

No. 709,403.

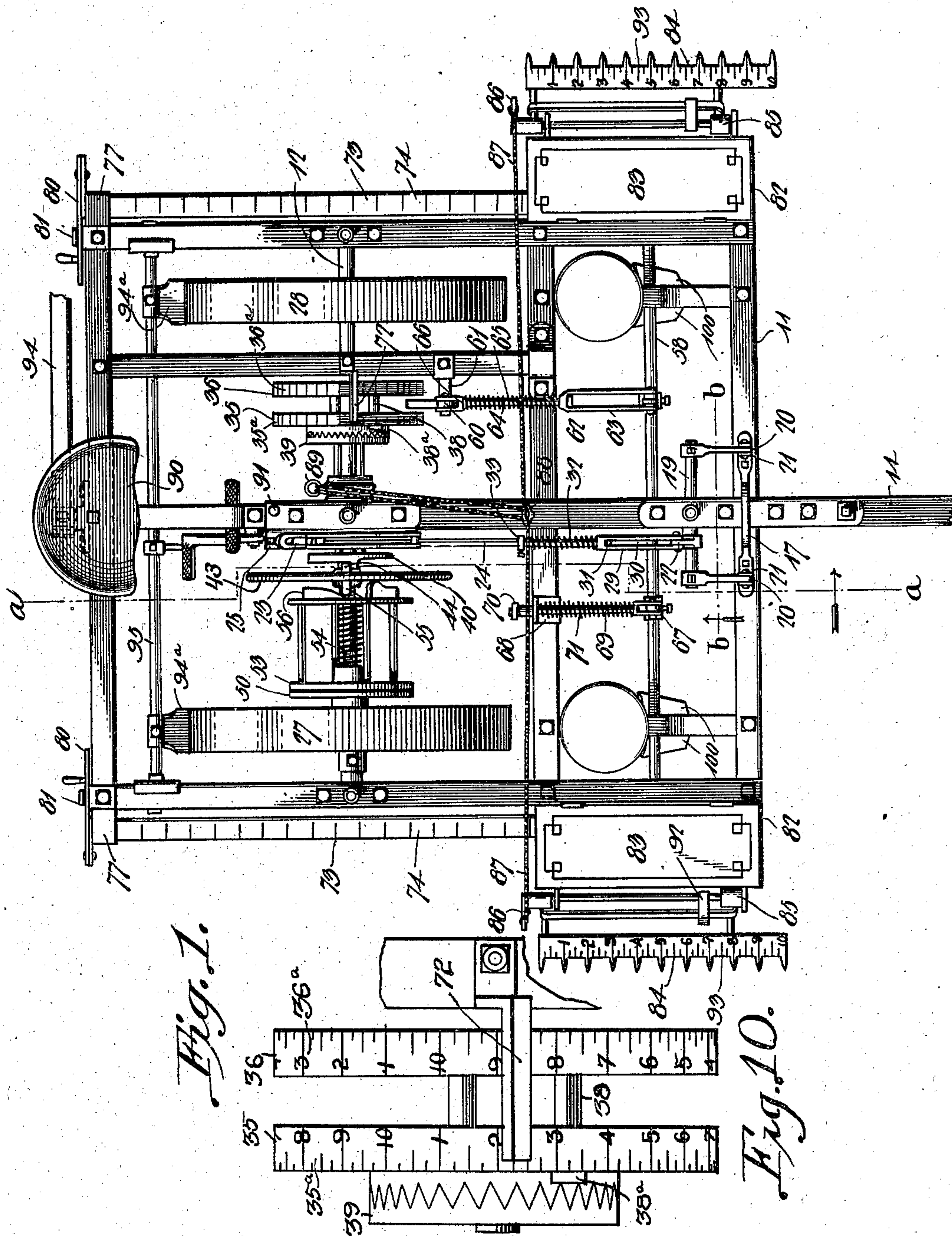
Patented Sept. 16, 1902.

J. HILLERY.
CHECK ROW CORN PLANTER.

(Application filed Oct. 1, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses

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4 Sheets—Sheet 2.

Fig. 2.

