

No. 767,359.

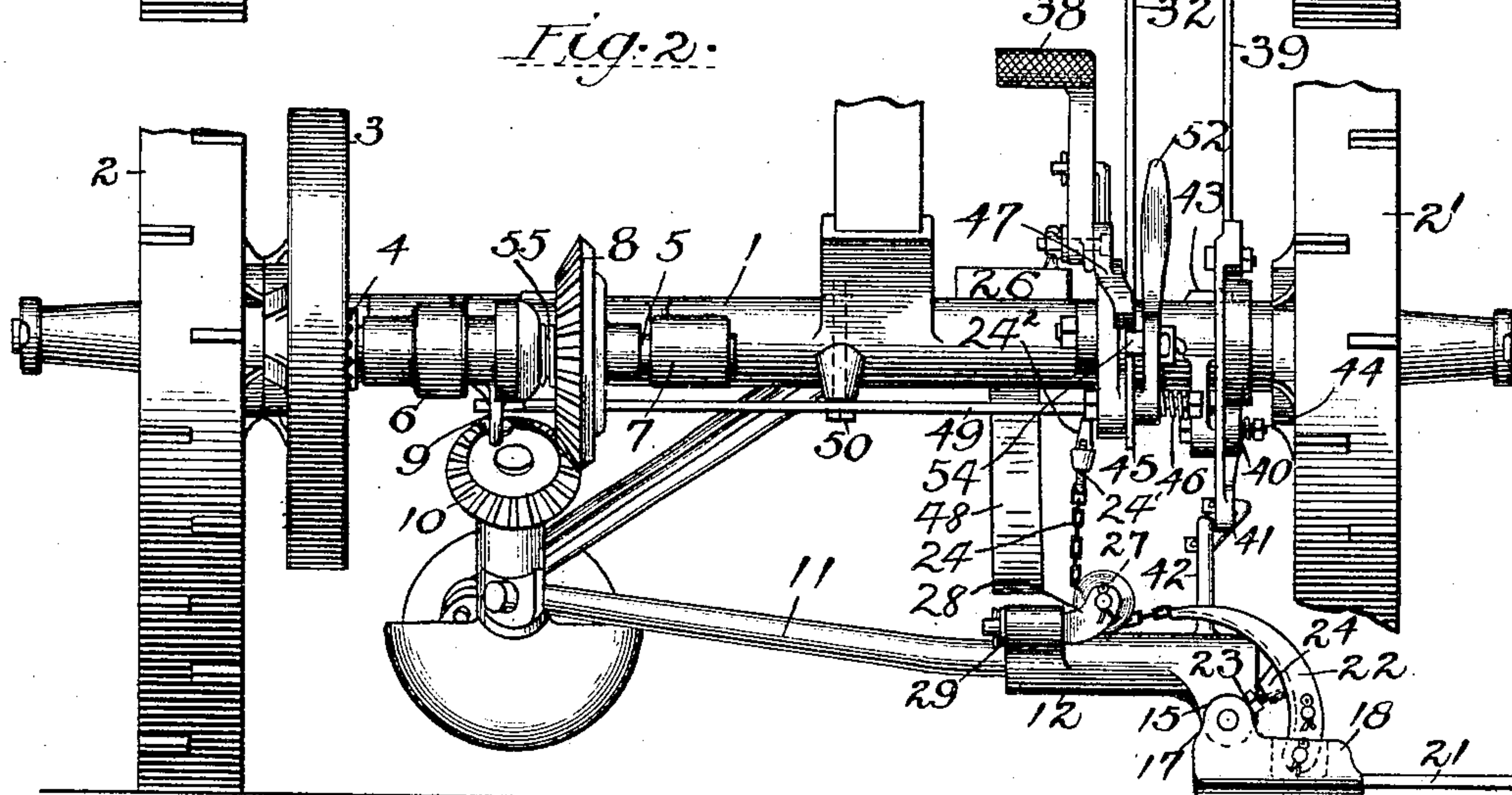
