

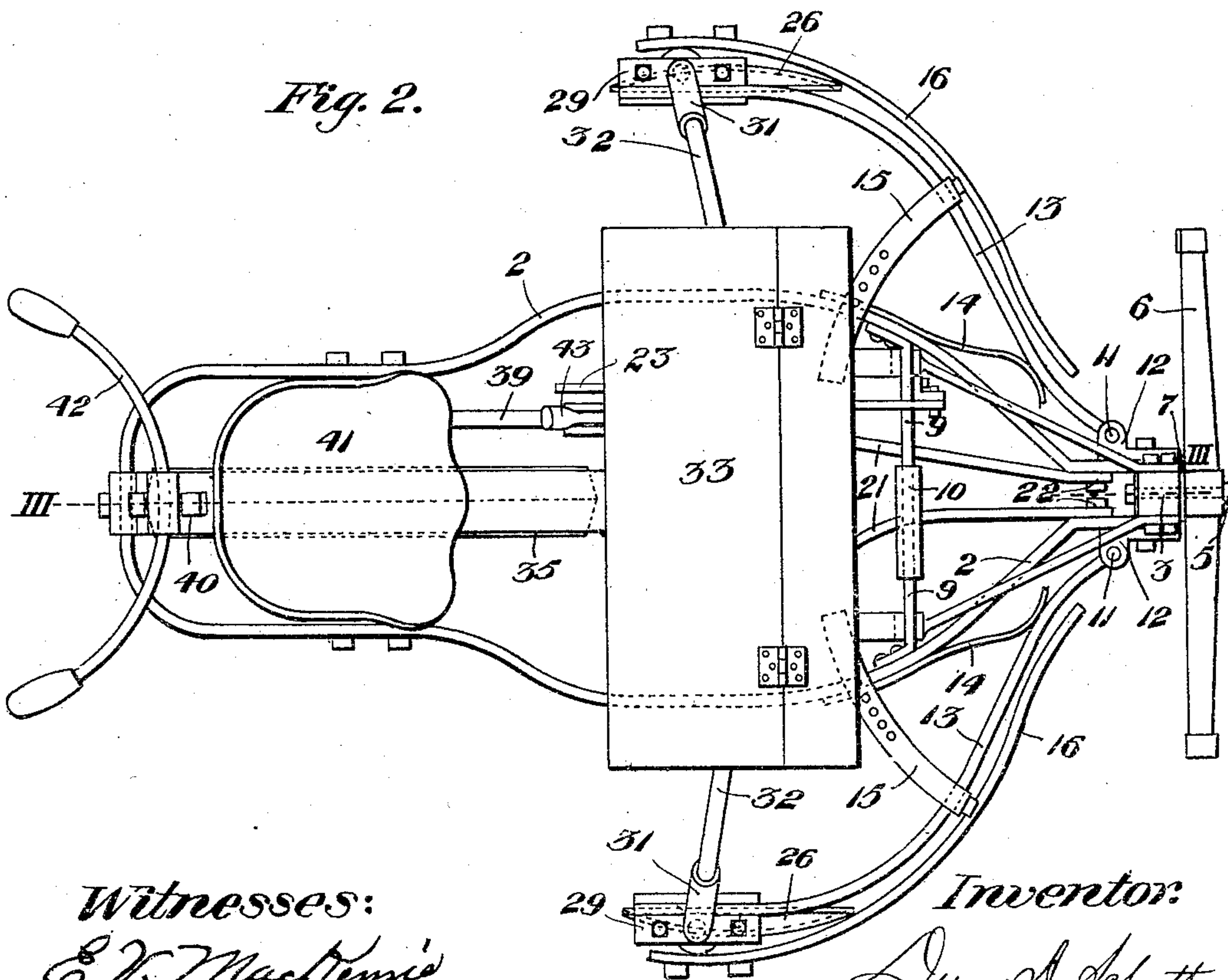
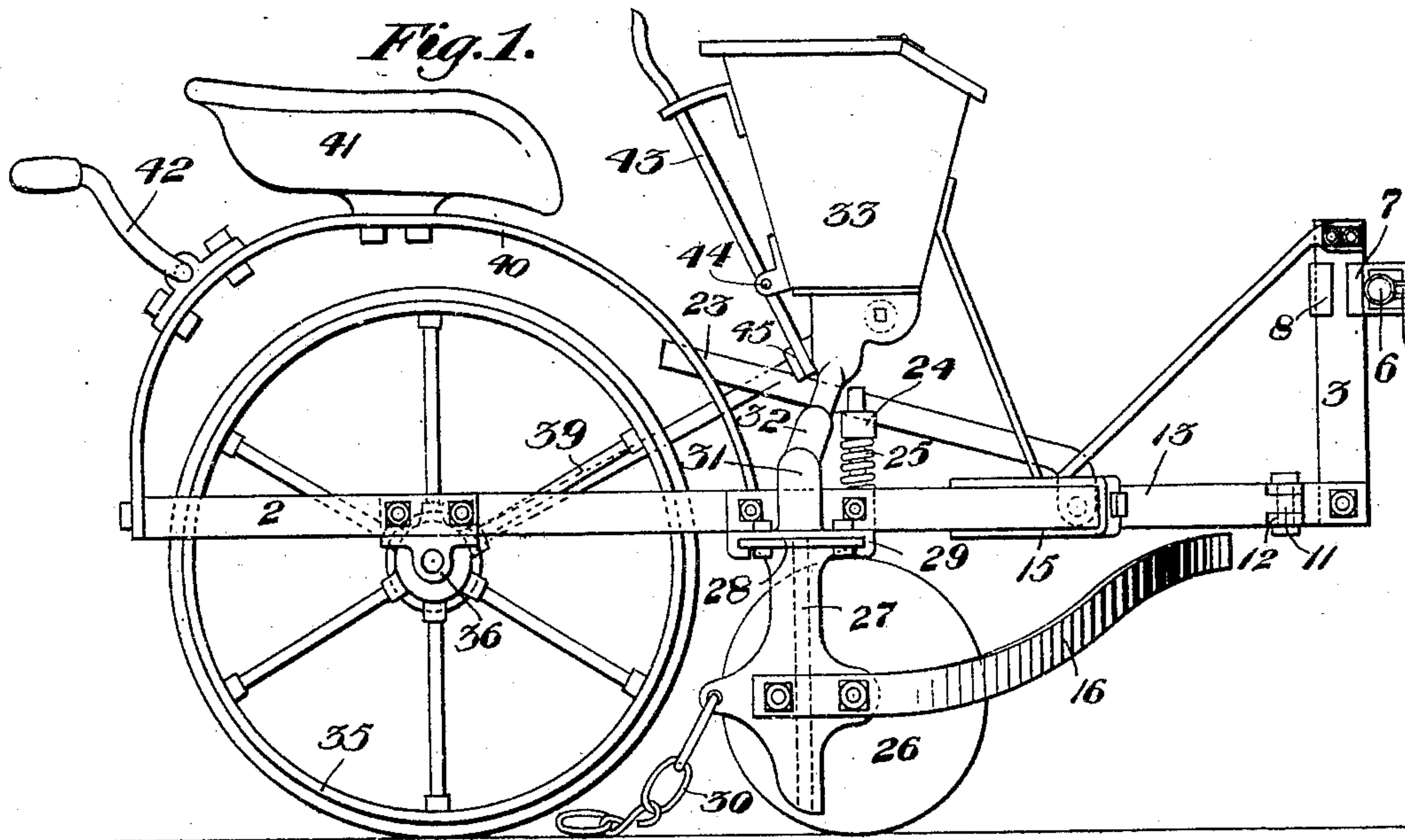
No. 840,020.

PATENTED JAN. 1, 1907.

D. A. SCHUTT.
GRAIN DRILL.

APPLICATION FILED FEB. 15, 1904.

