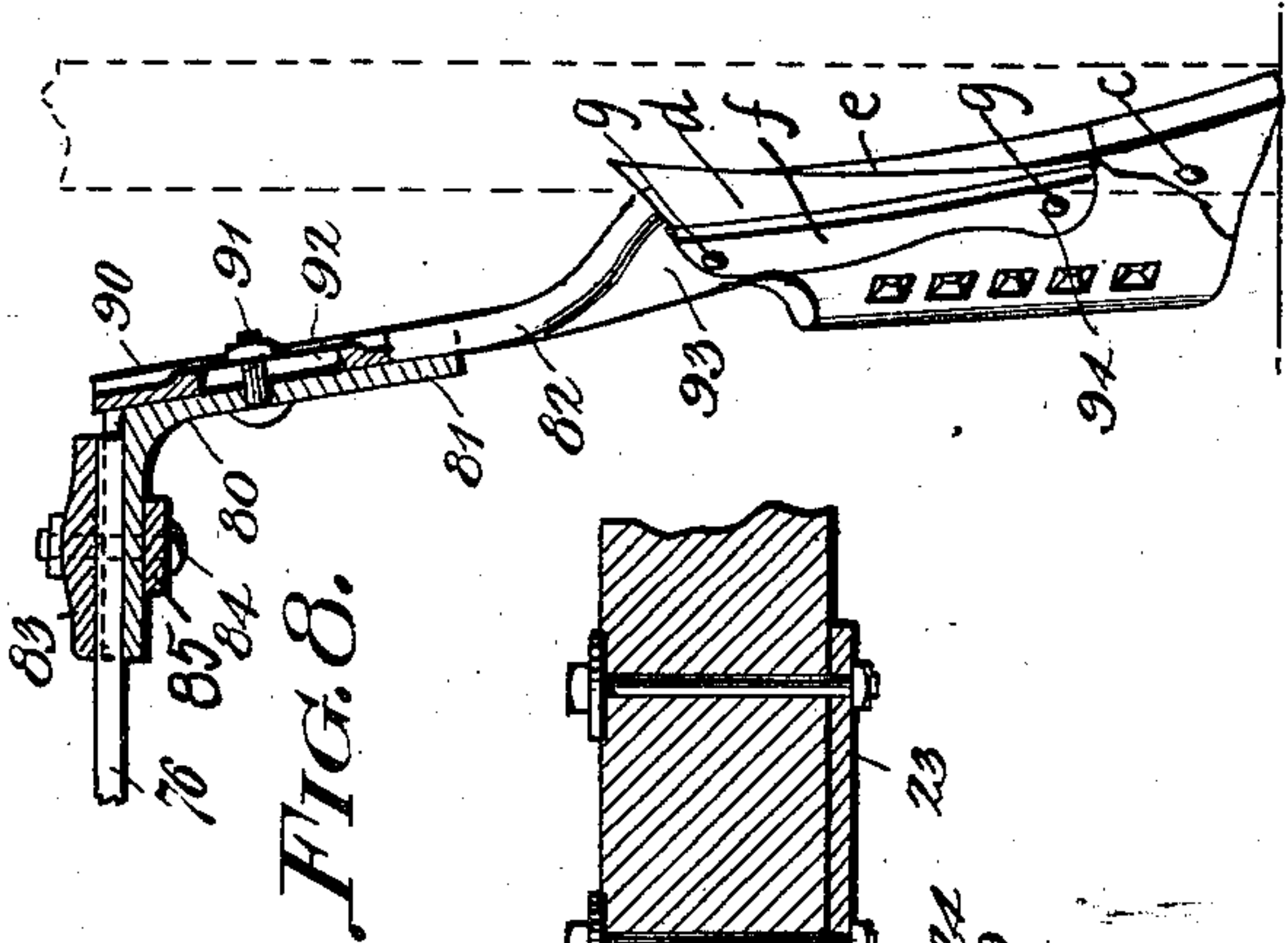


FIG. 8.

