

D. F. KUSTER & G. J. NIEMANN.

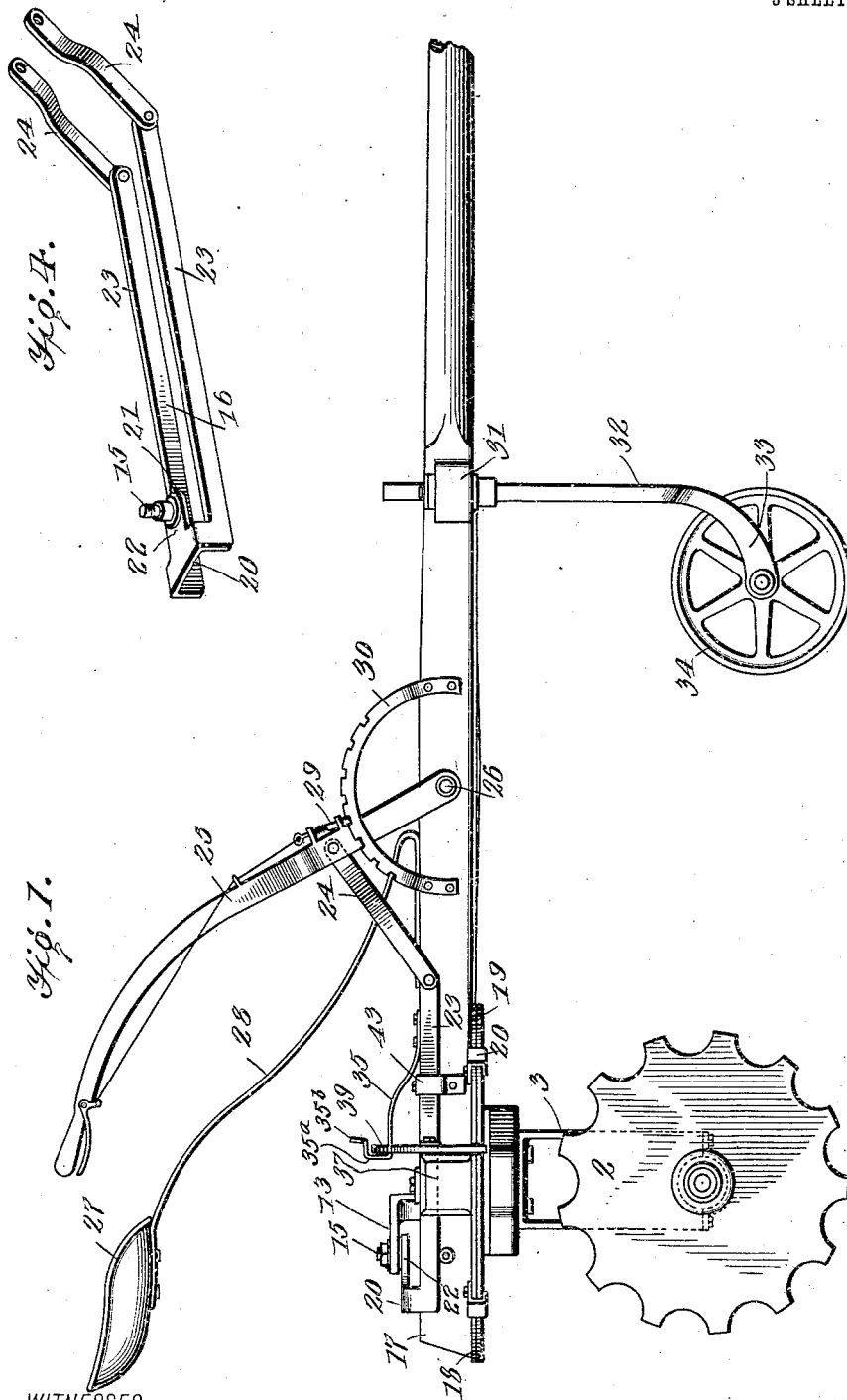
PLOWING MACHINE.

