

No. 696,555.

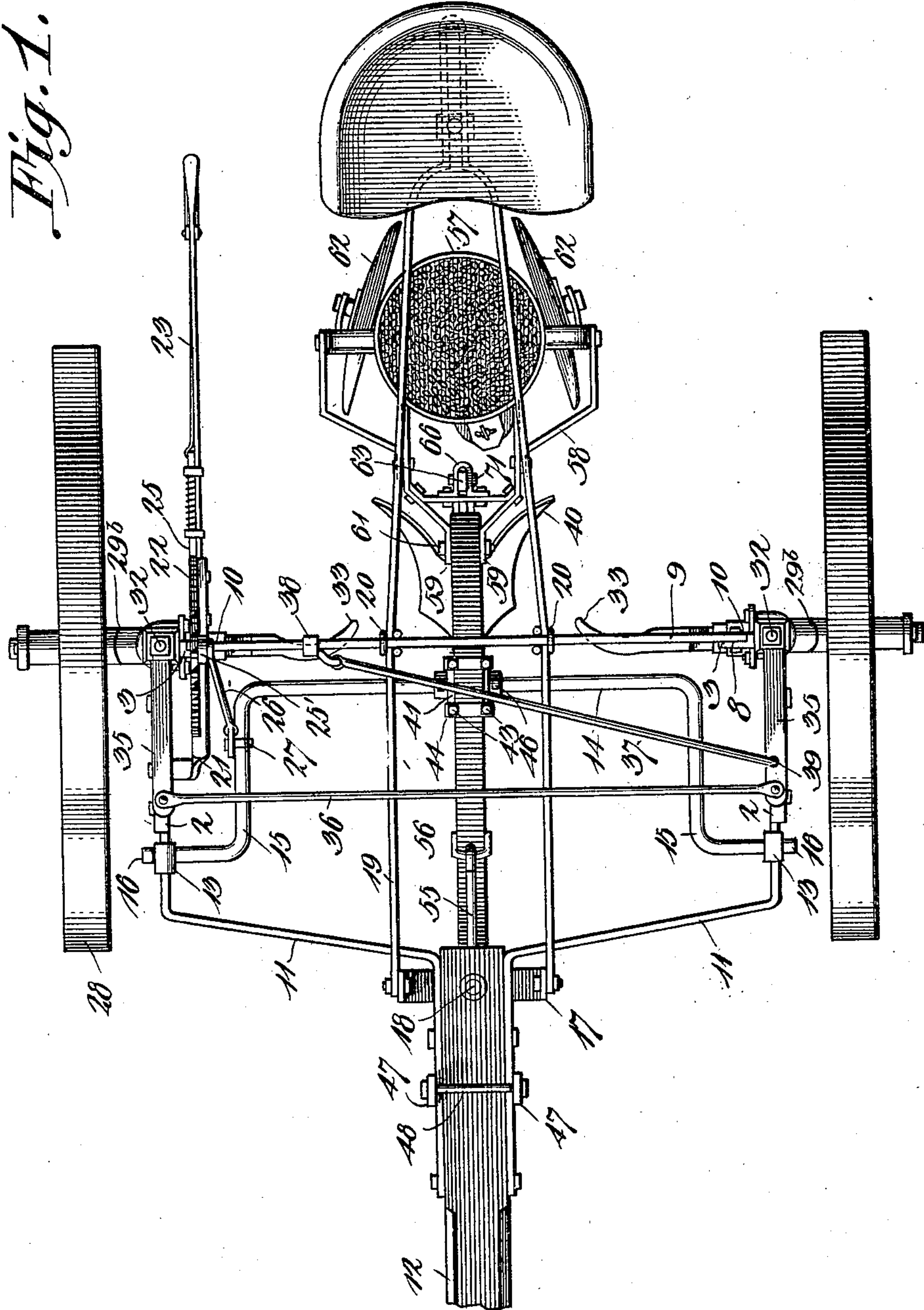
Patented Apr. 1, 1902.

G. ENGELMANN.
SULKY LISTER.

(Application filed Oct. 24, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses