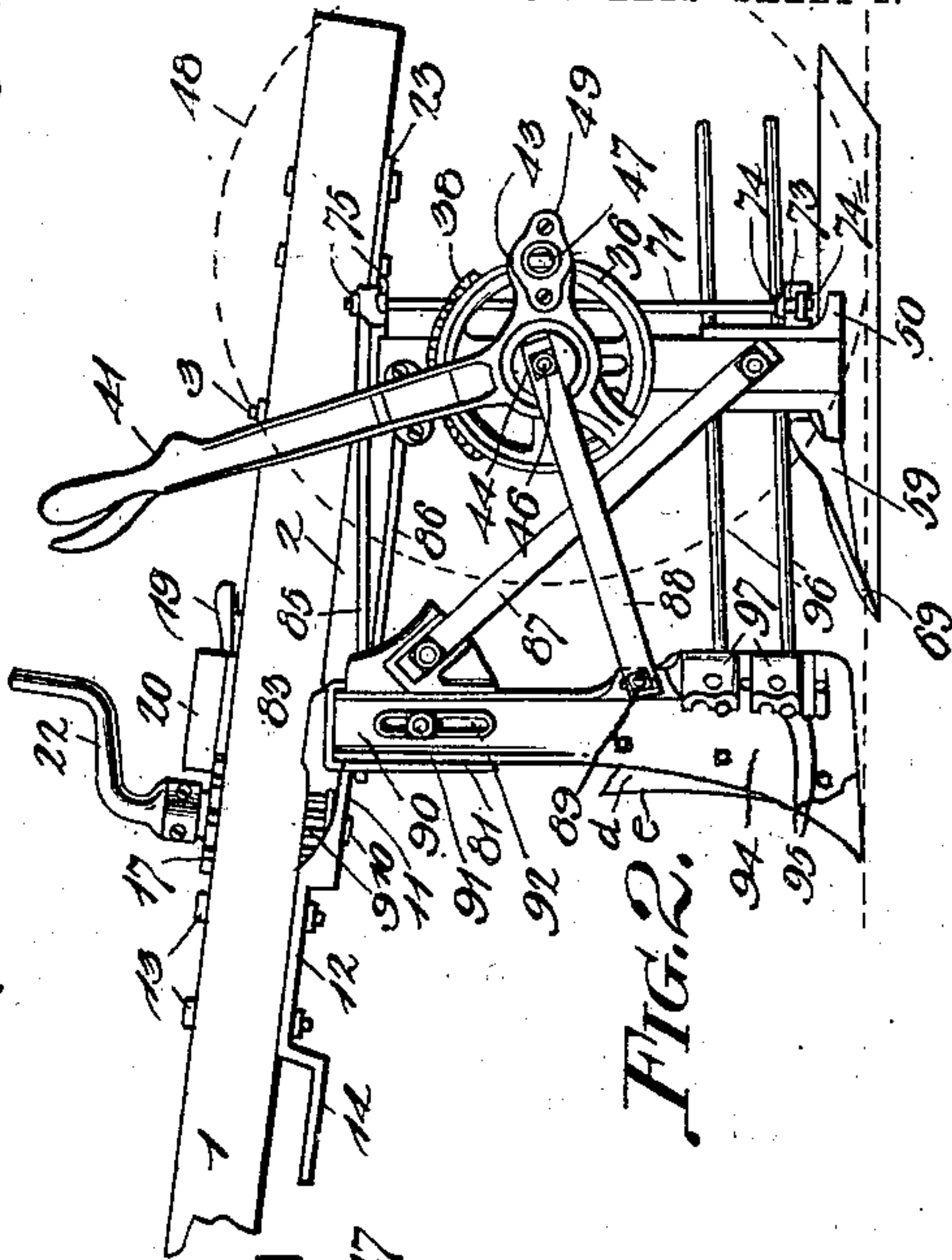


FIG. 2.

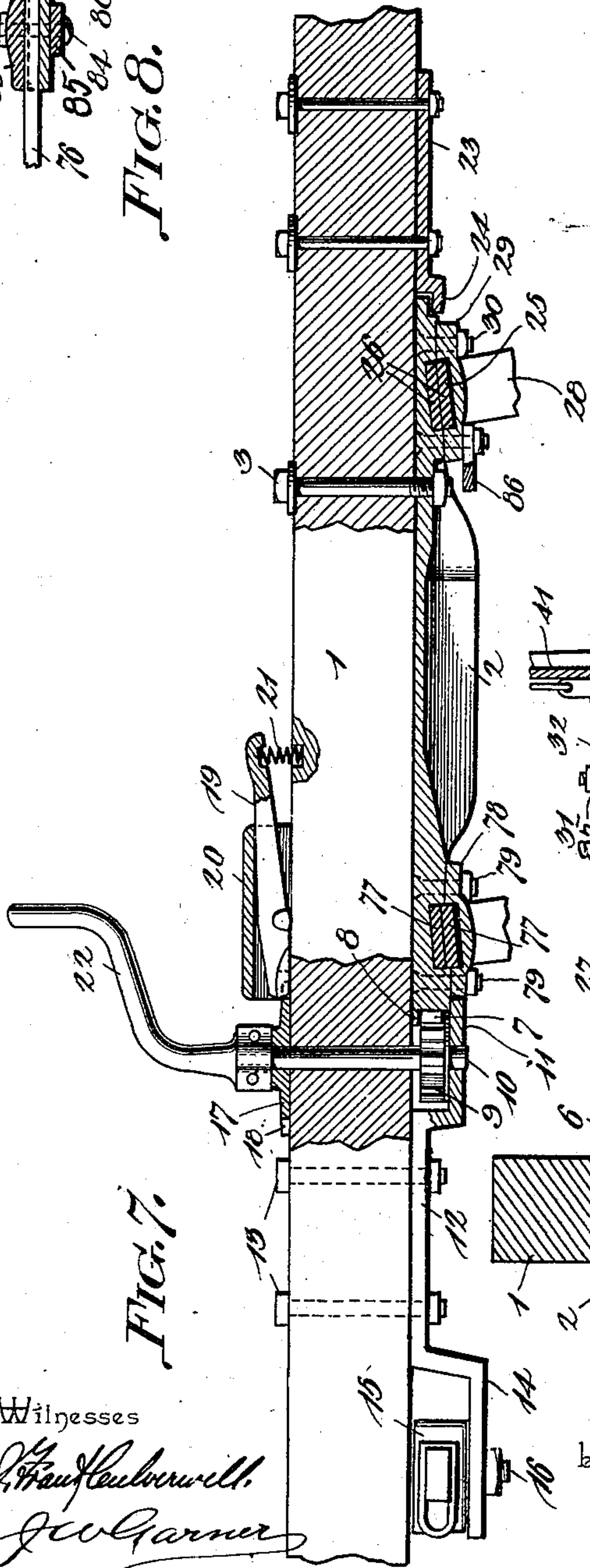


FIG. 7.