APPLICATION FILED JULY 20, 1908.

939,716.

Patented Nov. 9, 1909.

3 SHEETS—SHEET 1.



WITNESSES.

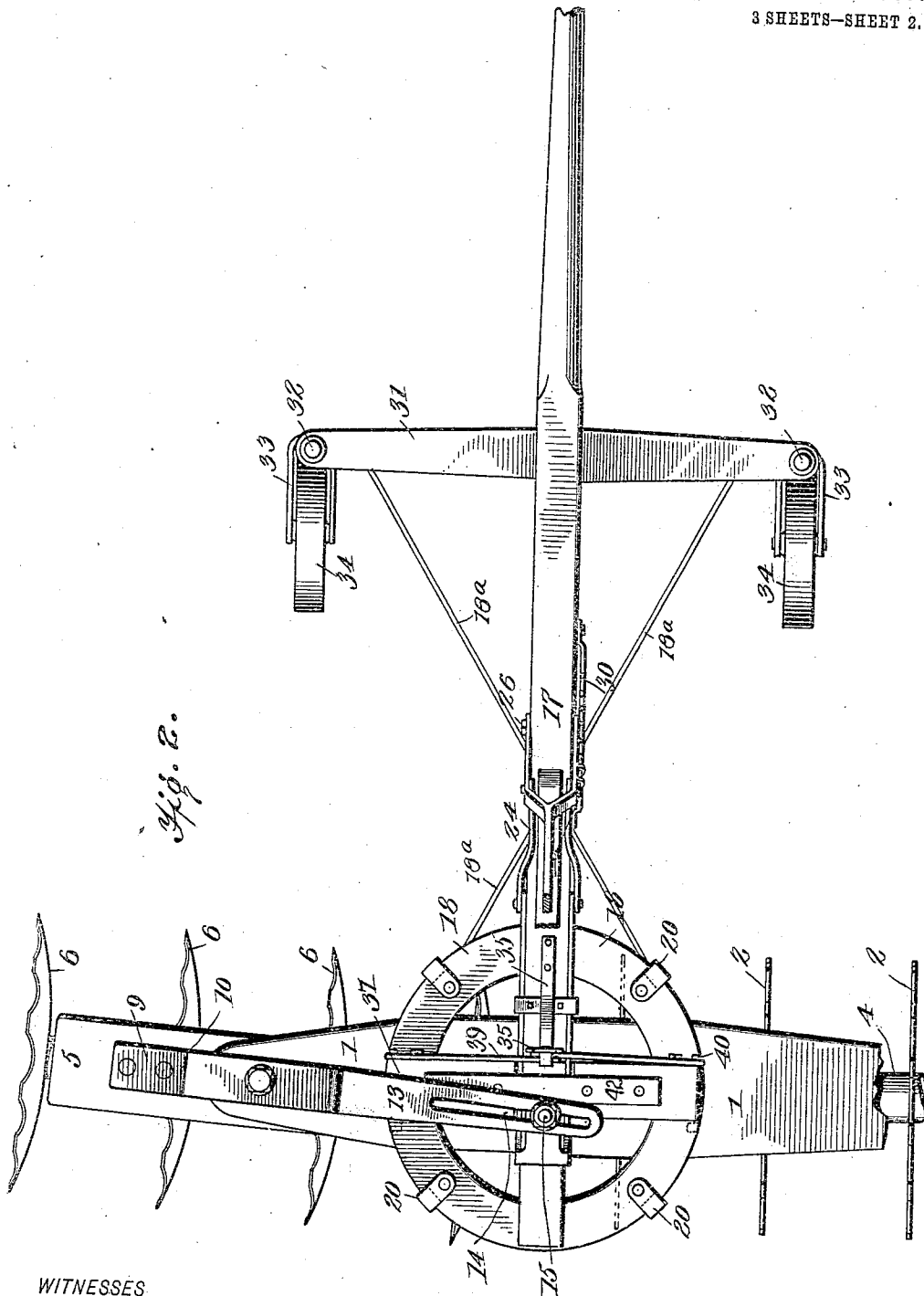
L. H. Schmidt.
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ATTORNEYS.