4 SHEETS—SHEET 1.



Witnesses:
E. V. MacKenzie
Chas. S. Pepley

Inventor:
D. A. Schutt
by C. M. Clarke
his Attorney

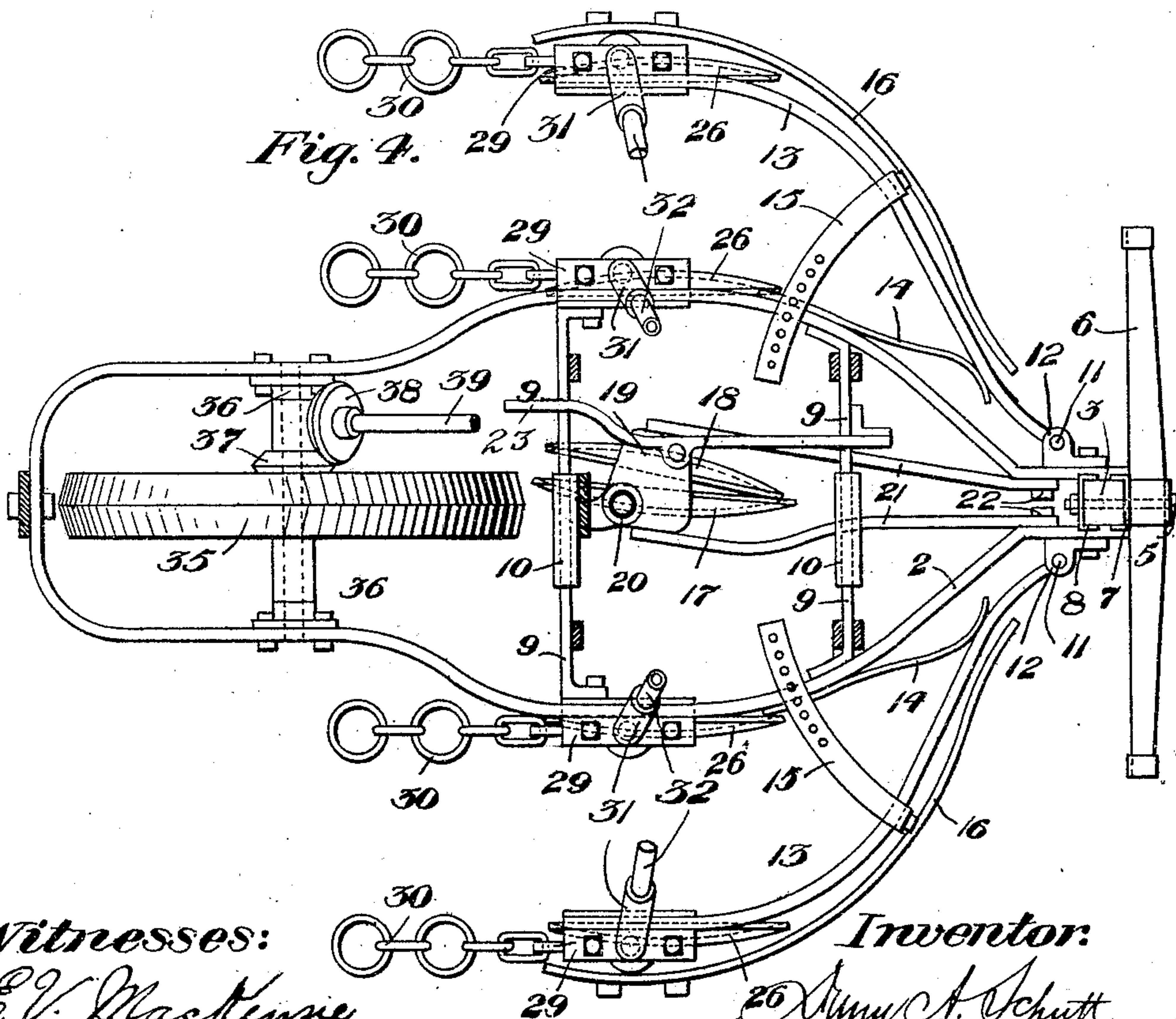
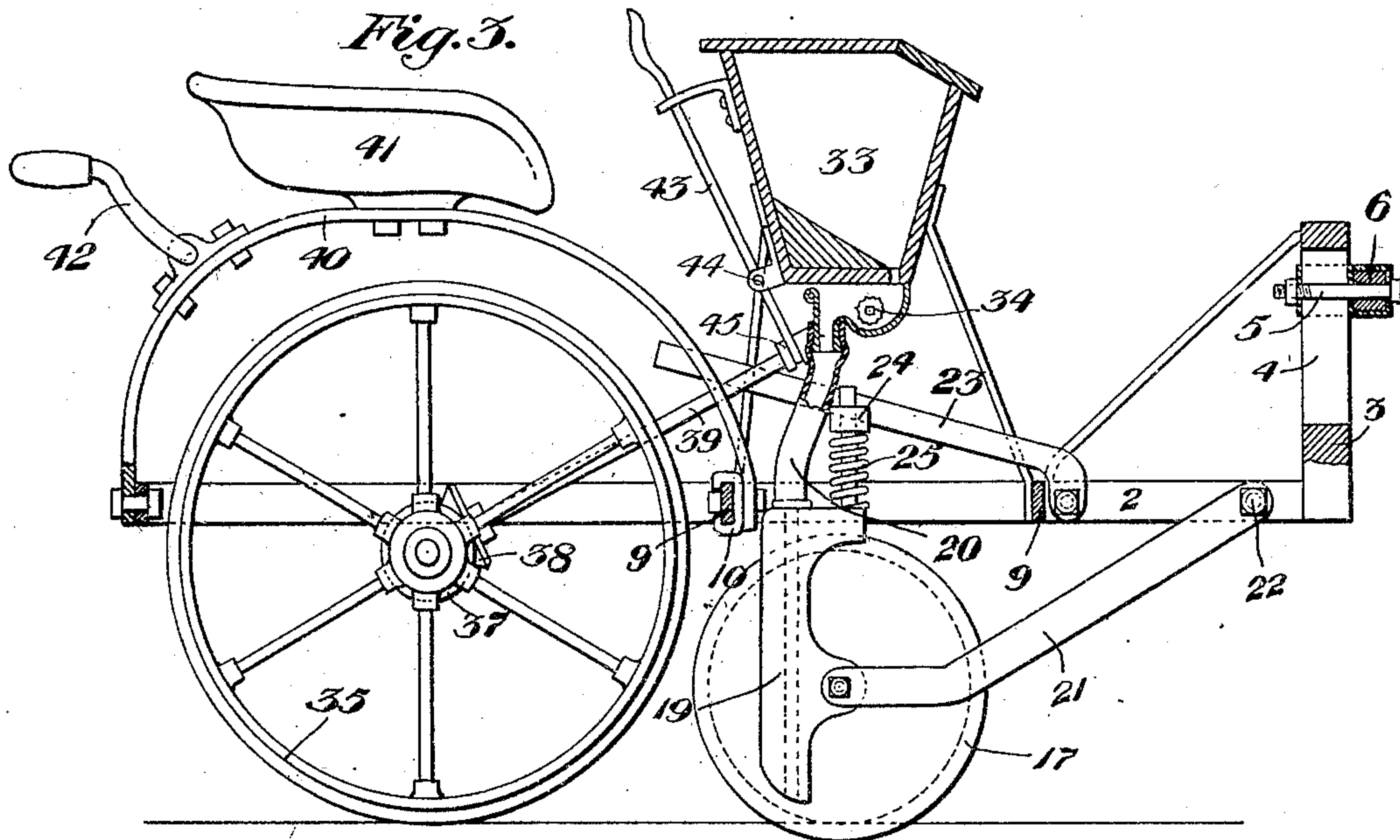
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4 SHEETS—SHEET 2.



Witnesses:

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4 SHEETS—SHEET 3.

Fig. 6.

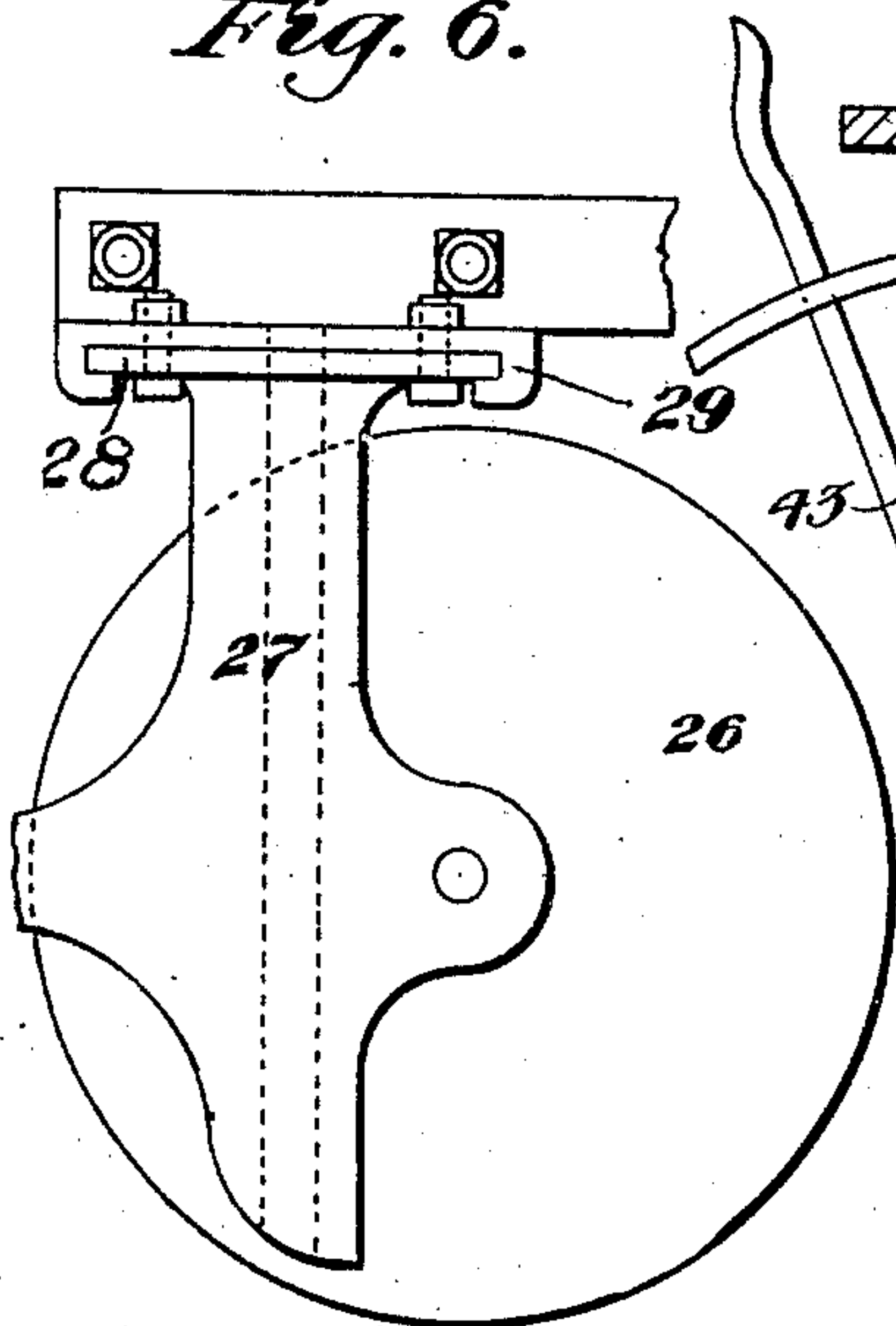


Fig. 5.