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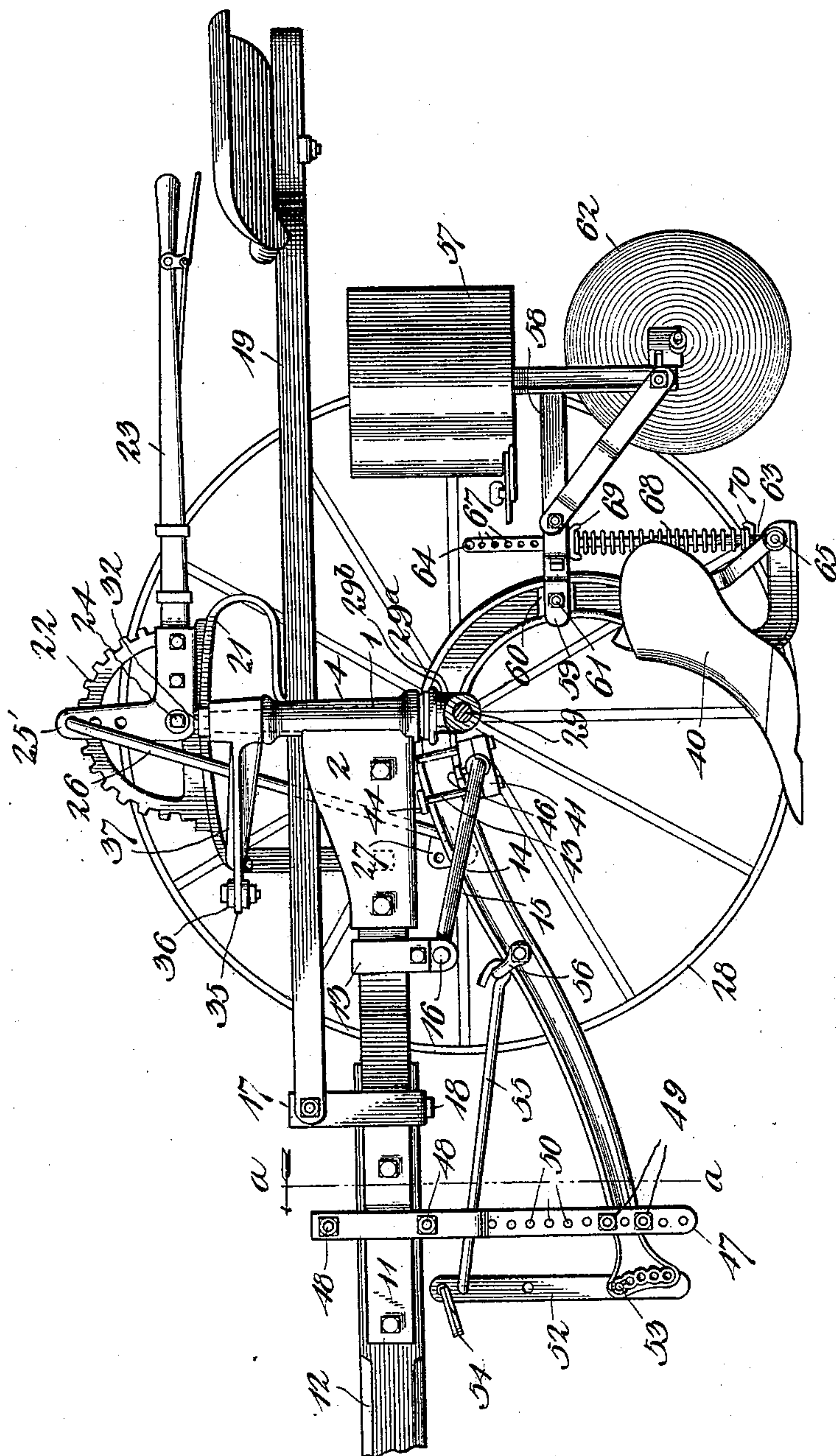
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Fig. 2.



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Fig. 3.

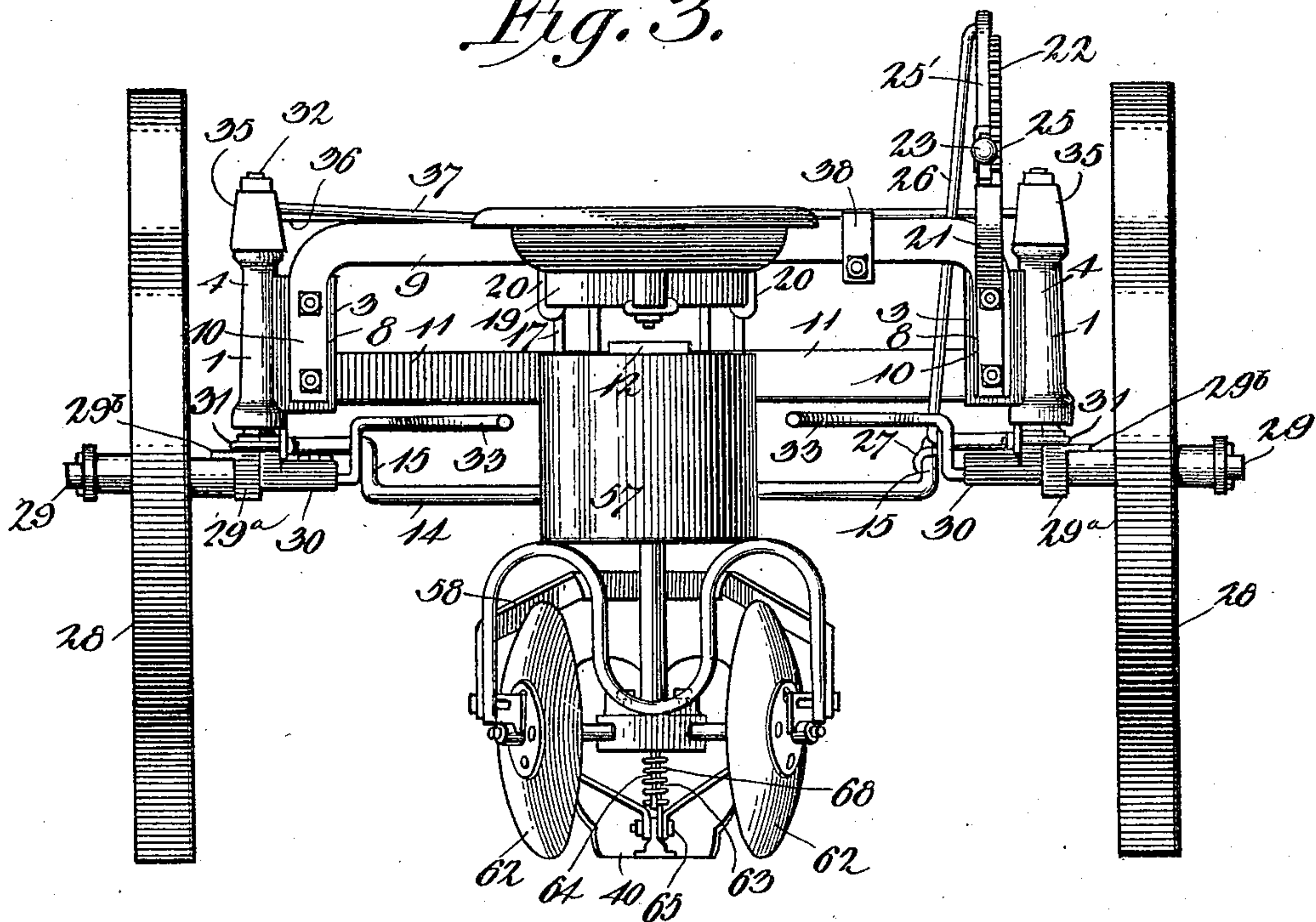


Fig. 7.