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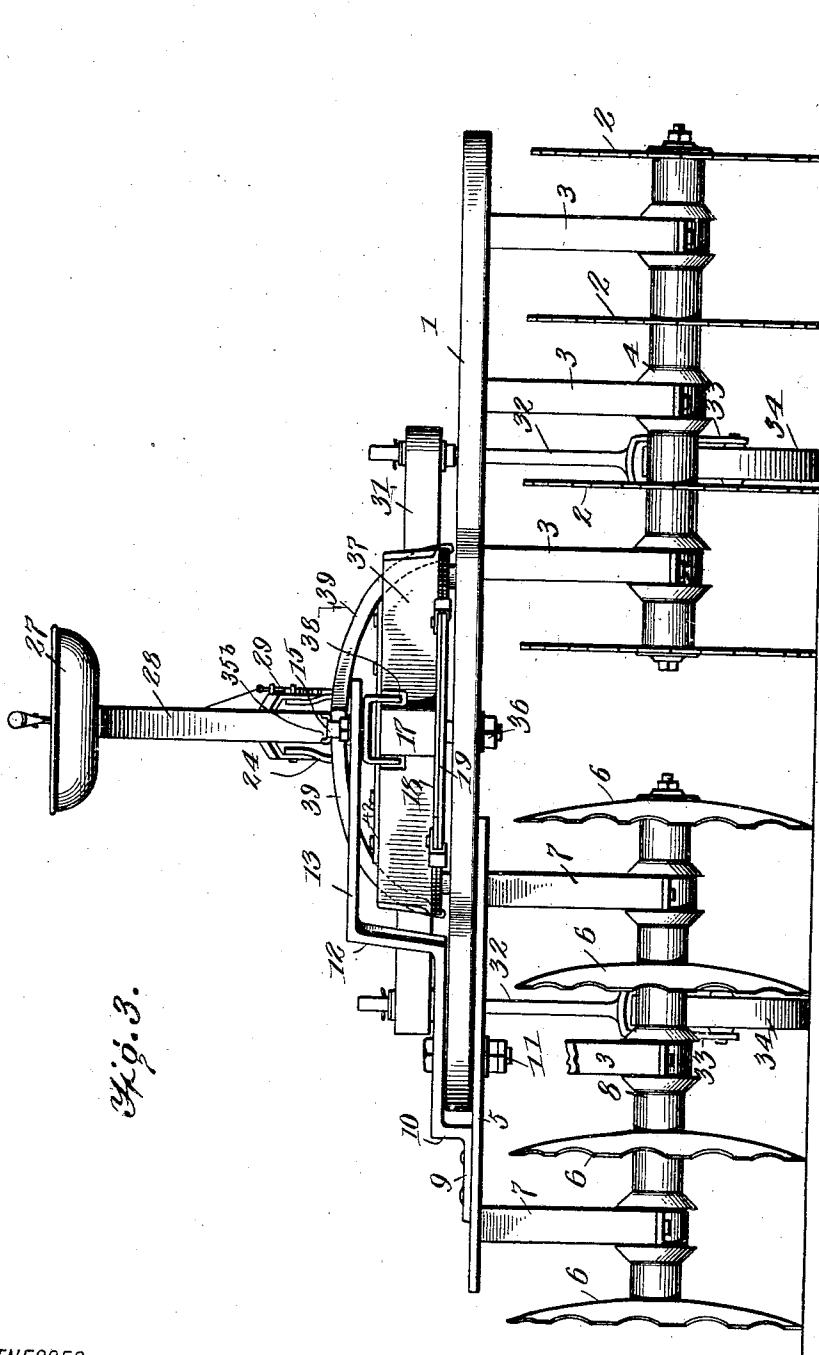


Fig. 3.

