

No. 828,204.

PATENTED AUG. 7, 1906.

O. FRACK & A. C. BOWKER.

STRAW SPREADER.

APPLICATION FILED MAR. 23, 1906.

3 SHEETS—SHEET 1.

Fig. 3.

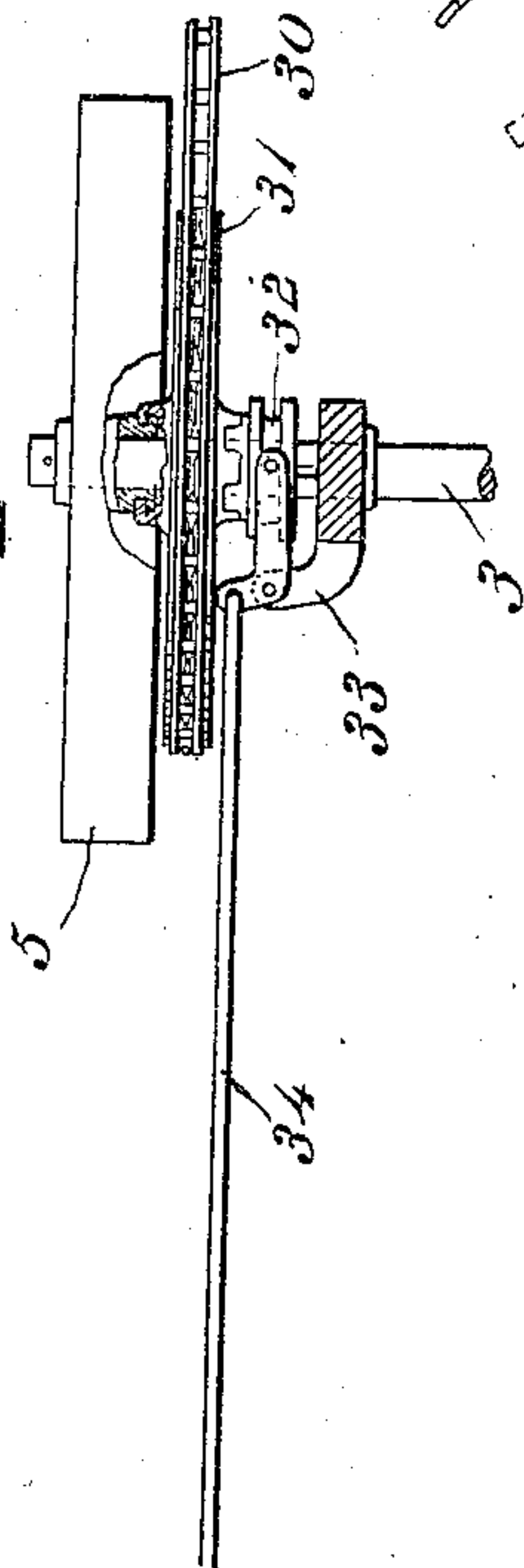
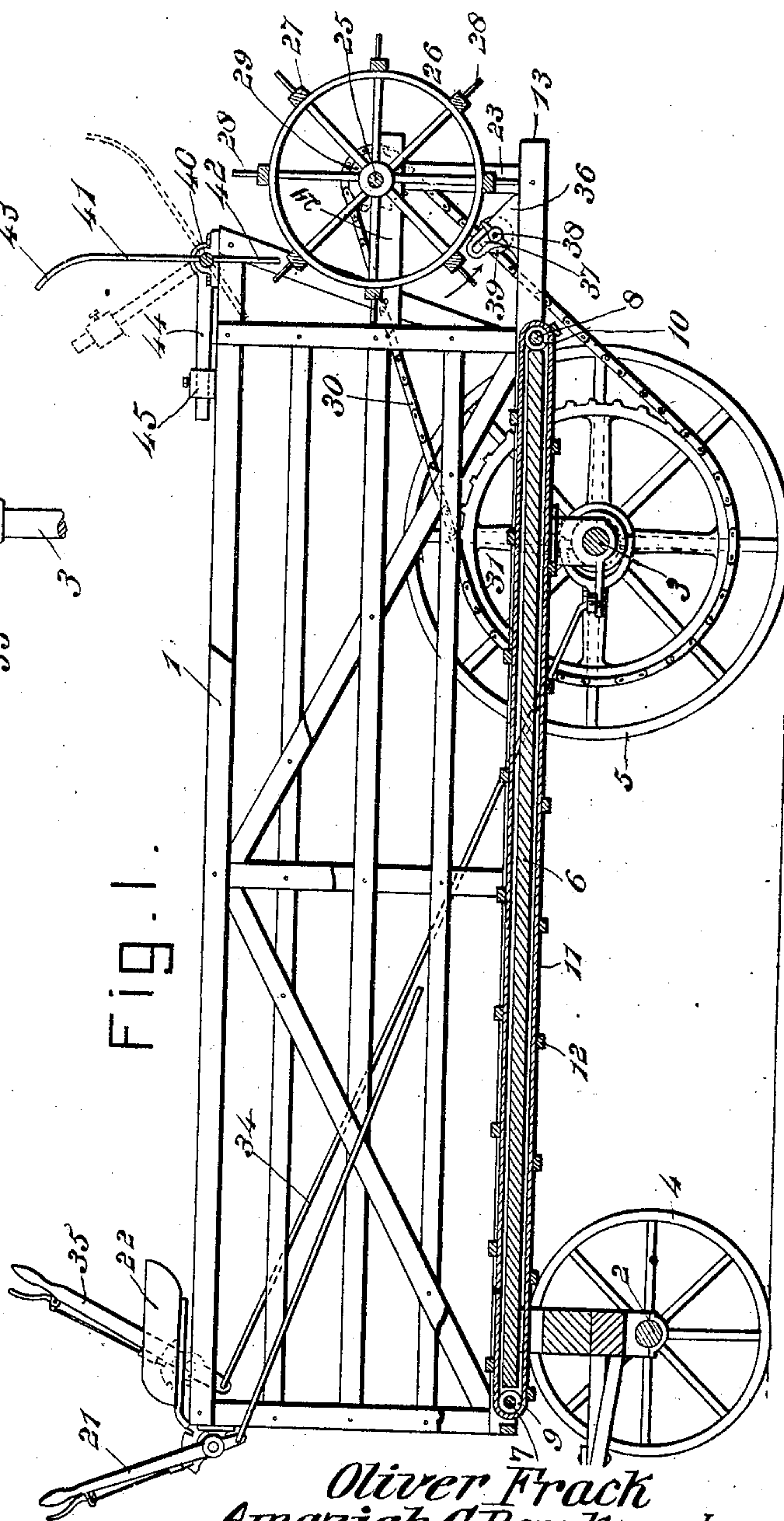


Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

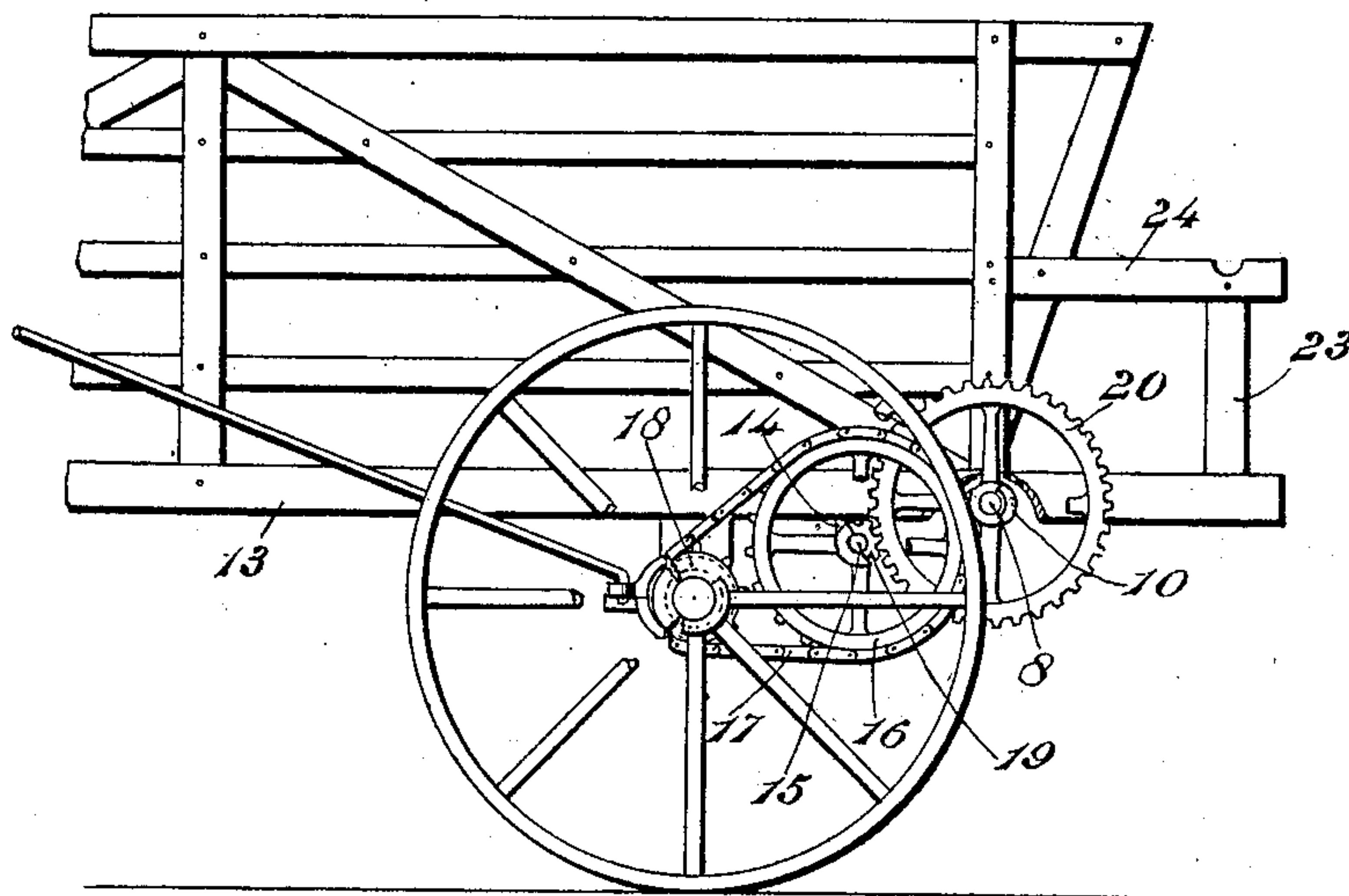
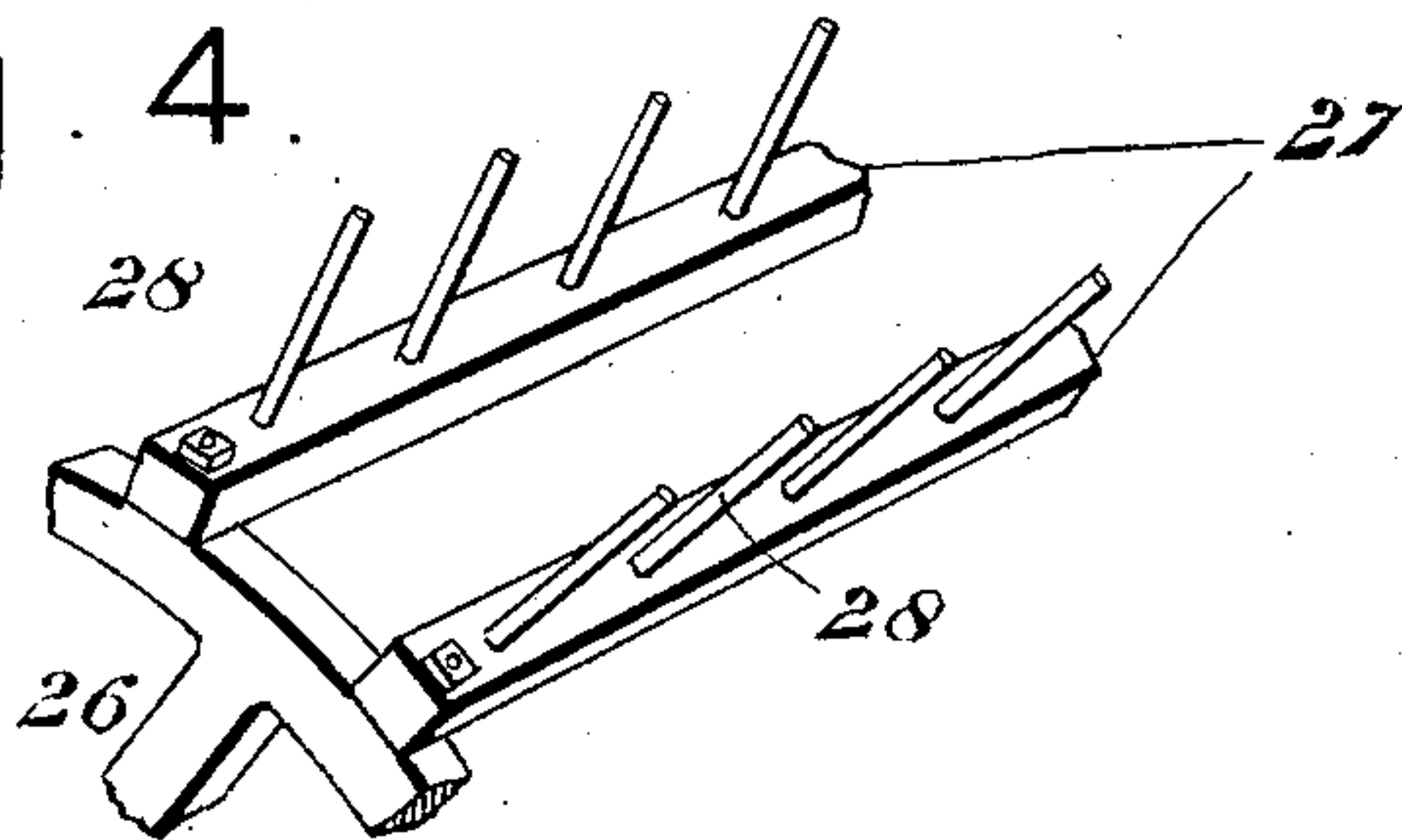


