

No. 843,479.

PATENTED FEB. 5, 1907.

J. MA CALLEJAS Y BECERRA.
SUGAR CANE STRAW CUTTING MACHINE.

APPLICATION FILED JULY 27, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

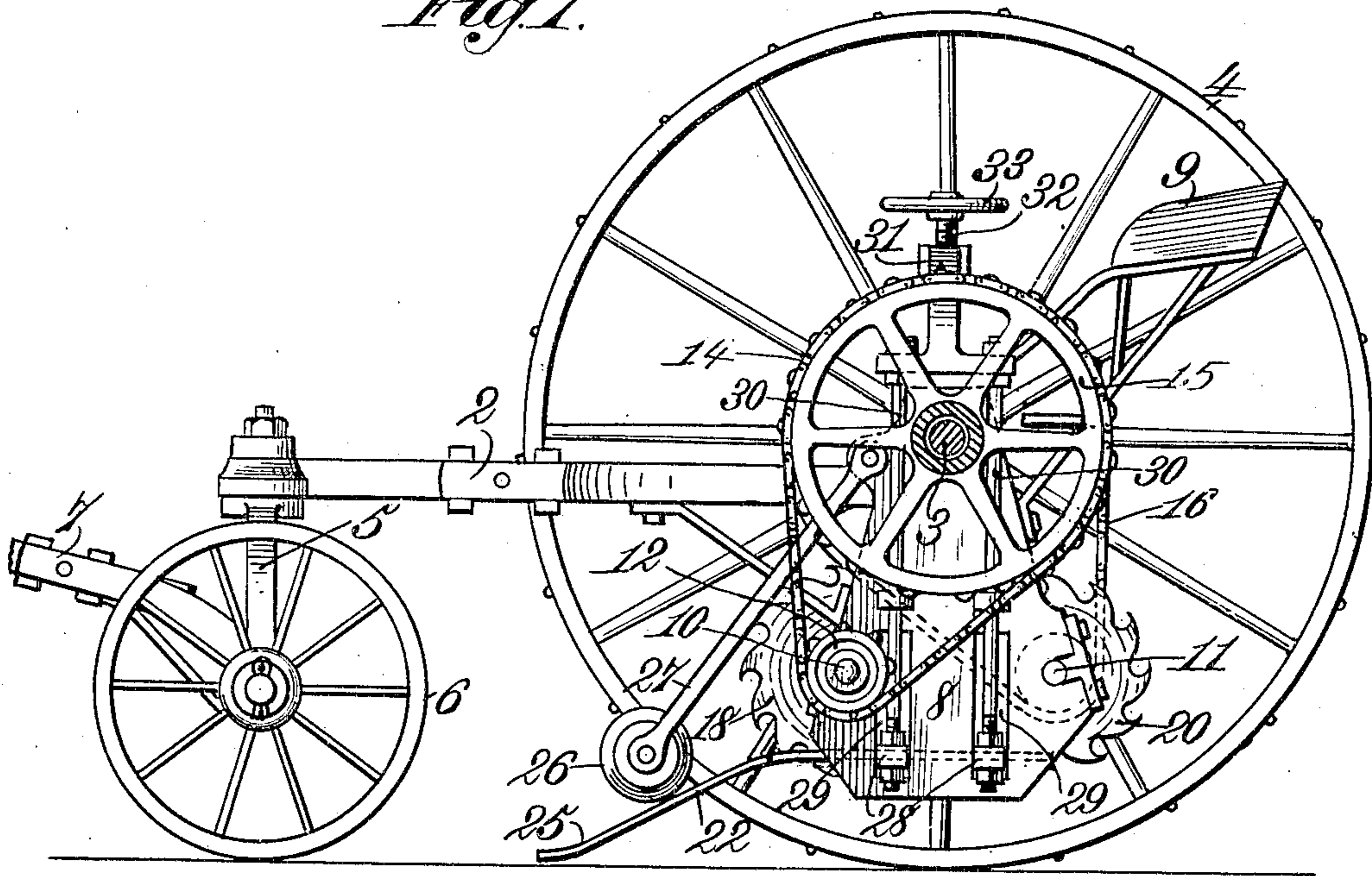


Fig. 2.

