

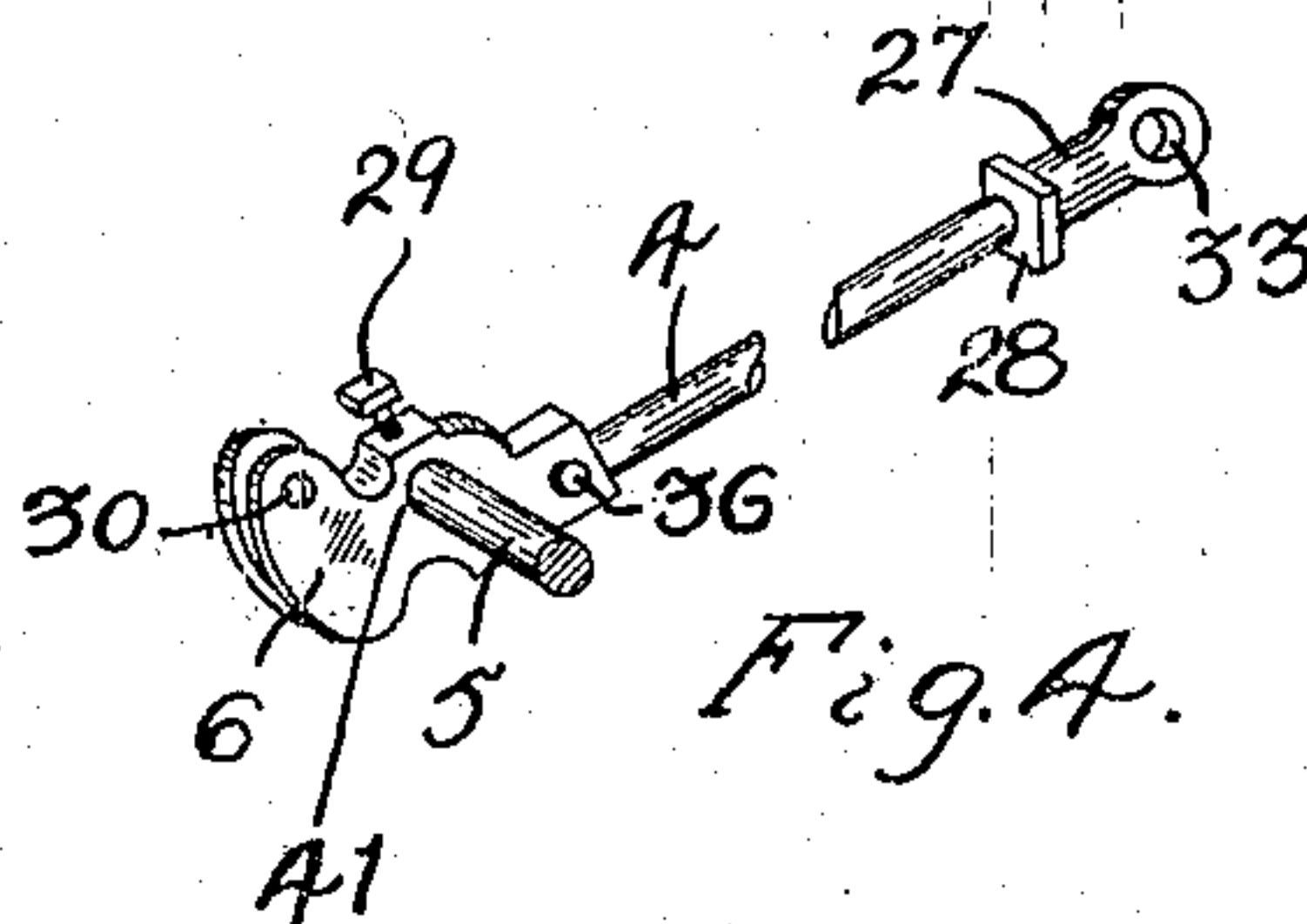