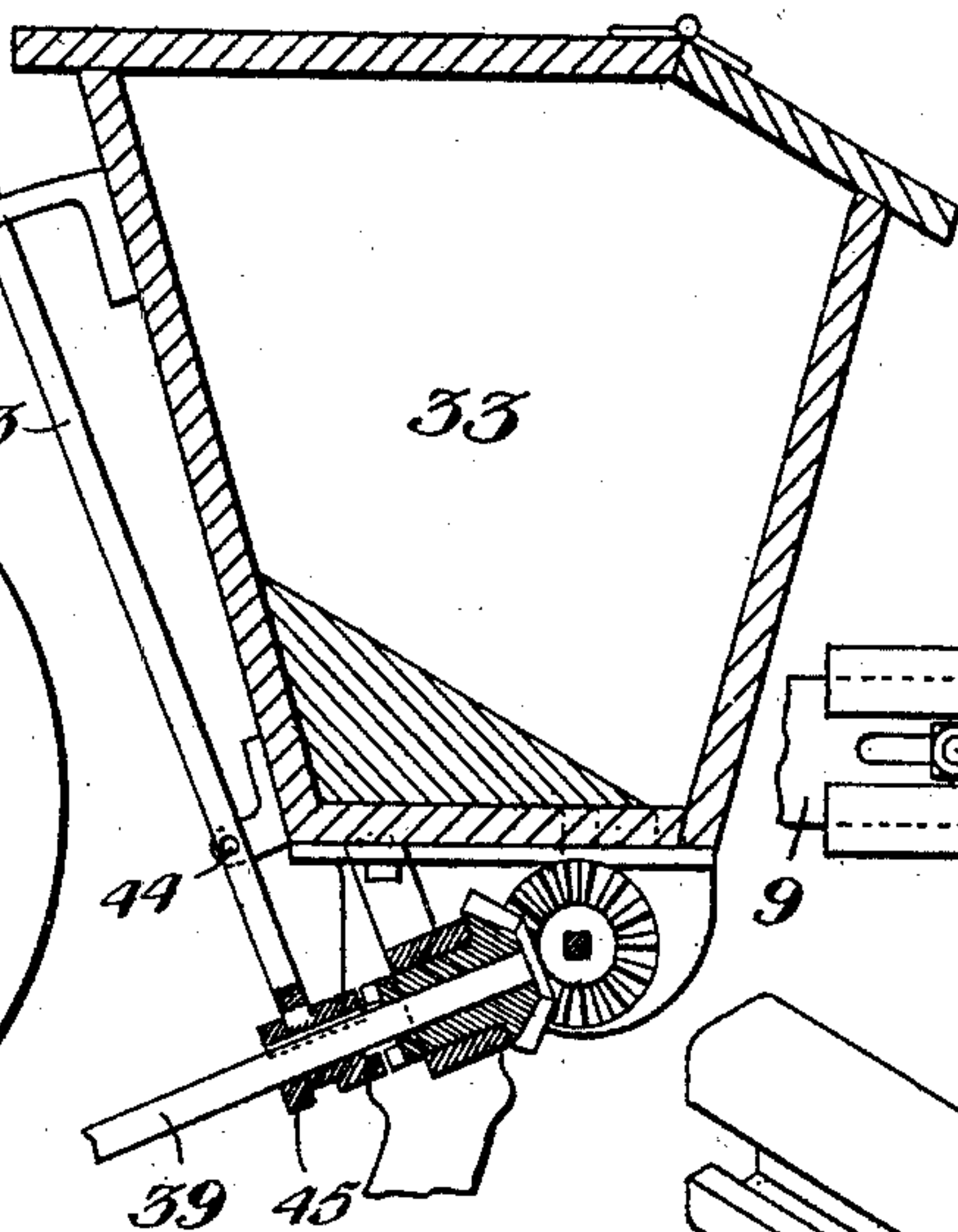


Fig. 9.

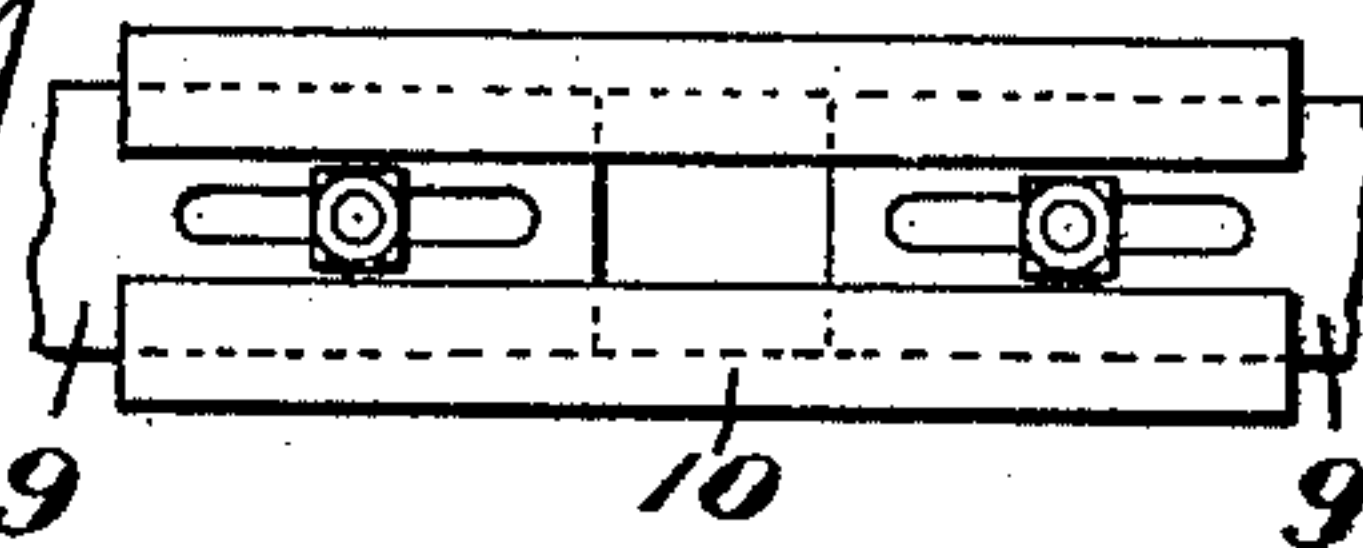


Fig. 10.