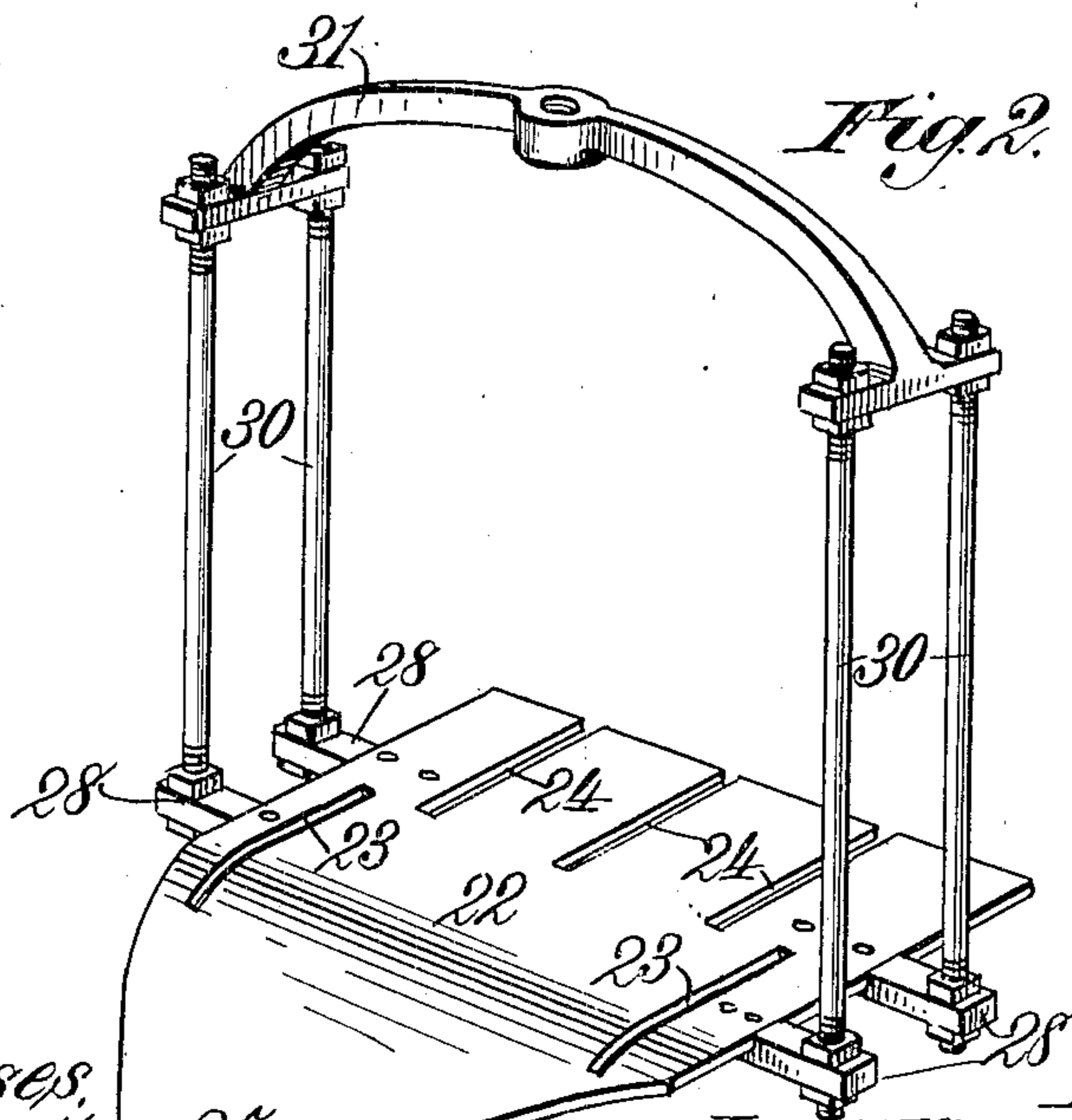
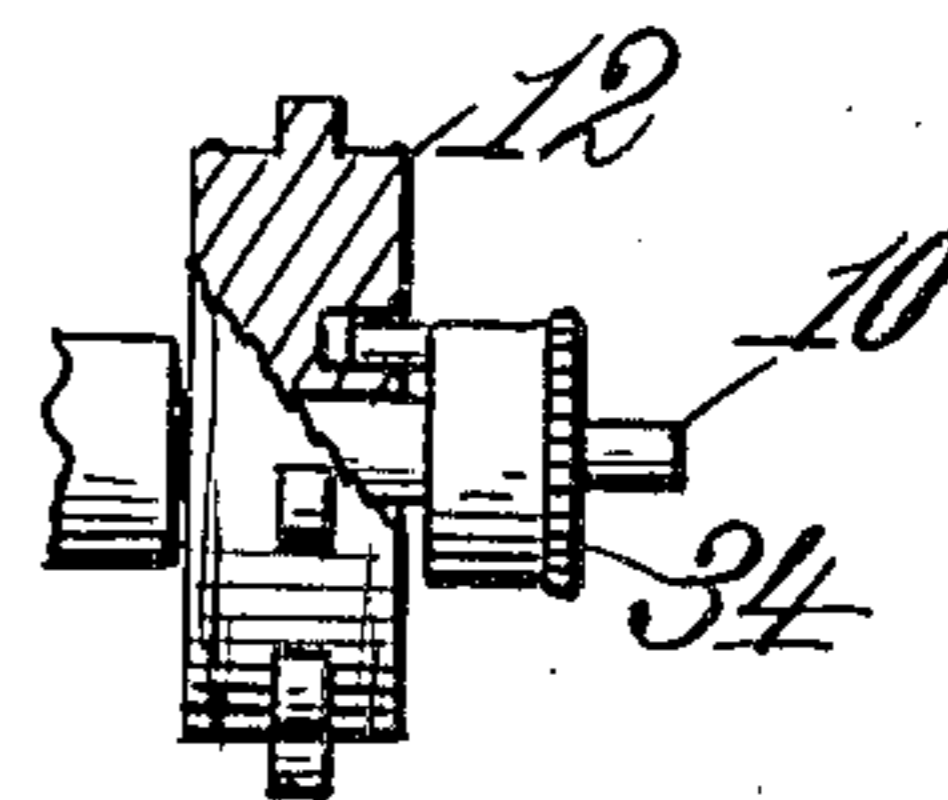