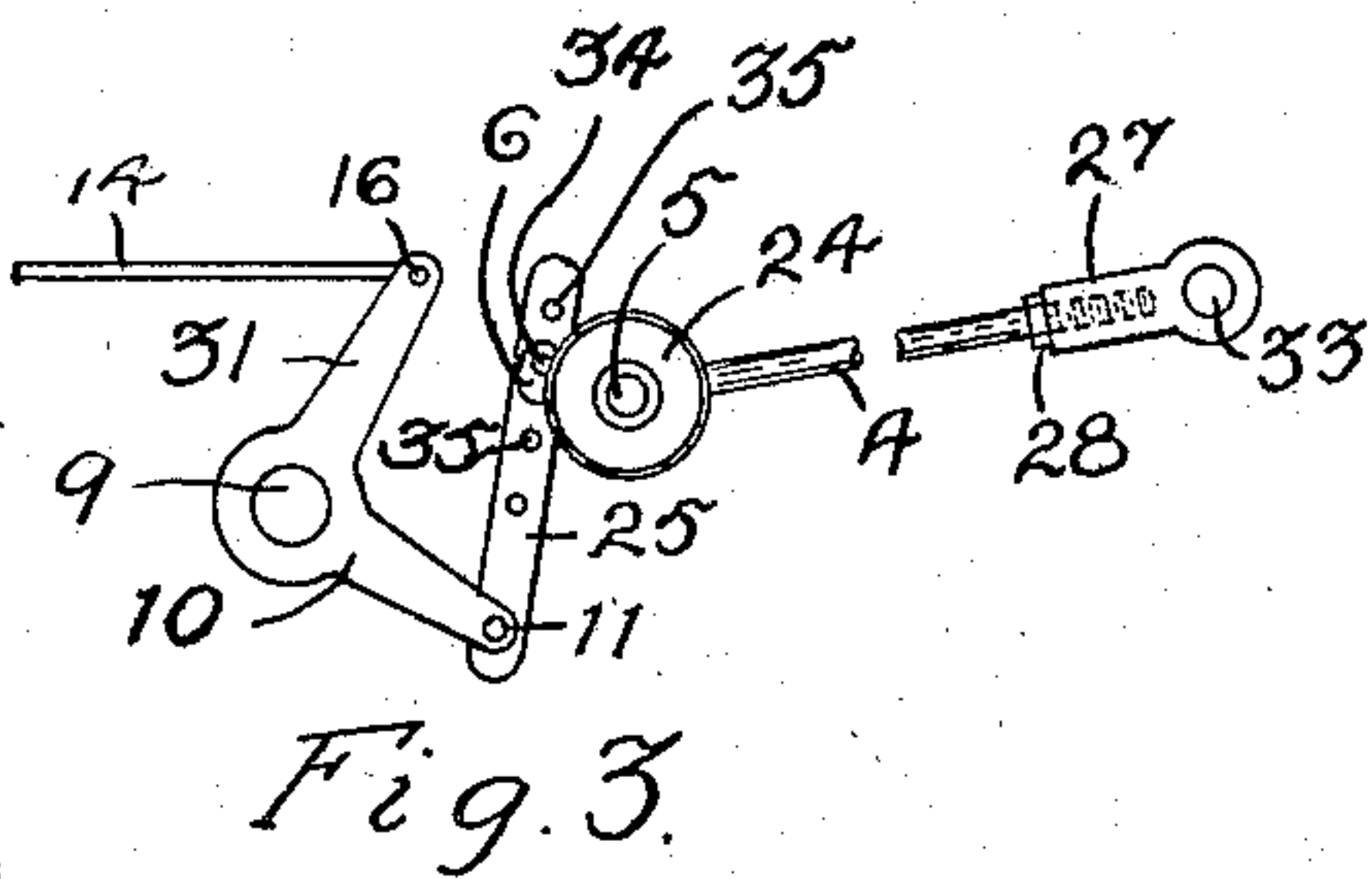