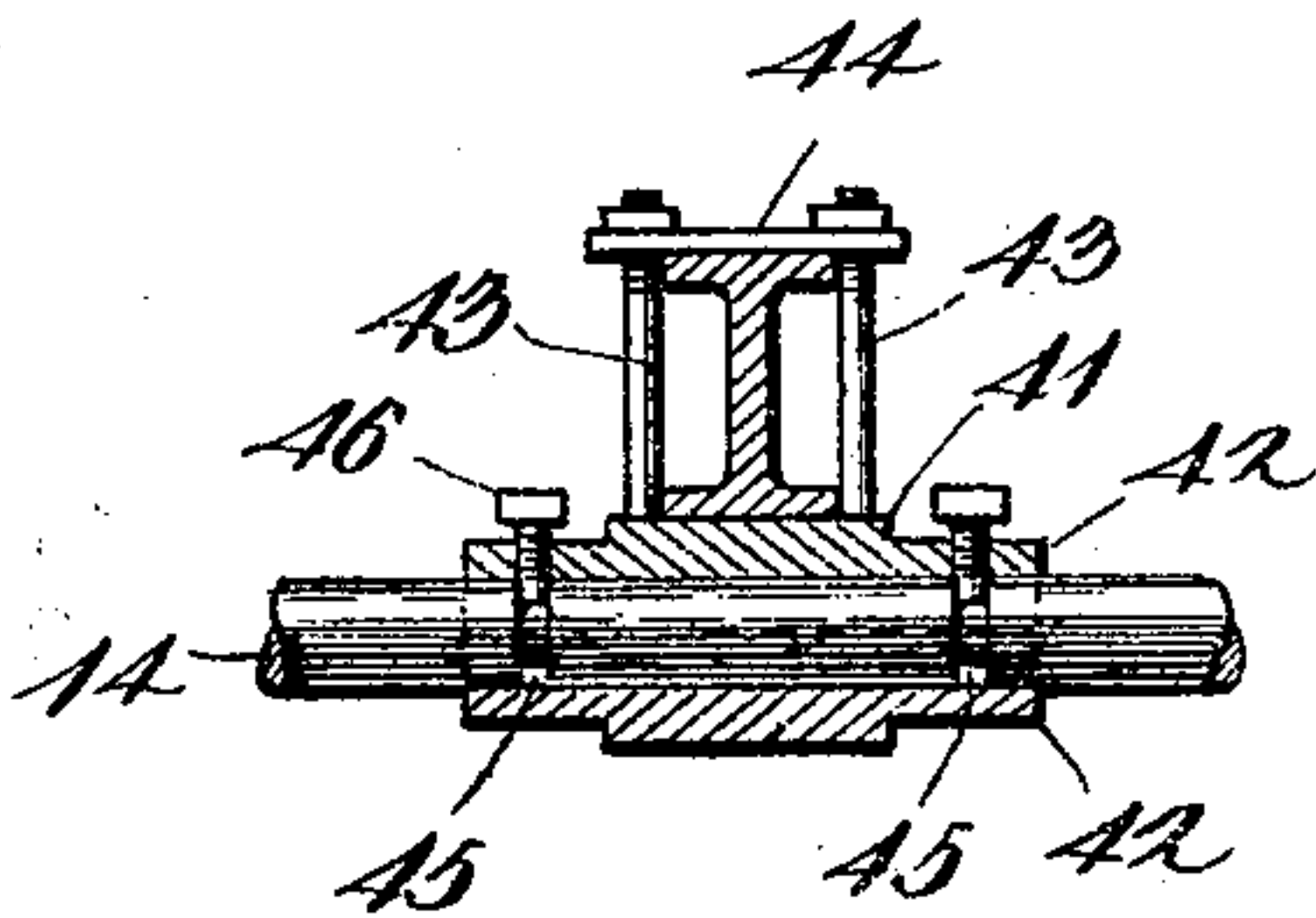
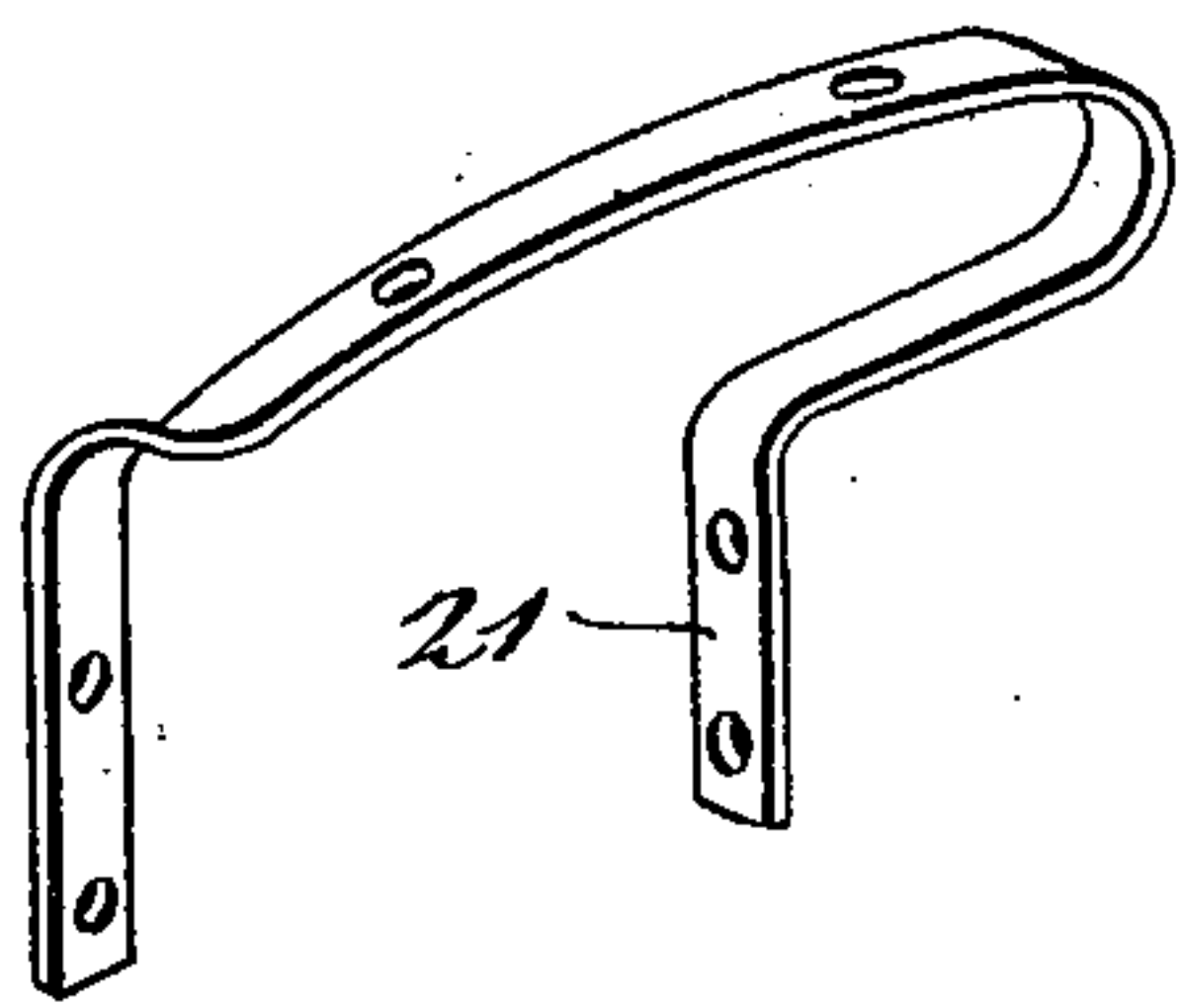