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

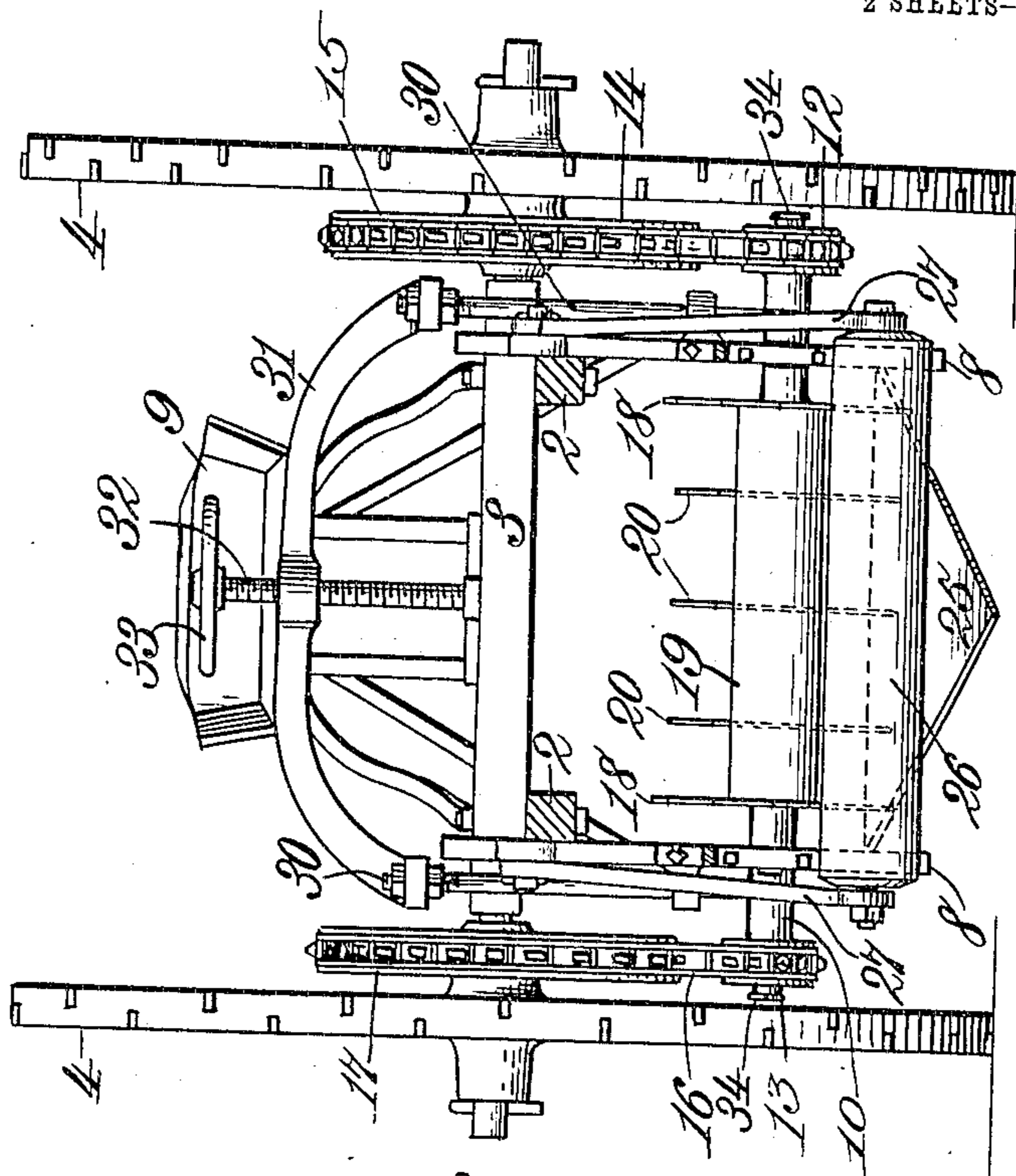
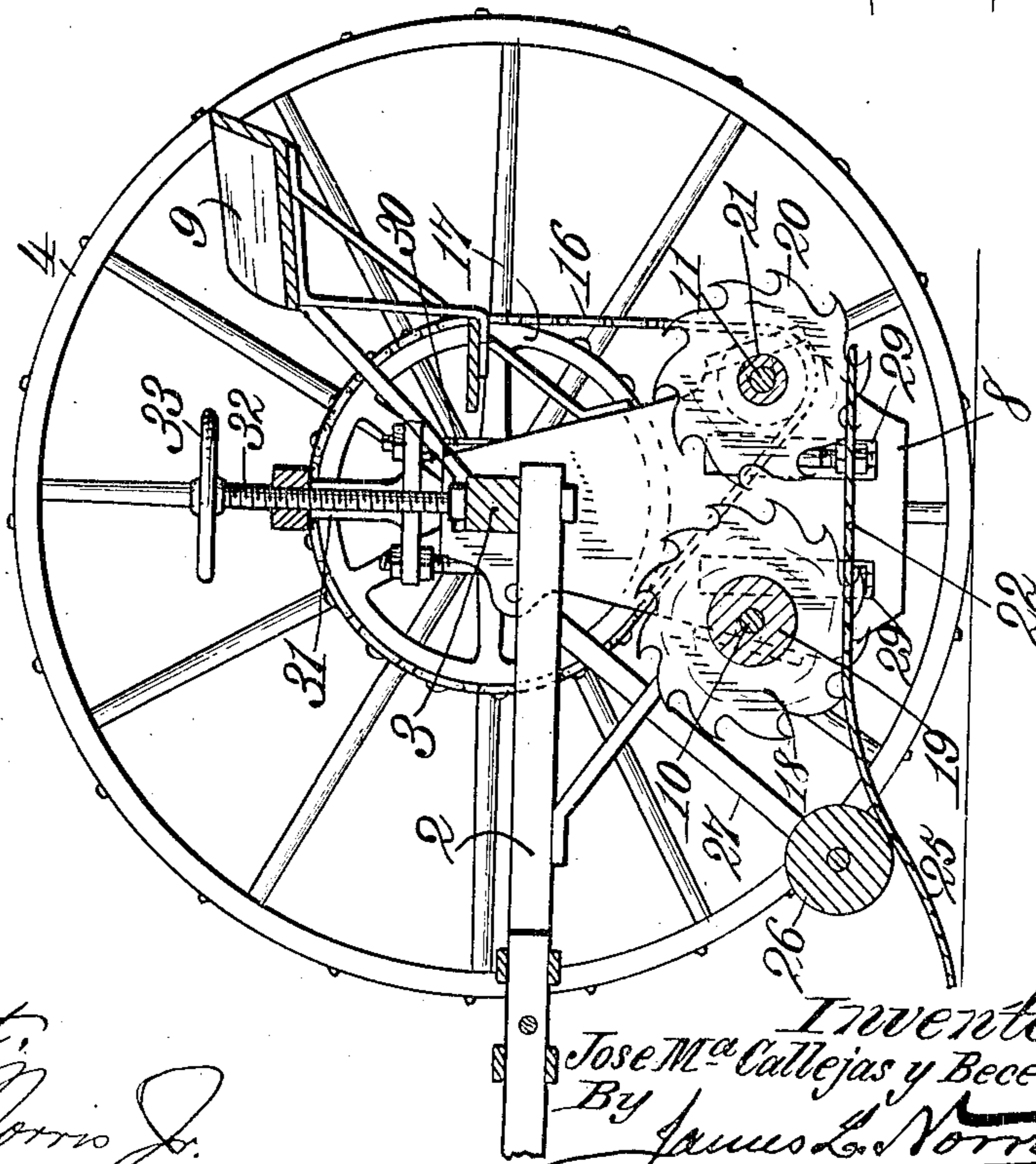