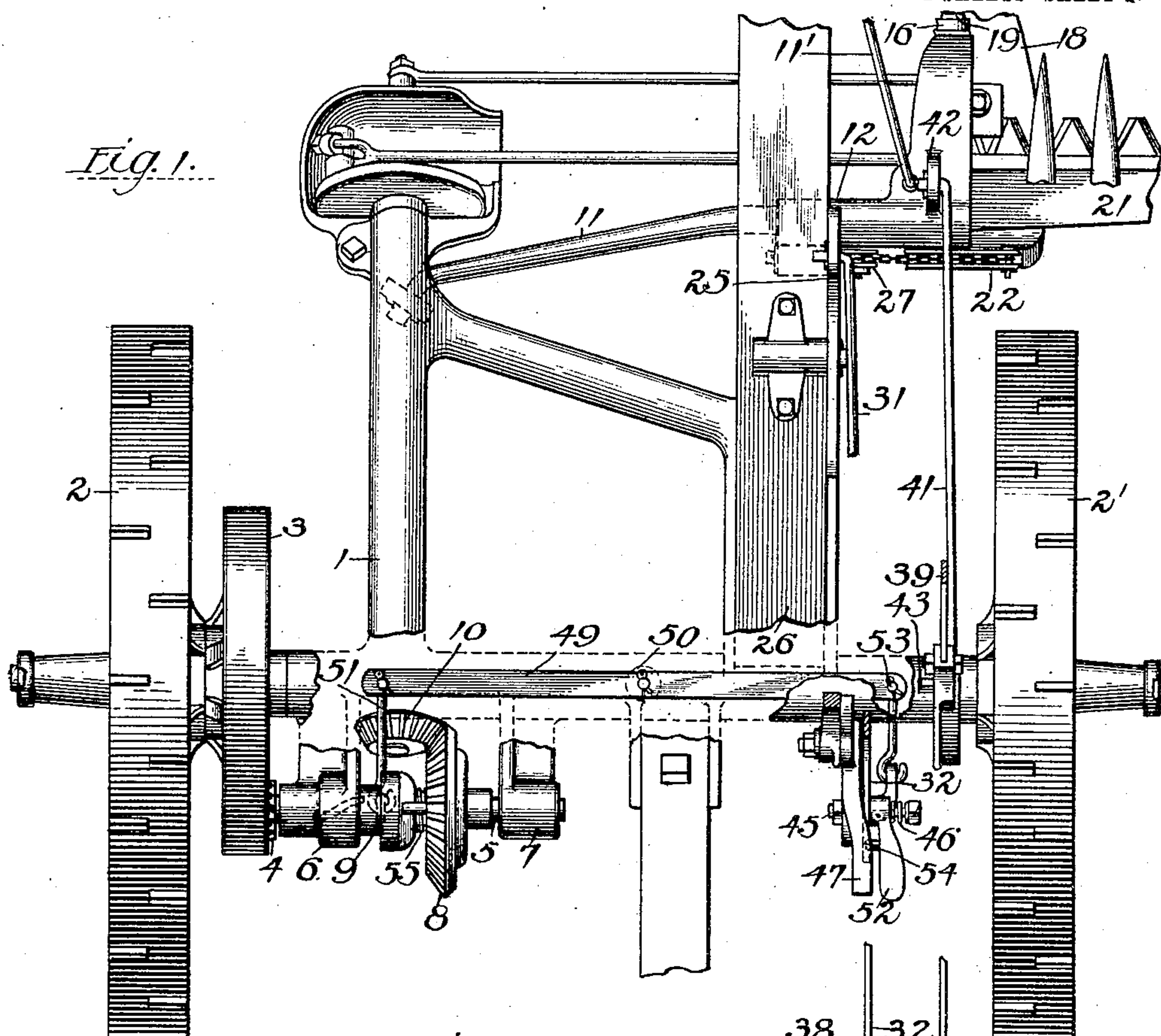
PATENTED AUG. 9, 1904.