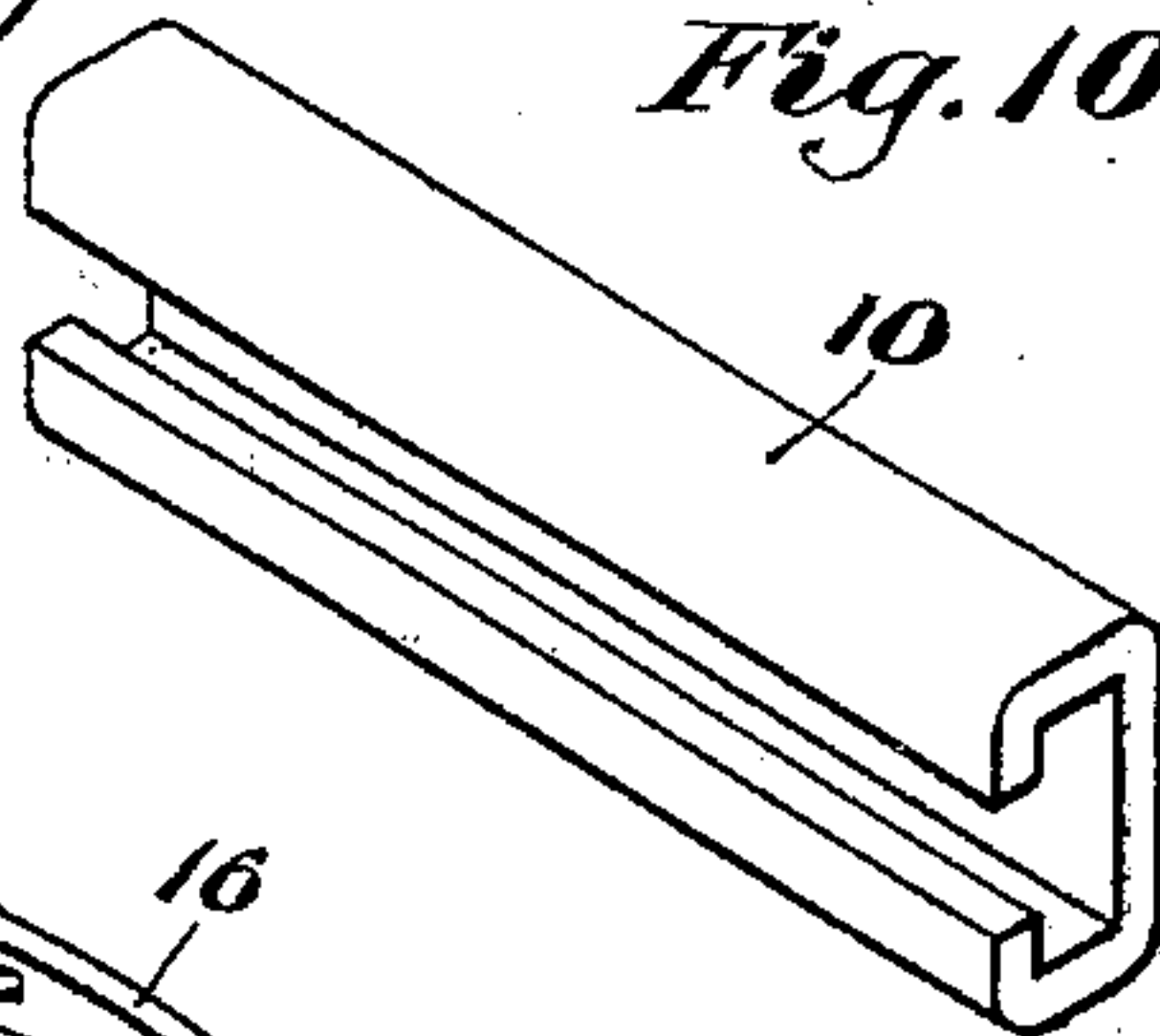


Fig. 7.

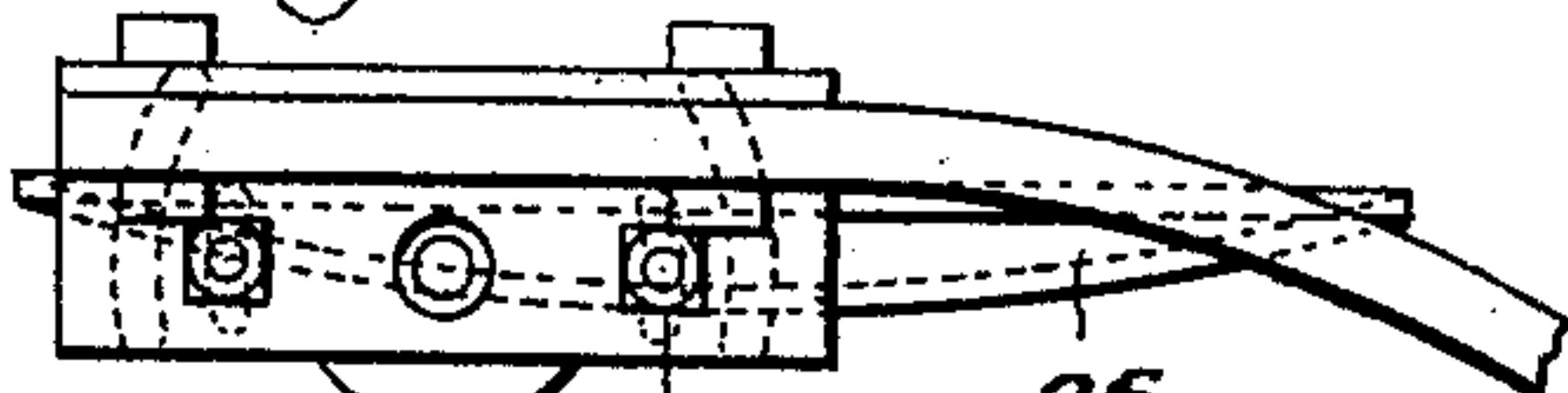


Fig. 8.

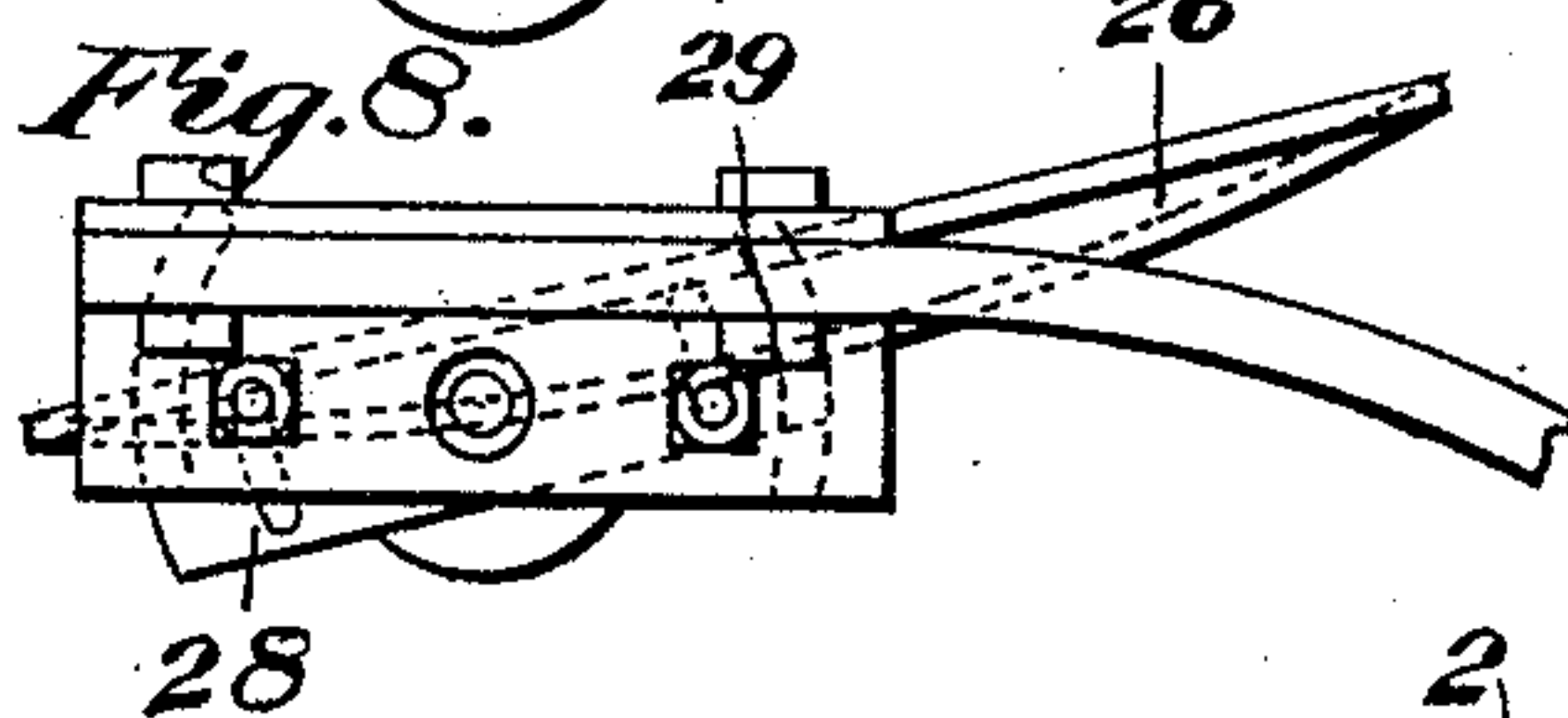
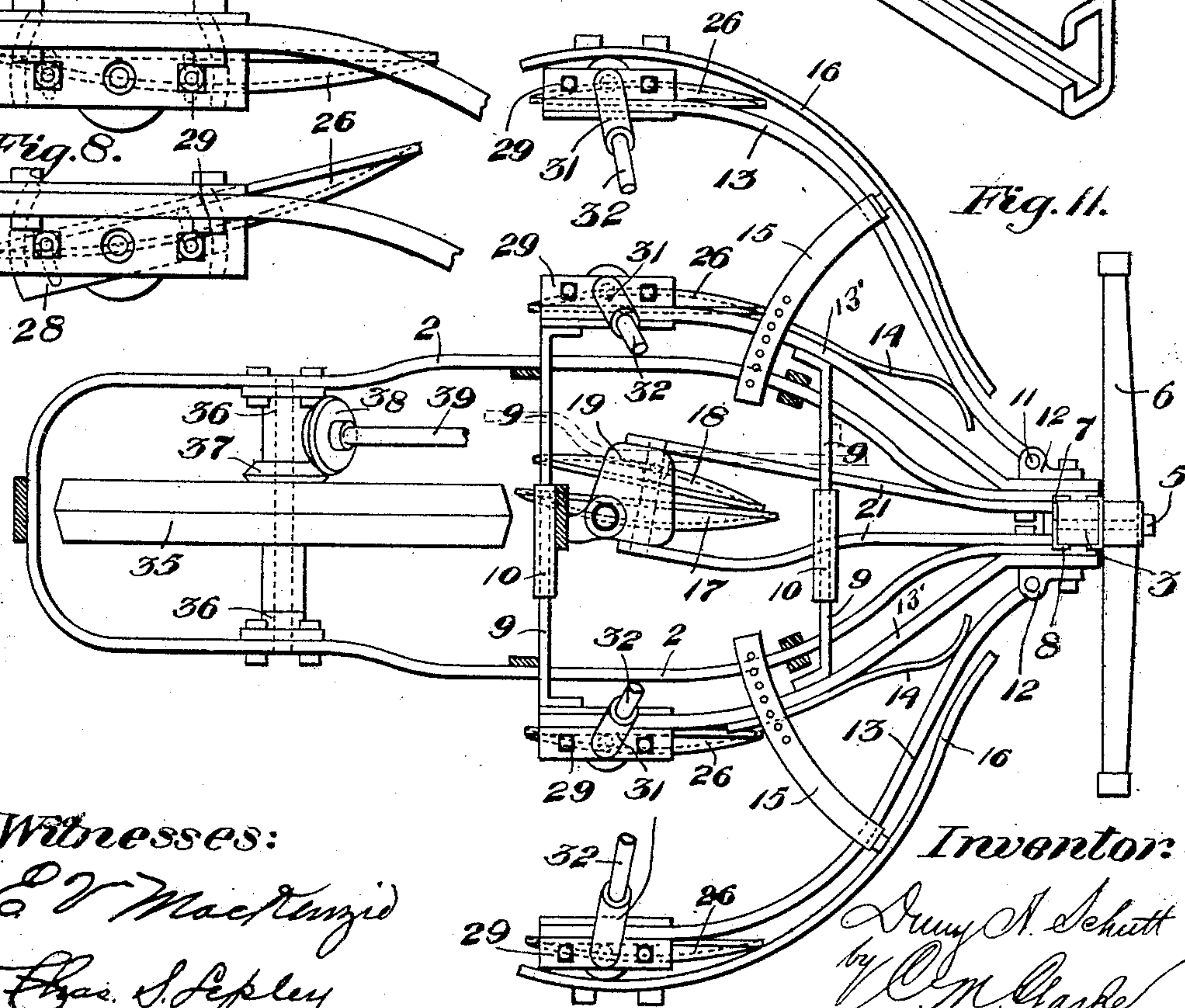