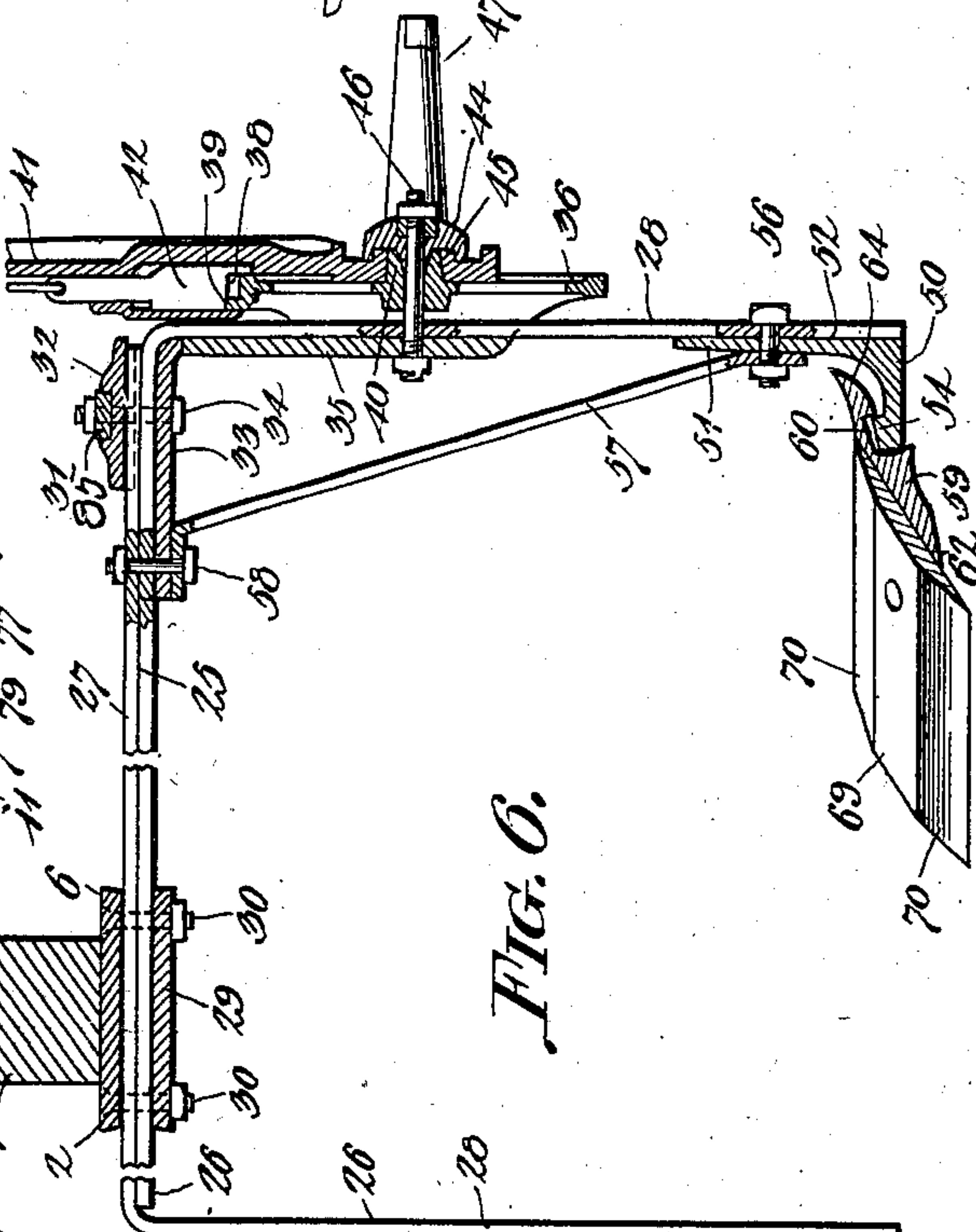


FIG. 6.