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

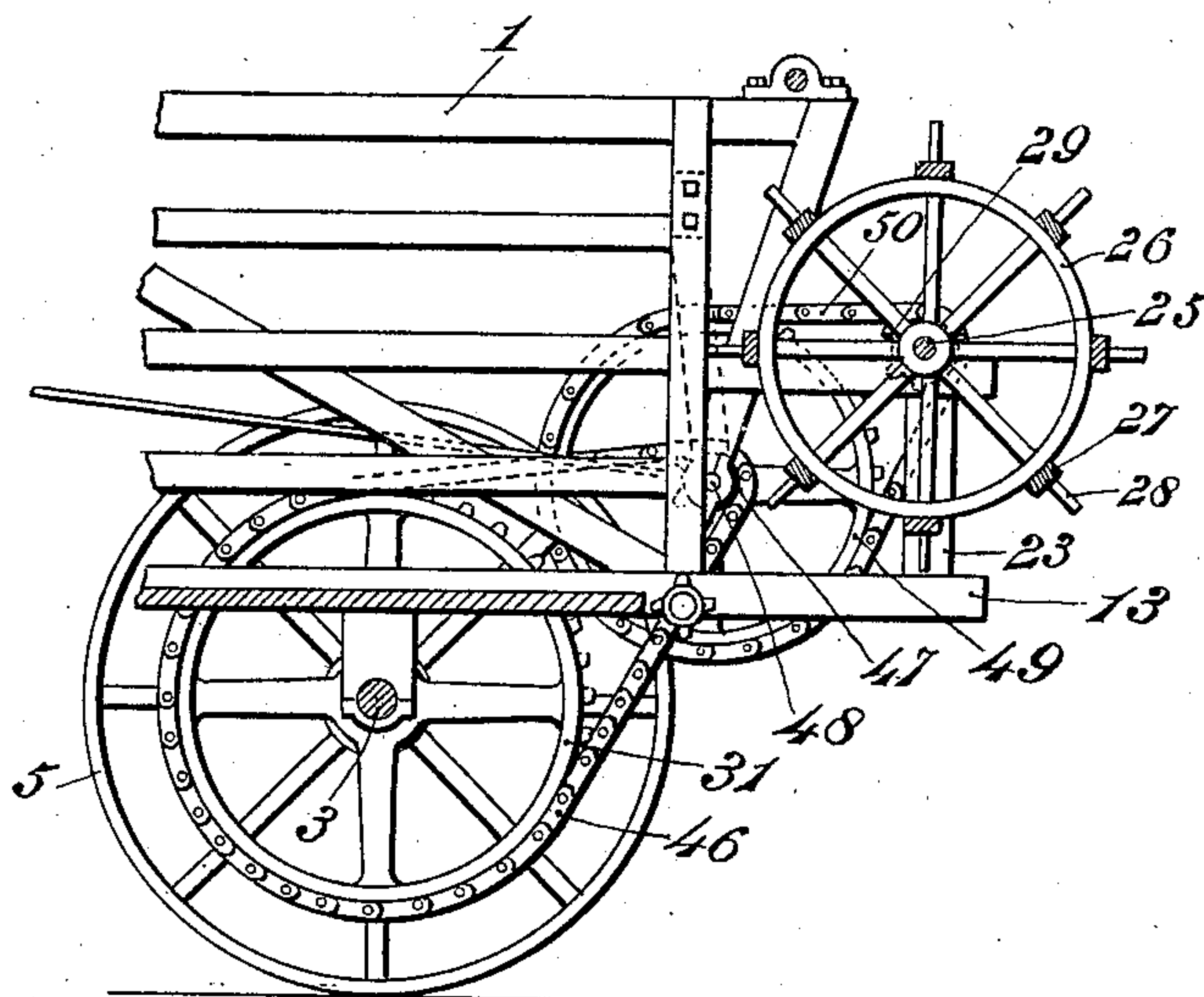
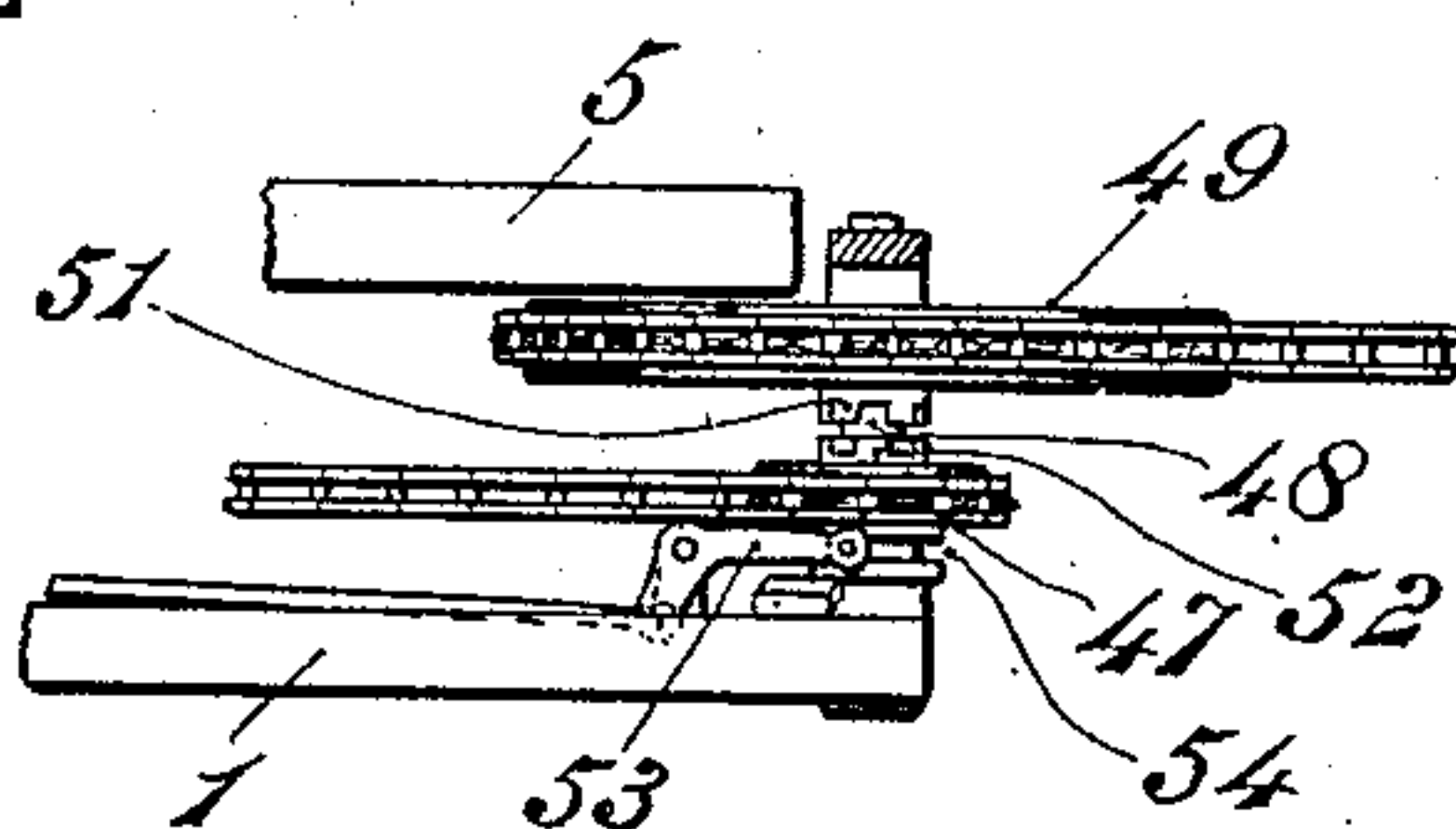