Fig. 8.

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Fig. 4.

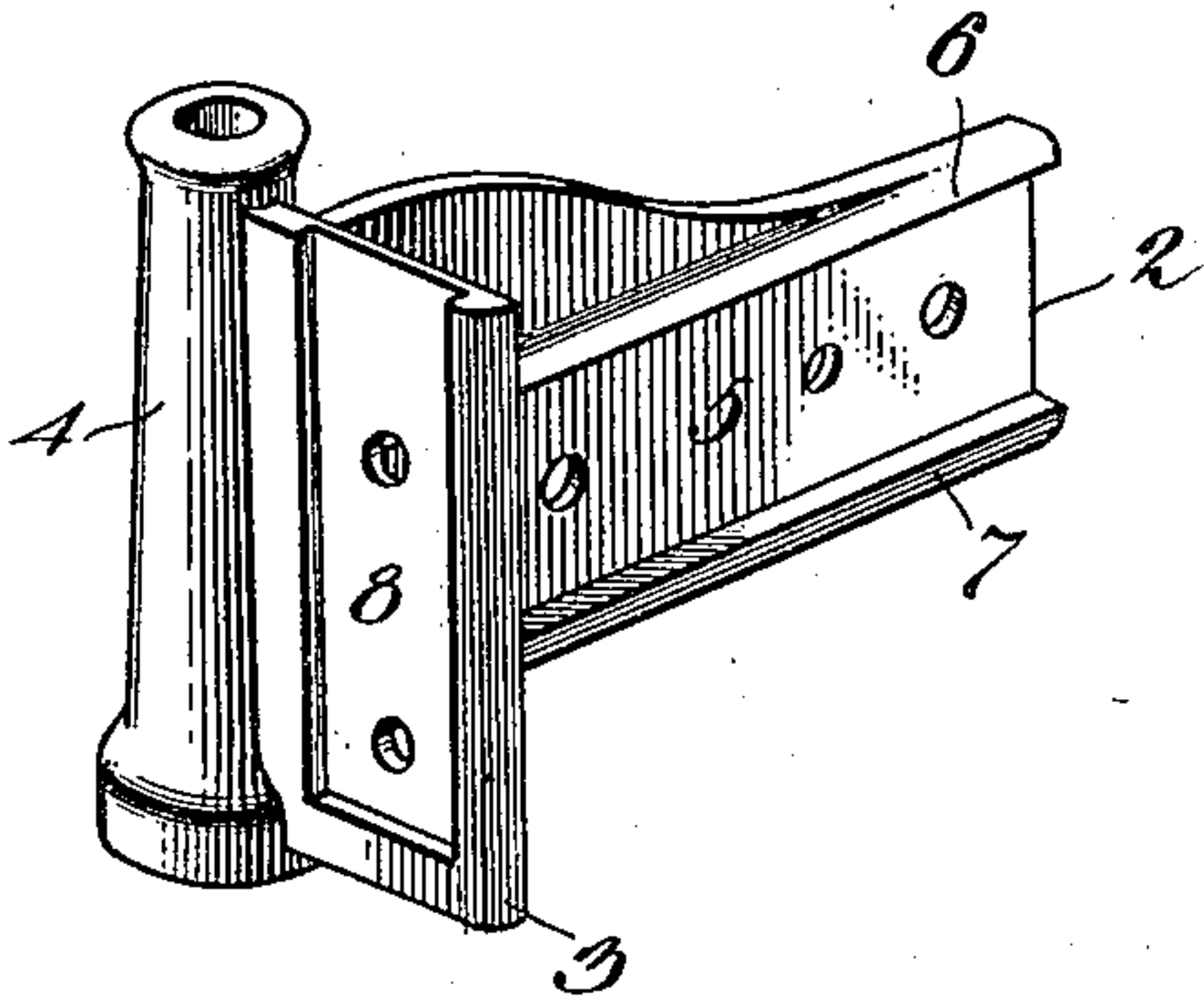


Fig. 5.

