(No Model.) 2 Sheets—Sheet 1.

W. A. KNOWLTON.

MOWING MACHINE.

No. 395,981. Patented Jan. 8, 1889.

Fig. 1.

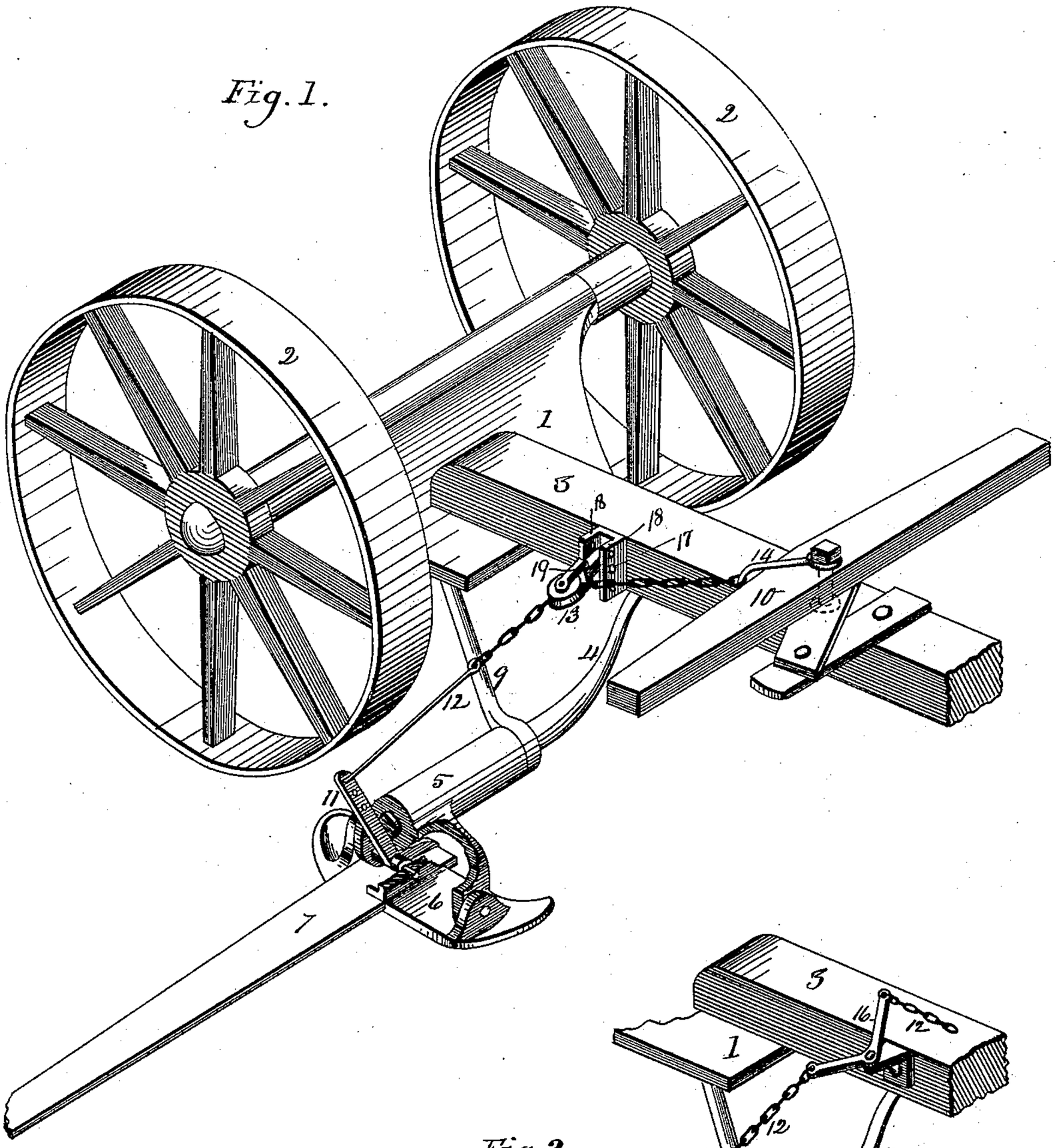
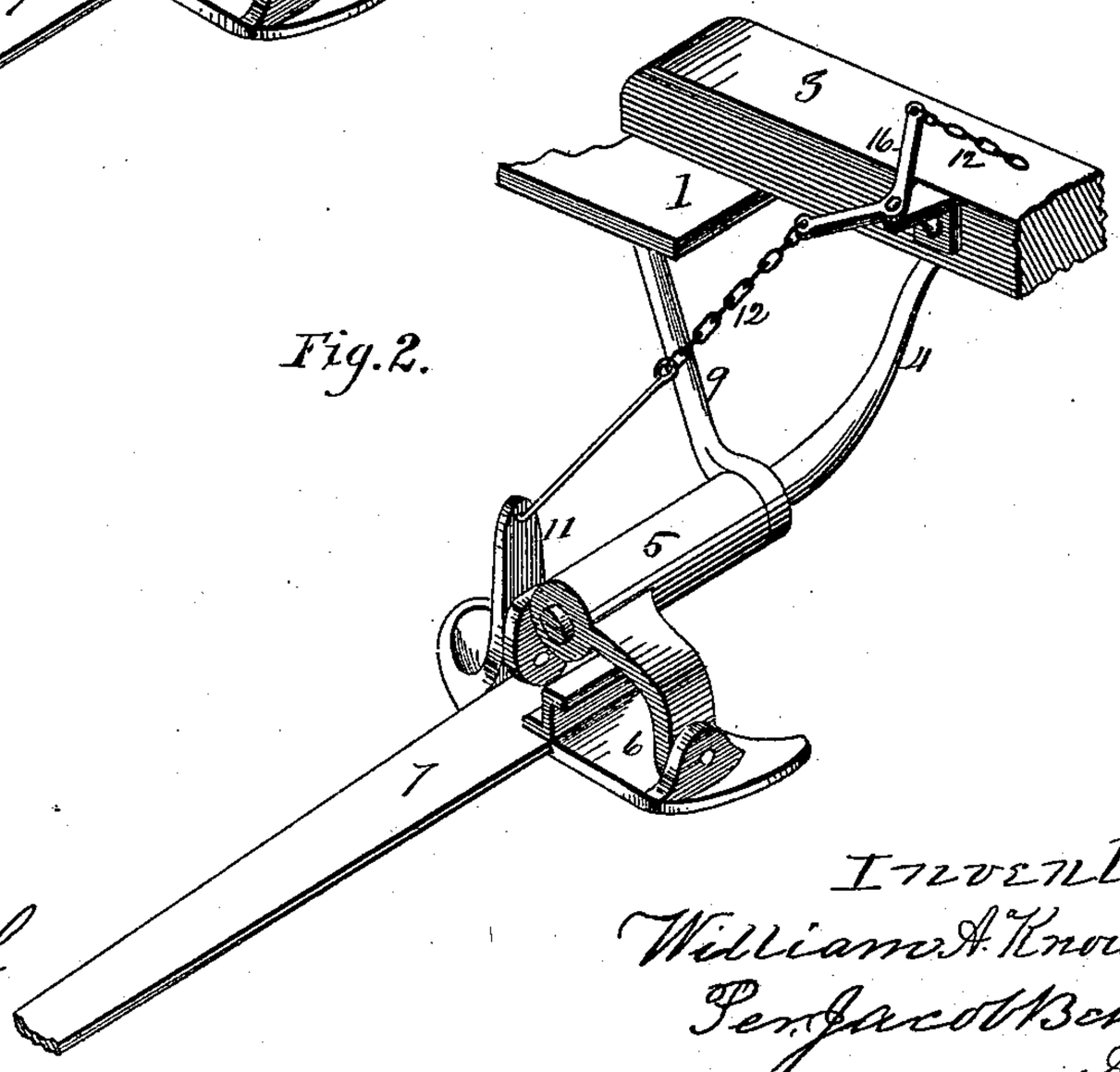