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSÉ M^A CALLEJAS Y BECERRA, OF HAVANA, CUBA.

SUGAR-CANE-STRAW-CUTTING MACHINE.

No. 843,479.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed July 27, 1906. Serial No. 328,058.

To all whom it may concern:

Be it known that I, JOSÉ M^A CALLEJAS Y BECERRA, a citizen of the Republic of Cuba, residing at Havana, Cuba, have invented certain new and useful Improvements in Sugar-Cane-Straw-Cutting Machines, of which the following is a specification.

This invention relates to what I shall for convenience term a "sugar-cane-straw-cutting" machine. The machine, however, may be employed with advantage in other connections, although it is of particular importance for cutting the sugar-cane straw. When sugar-cane is cut, the intermediate part thereof is that which is utilized for the extraction of sugar, the tops of the cane being cut off and left on the field and being known as "straw." This is the straw my machine will effectually and rapidly cut into small pieces, by reason of which such small pieces can be much more readily plowed under the ground, and thereby used as fertilizer.

The machine includes in its make-up a platform onto which the straw is moved as the machine traverses a field, and in connection with this platform I provide mechanism of a positive certain nature for cutting up the straw thereon. These parts may be of any desirable or convenient character. In the drawings accompanying and forming a part of this specification I show, however, in detail one simple form of embodiment of the invention, which to enable those skilled in the art to practice said invention will be fully set forth in the following description, while the novelty of said invention will be included in the claims succeeding said invention.