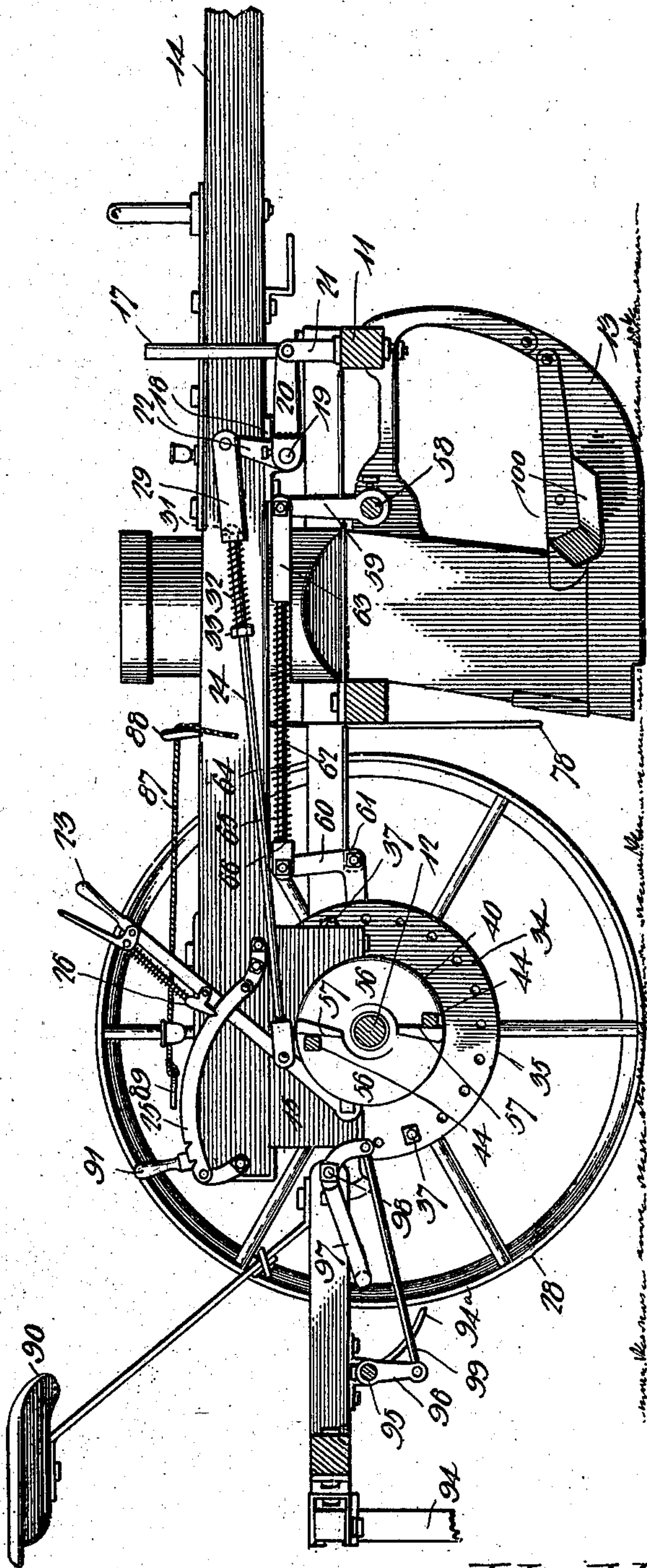
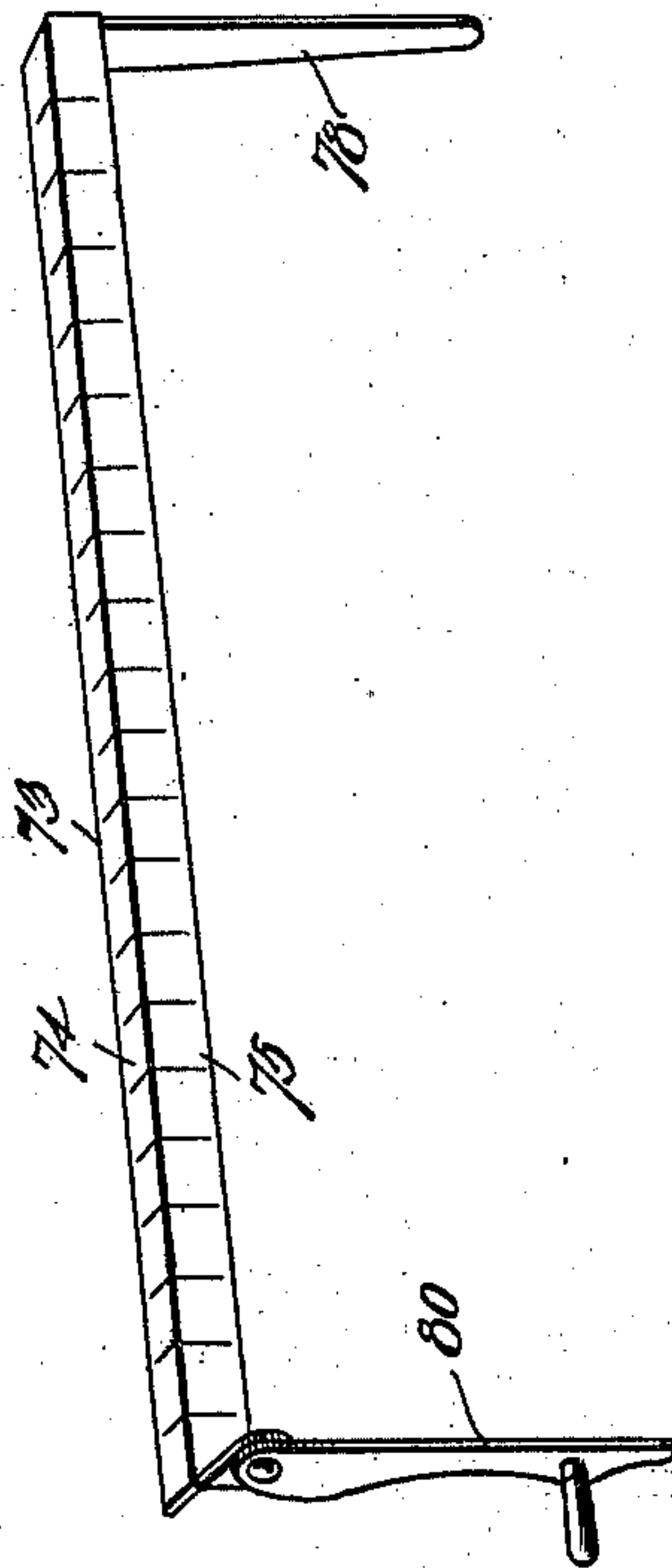


Fig. 4.