Witnesses
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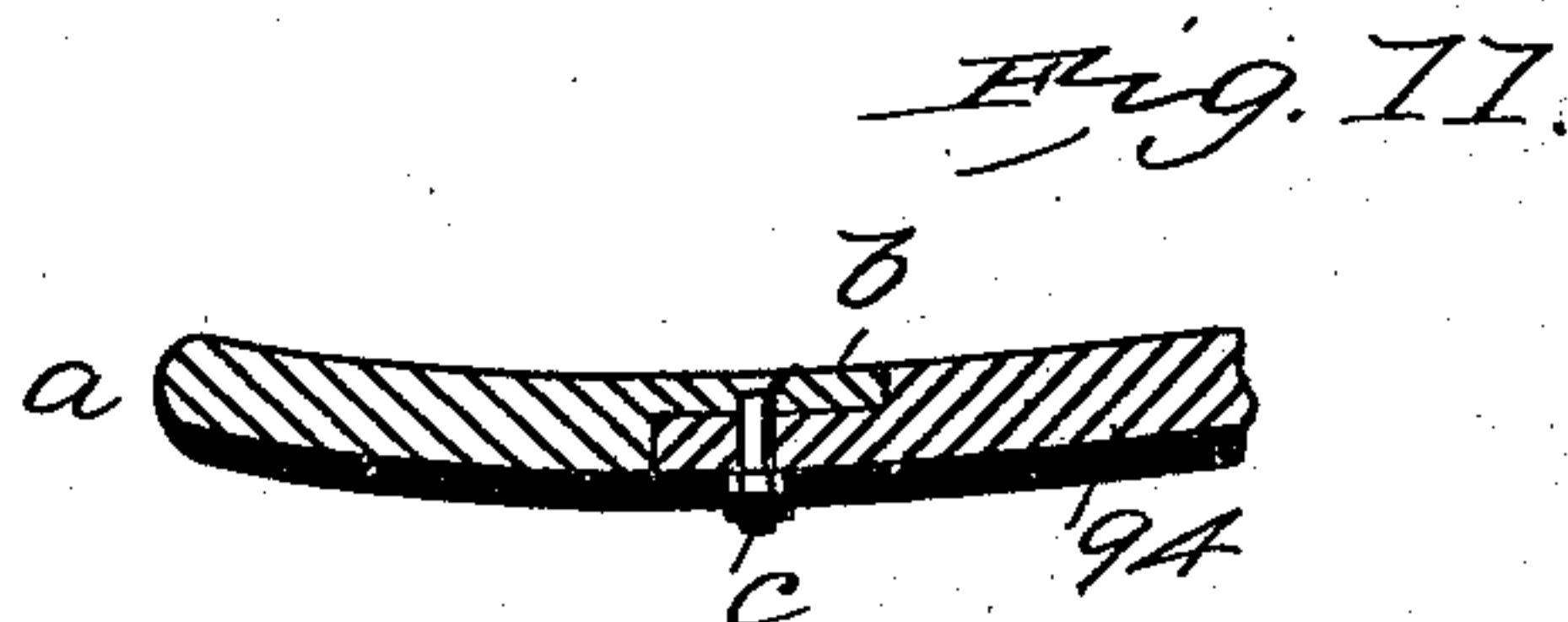
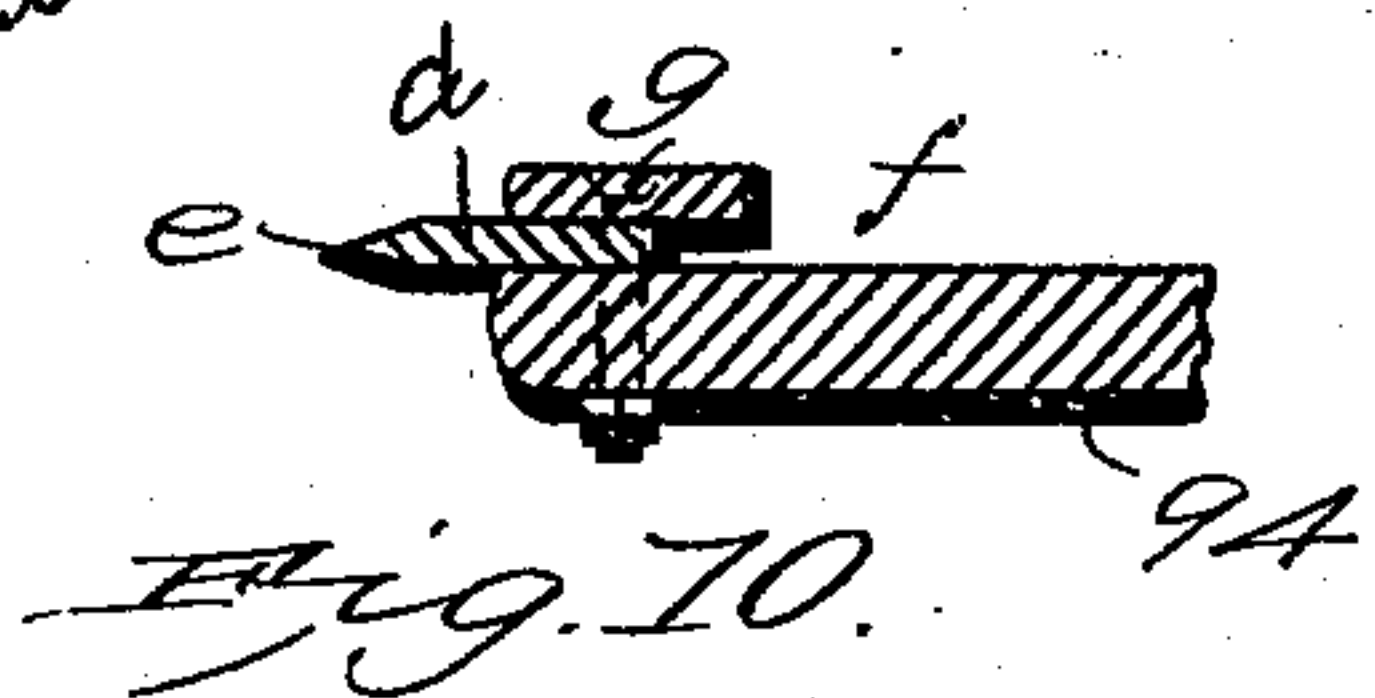
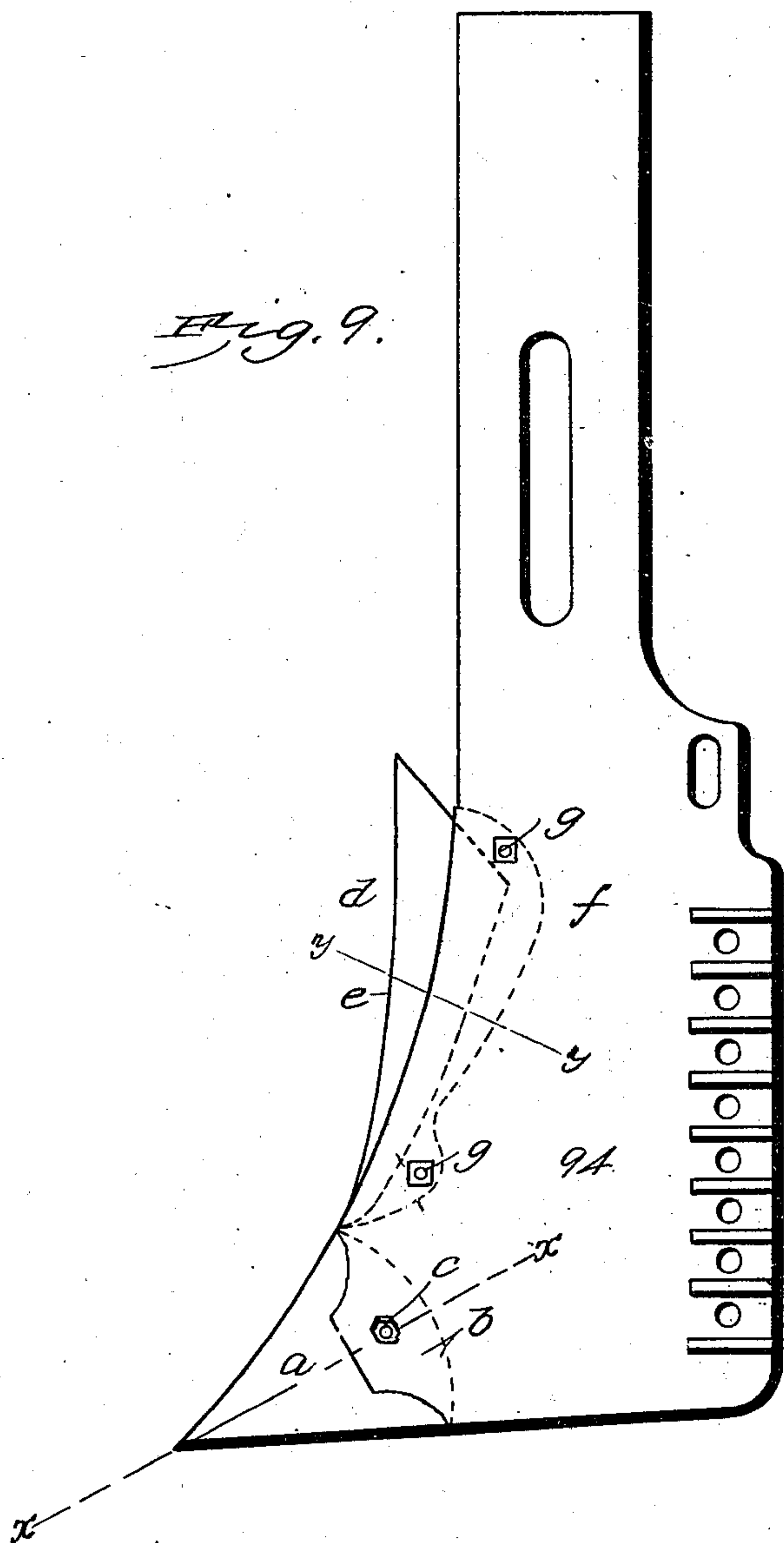
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W. H. WILDER.
BEAN HARVESTER.