Fig. 6.



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# UNITED STATES PATENT OFFICE.

OLIVER FRACK AND AMAZIAH C. BOWKER, OF ST. JOHN, KANSAS.

## STRAW-SPREADER.

No. 828,204.

Specification of Letters Patent.

Patented Aug. 7, 1906.

Application filed March 23, 1906. Serial No. 307,681.

*To all whom it may concern:*

Be it known that we, OLIVER FRACK and AMAZIAH C. BOWKER, citizens of the United States, residing at St. John, in the county of Stafford and State of Kansas, have invented a new and useful Straw-Spreader, of which the following is a specification.

This invention relates to machines for spreading or scattering straw in the field for fertilizing purposes; and it has for its object to provide a machine of this class which shall possess superior advantages in point of simplicity, durability, ease, and effectiveness of operation and general efficiency.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be resorted to when desired.

In the drawings, Figure 1 is a side elevation, partly in section, of a straw-spreader constructed in accordance with the principles of the invention. Fig. 2 is a detail side elevation of a portion of the machine. Fig. 3 is a sectional detail view showing one of the clutches for throwing the operating mechanism into and out of gear. Fig. 4 is a perspective detail view of a portion of the spreading-cylinder. Fig. 5 is a detail side elevation illustrating a modification. Fig. 6 is a detail plan view of said modification.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The improved straw-spreader comprises a capacious straw-rack 1, which is mounted for operation upon an ordinary running-gear comprising front and rear axles 2 3 and carrying wheels 4 5. At or near the front and rear ends of the bottom 6 of the straw-rack shafts 7 and 8 are rotatably supported, said shafts carrying rollers 9 and 10, over which passes an endless conveyer 11, which may consist of a canvas apron having slats or cross members 12.

The straw-rack is provided with longitu-

dinal bottom sills, as 13, one of which has a bearing 14, in which is journaled a shaft 15, carrying a sprocket-wheel 16, which is connected by a link belt 17 with a sprocket-wheel 18 upon the rear axle 3, which is supported for rotation in its bearings. The shaft 15 also carries a pinion 19, meshing with a spur-wheel 20 upon the shaft 8, carrying the roller 10, which supports the rear end of the endless conveyer 11, to which latter motion may thus be transmitted from the sprocket-wheel 18 when the latter is operatively connected with the axle, which is accomplished by a clutch mechanism of ordinary construction operated by means of a lever 21, which is mounted in convenient position to be manipulated by the operator, whose seat 22 is supported upon the front end of the rack.

The rear ends of the sills 13 support uprights 23, which are connected with the straw-rack by means of cap-pieces 24, affording bearings for a shaft 25, carrying the spreading-cylinder 26, which latter is provided with slats 27, having radially-extending teeth or spreading-fingers 28. The shaft 25 carries a sprocket-pinion 29, which is connected by a link belt 30 with a sprocket-wheel 31, supported upon the axle and adapted to be operatively connected with the latter by means of a clutch 32, operable by a shipping-lever 33, which is connected by a link rod 34 with an operating-lever 35, supported in convenient position to be manipulated by the operator. Motion may thus be transmitted from the sprocket-wheel 31 direct to the shaft 25, carrying the spreading-cylinder. One of the sills 13 supports a bracket 36, having a slot 37, in which is adjustably mounted a pin 38, carrying a tightening-pulley 39, that engages the link belt 30 for the purpose of keeping the latter under proper tension. The sills 13, uprights 23, and caps 24 coöperate to form a frame, whereby the spreading-cylinder is supported in rear of the straw-rack proper and slightly above the plane of the endless carrier 11, said spreading-cylinder constituting the only closure for the tail end of the rack.