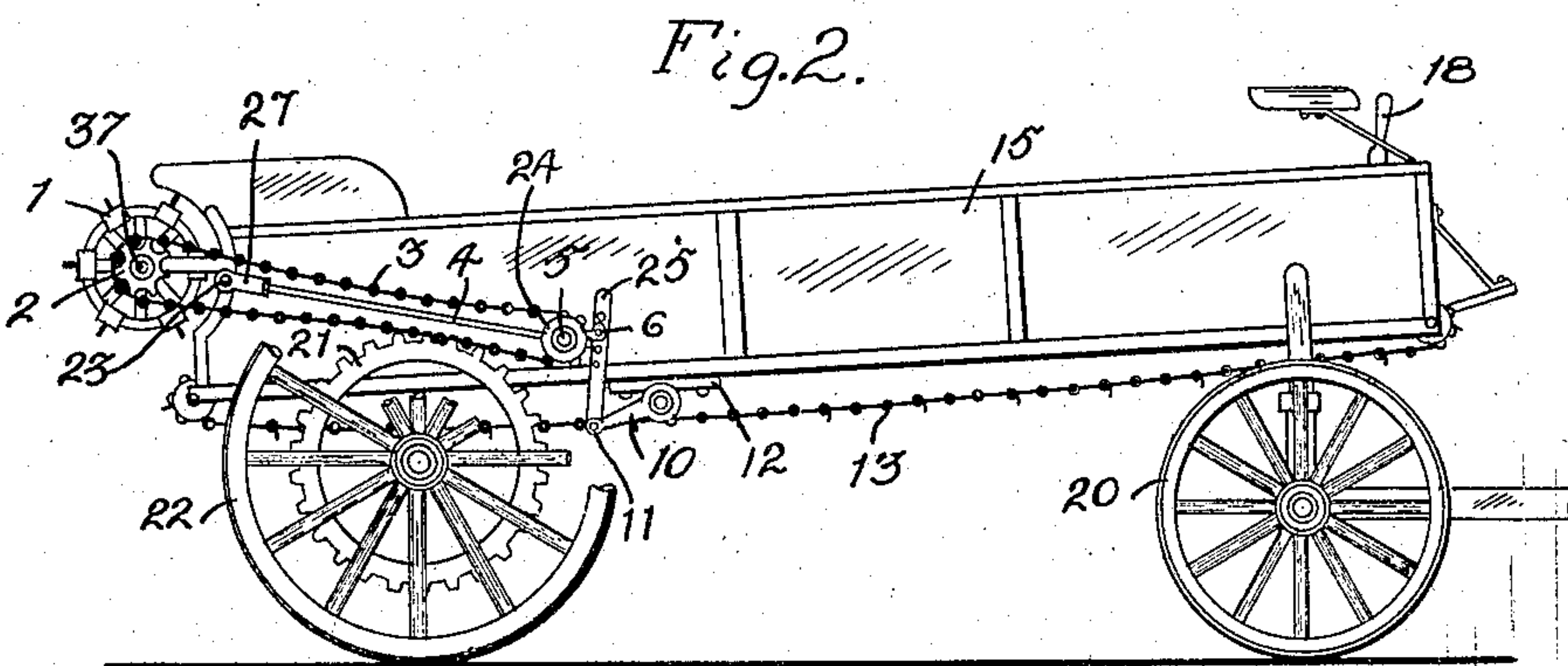
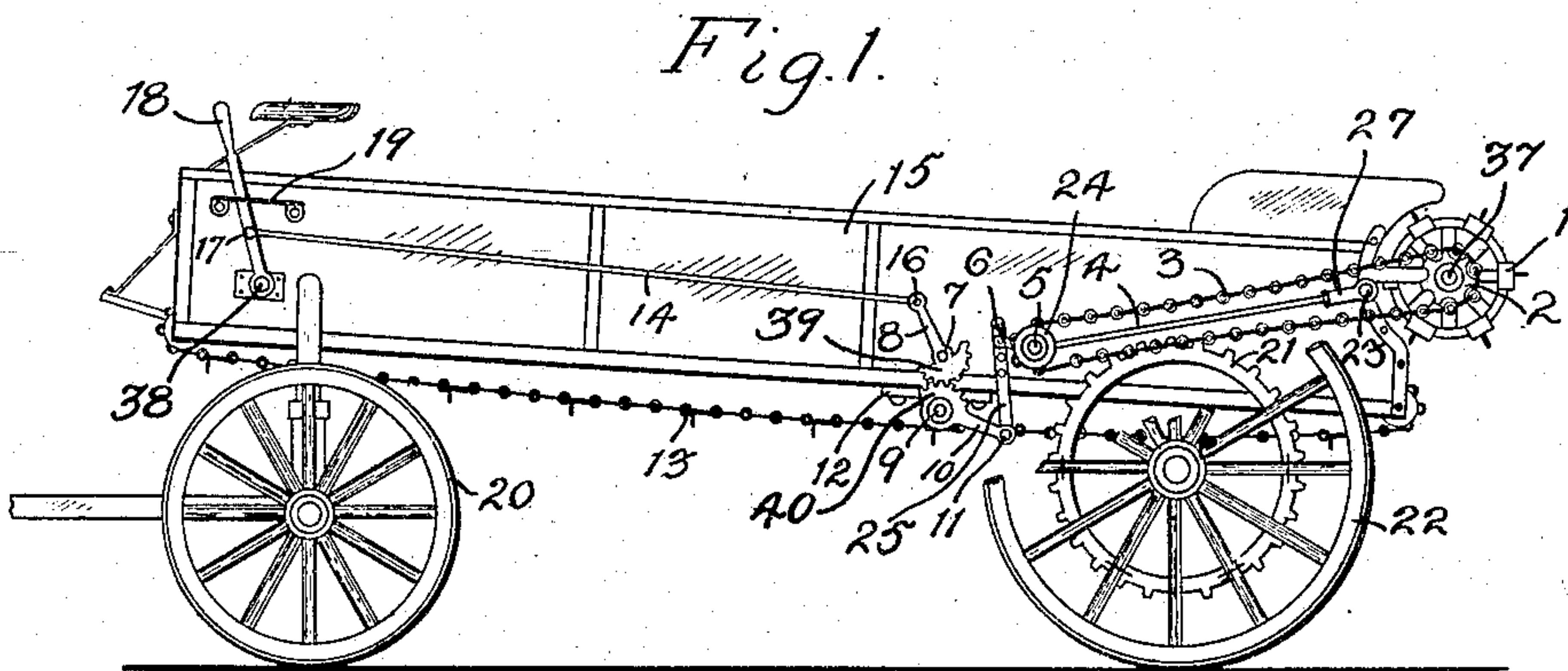
D. K. WILSON & C. C. BUTLER.