APPLICATION FILED JAN. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY WILDER, OF CALEDONIA, NEW YORK.

BEAN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 723,962, dated March 31, 1903.

Application filed January 18, 1902. Serial No. 90,349. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY WILDER, a citizen of the United States, residing at Caledonia, in the county of Livingston and State of New York, have invented a new and useful Bean-Harvester, of which the following is a specification.

My invention relates to improvements in bean-harvesters of that class in which shares are employed to cut the vines of two rows simultaneously at the ground and laterally-inclined gathering-arms are employed which coact with the shares and sweep the cut vines into windrows between the rows and in which the machine is mounted upon supporting-wheels and the sides thereof are independently vertically adjustable with respect to the supporting-wheels to accommodate the machine to inequalities of the ground.

One object of my invention is to effect improvements in the means for independently vertically adjusting the shares at the sides of the machine with respect to the supporting-wheels.

A further object of my invention is to effect improvements in the construction of the dividers and of the brackets by which they are connected to the front cross-bar.

A further object of my invention is to effect improvements in the construction of the shoes which carry the shares.

A further object of my invention is to effect improvements in the construction of the shares so that the latter are adapted to be reversed.

With these and other objects in view my invention consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a top plan view of a bean-harvesting machine embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a detail elevation of one of the lock-wheels, showing the inner side thereof. Fig. 4 is a detail perspective view of one of the standard-feet. Fig. 5 is an inverted plan view of one of the shoes, which are adjustably secured on the standard-feet and carry the reversible blades or shares. Fig. 6 is a detail sectional view showing one of the lock-wheels and one of the vine-cutting plows or shares in operative relation

to the sectional arch-bar which forms the axle. Fig. 7 is a detail elevation, partly in section, showing the saddle-plate, the draft-beam, and their connections. Fig. 8 is a front elevation, partly in section, of one of the dividers, showing the same connected to the cross-bar. Fig. 9 is a detail elevation of one of the dividers, showing the same provided with a detachable point and a detachable knife, the latter used for cutting the vines. Fig. 10 is a sectional view taken on a plane indicated by the line *yy* of Fig. 9. Fig. 11 is a similar view taken on a plane indicated by the line *xx* of Fig. 9.

In the embodiment of my invention I provide a draft-beam 1, which is of suitable length and is disposed longitudinally on the upper side of a saddle-plate 2 and is pivotally connected thereto by a bolt 3, which is disposed near the rear end of the saddle-plate. The front end of the saddle-plate is widened to form a bearing 4, which supports the beam in the various positions assumed by the latter when adjusted on the pivotal bolt 3, vertical stop-flanges 5 being formed on the upper side of the bearing 4 at the sides thereof to limit the movement of the beam on the saddle-plate. The front and rear ends of the saddle-plate are curved concentrically with the bolt 3, and the rear end of the saddle-plate is widened to form the bearing 6. The front curved end of the saddle-plate is provided with rack-teeth 7, forming a rack-segment, and with a forwardly-projecting flange 8, which overhangs said rack-teeth. A pinion 9, which is carried by a shaft 10, that extends through the beam 1, engages the segment-rack 7. The lower end of the said shaft has its bearing in the rearwardly-extending arm 11 of a draft-plate 12. The said draft-plate is of the form shown in Fig. 7, is disposed on the under side of the draft-beam 1, and is bolted thereto, as at 13, and the rear end of the arm 11 of said draft-plate overlaps and bears under the front portion of the saddle-plate 2, thereby preventing the draft-beam from rocking vertically on the pivotal bolt 3. At the front end of the said draft-plate 12 is formed the forwardly-extending arm 14, on which is disposed the singletree 15, the same being connected to said arm by a bolt 16.