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UNITED STATES PATENT OFFICE.

DANIEL F. KUSTER AND GUSTAV J. NIEMANN, OF WASHTUCNA, WASHINGTON.

PLOWING-MACHINE.

939,716.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed July 20, 1908. Serial No. 444,320.

To all whom it may concern:

Be it known that we, DANIEL F. KUSTER and GUSTAV J. NIEMANN, citizens of the United States, residing at Washtucna, in the county of Adams and State of Washington, have invented an Improvement in Plowing-Machines, of which the following is a specification.

Our invention relates to improvements in machines for plowing in which a gang of concavo-convex disks and plane disks are disposed on opposite sides of the central draft line, and has for its object to produce a device which may be used for disking and throwing the dirt either to the right or left, thus making it possible to go along the side hill, and when the end of the strip is reached the machine may be reversed and retraced along the same side throwing the dirt down hill.

With these and other objects in view our invention consists in certain novel features of construction, arrangement and combination of parts as will be hereinafter fully described and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of our improved plowing machine. Fig. 2 is a top plan view of same. Fig. 3 is a rear elevation of the machine. Fig. 4 is a perspective view of the slide for adjusting the angularity of the concavo-convex disk-carrying frame.

In carrying out our invention we use a cross-frame 1 from which are suspended the plane disks 2 by hangers 3, the disks being separated by spools 4; these plane disks being disposed at one side of the central line of draft (in Fig. 2 they are shown at the right). Near the left end of the cross-frame 1 is pivoted a bar 5, said bar lying beneath the frame 1 and having suspended from it the concavo-convex disks 6 by the hangers 7 suitable spools 8 separating and spacing said disks. To the upper face of bar 5 is bolted a metal bar 9 which is offset at 10 to clear the end of frame 1 and is pivotally secured to the frame 1 by the same pivot 11 which secures the bar 5 to the lower face of frame 1. The bar 9 is then bent upwardly as at 12 and then horizontally as at 13 and has an elongated slot 14 near its end through which passes a threaded stud 15 projecting from an angular slide 16, said slide being shaped to embrace the rear end

of beam 17 which is secured to the upper circle member 18 of a turntable or fifth-wheel, the lower circle member 19 being held to the upper by the bent clips 20 which are secured to the upper circle member 18. The lower circle member 19 is rigidly secured to the cross beam 1.

The slide 16 for adjusting the angle at which the concavo-convex disks are set is made at its rear end in the form of a channel-iron 21 which embraces the beam 17 and has a projecting ledge 22 on which the threaded stud 15 is mounted; the main portion of the slide is open at the top as shown in Fig. 4, the side members 23 extending forwardly alongside the beam, and being pivotally connected at the forward ends to the bent strap bars 24, whose forward ends are pivotally secured to the adjusting lever 25 which is bifurcated at its lower end and pivotally secured to the beam at 26; the lever 25 is curved rearwardly so that the handle is in convenient reach of the operator on seat 27 mounted on a spring support 28 secured to the beam 17.

The lever 25 is provided with the usual spring actuated bolt 29 which engages a notched quadrant 30 secured to the beam 17; it will thus be seen that the slide 16 has a double pivotal connection with the hand lever 25 so that its main portion will slide perfectly horizontal on the beam; as before stated the rear end of the slide is pivotally connected to the end of the bar 13 which is secured to the bar 5 carrying the concavo-convex disks 6, and by means of this pivotal connection working in the elongated slot 14 the angle at which said concavo-convex disks may be set can be regulated through the hand lever 25.