MANURE SPREADER.

APPLICATION FILED MAR. 31, 1908.

907,932.

Patented Dec. 29, 1908.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## MANURE-SPREADER.

No. 907,932.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed March 31, 1908. Serial No. 424,328.

To all whom it may concern:

Be it known that we, DALTON K. WILSON and CLINTON C. BUTLER, citizens of the United States of America, and residents of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Manure-Spreaders, of which the following is a specification.

Our invention relates to improvements in manure spreaders, and the object of our improvement is to furnish a convenient, simple and inexpensive adjustable device adapted to disengage the driving sprocket-chain from the driving sprocket-wheel to stop the rotation of the beater-drum. This object we have accomplished by the mechanism which is hereinafter fully described and claimed, and which is illustrated in the accompanying drawings, in which:

Figure 1 is a left-side elevation of our improved device as applied in the mechanism of a manure spreader. Fig. 2 is a right-hand side elevation of said device on a manure-spreader. Fig. 3 is an enlarged detail view of the left-side parts of the device, showing a variation of one of the parts from that shown in Fig. 1. Fig. 4 is an enlarged perspective of the swing-arm for supporting the forward end of the driving sprocket-chain.

Similar numbers refer to similar parts throughout the several views.

We have shown an ordinary form of manure-spreader box 15, which may be removably supported on the bolsters of the axles of the forward and rear-carrying wheels 20 and 22 respectively. Such spreader is furnished with a longitudinally-movable apron 13, and a beater-drum 1, the latter mounted on a rotatable transverse shaft 37 whose ends are mounted in and project laterally from bearings which are bracketed to the sides of the rear end of the spreader-box 15. To the inner faces of the spokes of each rear carrying-wheel 22 is secured a large driving sprocket-wheel 21, adapted to drive the sprocket-chain 3 on each side. The rear portion of each chain 3 encircles a driven sprocket-wheel 2 secured to a projecting end of the shaft 37 on each side.

The numeral 4 designates a lever on each

side of the machine, whose rear end is in each case exteriorly threaded to fit an interiorly threaded socket 27 with a lock-nut 28 thereon for purposes of longitudinal adjustment. Each socket 27 has an eye 33 at its rear end by which it is pivoted on a headed stud 23 on the rear end of each side of the box 15.

The numeral 6 designates a casting, adapted to be secured to the forward end of each lever 4 by a pin or bolt 36. The forward part of each of the castings 6 is bifurcated for a purpose to be presently described. Each casting 6 has a transverse cylindrical bearing-opening 41 adapted to act as a slideway for the short shaft 5, which can thus be adjusted laterally and secured in its adjusted position by a set-screw 29. On the outer portion of each short shaft 5 an idler 24 is rotatably but non-slidably mounted, and carries the forward end of the sprocket-chain 3 on the same side. The object of the lateral adjustments of the shafts 5 and idlers 24 is to keep the chains 3 in operative engagement with the driving sprocket-wheels 21, when the latter are secured to rear carrying-wheels 22 which have varying distances of mounting apart, or, in other words to render the driving-connections referred to adaptable to be changed together with the wagon-box from one set of running-gear to another of a different width of tread.

In Figs. 1 and 3 are shown two methods of elevating the sprocket-chain 3, the simplest being depicted in Fig. 3, but the device shown in Fig. 1 employing the same principle of operation, but having a variation designed to obviate a dead-center.

Referring first to Fig. 3, the forks of the casting 6 are shown as having registering perforations 30, adapted to receive in connection with one of the openings 35 in the embraced link 25 a pin or pivot-bolt 34. The link 25, there being one on each side of the box 15, has a plurality of openings 35, whereby when the wagon-box 15 is transferred from one set of running-gear to another having bolsters of a different height, the adjustment may be made to keep the relation of the idler 24 to the sprocket-wheel 21



constant. The lower end of each link 25 has a pivotal connection 11 with the rear end of an arm 10 which is secured to one end of the rock-shaft 9, the latter extending transversely under the box 15 with its ends mounted in hangers 12. When the shaft 9 is rocked in one direction, by means of the said connections the arms 4 with the idlers 24 and the chains 3 are elevated out of operative engagement with the driving sprocket-wheels 21. When the shaft 9 is rocked in the reverse direction, the chains 3 are lowered into driving contact with said sprocket-wheels.

15 A hand-lever 18 has its lower end pivoted on a stud 38 extending from the forward part of the left-hand side of the box 15, and works within a rack-bar 19 adapted to limit its forward and back movements. A connecting-rod 14 has its forward end pivotally connected on a stud 17 on the lever 18, while its rear end has a pivotal connection 16 with the end of an arm 31 secured to the left-hand end of the rock-shaft 9. By this means the shaft 9 may be rocked forward or back to raise or lower the chains 3.