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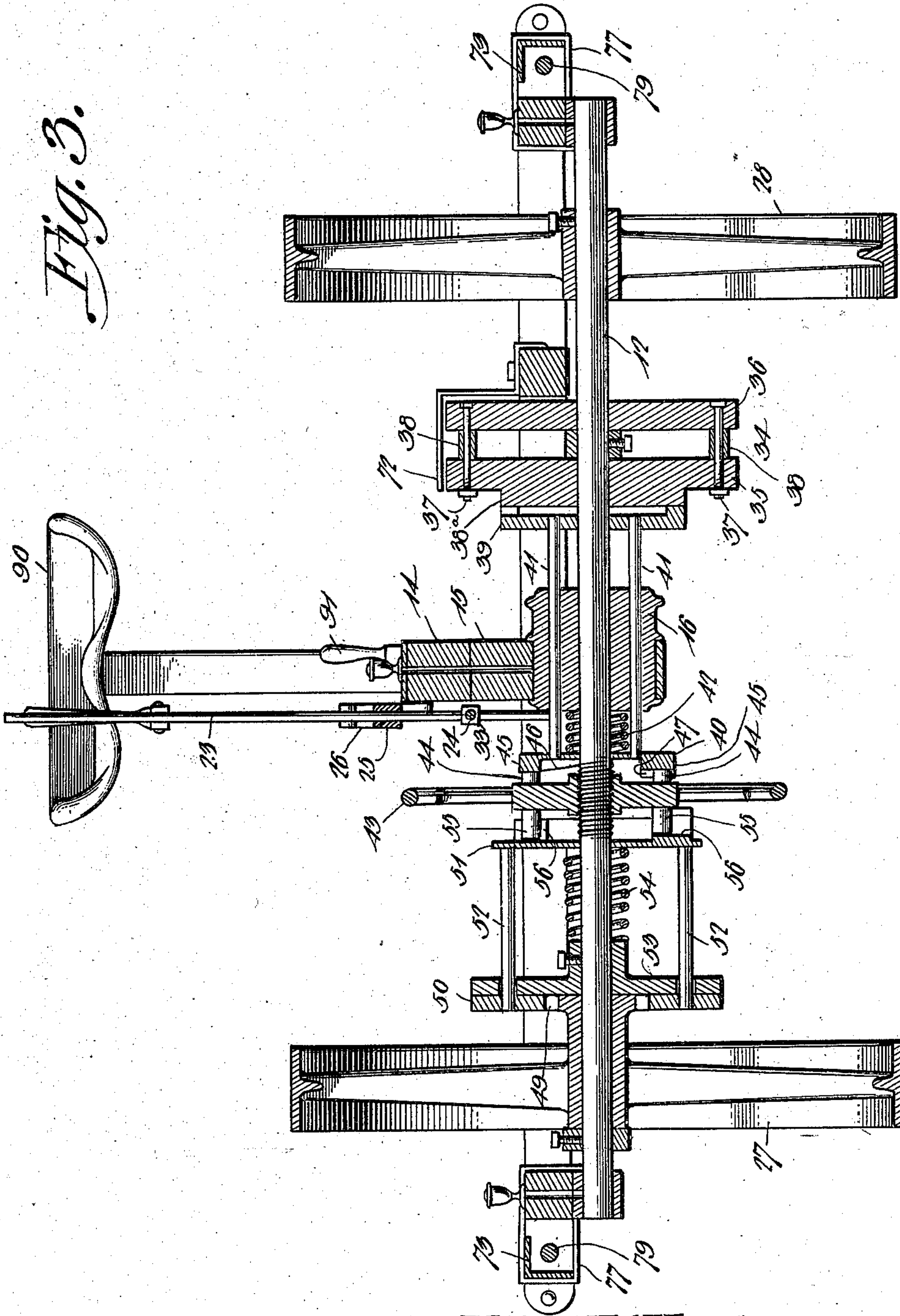
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4 Sheets—Sheet 4.



Fig. 5.