Fig. 11.



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4 SHEETS—SHEET 4.

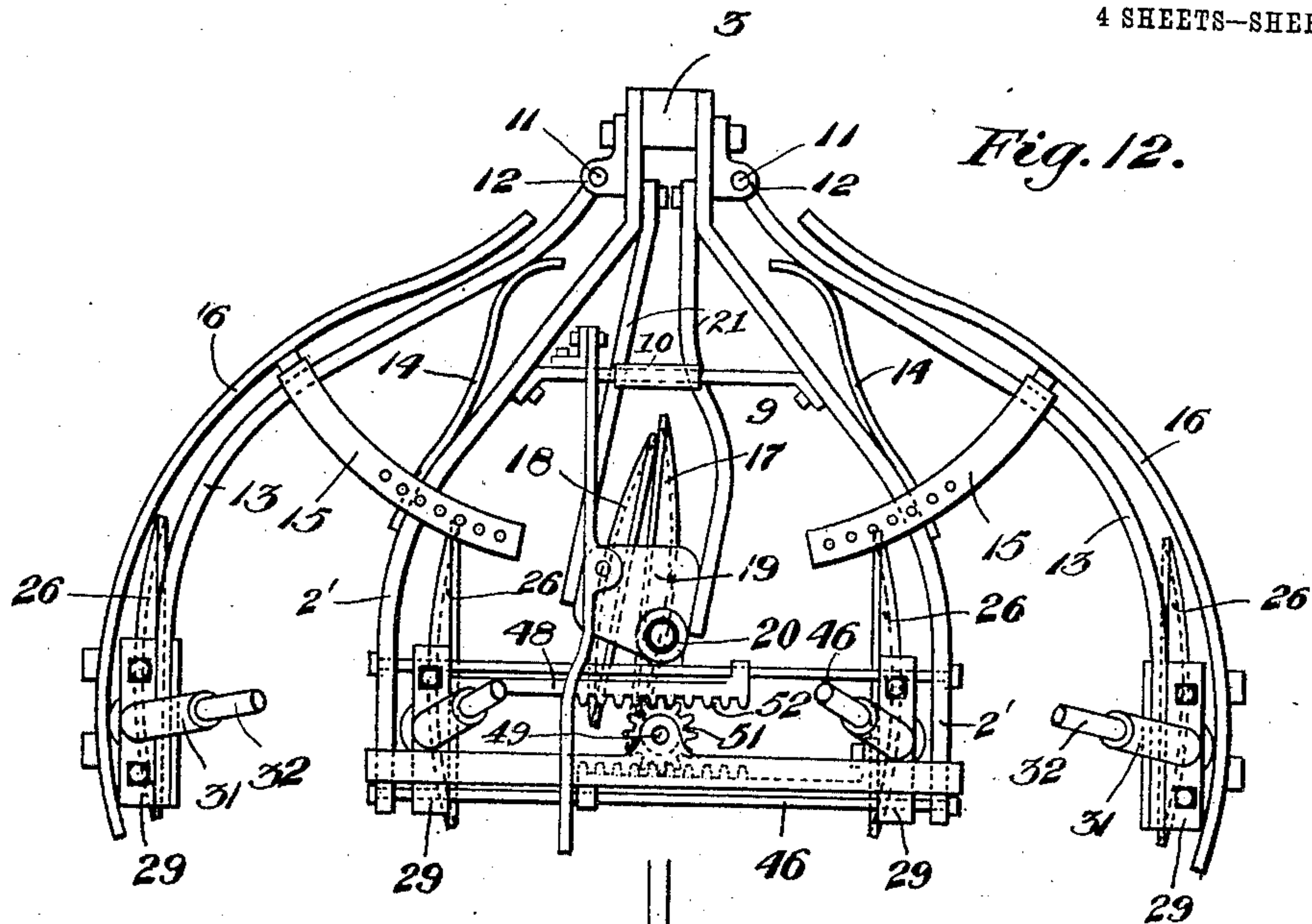


Fig. 12.

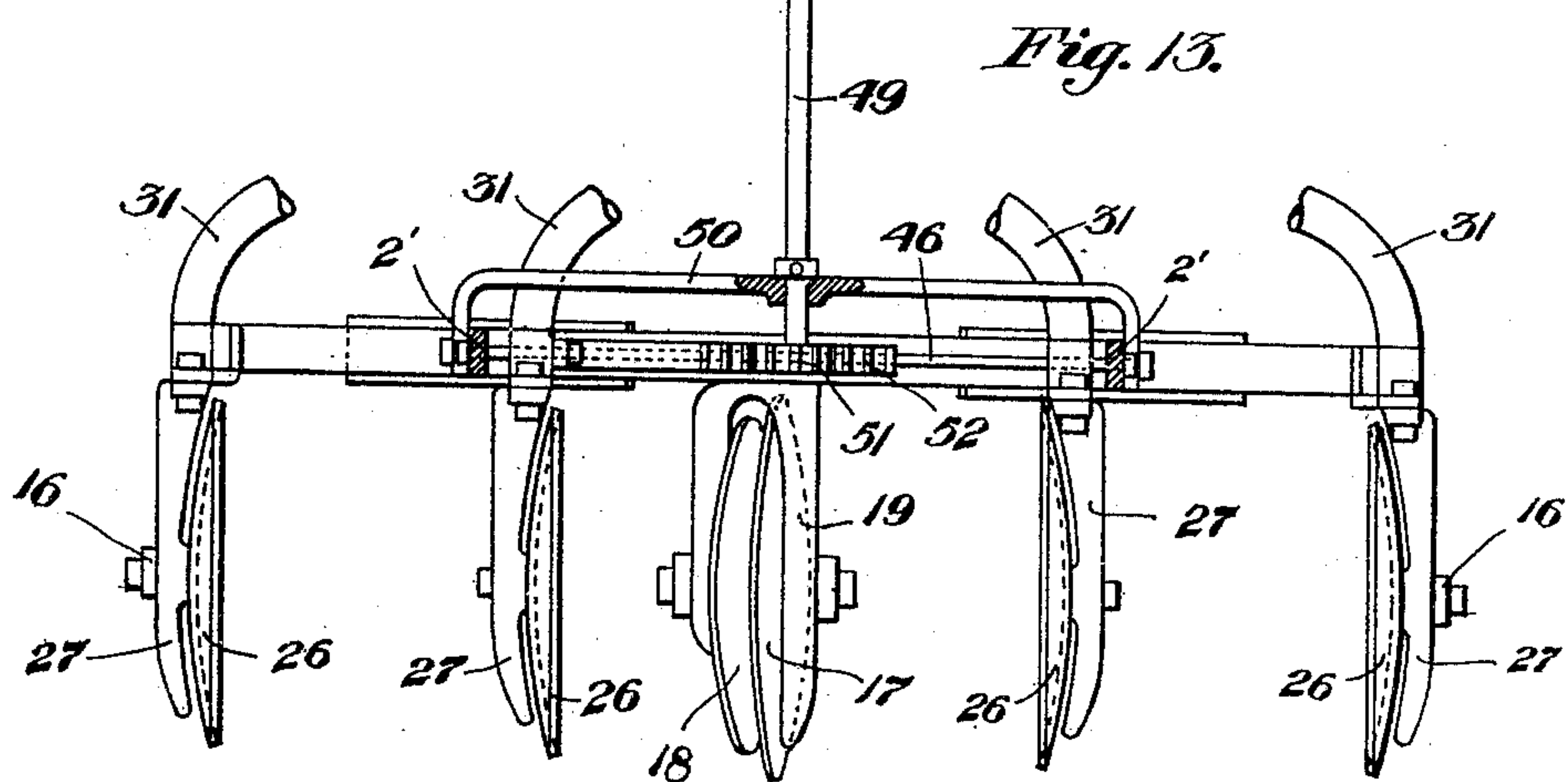


Fig. 13.