In order to prevent any inconvenience arising from a possible dead-center, we have shown in Fig. 1 a modification designed to effect that purpose. For the arm 31 is substituted a lever 8 pivoted intermediately to the wagon-box on a stud 7. The lower end of said lever is formed into a toothed sector 39 whose teeth are adapted to engage and intermesh with a plurality of similar teeth 40 formed on the hub of the arm 10. The action of the lever 18 is thus of course reversed in its action on the chains 3, from what it is in the device shown in Fig. 3, but the result of the extra leverage thus introduced between the pivotal points 16 and 11 is to prevent a stoppage on a dead-center.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. In a manure spreader, in combination, a wagon-box removably mounted on carrying-wheels, a beater-drum secured to a rotatable shaft at one end of said box, a driven sprocket-wheel on each end of said shaft, a driving sprocket-wheel secured to each of two oppositely-located carrying-wheels, a swing-arm pivoted to each side of said wagon-box, an idler rotatably mounted on the free end of each swing-arm, a sprocket-chain on each side of said wagon-box about the idler and driven sprocket-wheel on that side, a link on each side having means for adjustably connecting it to the free end of the swing-arm adjacent thereto, and means for simultaneously shifting said links to cause said swing-arms to elevate or depress said sprocket-chains out of or into operative en-

gagement with their coacting driving sprocket wheels.

2. In a manure spreader, in combination, a wagon-box removably mounted on carrying-wheels, a beater-drum mounted on a rotatable shaft at one end of said box, a driven sprocket-wheel on each end of said shaft, a driving sprocket-wheel secured to each of two oppositely-located carrying-wheels, a swing-arm pivoted to each side of said wagon-box, a horizontally-adjustable idler rotatably mounted at the free end of each swing-arm, a sprocket-chain on each side of said wagon-box about the idler and driven sprocket-wheel on that side, a link on each side having means for adjustably connecting it to the free end of the swing-arm adjacent thereto, and means for simultaneously shifting said links to cause said swing-arms to elevate or depress said sprocket-chains out of or into operative engagement with their coacting driving sprocket-wheels.

3. In a manure spreader, in combination, a wagon-box removably mounted on carrying-wheels, a beater-drum mounted on a rotatable shaft at one end of said box, a driven sprocket-wheel on each end of said shaft, a driving sprocket-wheel secured to each of two oppositely located carrying-wheels, a longitudinally-adjustable swing-arm pivoted to each side of said wagon-box, a horizontally-adjustable idler rotatably mounted at the free end of each swing-arm, a sprocket-chain at each side of said wagon-box about the idler and driven sprocket-wheel on that side, a link on each side having means for adjustably connecting it to the free end of the swing-arm adjacent thereto, a transverse rock-shaft supported under said wagon-box, an arm extending from each end of said rock-shaft at an angle thereto the free end of each of such arms being pivotally connected to one of said adjustable links, and means for rocking said shaft in either direction as desired to cause the intermediate connections to elevate or depress said sprocket-chains out of or into operative engagement with their coacting driving sprocket-wheels.

4. In a manure spreader, in combination, a wagon-box removably mounted on carrying-wheels, a beater-drum mounted on a rotatable shaft at one end of said box, a driven sprocket-wheel secured to each of two oppositely-located carrying-wheels, a swing-arm pivoted to each side of said wagon-box, a horizontally-adjustable idler rotatably mounted at the free end of each swing-arm, a sprocket-chain at each side of said wagon-box about the idler and driven sprocket-wheel on that side, a link on each side having means for adjustably connecting it to the free end of the swing-arm adjacent thereto, a transverse rock-shaft supported under said

wagon-box, an arm extending from each end of said rock-shaft at an angle thereto, the free end of each of such arms being pivotally connected to one of said adjustable links, a  
5 hand-lever pivoted to said wagon-box, a lever secured to said rock-shaft, and a connecting-rod between the two last-mentioned levers.

Signed at Waterloo, Iowa, this 12th day of March, 1908.

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Witnesses:

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