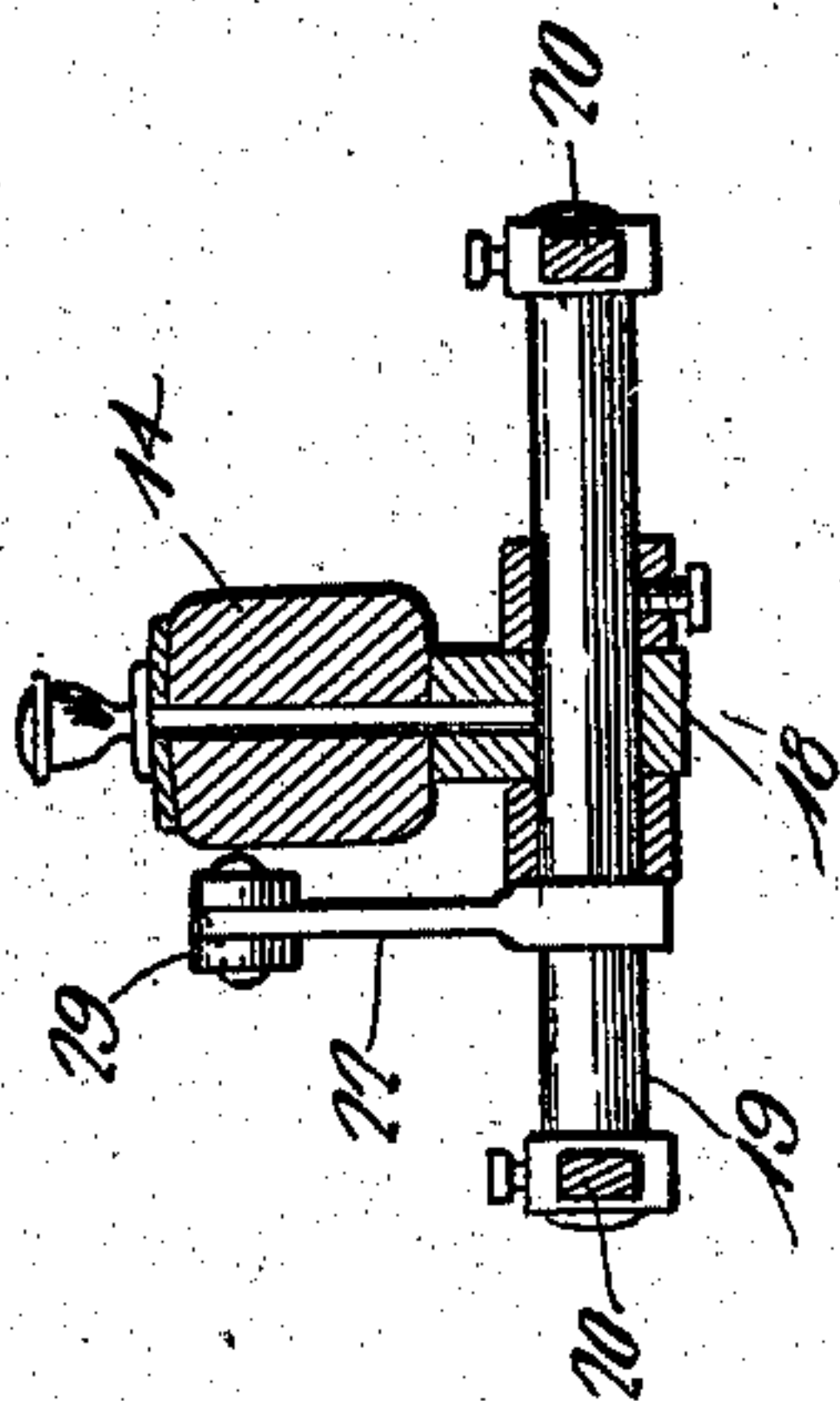


Fig. 6.

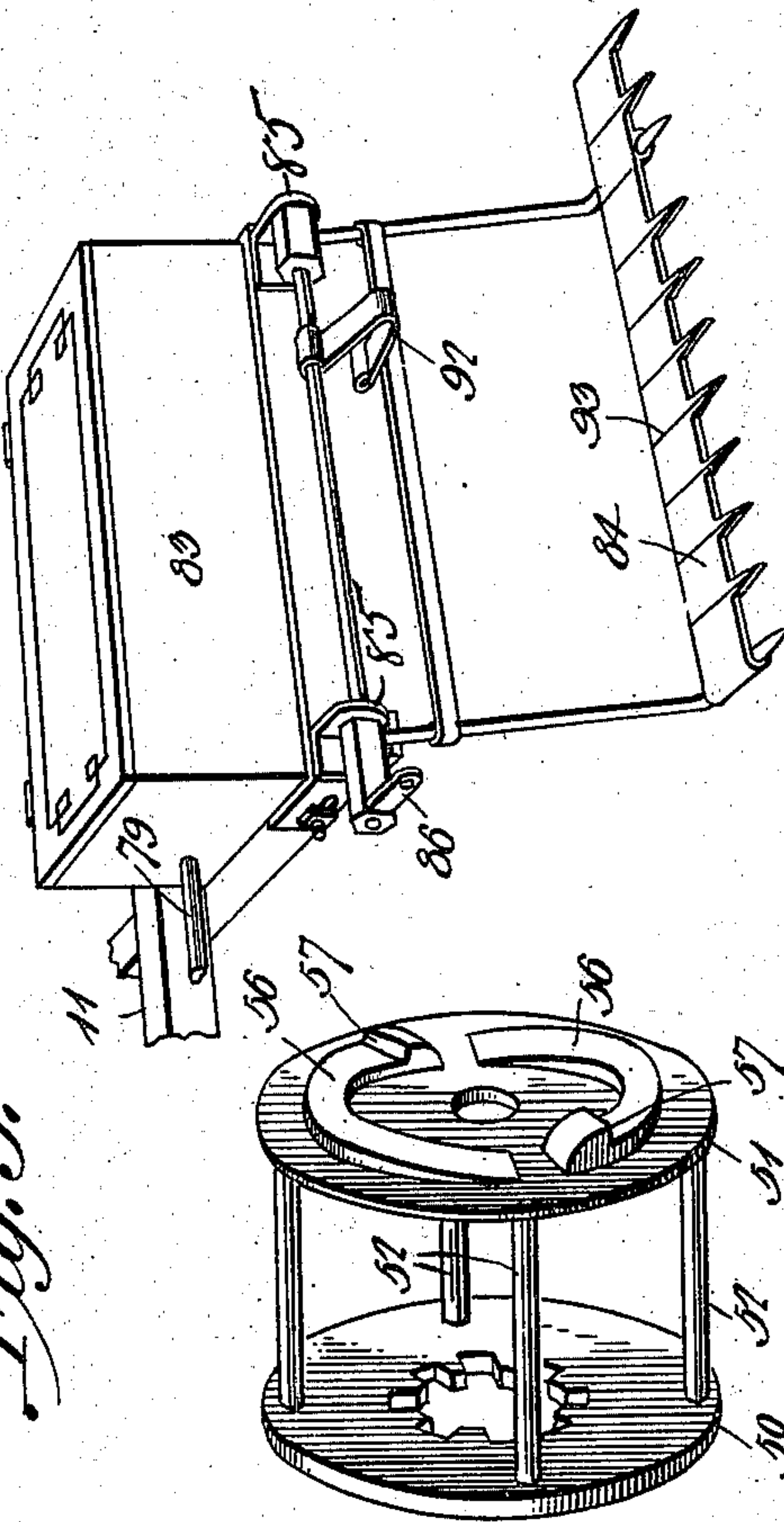


Fig. 7.