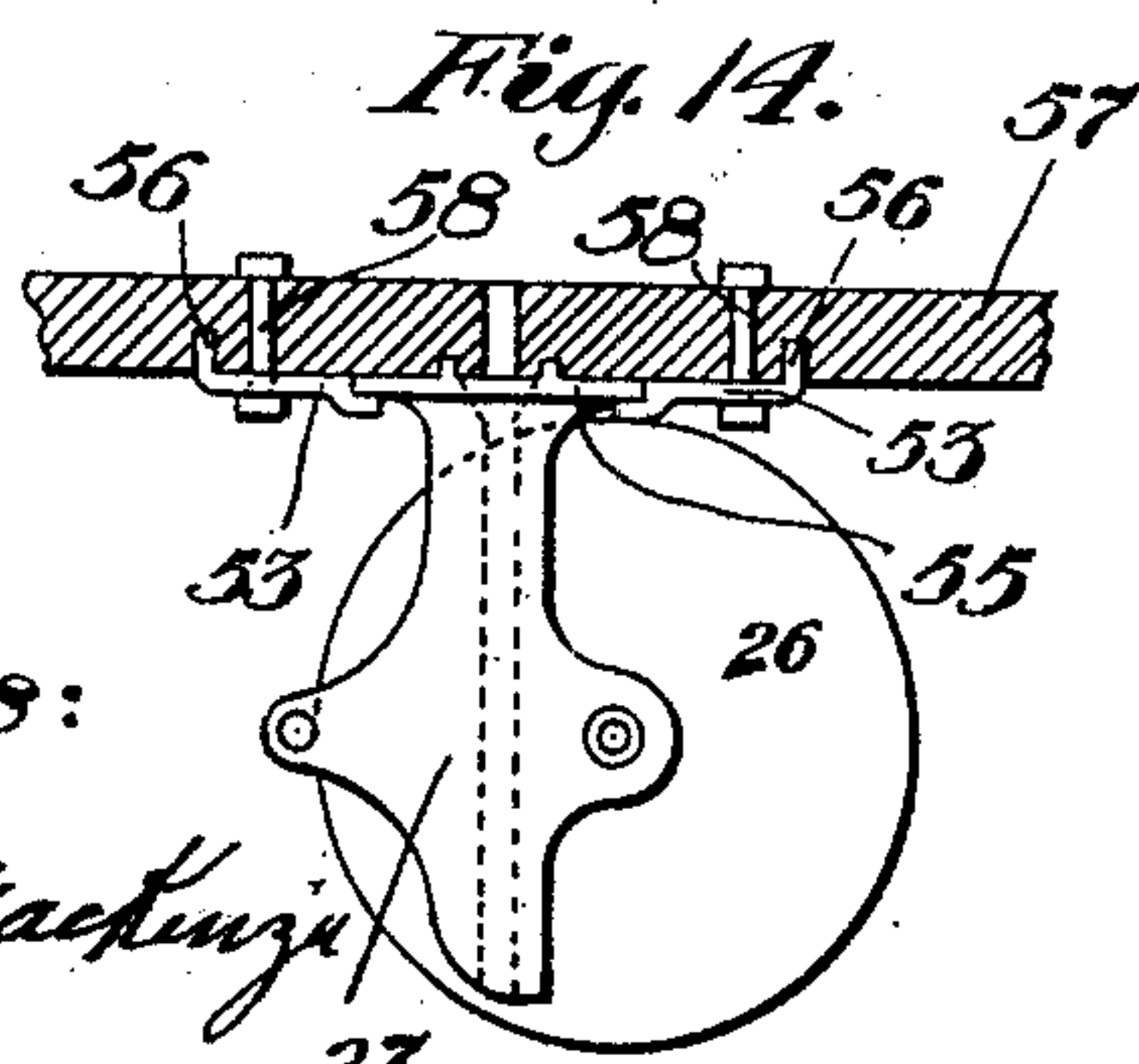


Fig. 14.

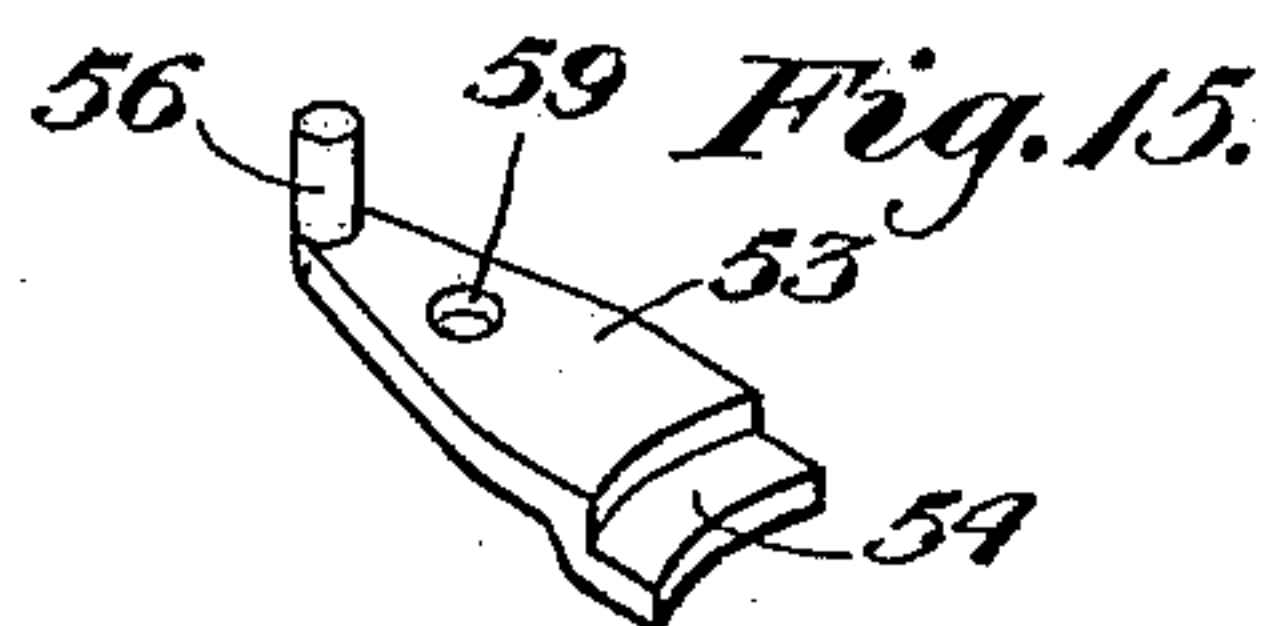


Fig. 15.

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UNITED STATES PATENT OFFICE.

DUNY A. SCHUTT, OF PERU, INDIANA.

GRAIN-DRILL.

No. 840,020.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed February 15, 1904. Serial No. 193,557.

To all whom it may concern:

Be it known that I, DUNY A. SCHUTT, a citizen of the United States, residing at Peru, in the county of Miami and State of Indiana, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in side elevation of my improved seed-grain drill. Fig. 2 is a plan view thereof. Fig. 3 is a vertical longitudinal section on the line III III of Fig. 2. Fig. 4 is a plan view with the grain-box removed. Fig. 5 is a vertical sectional view through the grain-box, showing the grain-feed gearing and the clutch mechanism. Fig. 6 is a detail view, in side elevation, of one of the disk-supporting frames. Figs. 7 and 8 are similar views in plan, showing varying positions of the disk. Figs. 9 and 10 are detail views of the adjustable cross-bar connections for the frame. Fig. 11 is a plan view of a modified construction similar to Fig. 4, showing all of the outer disk-carrying frames as adjustable laterally. Fig. 12 is a plan view similar to Fig. 11, showing a modification providing lateral adjustment of the disks. Fig. 13 is a partial sectional view in elevation, illustrating the same features. Fig. 14 is a detail view showing a modified construction of disk supporting and adjusting mechanism. Fig. 15 is a detail view of one of the disk-bracket clamps.

My invention relates to improvements in grain-drills for the purpose of planting grain or seed, and it relates particularly to the features of construction hereinafter described and claimed.