Various modifications may be made within the scope of my claims.

Referring to the drawings, Figure 1 is a sectional side elevation of a machine including my invention, the section being taken through the hub of the wheel in the foreground. Fig. 2 is a perspective view of the platform shown in the preceding figure and the supporting means therefor. Fig. 3 is a vertical sectional view of the machine. Fig. 4 is a sectional front view of the same, the section being taken just to the rear of the guide-wheels; and Fig. 5 is a detail view of a clutch.

Like characters refer to like parts in all the figures of the drawings.

The machine is made, preferably, in the form of a wheeled vehicle to facilitate its movement over a field, and it comprises a

frame, as that denoted in a general way by 2. To the rear of the frame 2 is represented as connected the axle 3, upon the opposite ends of which are rotatively mounted the similar traction-wheels 4, which in the present case, and as will hereinafter particularly appear, constitute a convenient means when turned for positively operating the straw-cutting mechanism. To the forward end of the frame 2 is swiveled an arch, as 5, equipped with guide-wheels, as 6, and associated with which is a suitable draft appliance, as that denoted in a general way by 7. The machine may be moved across a field in any desirable way—for example, by horses or oxen, or, if desired, by a motor, this being an immaterial point.

From the axle near opposite ends thereof there are shown as depending duplicate plates, as 8, constituting an effective support for cutters, and I have shown as connected with these plates and the axle 3 a seat 9 for a driver when horses or other draft-animals are employed for moving the vehicle.

The two plates 8 serve as a convenient means for rotatively supporting the front shaft 10 and the rear shaft 11. Said front shaft 10 is represented as having fastened thereto at one end a sprocket-wheel 12, while to the opposite end of the shaft 11 is similarly fastened a sprocket-wheel 13. The sprocket-wheel 12 is connected by a sprocket-chain 14 with the master sprocket-wheel 15, while the sprocket-wheel 13 is connected by a sprocket-chain 16 with the master sprocket-wheel 17. The two large sprocket-wheels 15 and 17 are suitably fixed to the hubs of the two main or traction wheels 4, by reason of which when the machine is moved the shafts 10 and 11 will, through the intervention of the intermediate sprocket-gearing, be rotated simultaneously and in the present case in the same direction. The construction described for driving the shaft is an effective one and is quite compact, although other means may be utilized for turning the two shafts.

The forward shaft 10 carries several cutters, as 18, two of these cutters being illustrated and being separated by a roller, as 19. The cutters and intermediate roller may be fastened to the shaft in any desirable way so as to rotate therewith. To the rear shaft 11 are fastened for rotation therewith several cutters, as 20, separated by spacing members, as 21, (see Fig. 3,) surrounding the

shaft 11 between the cutters 20. There may be any number of these cutters 20. The two sets of cutters successively act upon the straw brought under the action thereof, and this straw is preferably movable along a platform, as 22. (Shown best in Fig. 2.) The platform 22 or the main or body part thereof is substantially horizontally disposed, said body or main portion having two series of slots, the slots in the series being denoted, respectively, by 23 and 24. The forward slots 23 receive the forward cutters 18, while the rear slots 24 receive the rear cutters 20. From this it will be evident that the cutters have an effective motion below the upper surface of the platform, whereby they will thoroughly cut the material moving along the upper surface of said platform. The platform acts really as a gatherer for the straw, for which purpose the forward portion thereof is downwardly deflected or bent, as at 25, the sides of the downwardly-deflected portion converging in a point intersected approximately by the longitudinal median line of the platform. The pointed forward end of the platform 22 travels in practice adjacent to the ground in order that the same can pick up the straw, which as the vehicle moves forward is caused to travel along the upper side of the platform, such material being first of all carried against the two forward knives or cutters 18, which cut such material, the cut material being then positively moved along the platform by the action of the rotating roller 19 to the second series of cutters 20, which cut the said material into small pieces, which small pieces drop off the rear end of the platform onto the ground.