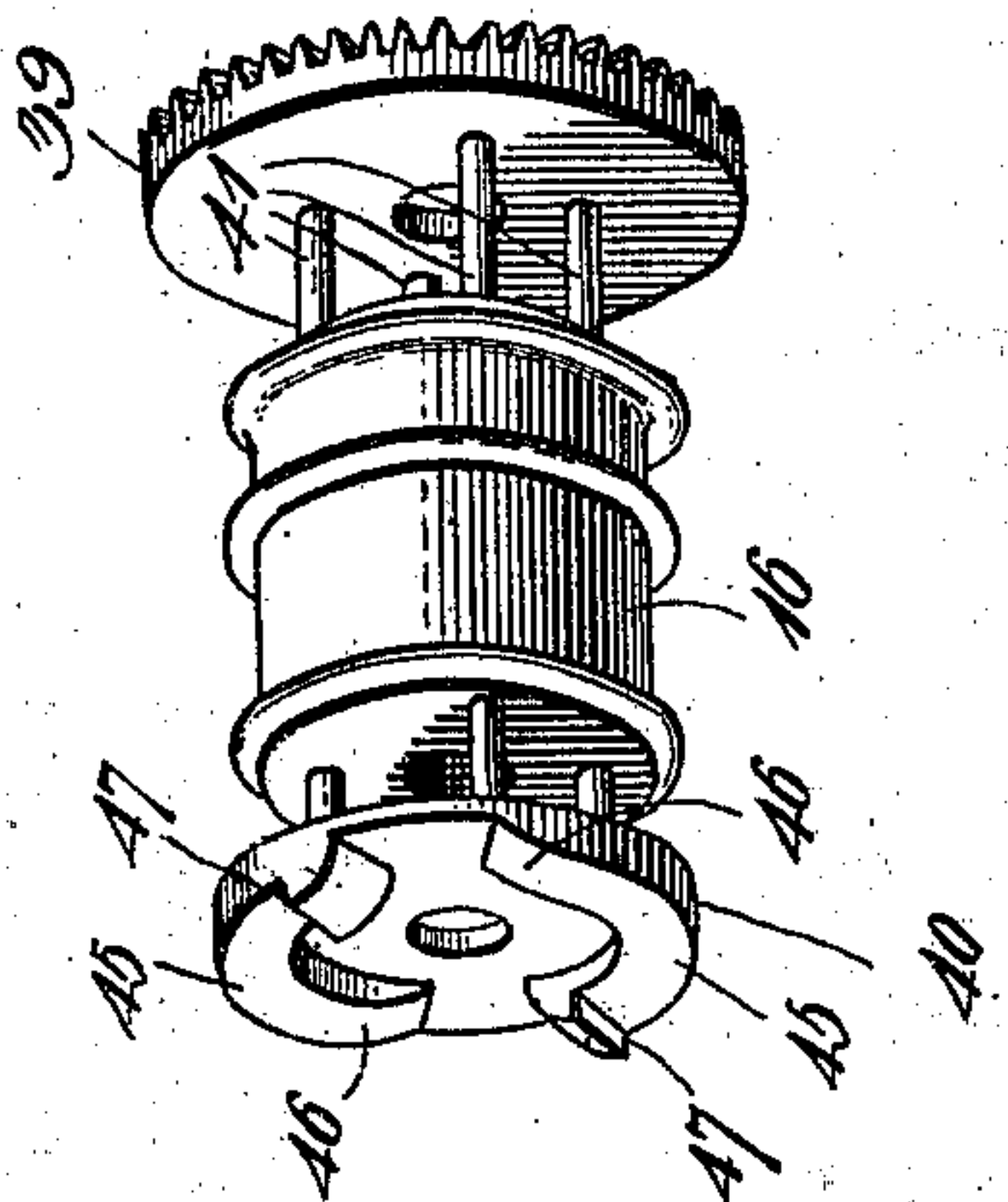


Fig. 8.

Fig. 9.

Fig. 9.

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UNITED STATES PATENT OFFICE.

JOHN HILLERY, OF COLCHESTER, ILLINOIS, ASSIGNOR OF ONE-THIRD TO
JOHN ROBERT ENNESS, OF COLCHESTER, ILLINOIS.

CHECK-ROW CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 709,403, dated September 16, 1902.

Application filed October 1, 1901. Serial No. 77,226. (No model.)

To all whom it may concern:

Be it known that I, JOHN HILLERY, a citizen of the United States, residing at Colchester, in the county of McDonough and State of Illinois, have invented a new and useful Check-Row Corn-Planter, of which the following is a specification.

My invention is an improved check-row corn-planter adapted for planting corn in check-rows.

One object of my invention is to effect improvements in the devices for throwing the seed-dropping mechanisms into and out of gear with the axle-shaft.

Another object of my invention is to effect improvements in the devices for raising and lowering the front end of the front frame to raise and lower the furrowing-runners.

Another object of my invention is to effect improvements in the devices for adjusting the planting mechanism.

Another object of my invention is to effect improvements in the devices for ascertaining the location of the planted hills at the ends of the rows.

A further object of my invention is to effect improvements in the construction of the furrow-openers.

With these objects in view my invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a check-row corn-planting machine embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same, taken on a plane indicated by the line *a a* of Fig. 1. Fig. 3 is a vertical transverse sectional view of the same, taken on a plane intersecting the axle-shaft. Fig. 4 is a detail perspective view of one of the hill finder-bars. Fig. 5 is a detail perspective view of one of the furrow-openers. Fig. 6 is a detail sectional view taken on a plane indicated by the line *b b* of Fig. 1. Fig. 7 is a detail perspective view of the power-wheel clutch. Fig. 8 is a detail perspective view of the drum on the axle-shaft and of the master-wheel clutch. Fig. 9 is a detail perspective view showing one of the space-boxes and the pivoted bar carried thereby. Fig. 10 is a detail edge ele-

vation of the master-wheel, showing the reversely-numbered peripheral scales therein.