Fig. 2.



Witnesses.
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A. O. Behel

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(No Model.) 2 Sheets—Sheet 2.

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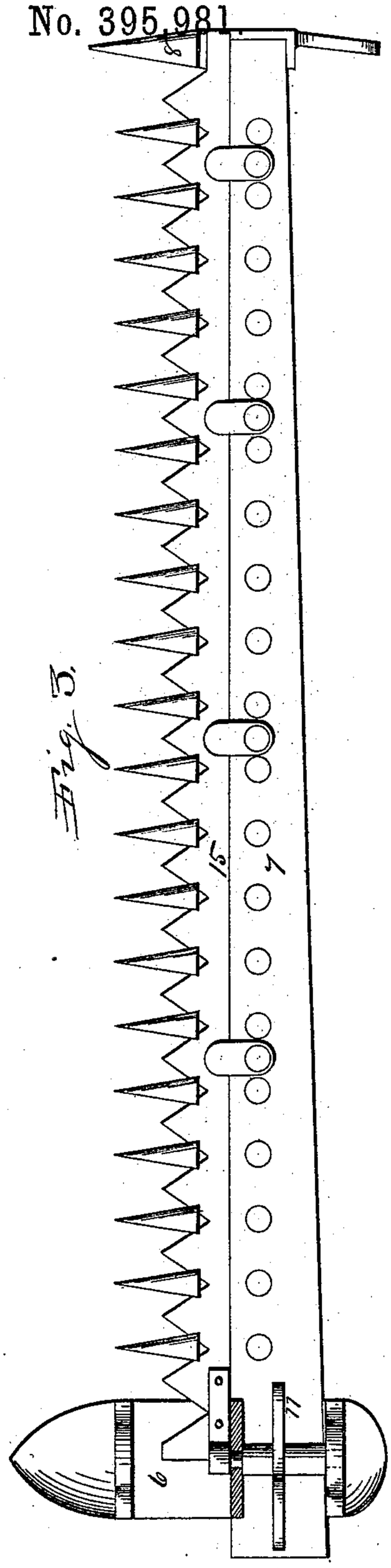