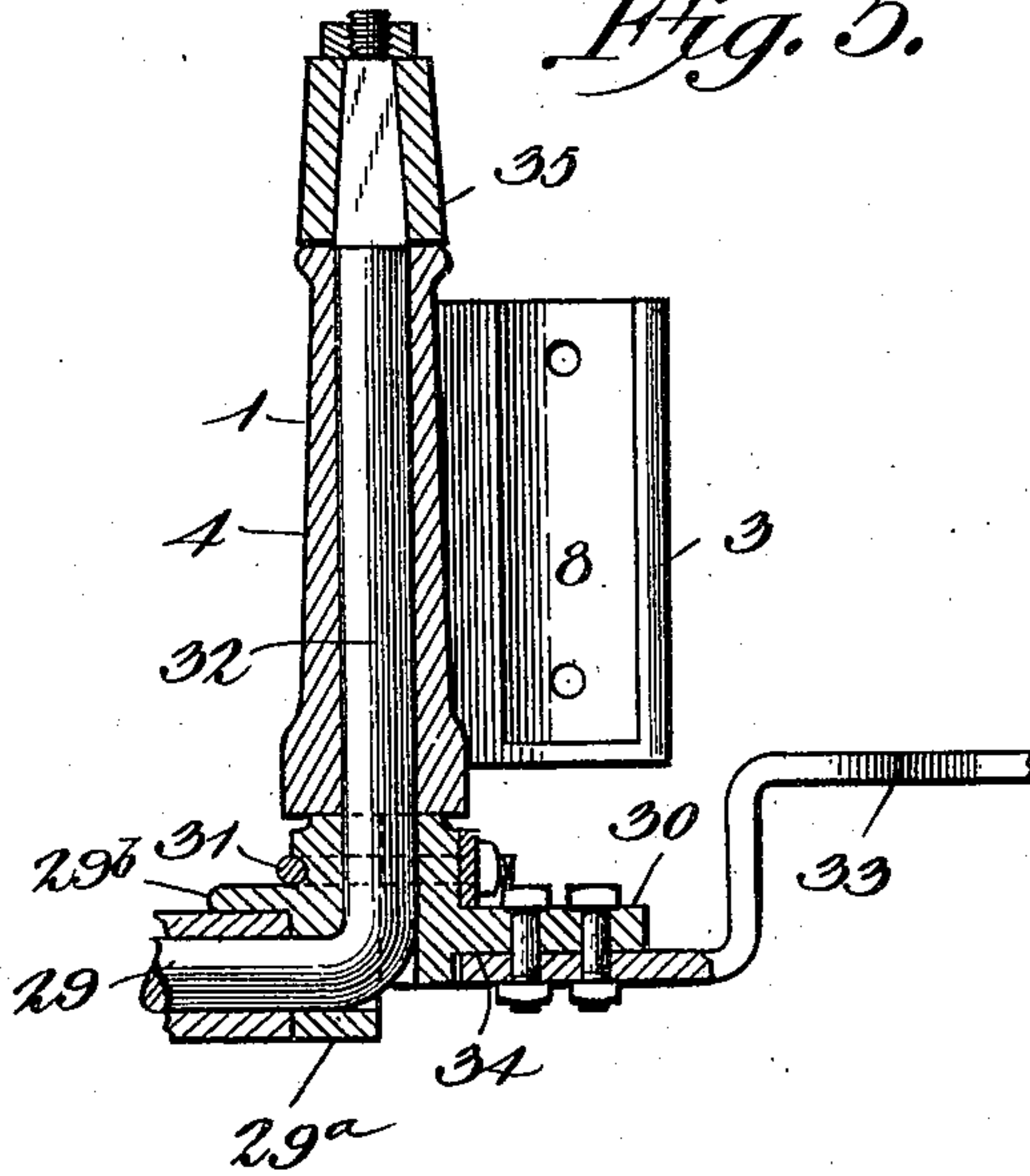


Fig. 6.