The beam 17 is pivotally secured near its rear end to the frame 1 by a king bolt 36 and side braces 37 extending from the said beam are rigidly secured at their outer ends to the upper circle iron 18; these side braces are usually formed in a single piece being mortised into the under face of beam 17 and having spaces 38 cut out on each side of the beam to permit the side bars 23 of the slide 16 to move freely. Pivottally secured to the side braces 37 are the curved pawls 39, the upper ends of which extend past each other and rest on the spring foot piece 35 which holds normally the said upper ends up and the lower outer ends into notches 40 in the upper and lower circle

irons of the turntable, the notches in each circle iron registering when the device is in locked position. 42 represents a retaining band which is secured to the upper face of the side braces 37 and prevents the slide 16 from moving vertically.

At a suitable distance in advance of the notched quadrant 30 a cross beam 31 is rigidly secured in the outer ends of which are mounted the standards 32 which are bifurcated and bent rearwardly at their lower ends 33, and carry the sustaining wheels or casters 34. In front of the cross beam 31 the beam continues as a tongue or pole to which the team is hitched, the wheels 34 supporting the tongue.

Machines of this character are usually what are termed "right-lap machines", which disk and throw the dirt slightly to the right at the same time; with this type of machine the difficulty lies in the fact that the dirt is always thrown to the right and hence when used on a side hill, where one cannot go around the hill, it can be used only in going in one direction, or else the dirt has to be thrown up hill half the way, which makes heavy pulling and produces unsatisfactory results.

With our machine it is possible to go along the side hill and when the end is reached, the driver by pressing his foot on the spring foot piece 35, the pawls 39 are lifted out of notches 40, releasing the turntable or fifth-wheel and the horses are swung in a half circle to the right which by virtue of the attachment of the concavo-convex disk section throws the disks the opposite way to which they were set; the foot piece 35 then being left free locks the turntable in this position and the machine can then be retraced alongside the last strip of ground, still throwing the dirt down hill. It will thus be seen that the draft on the team is reduced to a minimum and side pull prevented, and that the machine is a reversible lap machine.

The brace irons 18^a are secured at one end to the circle iron 18 and crossing each other under pole 17 are secured at their forward ends to the cross beam 31 as shown in Fig. 2.

The spring foot piece 35 which by upward pressure throws the pawls 39 into locking position is provided with the bent extension 35^a which projects forwardly over the pawls 39 and is bifurcated as at 35^b so that the foot of the operator may not slip to either side.

The hangers 3 will be placed between every two disks.

We claim—

1. In a plowing machine, the combination with a cross frame, a turn table carried by said frame, a beam mounted on said turn table, a plane disk section suspended from said frame at one side of its center, a dished disk section pivotally suspended from the frame at the other side of the center, and pivotal connections between the said dished disk section and the beam.

2. In a plowing machine, the combination with a cross frame carrying at one side of its center a plane disk section and at the other side a dished disk section, said dished disk section pivotally suspended from the cross frame, a beam pivotally mounted on said cross frame, an arm extending from said pivoted section over the beam, a slide mounted on said beam, a sliding connection between the arm of the pivoted disk section and the slide, and means for moving said slide to control the angle of the dished disks.

3. In a plowing machine, the combination with a cross frame carrying at one side of its center a rigid section of plane disks, and at the other side of its center, a section of dished disks and pivotally suspended therefrom, a turn table mounted on said frame consisting of upper and lower circle irons, a beam mounted on the upper circle iron, pawls carried by said beam to lock the upper and lower circle irons, means for throwing said pawls into locking engagement with said circle irons, and means for unlocking the same, and pivotal connections between the dished disk section and the beam.

4. In a plowing machine the combination with a cross-frame carrying at one side of its center a rigid plane disk section and at the other side of the center a dished disk section pivotally secured to said frame, a slotted arm projecting from said section, a beam mounted on said cross frame, a slide mounted on the beam, a pin or stud projecting from said slide and slidably engaging the slotted arm, a hand lever pivoted to the beam, and connecting bars pivotally connected to said lever and to the forward end of the slide.

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Witnesses:

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