A circular locking-disk 17 is secured to the

upper portion of the shaft 10 and bears on the upper side of the beam 1. The said locking-disk is provided with peripheral notches 18, which are disposed at regular distances apart 5 and are adapted to be engaged by a lock-bolt 19, which is fulcrumed in a housing-plate 20, that is secured on the upper side of the draft-beam. A spring 21 bears between the beam and the locking-bolt in recesses formed 10 therein and keeps the said locking-bolt in engagement normally with one of the notches 18. I also provide a crank 22, which is detachably connected to the upper end of the shaft 10 and by means of which said shaft 15 may be turned to rotate the pinion 9, and hence adjust the beam 1 to any desired position with relation to the saddle-plate. A plate 23 is secured to the under side of the draft-beam 1 and has a flange 24 formed at 20 the front end, which overlaps the segmental rear end of the saddle-plate and strengthens the adjustable connection between the saddle-plate and the draft-beam.

The axle-bar 25 comprises a pair of sections 26, each of which is in the form of a right angle, the horizontal portions 27 of the said sections overlapping each other and the vertical portions 28 thereof forming the standards which carry the plows or shares that cut the 30 bean-vines at a slight distance under the surface of the soil, as hereinafter stated. The overlapped portions 27 of the axle-bar sections are secured at their central portions transversely under the rear portion of the saddle-plate and at right angles thereto by a 35 clip-plate 29. The opposing sides of the rear portion of the saddle-plate and of said clip-plate are recessed to receive the said overlapped portions of the axle-bar, and the said 40 clip-plate is secured under the rear portion of the saddle-plate by bolts 30. The outer portions of the axle-bar sections are secured together by clips 31, which comprise the upper plates 32 and the lower plates 33, recessed or 45 gained in their opposing sides to receive the said axle-bar. Bolts 34 connect the said plates 32 33 together.

On the inner side of the vertical standard portion 28 of each axle-bar section is secured 50 a clip-plate 35. A locking-wheel 36 is disposed on the outer side of the vertical standard portion of each axle-bar section, the said locking-wheel and clip-plates 35 being gained or recessed in their opposing sides, as at 37, 55 Fig. 3, to receive said vertical standard portions of the axle-bar. Said clip-plates 35 and locking-wheels 36 are bolted together by bolts which are disposed on the front and rear sides of the vertical standard portions of the axle-bars. Each locking-wheel 36 is formed on 60 its upper side with a rack-segment 38 and with a flange 39 on the inner side of said rack-segment. A boss 40 is on the front side of each locking-wheel, at the center thereof, and 65 adjusting-levers 41 are fulcrumed on the said bosses of the said locking-wheels and are provided with spring-pressed locking-dogs 42,

which in coaction with the segment-racks 38, with which said locking-wheels are provided, secure the said adjusting-levers at any 70 desired position on the said wheels. Each of the said adjusting-levers is provided at its lower end with a rearwardly-extending arm 43. Caps 44 are centered on the outer sides of the locking-wheels and are in engagement 75 with the bosses 40 thereof and annular flanges 45, formed on the adjusting-levers 41. Bolts 46 pass through and secure the clip-plate 35, standard 26, locking-wheel 36, lever 41, and cap-plate 45 together, as shown in Fig. 6. 80 Spindles 47, on which the supporting-wheels 48 are mounted, are provided with clip-bases 49, which are bolted on the outer sides of the arms 43, with which the adjusting-levers 41 are provided. It will be understood that by 85 turning the levers 41 either side of the frame of the machine may be raised or lowered, and hence the standards 26 and the shares or plows carried thereby and hereinafter described may be adjusted vertically independently of 90 each other, as may be required by the character of the ground.

To the lower end of each standard portion 28 of the axle-bar, on the inner side thereof, is secured a foot 50, the vertical portion 51 95 of which is provided with a vertical groove 52 on its outer side to receive the standard 28. The laterally-extended portion 53 of the foot, which is on the inner side of the vertical portion 51 thereof, has its front edge 100 obliquely disposed and formed with a flange 54 on its upper side. At the front end of the flange is formed a stop 55, which extends from the flange to the vertical portion 51. The latter is secured to the standard portion 105 28 of the axle-bar by a bolt 56. In connection with each standard portion 28 of the axle-bar I employ a brace 57, which has its lower end secured by the bolt 56 on the inner side of the vertical portion of the foot and its up- 110 per end secured by a bolt 58 to one of the clip-plates 33, the said bolts 58 passing also through the overlapped horizontal portion of the axle-bar sections. It will be understood that the function of the said braces 57 is to 115 strengthen the standard portions of the axle-bar.

A shoe 59, which is approximately horizontally disposed, is provided on its under side with an obliquely-disposed groove 60, adapted 120 to receive the flange 54 of one of the feet 50, one of the said shoes being employed in connection with each of the feet. At the front end of the groove 60 is a communicating recess 61, the said recesses of the respective 125 shoes clearing the stops 55 of the feet. The front edges 62 of the shoes are obliquely disposed with relation to the line of draft, as shown in Figs. 4 and 1. The inner portions 63 of the shoes, which overhang the corre- 130 sponding portions of the feet 50, diverge inwardly and upwardly from the feet, as at 64, and thereby the said shoes are adapted to be adjusted to any desired angle with relation