Referring to the drawings, 2 2 are flat bars forming the central main framework of the machine, carried around at the back and connected at the front with a hitch-post 3 by suitable means, as bolts. The hitch-post is provided with a vertical slot 4, through which passes a bolt 5, by which the swingle-tree 6 may be secured to the post. The swingle-tree is provided with a clamp 7, and bolt 5 passes through a plate 8 at the back of the post, the clamp and plate being flanged to engage the post at each side, thereby providing a good bearing when the nut of the bolt is drawn up tight. The object of this construction is that by hitching the swingle-tree high a down-pull will be exerted on the machine, and by hitching it low an up-pull is

secured, so that by shifting the swingle-tree the depth of the furrow of the drills may be varied in operating the machine, as hereinafter described. The sides 2 of the frame are connected together by cross-bars 9, joined to the frame at each end and connected to each other at the middle by adjustable brackets 10. By this construction the sides of the frame, being made of flat somewhat pliable bars, may be set outwardly or inwardly to some extent and the positions of the disks varied thereby. Pivoted at 11 in bearings 12, secured to the side of the frame or to any suitable portion thereof, are the outer side frames 13, while intervening springs 14 tend to throw said outer frames outwardly beyond the main frame. The outer frames may thus be thrown backwardly when the disks come into contact with any obstacles, as corn-hills, when planting between rows of standing corn and will resume their normal position when the obstacle is passed. These outer frames 13 are provided with yokes 15, embracing the side frames 2, having holes in which pins or bolts may be inserted inside of frames 2 to limit the outward travel. By this construction the outward travel of the pivoted frames 13 may be limited and the extreme width of the machine narrowed so as to gage the width of the drill-furrow according to the distance between the rows of corn. Fenders 16 are secured to the disk-hangers by bolts, as shown, on each side of the machine and project forwardly, upwardly, and inwardly in the form of sled-runners, their forward terminals being free. These fenders will strike the corn-hills near the ground, where the cornstalks are strongest, and will fend the frame backwardly without breaking the corn. The front ends of the fenders will lay down the weeds and clear the ground for the oncoming disks, permitting the disks to cut through the weeds and sow the grain without interference.

In the machine illustrated I have provided a central furrow-forming construction consisting of a disk 17 and a disk 18 slightly smaller in diameter than disk 17, both disks being concave and mounted in a disk-hanger 19. These disks, which are preferably set at an angle, as shown, are carried by the disk-hanger, to which grain is delivered by a flexible tube 20, the grain passing downwardly through the disk-hanger and being delivered upon the convex side of the larger disk 17. The disk-hanger is mounted upon the back

end of double drag-bars 21, pivoted to the main frame at 22, thus allowing of the vertical movement. The disk-hangers are adapted to be depressed by a lever 23, pivoted to a
 5 suitable bearing attached to bar 9 of the main frame at the front or to any other suitable bearing and engaging a stud 24 of disk-hanger 19, an intervening cushioning-spring being provided to allow of sufficient elasticity
 10 to permit the disks to ride up over stones or other obstructions. The object of this construction is that as in the operation of the machine between corn-rows a gutter or depression between the rows is usually present
 15 the center disks may thus be lowered and will operate at all times under the pressure of the spring.

The outside disks 26, two on each side of the center and carried by the outer frame, as
 20 shown, are mounted in disk-hangers 27, which are provided at their upper portions with flanged heads 28, having engagement with a holding-frame or base 29, secured to or forming a part of the main framework.
 25 The disk-hangers are adapted to be secured to the bases 29 in varying positions, as indicated in Figs. 7 and 8, so as to set the disks at varying angles to form narrow or wide
 30 trenches or furrows, according to the quality of the ground, seed being planted, or other conditions. This is an important and valuable feature of my invention and provides means for adapting the machine to the varying conditions usually met with.

35 The outer disk-hangers are each provided with chains 30 or other flexible drags adapted to trail behind the disks and to cover the furrows after the grain has been deposited.

The grain is delivered to the disk-hangers
 40 and disk through telescoping pipes 31 and 32, connected to the under side of grain-hopper 33 and distributed therefrom to the various feed pipes and tubes 20 by means of feed-wheels 34 in a similar manner to the construction set forth in Letters Patent issued to
 45 W. W. and F. M. Mullen, Nos. 355,462 and 411,528. These patents show a main driving-wheel located in the front of the machine and geared, through suitable gearing and driving-shaft, with said feed-wheels. The feed-wheels of my present machine are actuated
 50 in generally the same manner, and such parts of the apparatus do not *per se* form any part of my present invention.

55 In practice it has been found that the location of the main driving-wheel in front of the machine considerably hinders its operation and renders it difficult to turn the machine at the end of the furrow or corn-row
 60 and also that it is impossible to raise the drive-wheel out of contact with the ground when in operation. This results in a continuous feed of the grain and resulting waste and also renders the machine very hard to handle.

65 In my improved machine I have mounted

the main driving-wheel 35 at the back behind the disks, so that the disks thereby become in a sense fulcrums upon which the entire machine is supported and balanced and upon which it is tiltingly mounted so that
 70 the back portion may be raised or lowered by the operator. As thus arranged the driving-wheel coming immediately behind the center disks completely covers the furrow, so that no other means are necessary. The
 75 drive-wheel 35 is mounted in bearings 36, depending downwardly from the backwardly-extending sides 2 of the main frame, and motion is imparted to feed-wheels 34 through bevel-gearing 37 38, shaft 39, and the bevel
 80 or other gearing usually heretofore employed to actuate the feed-wheels. Located above the drive-wheel 35 and mounted upon a suitable framework 40 is a driver's seat 41, thereby utilizing the weight of the driver to give
 85 additional pressure over the main driving-wheel. To the frame 40 at the back are secured in any suitable or convenient manner handle-bars 42, having suitable handles or grips by which the machine can be directed
 90 and manipulated from the rear. This arrangement permits the driver when walking to raise or lower the back end of the machine, so that he can to a large extent control the depth of cut of the disks or can entirely lift
 95 the wheel 35 away from contact with the ground, thereby discontinuing the grain feed. This operation is rendered comparatively easy on account of the machine being balanced on the disks. It also facilitates the
 100 turning of the machine, as at the ends of the rows. By locating the wheel at the back it comes into contact with the soft ground turned up by the center disks, thereby insuring its traction, and overcomes the objections present where the wheel has been located in front, coming into contact with hard ground and being apt to ride over it and fail in feeding the grain. This wheel has a broad face about four and one-half inches
 110 wide and is slightly extended at the center, so as to provide a ridge, and will completely cover the furrow made by the center disk. By this construction I am able to continuously operate the machine without shutting
 115 off the grain-supply, although lever 43 is provided, pivoted at 44 and adapted to shift a clutch 45, splined on shaft 39, into a corresponding clutch connected with or forming a part of one element of the driving-gearing,
 120 freely journaled on shaft 39. By this construction the driving mechanism may be entirely thrown out of gear, so that grain will not be fed at all times—as, for instance, when going to or from the field.
 125

Fig. 11 shows a construction wherein the inner side frames 13' are independent of the main frame 2 and are also adjusted laterally by cross-bars 9 and brackets 10.

For the purpose of providing adjustability 130

so as to operate the machine between unequally-planted corn-rows, wherein the distances between the hills vary, I have provided the mechanism shown in Figs. 12 and 13 for laterally adjusting the second and fourth disks at each side of the center. The hanger-frames 29 for the disks are slidingly mounted on cross-bars 46, secured in side bars 2', upon which bars the hanger-frames may be moved in or out. The disk-hangers 27 are adjustable as to their angularity in the same manner as in Fig. 6, already described, and each upper supporting portion 29, slidingly mounted upon the bars 46, is provided with an inwardly-projecting rack-bar 48, having sliding engagement at its inner end with one of bars 46. 49 is a turning-stem mounted in suitable bearings 50 and provided with a handle or wheel (not shown) at the upper end below the seat, by which the shaft may be rotated in one direction or the other. The shaft 49 is provided at its lower end with a pinion 51, engaging the teeth 52 of rack-bars 48, by which simultaneous inward or outward movement may be imparted to the hanger-frames 29 of intermediate disks 26. This construction is of great advantage and gives great flexibility to the machine, allowing it to be readily adjusted to suit local conditions and in a very convenient and rapid manner.

In Figs. 14 and 15 I have shown a modified construction of the adjustable supporting means for the disk-hanger. In this construction the clamps 53 are provided with lips 54, adapted to engage flanges 55 at each end of the upper portion of the disk-hanger, the clamps 53 being provided with a centering-bolt or pin 56, which projects up into the body portion of the frame or bar 57, serving to secure the clamps upwardly against the under side of the frame, tightly holding the disk-hanger by its flange at whatever angle it may be set. The pins 56 are of advantage in holding the clamps in position when the bolts are loosened, preventing them from turning and insuring their position, so as to always support the disk-hanger, whether tight or loose.

As thus constructed, my improved grain-drill is well adapted to the objects in view, it is light and strong in construction, capable of easy manipulation and very considerable adjustment, and will be found to perform its functions in a satisfactory and efficient manner.

Various changes and modifications may be made in the design or construction by the skilled mechanic, and all such are to be considered as within the scope of the following claims.

What I claim is—

1. A grain-drill comprising a series of laterally-arranged seeding-disks, and a main frame tiltingly mounted on said disks and

provided with a rear traction-wheel and a driver's seat located over said traction-wheel, substantially as set forth.

2. A grain-drill comprising a series of laterally-arranged seeding-disks, a main frame tiltingly mounted on said disks and provided with a rear traction-wheel, and a seat-support arching over said traction-wheel and provided with a driver's seat and guiding-handles, substantially as set forth.

3. A grain-drill comprising a series of laterally-arranged seeding-disks, a main frame tiltingly mounted on said disks and provided with a rear traction-wheel, and a driver's seat and guiding-handles connected with the frame and located above the traction-wheel, substantially as set forth.