The main frame 11 carries the seed-planting mechanism, which may be of any suitable construction, at its front side, and is mounted and adapted to be tilted or inclined on the axle-shaft 12, whereby the shoes or runners 13 may be raised or lowered from the ground. The draft pole or tongue 14 is provided on its lower side at its rear end with a block 15, bolted or otherwise secured thereto, which block bears upon a cylindrical drum 16, which is fast on the central portion of the axle 12 and rotates therewith, whereby a pivotal connection is formed between the axle-shaft and the rear end of the draft pole or tongue. The frame 11 is provided on its front side with a vertically-disposed yoke 17, which is bolted thereto and forms a guide through which the draft pole or tongue extends. In a bearing-block 18, which is bolted to the under side of the tongue, is journaled a rock-shaft 19, which is provided with forward-extending rock-arms 20, the front ends of which are pivotally connected to bearings 21 on the front end of the machine-frame. The said rock-shaft is provided, further, with a crank-arm 22, which extends from the upper side thereof. A hand-lever 23, the lower end of which is fulcrumed on one side of the block 15, is connected to the crank-arm 22 by a rod 24. A segment-rack 25 is secured on one side of the tongue at the rear thereof, and the hand-lever 23 is provided with the usual locking-dog 26, which by engagement with the segment-rack is adapted to secure the hand-lever at any desired adjustment. Driving and supporting wheels 27 28 are mounted on the axle-shaft, the wheel 27 being loose thereon and the wheel 28 being fast therewith, and it will be understood that by means of the hand-lever 23 and the connections hereinbefore described between the same and the front side of the frame 11 the latter may be raised and lowered so as to raise and lower the furrowing-shoes 13. The rod 24 is connected to the crank-arm 22 by a link 29. The said rod is adapted to play longitudinally in the said link, the latter being provided with a slot 30 and the said rod being provided with a stop 31, which operates

in the said slot. A coiled extensile spring 32 is placed on the said rod and bears between one end of the said link and a stop 33, with which the said rod is provided. Thus lost motion is provided between the link and the rod 24.

A master-wheel 34 is free to turn on the axle-shaft 12 and may be of any suitable construction. As here shown, the same comprises a pair of circular disks 35 36, connected together by bolts 37, of which any suitable number may be employed, two being here shown, at diametrically opposite points. Antifriction-sleeves 38 are employed on the said bolts between the said disks. The latter are provided on their peripheries with measuring-scales 35^a 36^a, respectively, the numbers of which measuring-scales run in reverse order on the said disks and each of the said disks being provided with two of the said scales, each scale occupying one-half of the periphery of each disk. A clutch member 38^a is formed on one side of the disk 35 opposite the drum 16. The clutch member 39, which is connected to a disk-head 40 on the side of the drum 16 opposite the member 34 by a series of rods 41, which extend through openings in the drum 16, is adapted to engage and disengage the clutch member 38^a to lock the master-wheel to the axle-shaft or permit it to remain idle thereon when the axle-shaft is in rotation. A spring 42 on the axle-shaft exerts its force against the inner side of the disk-head 40 and tends to move the clutch member 39 of the master-wheel clutch out of engagement with the member 38^a thereof. A hand-wheel 43 is disposed and adapted to partly rotate on the axle-shaft. Said hand-wheel is provided on one side with stops 44, which project laterally therefrom. The disk-head 40 is provided on the side opposite the said hand-wheel with laterally-extending flanges 45, which form cams, each of the said flanges terminating at one end in an incline 46 and at the opposite end with a projecting stop 47. This is shown in detail in Fig. 8 of the drawings. The ends of the said cam-flanges 45 are spaced apart at points on diametrically opposite sides of the disk-head 40 a sufficient distance to receive the stops 44 between them. By turning the hand-wheel in one direction moves the disk 40, and hence the clutch member 39, which is connected thereto laterally, thereby engaging the said clutch member with the master-wheel. Hence the master-wheel may be clutched to the axle-shaft and by turning the hand-wheel in the reverse direction the master-wheel may be unclutched from the axle-shaft, as will be understood.

The loose wheel 27 is provided with a clutch member 49, which is adapted to be engaged and disengaged by a clutch member 50. The latter is connected to a disk-head 51, that is loose on the axle-shaft, by bolt-rods 52, which pass through openings in a centering-disk 53, which is fast to axle-shaft 12. A spring 54 on the axle-shaft bears against the inner side

of the disk-head 51 and normally keeps the clutch member 49 in engagement with the clutch member 50, hence normally locking the loose wheel 27 to the axle-shaft. Said hand-wheel 43 is provided with stops 55 on the side opposite the stops 44, and the said disk-head 51 is provided with cam-flanges 56 and stops 57, Figs. 2 and 7, which are of the same construction as those of which the disk-head 40 is provided. By turning the hand-wheel in one direction the loose wheel 27, which is the power-wheel, may be clutched to the axle-shaft, and by reversing the movement of the hand-wheel the said power-wheel may be unclutched from the axle-shaft. The bolts 37, which connect the disks of the master-wheel together, form tappets which operate the seed-dropping mechanism hereinafter described. The said disks of the master-wheel are provided with a series of coincident openings appropriately spaced apart and in which one or more of the said tappet-bolts may be secured in order to cause the seeds to be dropped at any desired distance apart.