Fig. 5.

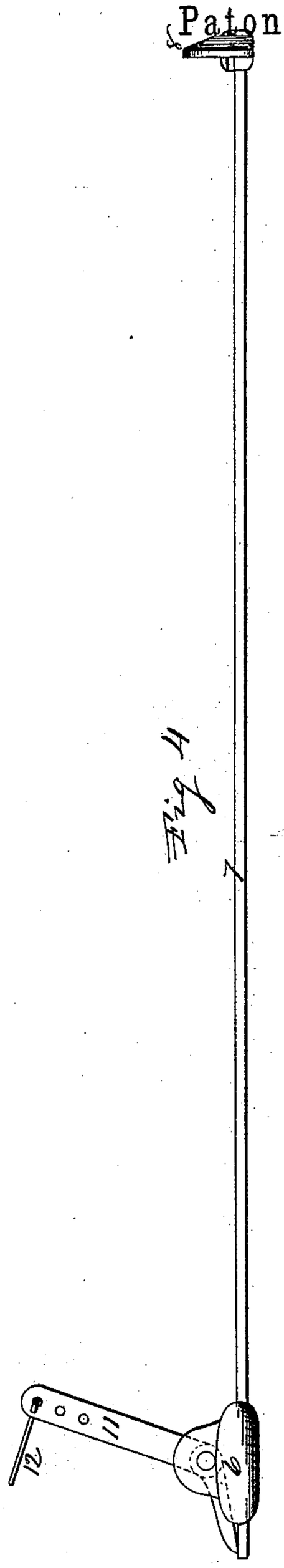

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM A. KNOWLTON, OF ROCKFORD, ILLINOIS, ASSIGNOR TO DEXTER A. KNOWLTON.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 395,981, dated January 8, 1889.

Application filed February 23, 1886. Serial No. 192,808. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. KNOWLTON, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented new and useful Improvements in Mowing-Machines, of which the following is a specification.

This invention relates to a class of machines known as the "two-wheeled mower." Its object is to reduce the ground friction of the cutting apparatus and lessen the direct and side drafts of the machine.

The expression "cutting apparatus" is employed throughout the specification and claims as including the coupling-bar, the finger-bar, the shoe, and the parts immediately connected therewith when taken as a whole. When a particular part is referred to, a more specific term will be employed to denote it.

It consists in mechanism connecting the folding or finger-bar portion of the cutting apparatus with the draft mechanism, by which under the draft-strain of the team a portion of the weight of the cutting apparatus will be transferred to the wheeled carrying-frame. To accomplish these objects I have designed and constructed the apparatus represented in the accompanying drawings, and in connection therewith, will be hereinafter more fully described.

Figure 1 of the drawings is an isometrical perspective of portions of a mowing-machine embodying my invention. Fig. 2 is a form of my improvement in isometrical perspective, slightly modified. Fig. 3 is a plan view of finger-bar portion of cutting apparatus. Fig. 4 is a rear edge view of the cutting apparatus as constructed.

The several parts in the figures, consisting of a supporting-frame, 1, mounted on carrying-wheels 2, and tongue 3, fixed to the frame, a coupling-bar, 4, hinge-jointed at one end to the frame, a yoke-sleeve, 5, swivel-jointed on the free end of the coupling-bar, a shoe, 6, hinge-jointed to the yoke-arms, a finger-bar, 7, fixed to the shoe, a divider, 8, on the free end of the finger-bar, a thrust-bar, 9, having a hinged connection with the coupling-bar and with the supporting-frame, the whiffletree 10 and its connection with the tongue, and the gag-lever 11 of the cutting apparatus, rising from the shoe thereof, as shown in Fig. 2, or pivoted upon the yoke-pivot, as shown in Fig. 1, are parts common to like machines, and may be any of the known varieties capable of use in connection with my improvements.