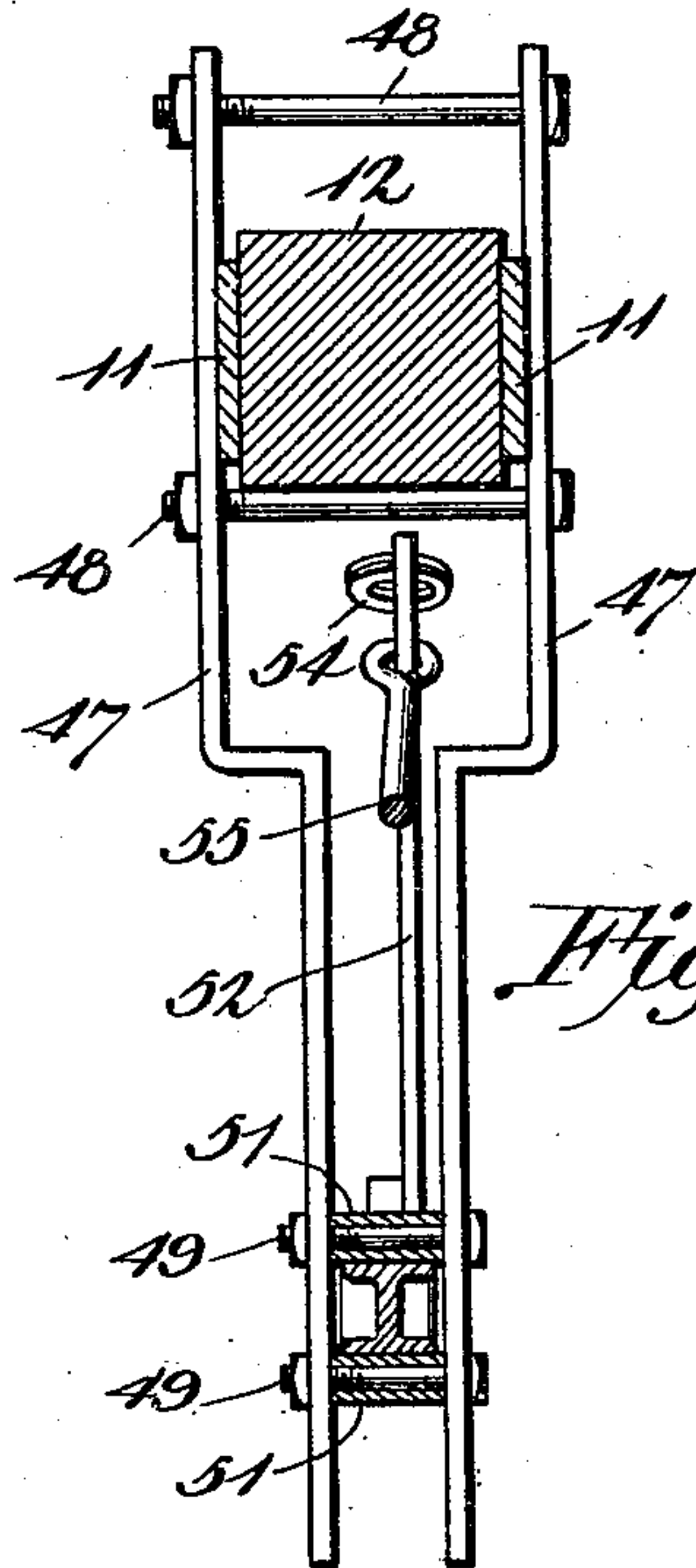
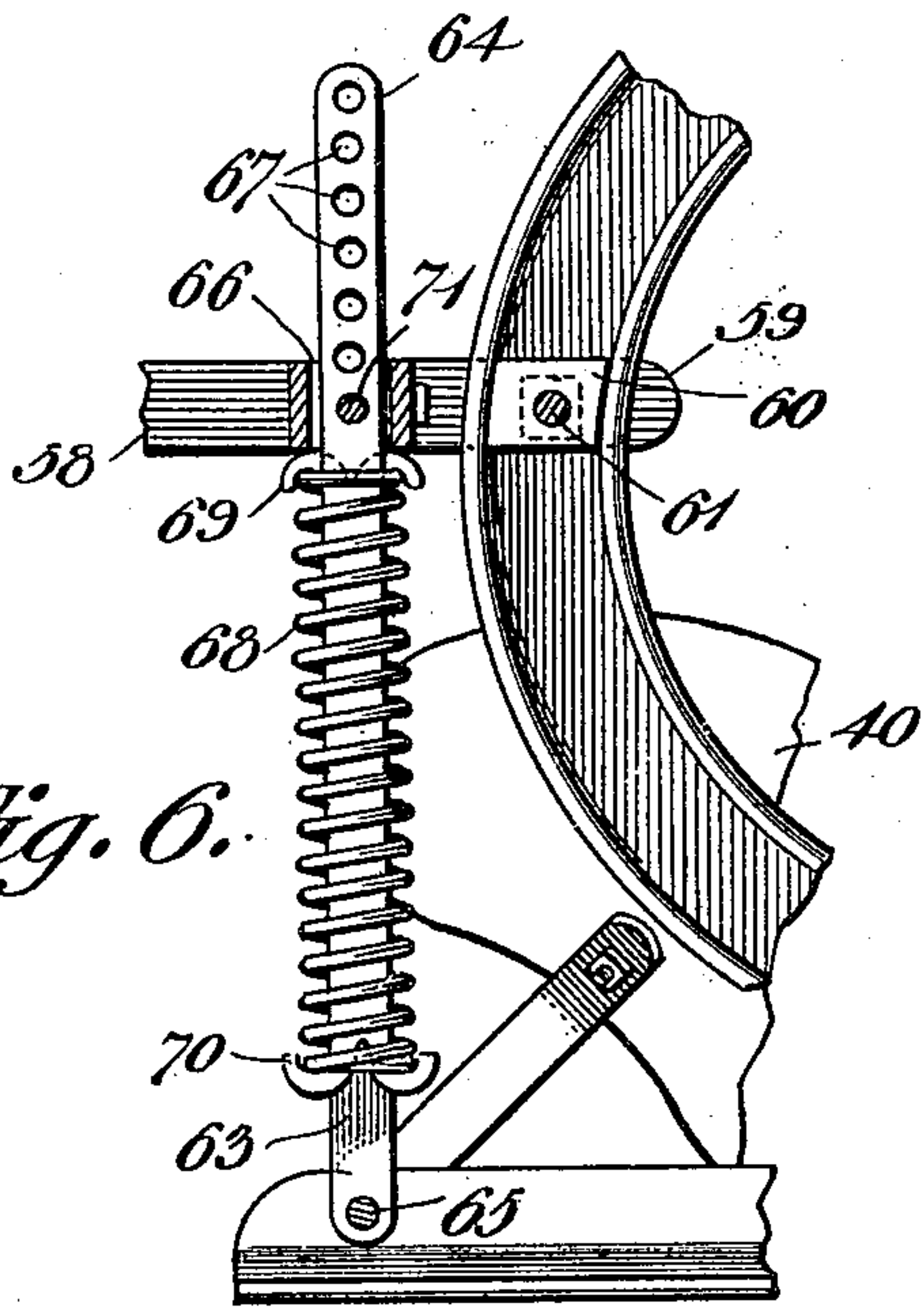


Fig. 9.