For the purpose of preventing the load, and especially the upper portion of the load, from being too rapidly discharged and also in order to prevent the top portion of the load from toppling over the spreading-cylinder 26 a gate is employed which includes a rock-shaft 40, supported in suitable bearings



upon the straw-rack near the rear end of the latter and provided with a plurality of radial fingers 41 and 42, extending upwardly and downwardly from the shaft, as shown, the upwardly-extending fingers being curved forwardly at their extremities, as shown at 43. The downwardly-extending fingers 42 will be disposed intercurrently with the fingers 28 of the spreading-cylinder. The rock-shaft 40 is provided with a forwardly-extending arm 44, adapted to rest and be supported upon the frame structure of the rack, said arm carrying a weight 45, whereby the fingers 41 and 42 of the rock-shaft will be normally maintained in an approximately vertical position, so as to obstruct the delivery of the upper portion of the load. As the load moves rearwardly in the box or rack pressure will be exerted upon the fingers 41 of the rock-shaft, which latter will thus be tilted to approximately the position shown in dotted lines in Fig. 1, the upward-extending fingers 41 being thus caused to retain the upper portion of the load and prevent the same from toppling over the spreading-cylinder. When the load has been nearly discharged, the weighted arm 4 restores the rock-shaft to its normal position, with the fingers 42 and 43 in approximately vertical position, bringing the fingers 43 against the nearly-exhausted load, which will be thus guided in the direction of the cylinder, causing the latter part of the load to be thoroughly acted upon by the spreading-cylinder and scattered over the ground by the action of said cylinder.

It may at times be desired to rotate the spreading-cylinder at higher speed than would be caused by the means hereinbefore described. When this is considered necessary, the sprocket-wheel 31 may be connected by a chain 46 with a sprocket-pinion 47 upon a counter-shaft 48, the sprocket-pinion being splined upon the shaft, so as to rotate the latter and yet be slidable thereon. The shaft 48 carries a sprocket-wheel 49, which will be connected by a chain 50 with the sprocket-pinion 29 upon the cylinder-shaft 25, which may thus be driven. The hubs of the pinion 47 and the wheel 49 are provided with clutch members 51 and 52, which may be thrown into or out of engagement by means of a shipping-lever 53 engaging an annular groove 54 in the hub of the sprocket-pinion 47. The sprocket-wheel 49 is obviously loose upon the shaft 48. By this mechanism, which has been illustrated in Figs. 5 and 6 of the drawings, the necessary speed may be readily imparted to the spreading-cylinder.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this

invention will be readily understood. The rack is made sufficiently large to accommodate a large load of straw, which may thus be readily conveyed to the place upon the field where it is desired to deposit the same. The spreading-cylinder and the endless conveyer are then thrown into gear, and the load will as the wagon passes along be spread or distributed evenly upon the surface of the ground in a far more expeditious, satisfactory manner than this work could be accomplished by hand.

It is desired to be understood that this machine is not intended for spreading barn-yard manure and that ordinary so-called "manure-spreaders" are in no wise adapted for spreading straw, which is the particular object of this machine.

The present device is light, free from complication, and thoroughly efficient for the purpose for which it is intended.

Having thus described the invention, what is claimed is—

1. In a device of the class described, a rack constituting a receptacle, a spreading-cylinder supported for rotation near one end of said rack, and a tilting gate supported adjacent to said spreading-cylinder, said gate including a rock-shaft having upwardly and downwardly extending radial fingers, and a weighted arm extending radially from the shaft at approximately right angles to the fingers.

2. A device of the class described, a rack constituting a receptacle, a spreading-cylinder supported for rotation near one end of the rack, and a tilting gate supported adjacent to the spreading-cylinder, said gate including a rock-shaft having upwardly and downwardly extending radial fingers, an arm also extending from said shaft and approximately at right angles to the fingers, an adjustable weight carried by said arms.

3. A device of the class described, a rack constituting a receptacle, a spreading-cylinder supported for rotation near one end of said rack, and a tilting gate supported adjacent to the spreading-cylinder, said gate including a rock-shaft having upwardly and downwardly extending radial fingers, the upwardly-extending fingers having forwardly-curved extremities; and a weighted arm extending radially from the shaft at approximately right angles to the fingers.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

OLIVER FRACK.

AMAZIAH C. BOWKER.

Witnesses:

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PAUL R. NAGLE.