A draft-chain, 12, is connected at one end to the vertical arm 11, rising from the shoe end of the finger-bar portion of the cutting apparatus, and from its connection therewith is passed round a sheave, 13, connected with the tongue or supporting-frame, and thence to the whiffletree 10, and is connected therewith by means of a clevis, 14. The draft-chain 12 in its connection with the arm 11, rising from the shoe end of the finger-bar portion of the cutting apparatus, is made vertically adjustable to increase or lessen the leverage, and consequently the lifting power, of the draft-chain on the finger-bar portion of the cutting apparatus under the draft-strain.

The sheave 13 is pivotally connected with the tongue, and in its connection therewith is made vertically adjustable, to vary the inclination of the draft-chain between its connection with the uprising arm 11 and its passage round the sheave 13.

A bracket, 17, is secured on the side of the tongue and has parallel side portions, 18, which each have a vertical series of perforations in line with each other. A yoke, 19, has forked portions, which carry a vertical pin, upon which is mounted the pulley 13, and the inner end of the arm is horizontally perforated for the passage of a pin, the ends of which have a bearing in two of the perforations in the bracket. The arm can swing vertically on its pin to vary the vertical position of the pulley. The vertical adjustment of the sheave and of the chain in its connection with the arm rising from the shoe end of the finger-bar portion of the cutting apparatus furnish the means under the draft-strain to properly balance the ends of the finger-bar portion of the cutting apparatus relatively with each other, and reduce its frictional contact with the ground to its lowest practical point, and transfer the weight of the cutting apparatus sustained by the draft of the team to the carrying-frame to increase the cutting power of the machine, lessen its direct draft, and also its side draft.

In the foregoing I have employed a sheave to deflect the draft-chain to the required angle between its connection with the cutting apparatus and the whiffletree; but instead of the sheave a bell-crank lever, 16, (shown in Fig. 2,) or other equivalent device, may be employed, the object being to carry the draft-chain from its connection with the cutting apparatus in the lengthwise direction of the cutter-bar or laterally to the lengthwise direction of the machine to meet the line of draft centrally, and then change its direction lengthwise of the machine to connect with the whiffletree. In this modification I have dispensed with the vertical adjustment of the draft-chain, as it is evident that in the construction and manufacture of any particular machine the positions may be so arranged as to produce a practical machine without further adjustment.

I claim as my invention—

1. In a mower, the combination, with a rising-and-falling cutting apparatus connected at one end to the main frame, and a whiffletree having a movement relatively to the machine in the direction of the line of draft, of a flexible connection of the whiffletree with the folding or finger-bar portion of the cutting apparatus, substantially as set forth.

2. In a mower, the combination, with a rising-and-falling cutting apparatus connected at one end to the main frame, and a whiffletree having a movement relatively to the machine in the direction of the line of draft, of a flexible connection of the whiffletree with the folding or finger-bar portion of the cutting apparatus, and a bearing for the flexible connection intermediate of its end connections, the said bearing being located at one side of the direct line between the linked connection with the whiffletree and the folding or finger-bar portion of the cutting apparatus, substantially as set forth.

3. In a mower, the combination, with a rising-and-falling cutting apparatus connected at one end to the main frame, and a whiffletree having a movement relatively to the machine in the direction of the line of draft, of a flexible connection of the whiffletree with the folding or finger-bar portion of the cutting apparatus, and a bearing for the linked connection located at one side of the direct line between its connections with the whiffletree and the folding or finger-bar portion of the cutting apparatus, the said bearing having a vertical adjustment, substantially as set forth.

4. In a mower, the combination, with a rising-and-falling cutting apparatus connected at one end to the main frame, and a whiffletree having a movement relatively to the machine in the direction of the line of draft, of a flexible connection of the whiffletree with the folding or finger-bar portion of the cutting apparatus, said flexible connection of the whiffletree being connected with this portion of the cutting apparatus in vertical adjustment, substantially as set forth.

5. In a mower, the combination, with a rising-and-falling cutting apparatus connected at one end to the main frame, and a whiffletree having a movement relatively to the machine in the direction of the line of draft, and a bearing for the linked connection secured to the machine in vertical adjustment, of the flexible connection of the whiffletree and folding or finger-bar portion of the cutting apparatus, the said flexible connection engaged in said bearing and having a vertical adjustment at the end connected with the folding or finger-bar portion of the cutting apparatus, substantially as set forth.

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Witnesses:

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