Between the forward end of the platform 22 and the forward cutters or knives 18 is a roller 26, supported by companion arms, as 27, pivoted at their upper ends to the hangers or side plates 8. This roller 26 prevents scattering of the material or straw and also insures an even feed of such material to the cutting mechanism. The roller is flexibly suspended, so that it may yield to any unusual obstruction in the mass moving under it.

From the opposite sides of the platform 22 there extend the arms 28, arranged in pairs, as clearly shown in Fig. 2, and these arms extend through vertical slots, as 29, in the side plates or hangers 8. Rods or tie-bolts, as 30, are shown as connected with the outer ends of the several arms 28 exteriorly of the plates or hangers 8, the upper ends of said rods being connected with the opposite extremities of a transverse member, as 31, represented as made in the form of a yoke.

An adjusting-screw, as 32, is represented as tapped through the arch 31, substantially centrally thereof, the lower end of said screw having a bearing against the axle 3, substantially centrally thereof, and said adjusting-screw is provided at its upper end with a

hand-wheel, as 33, by which the said adjusting-screw can be readily turned in order to effect the vertical adjustment of the platform 22, whereby the position of the latter with respect to particular conditions may be accomplished. The wheel 33 is within convenient reach of the driver occupying the seat 9.

The sprocket-wheels 12 and 13 are respectively clutched to their shafts 10 and 11 by means of suitable clutch mechanisms 34, a conventional form of which clutch is illustrated in Fig. 5.

When going to or from the field where the machine is to be operated or where it is not desired to operate the cutters, the clutches 34 are released, so that the sprocket-wheels will be free to rotate on their respective shafts 10 and 11, thus leaving the cutters 18 and 20 idle, and the adjusting-screw 32 is turned a sufficient amount to raise the platform 22 high enough to clear any obstacle which may be in the road or field which the machine is traversing.

The machine hereinbefore described is simple in construction, effective and automatic in operation, and cuts up with thoroughness and into small pieces straw moving along the platform 22. From what I have hereinbefore stated the machine may be put to other purposes than that of straw-cutting. It may be utilized for cutting brush, stalks, and material of other kinds.

What I claim is—

1. In a machine of the class described, a platform along which material may move, and two sets of cutting devices for cutting the material while on said platform.

2. In a machine of the class described, a vehicle, a platform connected with said vehicle and along which material may move, two sets of cutting mechanism arranged to cut the material at separated places longitudinally of the platform, and means for feeding the material positively from the first set of cutting devices to the second set of cutting devices.

3. In a machine of the class described, a vehicle, a platform connected with said vehicle and along which material may move, two sets of cutting mechanisms arranged to cut the material at separated places longitudinally of the platform, and means movable with the first set of cutting devices for positively moving the material from said first set of cutting devices to the second set of cutting devices.

4. In a machine of the class described, a wheeled vehicle, a platform connected with said wheeled vehicle and along which material may move, said platform comprising a substantially horizontally disposed body having a downwardly and forwardly inclined portion, a flexibly-suspended roller to act against the material while on said inclined

portion, and cutting mechanism for cutting material while on the horizontal portion of said platform.

5 In a machine of the class described, a vehicle, a platform connected with said vehicle and along which material may move, cutting mechanism for cutting the material while on the platform, and a roller for securing even feed of the material to the cutting
10 mechanism, said roller being flexibly mounted.

6. In a machine of the class described, a wheeled vehicle, a platform connected with the vehicle and along which material may move, the platform having a substantially
15 horizontally disposed body provided with a downwardly and forwardly extending angu-

lar portion, two sets of cutting mechanisms for acting upon the material while on said horizontal portion, means for feeding the material from one cutting mechanism to the
20 other cutting mechanism, and a flexibly-mounted roller arranged to engage the said angular portion and for securing even feed of the material to the cutting mechanisms.

In testimony whereof I have hereunto set
25 my hand in presence of two subscribing witnesses.

JOSÉ M^A CALLEJAS Y BECERRA.

Witnesses:

JOSÉ REYUA,

JAMES L. NORRIS, Jr.