to the feet to cause the said shoes to operate in the ground at any desired inclination. The said feet and the said shoes are provided with alined bolt-openings 65, the centers of which are in line with the rear sides of the flanges 54 and grooves 60. The said flanges and grooves form interlocked hinged connections between the feet and the shoes, and the openings 65 for the bolts which secure the said shoes on the said feet are so disposed that the said bolts permit of the movement of the shoes with relation to the feet on the hinged connections thus formed between them. Each shoe 59 is formed on its outer side at its rear corner with a laterally-extending arm 66, which is near but clear of the rear side of the vertical portion 51 of the foot. The front end of the groove 60 on the under side of each shoe is closed, and the narrowed front corner 67 of the foot with which the shoe is associated bears against the closed front end of the said groove, and hence the bolts which connect the shoes to the feet are relieved of all stress incident to draft. Each of the shoes is provided near its front and rear ends with adjusting-openings 68. In connection with the shoes I employ shares or blades 69, which are of the form shown in Figs. 1 and 6 and are connected to the said shoes by means of bolts and the said adjusting-openings 68. Said shares or blades 69 are of suitable length to extend within a suitable distance of the center of the machine, and the said shares or blades are beveled on their upper sides to form the oppositely-disposed duplicate cutting edges 70. The said shares or blades are adjustable laterally on the shoes, the openings 68 permitting said lateral adjustment, and the said shares or blades after one of the oblique edges thereof has become dulled may be reversed end for end on the said shoes, as will be understood. Bolt-rods 71 connect the arms 66 of the shoes to the clip-plates 32. The lower ends of the said bolt-rods are disposed in open slots 73, with which said arms 66 are provided, and are clamped thereto by nuts 74. The upper portions of the said bolt-rods are provided with adjusting-nuts 75, which bear on the upper and lower sides of the clip-plates 32 and by adjusting which the shoes may by the bolt-rods 71 be set to any desired inclination on the feet 50.

The cross-bar 76, which is parallel with and at a suitable distance in front of the axle-bar 25, is composed of two overlapping sections 77, which are disposed at their central portions in transverse grooves or rabbets in the opposing sides of the front portion of the saddle-plate 2, and of a clip-plate 78, which is bolted on the under side of the front portion of said saddle-plate, as at 79. Clips 80 are secured under the ends of the cross-bar 76 and are provided with depending portions 81, which are grooved vertically in their outer sides to receive the upper portions of the dividers 82. The horizontal portions of the clip-plates 80 are disposed under the ends of the

cross-bar 76 and are grooved or rabbeted on their upper sides to receive said ends of the cross-bar, and clip-plates 83 are placed on the upper side of the cross-bar, at the ends thereof, and bolted to said clip-plates 83 by bolts 84. The said bolts also secure the front ends of a pair of rearwardly-extending brace-rods 85 under the said cross-bar 76. The rear ends of the said brace-bars 85 are bolted on the clip-plates 32 on the ends of the horizontal portion of the axle-bar. Obliquely-disposed brace-bars 86 have their inner rear ends bolted to the under sides of the clip-plates 29. The front outer ends of the said brace-bars are bolted to the under sides of the clips 80. Inclined brace-bars 87 have their upper ends disposed in gains formed in the rear portions of the clips 80 and bolted thereto and their lower ends bolted on the outer sides of the standard portions 28 of the axle-bar near the lower ends of said standard portions. Brace-rods 88 have their front ends bolted to the dividers 82, as at 89, and their rear ends disposed in grooves or recesses in the outer sides of the caps 45 and secured on the bolts 46. Hence the cross-bar 76 and axle-bar 25 are connected together and the standard portions of said axle-bar are connected to the dividers 82, thereby strengthening both the dividers and the said standard portions of the axle-bar, as will be understood. It will be observed by reference to Figs. 1 and 8 that the dividers operate directly in advance of the supporting-wheels 48. The said dividers have the standard portions 90, which are bolted to the clips 80 by bolts 91, said standard portions having slots 92, in which the said bolts operate, the said slots adapting the said dividers to be secured to the clip-plates 80 at any desired vertical adjustment. The said dividers are offset laterally and outwardly, as at 93, to dispose their front edges 94 directly in advance of the supporting-wheels 48. On the outer sides of the dividers, at the rear portions thereof, are formed groove-seats 95 for the front ends of the gathering-rods 96, which are disposed obliquely over the blades or shares 69 and converge rearwardly, as shown in Fig. 1, the function of the said gathering-rods being to dispose the bean-vines in windrows as they are cut by the shares or blades 62. In connection with the groove-seats 95 I provide clip-blocks 97, which are bolted to the outer sides of the dividers and secure the front ends of the gathering-rods thereto. The gathering-rods may be set at any required height above the dividers, according to the size of the vines.

In the operation of my invention the frame which comprises the axle-bar, the cross-bar 76, and their connections may be adjusted with reference to the draft-beam as may be required to overcome any tendency to side draft. Furthermore, as hereinbefore indicated, each side of the frame may be vertically adjusted independently of the other to enable the machine to be operated success-

fully on hillsides. When the machine is to be moved from one point to another without being operated, the wheels 48 are so adjusted by means of the levers 41 as to raise the shares or blades which cut the bean-vines entirely clear of the earth.

In Fig. 9 of the drawings I show in detail the construction of the dividers. Each divider 94 is provided at its front lower corner with a detachable point *a*, which is triangular in form and has at its base, which abuts against the lower front edge of the divider, a flange *b*, that bears on one side of the divider and is secured thereto by a bolt *c*, thereby detachably securing the point to the divider, so that when the point becomes worn it may be renewed. On the front edge of the divider, extending upwardly from the point, is a cutting-knife *d*, having a sharpened front cutting edge *e* to cut the vines. This knife bears against one side of the divider and is detachably secured thereto by a plate *f*, that is secured to the divider by bolts *g*.

Having thus described my invention, I claim—

1. In a machine of the class described, the combination of a foot having a laterally-extended portion and a shoe adapted to carry a share, said shoe being secured on and hingedly connected to said foot, whereby said shoe may be adjusted to any desired inclination, substantially as described.