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UNITED STATES PATENT OFFICE.

GUSTAV ENGELMANN, OF SELMA, TEXAS.

SULKY-LISTER.

SPECIFICATION forming part of Letters Patent No. 696,555, dated April 1, 1902.

Application filed October 24, 1901. Serial No. 79,844. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV ENGELMANN, a citizen of the United States, residing at Selma, in the county of Bexar and State of Texas, have invented a new and useful Sulky-Lister, of which the following is a specification.

My invention is an improved sulky-lister for planting listed corn, cotton, or other crops; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

The object of my invention is to provide an improved spring connection between the planting mechanism and the lister-plow by means of which the covering-disks may be drawn downwardly, together with the seed-dropping mechanism, to cause the said covering-disks to run at the required depth in the drill in rear of the lister-plow.

In the accompanying drawings, Figure 1 is a top plan view of a sulky-lister embodying my improvements. Fig. 2 is a side elevation of the same with the rear wheel removed. Fig. 3 is a rear elevation of the same. Fig. 4 is a detail perspective view of one of the corner-pieces which connect the side bars to the arch-bar of the sulky-frame. Fig. 5 is a detail sectional view taken through the bearing of one of the axles. Fig. 6 is a detail elevation, partly in section, showing the spring connection between the seed-dropping mechanism and the lister-plow. Fig. 7 is a detail perspective view of the arched support for the segment and elevating lever. Fig. 8 is a detail sectional view showing the connection between the plow-beam and the elevating-crank. Fig. 9 is a detail sectional view taken on a plane indicated by the line *a a* of Fig. 2.

In the construction of the sulky-frame I provide a pair of corner-pieces 1, which are of the form shown in Fig. 4. Each corner-piece has a forwardly-extending arm 2 and a transversely-extending arm 3, disposed at right angles to and at the rear end of the arm 2, and each corner-piece is further formed with a vertical bearing sleeve or box 4. On the inner side of each arm 2 is a longitudinal groove or gain 5, formed by inwardly-projecting flanges 6 7. In each arm 3, on the rear side thereof, is formed a vertical groove or gain 8, the upper end of which is open. An

arched bar 9, which forms the rear side of the sulky-frame, has its depending arms 10 disposed in the grooves 8 and bolted to the arms 3 of the corner-pieces, as shown, the said 55 arched bar thereby connecting the corner-pieces together. A pair of side bars 11 have their rear portions disposed in the gains or grooves 5 of the side arms 2 of said corner-pieces and bolted thereto. The front portions 60 of the said side bars are bent inwardly toward each other and are then bent forwardly to form a pair of arms 11, between which the rear end of the tongue 12 is bolted. On the side bars 11 are secured hanger-blocks 13, 65 the lower ends of which depend from the said side bars. A link-bar 14 is disposed transversely under the sulky-frame and is formed with cranks 15 at its ends, which extend forwardly therefrom and are journaled in bearings in the lower portions of the hanger-blocks 13, as at 16. A U-shaped yoke 17 is disposed 70 transversely under the rear portion of the tongue 12 and bolted thereto, as at 18. To the upper ends of the vertical arms of said 75 yoke 17 are bolted the front ends of the arms of a forked seat-supporting bar 19. The said seat-supporting bar passes under the arched bar 9, and the arms of the said seat-supporting bar are connected to and suspended from 80 the said arched bar by links 20, which are here shown as hooked links. An arched support 21, which is shown in detail in Fig. 7, is bolted on the rear side of the arch-bar 9, at the right-hand end thereof, by the same bolts 85 which secure said end of said arch-bar to one of the corner-pieces. The front depending portion of the said arch-support 21 is bolted to the inner side of the proximate side bar 11 by one of the bolts which secure said side bar 90 to said corner-piece. On the said arch-support is secured a racked segment 22. A hand-lever 23 is pivotally connected to the said racked segment by a bolt 24 and is provided with the usual spring-pressed locking-dog 25 95 to engage the said racked segment, and thereby lock said lever thereto in any desired position. The said lever has at its upper front side a crank-arm 25'. A rod 26 is pivotally connected to said crank-arm and to a clip 27, 100 which is secured on one side of the crank-link 14. It will be understood that by turning the

lever 23 the crank-link may be raised or lowered to raise or lower the plow, as will presently appear.

The wheels 28 are journaled on right-angled axles 29, the inner upturned portions of which form vertical spindles 32. In the angle of each of said axles is fitted a block 29^a, that has a flange 29^b on its outer side to overlap the hub of the wheel and exclude dust. To the inner side of each block 29^a is secured a block 30 by a clip-bolt 31. Foot-levers 33 have their outer ends bolted to the under sides of the said blocks 30, the latter being formed with gains or recesses 34 to receive the said foot-levers. The vertical spindles 32 form pivots for the axles 29 and are disposed in the bearing-boxes 4 of the corner-pieces. To the upper end of each spindle 32 is secured a forwardly-extending arm 35. These arms are connected together by a rod 36. It will be understood that the driver on the seat may, by placing his feet on the foot-levers 33 and by appropriately turning the latter, turn the axles and the wheels in such manner as to guide the lister laterally, as may be required when the same is in operation. When the lister is being drawn in a straight line, the axles are locked against turning on their pivots by a hook 37, which is secured at one end to the arch-bar 9 by a clip 38 and the free end of which is adapted to engage an opening 39 in one of the arms 35, as shown in Fig. 1.