4. A grain-drill comprising a series of laterally-arranged seeding-disks, a main frame tiltingly mounted on said disks and provided with a rear traction-wheel, a grain-box, means for feeding the grain therefrom to the seeding-disks, and a driver's seat located above the traction-wheel, substantially as set forth.

5. A grain-drill comprising a series of laterally-arranged seeding-disks, a main frame tiltingly mounted on said disks and provided with a rear traction-wheel, a seedbox, grain-feeding conduits leading therefrom to the seeding-disks, feeding mechanism actuated by the traction-wheel, and a driver's seat located above the traction-wheel, substantially as set forth.

6. In a grain-drill the combination of a plurality of laterally-arranged seeding-disks, a main frame tiltingly mounted upon said disks, a rear traction-wheel mounted in the frame, a seedbox, feeding-tubes leading therefrom to the seeding-disks, seed-feeding mechanism and gearing therefor connected with the traction-wheel, a driver's seat located above the traction-wheel, and guiding-handles connected with the main frame, substantially as set forth.

7. In a grain-drill, the combination of a series of laterally-arranged seeding-disks extending across the machine underneath and providing a rolling support therefor, a supporting-frame mounted on said disks arranged to tilt forwardly or backwardly on said disks as a fulcrum, a grain-box, grain-feeding mechanism leading therefrom to the disks, a rear traction-wheel, and gearing adapted to transmit motion therefrom to the grain-feeding mechanism, substantially as set forth.

8. In a grain-drill, the combination of a main frame, a hitch-post at the front thereof, a series of laterally-arranged seeding-disks providing a tilting bearing for the frame, a grain-box, grain-feeding mechanism, a rear traction-wheel, and gearing adapted to transmit motion therefrom to the grain-feeding mechanism, with means for varying the pres-

sure of the rear traction-wheel, substantially as set forth.

9. In a grain-drill, the combination of a main frame, a hitching-post at the front thereof, a series of laterally-arranged seeding-disks, a grain-box, grain-feeding mechanism, a rear traction-wheel, gearing adapted to transmit motion therefrom to the grain-feeding mechanism, a rear frame secured to the main frame and arching over the traction-wheel, with guiding-handles and a seat secured upon said rear frame, substantially as set forth.

10. In a grain-drill, the combination of a main frame, a hitch-post at the front thereof, means providing for hitching thereto at varying heights, seed-disks mounted under the main frame and providing a tilting bearing therefor, laterally-adjustable supplemental frames provided with seed-disks, and a rear traction-wheel, substantially as set forth.

11. A grain-drill having a series of laterally-arranged supporting and feeding disks, a main frame tiltingly mounted thereon, a vertically-adjustable center disk, and a rear traction-wheel, substantially as set forth.

12. A grain-drill provided with a series of seed-disks arranged laterally across and adapted to support the machine, and a rear traction-wheel adapted to be raised out of contact by tipping the machine forward on said seed-disks, substantially as set forth.

13. In a grain-drill, the combination of a main frame, a plurality of independently laterally adjustable feeding-disks on each side thereof constituting supports for the main frame and upon which it is tiltingly mounted, an independently-adjustable center disk, and a rear traction-wheel adapted to be raised out of contact by tipping the machine forward on the supporting-disks, substantially as set forth.

14. In a grain-drill, the combination of a main frame, a plurality of independently laterally adjustable pivoted disk-frames at each side of the main frame, adjustable feeding-disks carried in said frame, and forwardly and upwardly extending fenders incorporated with the outer disk-frames, substantially as set forth.

15. In a grain-drill, the combination of a main frame, a plurality of independently laterally adjustable pivoted disk-frames at each side of the main frame, adjustable feeding-disks carried in said frame, and forwardly and upwardly extending fenders incorporated with the outer disk-frames, with means for adjusting the disk-frames outwardly and holding them in such adjusted positions, substantially as set forth.

16. In a grain-drill, the combination of a main frame, a plurality of independently laterally adjustable pivoted disk-frames at each side of the main frame, adjustable feeding-disks carried in said frame, and forwardly

and upwardly extending fenders incorporated with the outer disk-frames, with means for adjusting the disk-frames outwardly and holding them in such adjusted positions, and for limiting their outward travel, substantially as set forth.

17. In a grain-drill, the combination of a main frame, an adjustable center disk mounted thereon, a rear traction-wheel, disks on each side of said center disk, pivoted disk-frames at each outer side of the main frame, outer disks adjustably mounted therein, means for exerting outward pressure against said disk-frames and for limiting their outward travel, and forwardly and upwardly extending fenders incorporated with the outer disk-frames, substantially as set forth.

18. A grain-drill provided with disk-hangers and disks, and fenders secured to the disk, hangers at each side extending forwardly, upwardly and inwardly, for the purpose described.

19. A grain-drill provided with a centrally-arranged disk, laterally-arranged frames on each side of the central disk, cross-bars connecting said frames, laterally-adjustable disk-hangers arranged at each side of the central disk and slidingly mounted on said cross-bars, disks carried by said hangers, rack-bars connected to the hangers and slidingly mounted on said cross-bars, and an actuating-pinion engaging said rack-bars and provided with an operating-rod, substantially as set forth.

20. The combination with the tiltingly-mounted frame of a seed-drill provided with a series of laterally-arranged seeding-disks and a rear traction-wheel, of a vertically-slotted hitch-post secured upon the front of the frame, a swingletree, and a bolt adapted to secure the swingletree to the post at varying heights, substantially as set forth.

21. In a grain-drill, the combination with a main frame provided with a seedbox, a rear traction-wheel, means for lifting and depressing said wheel, and a series of disks upon which the frame is tiltingly mounted; of vertically-movable drag-bars pivoted to the frame, a disk-hanger provided with disks, a flexible connection between the seedbox and the disk-hanger, and means actuated by the traction-wheel for feeding the grain to the disks, substantially as set forth.

22. In a grain-drill, the combination with a main frame provided with a seedbox, a rear traction-wheel, means for lifting and depressing said wheel, and a series of disks upon which the frame is tiltingly mounted; of vertically-movable drag-bars pivoted to the frame, a disk-hanger provided with disks, a flexible connection between the seedbox and the disk-hanger, and means actuated by the traction-wheel for feeding the grain to the disks, with a pivoted depressing-lever and an interposed spring adapted to exert pressure

downwardly upon the disk-hanger and disks, substantially as set forth.

23. In a grain-drill, the combination of a main frame provided with a series of laterally-disposed disks, means for adjusting some of the disks outwardly, means for adjusting the center disk vertically, a seedbox provided with connections to the disks adapted to compensate for variations in the position of the disks, seed-feeding mechanism, a rear traction-wheel, means providing for pressure upon said rear traction-wheel, and gearing arranged to transmit motion from the rear traction-wheel to the said feeding mechanism, substantially as set forth.

24. In a grain-drill, the combination of a main frame provided with a series of laterally-arranged adjustable disk-hangers, means for adjusting the outermost disk-hangers laterally, means for adjusting a central disk-hanger vertically, a rear traction-wheel, a seedbox, gearing arranged to transmit movement from the rear traction-wheel to seed-feeding mechanism, and a driver's seat arranged above the rear traction-wheel, substantially as set forth.

25. In a grain-drill, the combination of a main frame provided with a series of laterally-arranged adjustable disk-hangers, means for adjusting the outermost disk-hangers laterally, means for adjusting a central disk-hanger vertically, a rear traction-wheel, a seedbox, gearing arranged to transmit movement from the rear traction-wheel to seed-feeding mechanism, and a driver's seat arranged above the rear traction-wheel with a supporting-frame therefor, provided with backwardly-extending handles, substantially as set forth.

26. In a grain-drill, the combination with the main frame, of an independently-adjustable laterally-arranged disk-hanger provided with a seeding-disk and a forwardly and upwardly extending fender, substantially as set forth.

27. In a grain-drill, the combination with

an adjustable disk-hanger, of a forwardly-extending fender secured to the disk-hanger and free at its forward end, substantially as set forth.

28. A grain-drill provided with a laterally-arranged adjustable disk-hanger having secured to it a forwardly-extending fender having a free forward terminal, substantially as set forth.

29. A grain-drill having a laterally-adjustable frame provided with a disk-hanger, and a forwardly-extending fender secured to the disk-hanger and having a free forward terminal, substantially as set forth.

30. A grain-drill having laterally-adjustable frames at each side provided with disk-hangers, and forwardly-extending fenders secured to the disk-hangers and having free forward terminals, substantially as set forth.

31. A grain-drill having laterally-adjustable frames at each side provided with independently-adjustable disk-hangers, and forwardly-extending fenders secured to the disk-hangers and free at their forward terminals, substantially as set forth.

32. In a grain-drill, the combination with the main frame, of an outer laterally-adjustable disk-frame provided with a disk-hanger, a disk carried thereby, and a forwardly and upwardly extending fender incorporated with the disk-hanger, substantially as set forth.

33. In a grain-drill, the combination with the main frame, of an outer laterally-adjustable disk-frame provided with a disk-hanger, a disk carried thereby, and a forwardly and upwardly extending fender incorporated with the disk-hanger, said fender being free at its outer terminal, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DUNY A. SCHUTT.

Witnesses:

WM. B. McCLINTIC,
ESKA FLINN.