The seed-dropping mechanisms, which may be of any suitable construction, are actuated by a rock-shaft 58. The same is journaled in suitable bearings with which the frame is provided and has a rock-arm 59. A bell-crank lever 60 is fulcrumed to a bracket 61, which is secured to one of the bars or members of frame 11, the rearwardly-extending arm of said bell-crank lever being interposed in the path of the tappet or tappets 37 of the master-wheel. A link 62 connects the upper arm of the bell-crank lever with the rock-arm 59. The said link comprises the two sections or members 63 64. The member 63 is a yoke, and the member 64 is a rod which is movable lengthwise in one direction independently of the yoke. A coiled extensile spring 65 bears between the head of the yoke and an enlargement, as at 66, with which the rod 64 is provided. It will be understood from the foregoing and by reference to the drawings that when the master-wheel rotates the tappet or tappets carried thereby by engagement with the bell-crank lever will turn the rock-shaft 58 in one direction. The said rock-shaft is provided with a rock-arm 67, which projects from the upper side thereof and is connected to a standard or bracket 68, with which the frame 11 is provided, by a rod 69, which is pivotally connected to the upper end of rock-arm 67 and passes through an opening in the standard and is provided at its rear end with a head 70, which by coaction with the standard limits the forward movement or throw of the rock-arm 67. A spring 71 exerts its tension on the said arm 67, and as the tappet clears the bell-crank lever 60 after having turned the rock-shaft 58 in one direction the spring 71 moves the said rock-shaft in the reverse direction, as will be understood. The master-wheel may be turned manually when unclutched from the axle-shaft to adjust its

indicating or measuring scales, which in co-
action with a pointer 72 indicates the dis-
tance in inches that the machine has trav-
eled at any time between the planting of two
5 hills of corn. The tappets carried by the
master-wheel being appropriately disposed
with reference to the measuring-scales may
be hence disposed when starting the machine
at the beginning of a row in such manner as
10 to cause the first hills of corn in the new rows
to be planted in line with those previously
planted to secure the planting of the hills in
check-rows. The said master-wheel is used
in connection with pointer-bars, hereinafter
15 described.

In connection with the measuring-scales of
the master-wheel I employ a pair of hill
finder-bars 73, which are longitudinally dis-
posed on the sides of frame 11 and are adapted
20 to be drawn lengthwise rearwardly therefrom
to any suitable extent, the said hill finder-
bars being provided each on two sides with
measuring-scales 74 75, the numbers of the
latter running consecutively with those of the
25 former. The front sides of eyes or yokes 77,
which support and guide the said hill finder-
bars and are disposed at the rear sides of the
frame 11, form pointers which coact with the
scales 75 of the hill finder-bars. Any suit-
30 able means may be employed for guiding and
supporting the hill finder-bars. In the form
of my invention here shown I provide the
hill finder-bars at their front ends with down-
turned pointers 78, through openings in the
35 upper ends of which pass longitudinally-dis-
posed rods 79 on the outer sides of the frame
11, by which rods and the eyes or yokes 77
the said hill finder-bars are supported and
guided. When the hill finder-bars are not in
40 use, they are moved forwardly to their entire
extent and are held in position by pivoted
lock-arms 80, which engage the catches 81,
that are secured on the rear side of the
frame 11.

45 The frame 11 is provided at its front end
on opposite sides with lateral extensions 82, on
which stake-boxes 83 are secured. Pointer-
bars 84 are pivotally connected to the said ex-
tensions, as at 85, and are adapted to be lowered
50 nearly to the ground or to be raised therefrom.
The said pointer-bars have rock-arms 86, by
which they may be thus raised or lowered.
Operating-cords 87 are attached to the said
rock-arms and pass through guides 88 on the
55 tongue. The rear ends of the said operating-
cords are attached to a ring or other suitable
device 89, by means of which the cords may
be readily and simultaneously operated by
the driver on the seat 90. When the said
60 pointer-bars are raised to inoperative posi-
tion, said ring 89 may be secured on a pin
91, which projects from the upper side of the
tongue, at the rear end thereof. Springs 92,
with which the pointer-bars are provided, are
65 compressed against the outer sides of the
stake-boxes when the said pointer-bars are
raised, and said springs when the said cords

87 are released from the pin 91 start the
pointer-bars outwardly from the said stake-
boxes, carry them over the dead-centers above 70
their pivotal points, so that the said pointer-
bars will descend by their own gravity. The
said pointer-bars are employed in connection
with stakes driven at the ends of the rows to
adjust the machine when starting a new row. 75
The rear ends of the pointer-bars are in line
with the heels of the seed-spouts, and the
said pointer-bars project forwardly, are of
suitable length, and are provided with meas-
uring-scales 93, which correspond with the 80
scales on the master-wheel and on the hill
finder-bars.

The check-row corn-planter is provided
with the usual marker-bar, which is adapted
to be swung to either side thereof to mark 85
the next furrow or row and which is indicated
at 94 in Figs. 1 and 2.

Scrapers 94^a are carried by a rock-shaft 95,
journaled in bearings near the rear side of
the frame 11. Said rock-shaft has an arm 96. 90
A foot-lever 97 is fulcrumed to a support 98,
that projects rearwardly from the rear cross-
bar of the frame. A rod 99 connects said foot-
lever to the said arm 96. Hence the driver
by depressing the foot-lever may readily ap- 95
ply the scrapers to the wheels 27 28 to clear
them of adhering earth.

I provide the runners or furrow-openers,
which operate in advance of said wheels, with
laterally-extending wings 100, which incline 100
downwardly, rearwardly, and serve to clear
large clods out of the way of said wheels 27
28, said wings operating in some instances to
move the clods out of the way and in other
instances to break up the clods, according to 105
the nature of the latter. Hence smooth tracks
are by the said wings prepared for the said
wheels and the operation of the machine is
facilitated.