The lister-plow 40 may be of any suitable construction, a well-known form of the same being here shown. On the under side of the beam of the lister-plow at a suitable point is secured a bearing-box 41, which comprises two detachable sections 42 of the form here shown, which are connected together by a pair of bolts 43. The same bolts in connection with a yoke-plate 44 also serve to secure the said bearing-box to the plow-beam. The crank-link 14 has its bearing in the said box 41, the latter being disposed on the central portion of the crank-link, and the said bearing-box is prevented from moving laterally on the said crank-link by any suitable means. For this purpose I show in Fig. 8 of the drawings annular grooves 45 in the said crank-link, which are engaged by the inner ends of screws 46, with which the bearing-box is provided. A pair of vertically-disposed guide-bars 47 have their upper portions secured on opposite sides of the rear portion of the tongue by clamping-bolts 48, which connect said guide-bars and are disposed above and below the tongue, as shown in Fig. 9. The plow-beam near its front end is disposed between the said guide-bars and is adjustably connected thereto by means of bolts 49, which pass through appropriate adjusting-openings 50, with which the said guide-bars are provided, and are disposed above and below the plow-beam. On the said bolts 49 are sleeves 51, which prevent the said bolts from clamping the said guide-bars to the plow-beam. A draft-bar 52 has its lower portion connected

at a suitable adjustment to the clevis of the plow by a bolt or pin 53, which is provided with a suitable cotter. The link 54, which is employed to connect the doubletree (not shown) to the draft-bar 52, may be attached to the latter at any desired adjustment, the said draft-bar being provided with a series of openings for this purpose. A rod 55 is attached to the upper portion of the said draft-bar, and the rear end of the said rod is connected to a clip-link 56, with which the plow-beam is provided.

The seed-dropping mechanism 57 is disposed in rear of the lister-plow and is connected to the beam thereof by a link-frame 58, having arms 59, which bear on opposite sides of the beam and on blocks 60, set in the channels thereof, and a pivotal bolt 61, which passes through aligned openings in said arms, channel-blocks, and beam. The seed-dropping mechanism *per se* may be of any approved type and is not of my invention. The same is carried and operated by a pair of covering-disks 62. It is of importance to cause these disks under all conditions to run at such a depth in the furrow or drill made by the lister-plow as to insure the rotation of the said disks and the operation of the seed-dropping mechanism. To secure this result, I provide a spring-link connection between the heel of the lister-plow and the frame 58 of the seed-dropping mechanism, which I will now describe.

A pair of link-bars 63 64 are disposed side by side and overlap each other to a suitable extent. The lower end of the link-bar 63 is pivotally connected to the heel of the lister-plow by a bolt, as at 65. The upper portion of the link-bar 64 passes through a guide-yoke 66, with which the frame 58 of the corn-dropping mechanism is provided, and the said link-bar 64 has a series of adjusting-openings 67. A coiled extensile spring 68 is placed on the overlapping portions of the said link-bars, the latter passing through the said spring, as shown in the drawings, and the upper end of the lower link-bar 63 is provided with hooks or other engaging devices 69, which engage the upper end of the said spring, the lower end of the upper link-bar 64 being provided with similar devices 70 to engage the lower end of the said spring. The link-bar 64 is connected to the guide-yoke 66 at any suitable adjustment in order to compress the spring 68 with any desired tension by a bolt 71, which passes through openings in the said guide-yoke 66 and through one of the adjusting-openings 67. It will be understood that the said spring-link connection draws downwardly on the frame of the seed-dropping mechanism and attains the object hereinbefore stated.

Having thus described my invention, I claim—

1. The combination of a sulky-frame, a plow connected thereto, to open a furrow, means, carried by said frame, to raise and lower the

plow, a seed-dropping mechanism, in rear of the plow, pivotally connected thereto, and having supporting-disks to cover the seeds in the furrow, and a connection including a spring, between the plow and the seed-dropping mechanism, to depress the latter, the said spring also supporting the said seed-dropping mechanism when the latter is raised, substantially as described.

2. In a sulky-lister, the combination with a lister-plow, of a seed-dropping mechanism having supporting revoluble disks, and disposed in rear of the plow, said seed-dropping mechanism having a frame pivotally connected to said lister-plow, and a spring connection between the latter and said frame, to depress said seed-dropping mechanism, for the purpose set forth, substantially as described.

3. The combination with a plow, of a seed-dropping mechanism having supporting revoluble elements and a forwardly-extending frame, the latter being pivotally connected to said plow, and a spring connection between said frame and said plow to depress said seed-dropping mechanism, substantially as described.

4. The combination with a plow, of a seed-dropping mechanism having supporting revoluble elements and a forwardly-extending frame, the latter being pivotally connected to said plow, a pair of overlapped link-bars respectively connected to said frame and to said plow, and a spring connection between the said link-bars, substantially as described.

5. The combination with a plow, of a seed-dropping mechanism having supporting revoluble elements and a forwardly-extending frame, the latter being pivotally connected to said plow, a link-bar connected to the latter, a link-bar adjustably connected to said frame, said link-bars overlapping each other, and a spring connecting said link-bars, the tension of the said spring being varied by adjusting said adjustably-connected link-bar, 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.

GUSTAV ENGELMANN.

Witnesses:

JNO. B. VINCK, Jr.,
H. C. VON STRUM.