2. In a machine of the class described, the combination of a foot having a laterally-extended portion provided with a flange 54, and a shoe on said laterally-extended portion of said foot, and having a groove on its under side to receive the said flange 54, substantially as described.

3. In a machine of the class described, the combination of a foot having a laterally-extended portion with an oblique inner side, and a shoe fitted on said foot, said shoe and foot having coacting stops at the front end of the latter to sustain said shoe against the draft, substantially as described.

4. In a machine of the class described, the combination of a foot having a laterally-extended portion and a shoe fitted on said laterally-extended portion of the foot, said shoe and foot having an interlocking flange-and-groove connection and coacting stops to prevent longitudinal movement of the shoe on the foot, substantially as described.

5. In a machine of the class described, the combination of a foot, a laterally-extended shoe hingedly connected thereto, and a bolt to adjust said shoe and secure the same when adjusted, substantially as described.

6. In a machine of the class described, the combination of a foot having a laterally-extended portion provided with a flange on its upper side, a laterally-extended shoe on said foot, and having a groove in its under side engaged by said flange, the under side of said shoe diverging outwardly from the upper side of said foot, whereby said flange and groove

form a hinge connection between said foot and shoe, and means to secure the latter when adjusted, substantially as described. 70

7. In a machine of the class described, the combination of a foot having a vertical standard portion and a laterally-extended portion, a laterally-extended shoe on said foot, and having lateral extensions engaging the front and rear sides of the standard portion of the foot, substantially as described. 75

8. In a machine of the class described, the combination of a foot having a laterally-extended portion provided with a flange on its upper side, a laterally-extended shoe on said laterally-extended portion of the foot and having a groove in its under side to receive said flange, the opposing sides of said shoe and foot on the outer side of said flange diverging inwardly and said foot and shoe having openings the centers of which are in line with the outer side of said flange and groove, and bolts in said openings, securing said shoe on said foot, whereby said shoe may be adjusted on said bolts and turned to any desired angle with respect to said laterally-extended portion of the shoe, substantially as described. 80 85 90

9. In a machine of the class described, the combination of an axle-bar having standard portions at the ends thereof, feet having vertical portions recessed to receive said standard portions of the axle-bar, shoes secured on said feet, brace-bars having their upper ends connected to the horizontal portion of the axle-bar, the lower ends of said brace-bars bearing against the inner sides of said vertical portions of said feet, and bolts connecting the lower ends of said brace-rods thereto, said bolts passing through said brace-rods and the vertical portions of said feet and said axle-bar, substantially as described. 95 100 105

10. In a bean-harvester, of the class described, the combination of an arched axle-bar having shares attached to the standard portions thereof, levers fulcrumed to the standard portions of said arched axle, supporting-wheels mounted on and carried by said levers, a cross-bar in advance of the axle-bar, clip-plates secured to the ends of the cross-bar, dividers secured to and vertically adjustable on the clip-plates, brace-rods connecting the lever-axes with the dividers and brace-rods connecting the standard portions of the axle-bar to the clip-plates, the axes of said wheels being eccentric to the fulcrums of said levers, substantially as described. 110 115 120

11. In a bean-harvester, a frame including an axle-bar, shares carried thereby, a cross-bar in advance of said axle-bar, adjusting-levers fulcrumed to said axle-bar, supporting-wheels carried by said adjusting-levers, the axes of said supporting-wheels being eccentric to the fulcrums of said levers, dividers secured to the front cross-bar, and braces connecting the axes of the levers to the dividers, substantially as described. 125 130

12. In a bean-harvester of the class de-

scribed, a frame having supporting-wheels and shares to cut the bean-vines, in combination with dividers in advance of said supporting-wheels, said dividers being obliquely disposed laterally and inclining toward each other upwardly and having standard portions secured to the sides of the frame, substantially as described.

13. In a bean-harvester of the class described the combination of a frame having an axle-bar with downturned ends forming standards, shares carried by said standards, locking-wheels secured on said standards and having segment-racks, adjusting-levers fulcrumed to said locking-wheels, said levers having rearwardly-extending arms, dogs carried by said levers to engage said segment-racks and lock said levers when adjusted, arms of said levers are provided and supporting-wheels mounted on said spindles, substantially as described.

14. In a bean-harvester of the class described, the combination of a frame carrying vine-cutting shares, supporting-wheels for said frame, disposed on the sides thereof and vertically-adjustable dividers having standard portions secured to the sides of the said frame, and disposed in advance of and in line with the supporting-wheels, substantially as described.

15. In a machine of the class described, the combination of a foot having a laterally-extending portion and a detachable laterally-extending shoe thereon, with a share and means to secure the same on the shoe, said share being reversible, end for end, on said shoe, substantially as described.

16. In a machine of the class described, the combination of a foot having a laterally-extending portion and a detachable laterally-extending shoe thereon, with a share and means to secure the same on the shoe, said share being reversible, end for end, on said shoe and having cutting edges on opposite sides, substantially as described.

17. A bean-harvesting machine having a vine-cutting share and a divider in advance thereof, said divider having a vine-cutter on its front edge.

18. A bean-harvesting machine having a vine-cutting share and a divider in advance thereof, said divider having a detachable vine-cutting knife on its front edge, substantially as described.

19. In a bean-harvester of the class described, the combination of a frame carrying vine-cutting shares, supporting-wheels for said frame and dividers directly in front of the supporting-wheels, and having standard portions secured to the sides of the frame, substantially as described.

20. In a bean-harvesting machine, a divider comprising a blade and a standard portion, the blade being disposed obliquely with relation to the standard portion and having a detachable vine-cutting knife on its front edge, substantially as described.

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

WILLIAM HENRY WILDER.

Witnesses:

E. B. MCKAY,
ALLAN B. MCKAY.