The measuring-scales on the master-wheel 110
and on the pointer-bar enable the master-
wheel to be so adjusted, hence adjusting the
tappets carried thereby, as to enable the ma-
chine when it has been turned at the end of
a row to correctly check the hills in the rows 115
about to be planted. The pointer-bar, in con-
nection with the driven stake, enables the ex-
act location of the heels of the runners where
the seeds are dropped to be ascertained with
reference to the last-planted hills, and the 120
scales on the master-wheel, in connection with
the pointer 72, enable the master-wheel to
be readily and appropriately set. It will be
understood that after the master-wheel has
been thus set it must be clutched to the axle- 125
shaft before starting the team on the new
rows. It will be understood that the wheel
27 should be unclutched from the axle-shaft
to readily enable the machine to be turned
at the end of a row. 130

Having thus described my invention, I
claim—

1. In a check-row corn-planter, the combi-
nation of a seed-dropping mechanism, an axle-

shaft, a master-wheel loose thereon, having tappets to operate said seed-dropping mechanism, and said master-wheel having reversely-disposed peripheral measuring-scales, a fixed pointer coacting with said measuring-scales, and means to lock said master-wheel to the axle-shaft, substantially as described.

2. In a check-row corn-planter, a pointer-bar abreast of the seed-dropping mechanism and having a measuring-scale running forward from the seed-spout, substantially as described.

3. In a check-row corn-planter, a fixed pointer, an adjustable master-wheel having a measuring-scale coacting with said fixed pointer, seed-dropping mechanism, operated by said master-wheel, and a pointer-bar abreast of the seed-dropping mechanism having a measuring-scale running forward from the seed-spout, substantially as described.

4. In a check-row corn-planter, in combination with a seed-dropping mechanism, a shaft, a master-wheel loose thereon, to actuate the seed-dropping mechanism, a clutch to lock the master-wheel, a power-wheel, loose on said shaft, a clutch to lock said power-wheel and a hand-wheel, revoluble on said shaft, said hand-wheel and said clutches having coacting cams, whereby said clutches may be operated by said hand-wheel, substantially as described.

5. In a check-row corn-planter, a pivoted pointer-bar disposed abreast of the seed-dropping mechanism and having a measuring-scale running forwardly from the heel of the runner, said pointer-bar being adapted to be raised and lowered, means to raise said pointer-bar, and a spring compressed when said pointer-bar is raised, for the purpose set forth, substantially as described.

6. In a check-row corn-planter having an adjustable seed-dropper-actuating element and a scale by which to set the same, a longitudinally-movable hill finder-bar disposed to extend forwardly from the heel of the runner, and a pointer-bar having a measuring-scale, substantially as described.

7. In a planter, the combination of an axle, a main frame, a tongue pivotally connected to the axle, an element to raise and lower the front end of the frame, said element being carried by the tongue, a lever, and connections, including a spring, between said tongue and said raising and lowering element, substantially as described.

8. In a planter, a furrowing-runner having laterally-projecting wings, adapted to bear on the surface of the soil and forming rearwardly-descending inclined planes, substantially as described.

9. In a check-row corn-planter, in combination with a seed-dropping mechanism, an axle-shaft, a master-wheel loose thereon, to actuate the seed-dropping mechanism, supporting and traction wheels, one fast and the other loose on said shaft, a clutch to lock the

master-wheel to the shaft, a spring to normally unclutch the same, a spring-pressed, normally effective clutch to lock said loose traction-wheel to the shaft, and a hand-wheel, free to revolve on said shaft, and between said clutches, said hand-wheel having stops on opposite sides and said clutches having cams coacting with said stops, substantially as described.

10. In a check-row corn-planter, in combination with a seed-dropping mechanism, an axle-shaft, a master-wheel loose thereon, to actuate the seed-dropping mechanism, supporting and traction wheels, one fast and the other loose on said shaft, a clutch to lock the master-wheel to the shaft, a spring to normally unclutch the same, a spring-pressed, normally effective clutch to lock said loose traction-wheel to the shaft, and a hand-wheel, free to revolve on a threaded portion of said shaft and between said clutches, said hand-wheel having stops on opposite sides, and said clutches having cams, coacting with said stops, substantially as described.

11. In a check-row planter, in combination with a seed-dropping mechanism, an axle-shaft, a master-wheel loose thereon, having a tappet to operate said seed-dropping mechanism, and provided with reversely-disposed measuring-scales, a fixed pointer coacting with said measuring-scales, supporting and traction wheels on said shaft, one fast and the other loose, a clutch to lock said master-wheel to said shaft, a disk free to travel longitudinally of the shaft, rods connecting said disk to said clutch, a drum fast to the shaft and through which said rods pass, a clutch to lock said loose traction-wheel to said shaft, said wheel having a disk, and a hand-wheel between said disks and free to revolve on said axle-shaft, said hand-wheel and said disks having coacting cams, substantially as described.

12. In a check-row corn-planter, in combination with a seed-dropping mechanism, an axle-shaft, a master-wheel, loose on said shaft, and having a tappet to operate the seed-dropping mechanism and reversely-disposed measuring-scales, a fixed pointer coacting with said measuring-scales, supporting and traction wheels on said shaft, one fast and one loose, clutches to lock said master-wheel and loose traction-wheel to said shaft, and a hand-wheel, free to revolve on said shaft, said hand-wheel and clutches having coacting means to operate said clutches, substantially as described.

13. In a check-row corn-planter, in combination with a seed-dropping mechanism, an axle-shaft, a master-wheel, loose on said shaft, and having a tappet to operate the seed-dropping mechanism and reversely-disposed measuring-scales, a fixed pointer coacting with said measuring-scales, supporting and traction wheels on said shaft, one fast and one loose, clutches to lock said master-wheel

and loose traction-wheel to said shaft, a hand-wheel, free to revolve on said shaft, said hand-wheel and clutches having coacting means to operate said clutches, and a hill finder-bar
5 adapted to be extended longitudinally from the planter, 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.

JOHN HILLERY.

Witnesses:

JAMES WINSHIP SCOTT,
FRANK KIPLING.