H. B. SPERRY.  
MOWER.

APPLICATION FILED FEB. 15, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



*Witnesses:*

*Eduw. Barrett*

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*By*

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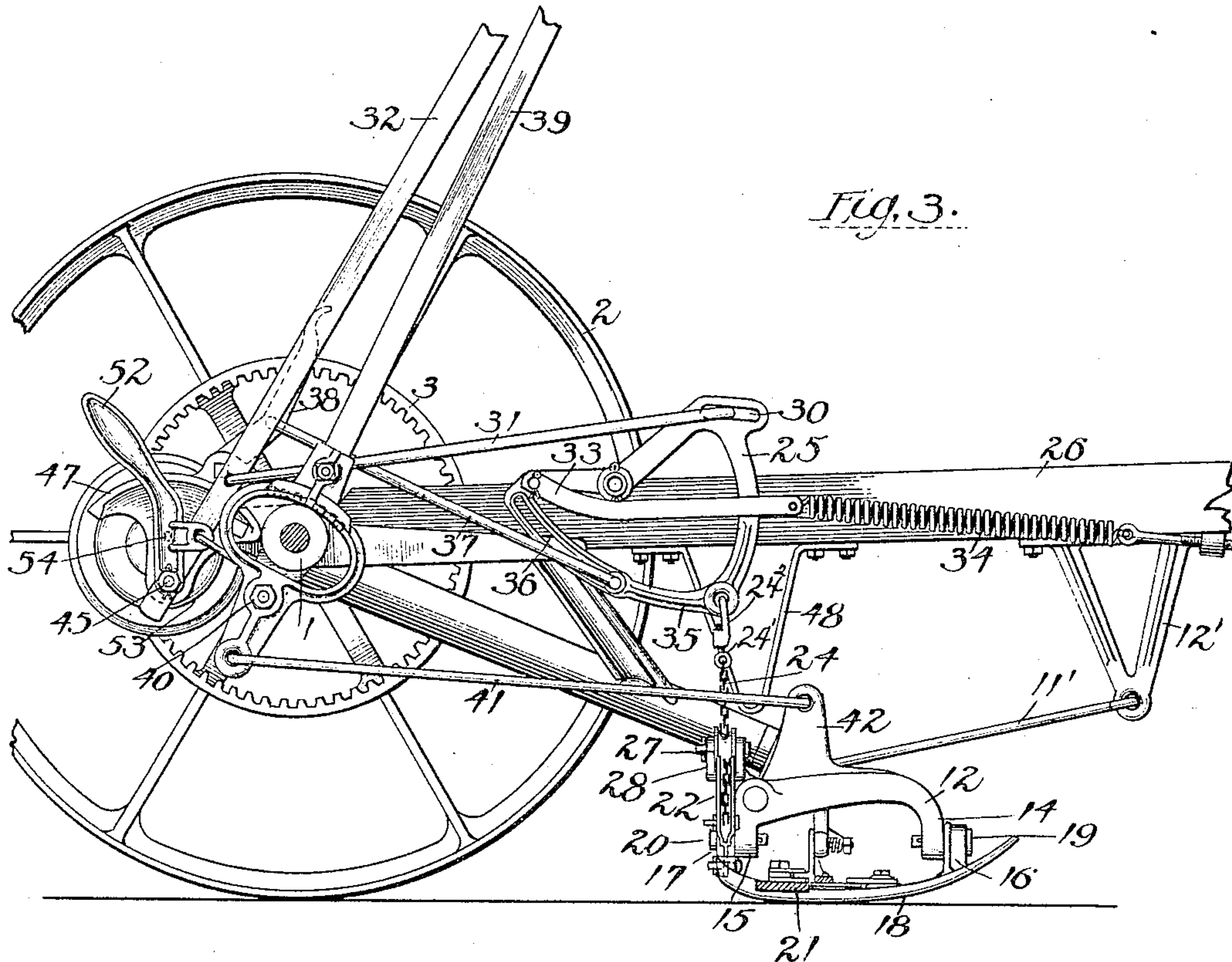
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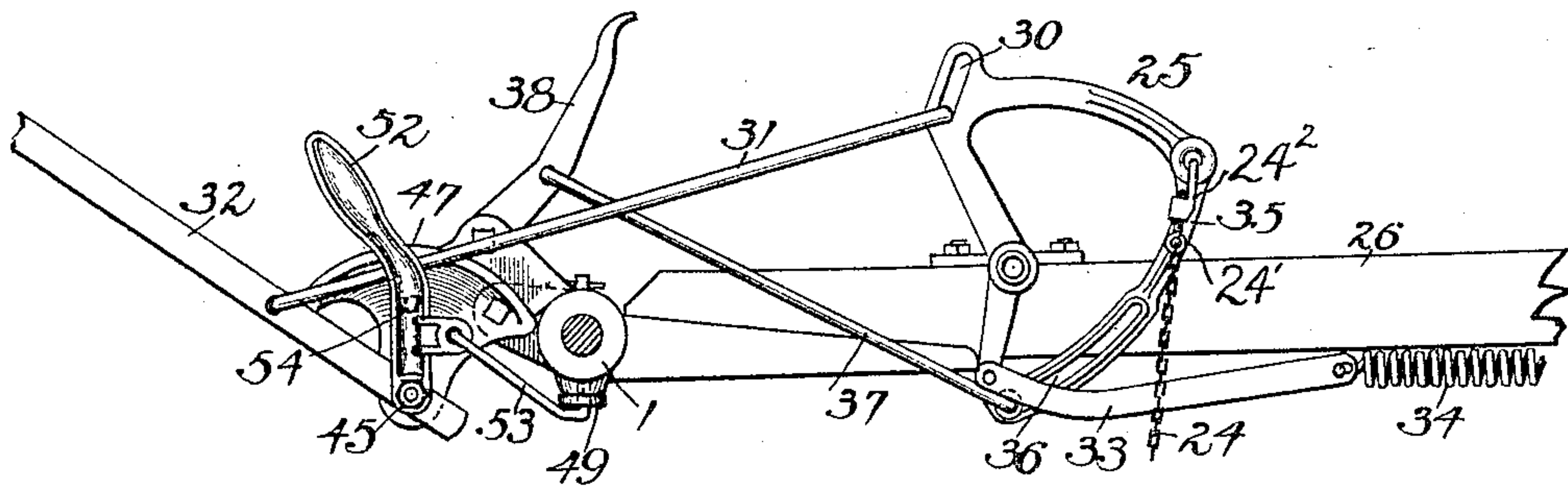
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NO MODEL.

2 SHEETS—SHEET 2.



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

HERBERT B. SPERRY, OF SPRINGFIELD, OHIO.

## MOWER.

SPECIFICATION forming part of Letters Patent No. 767,359, dated August 9, 1904.

Application filed February 15, 1904. Serial No. 193,671. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT B. SPERRY, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Mowers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to mowers in which the finger-bar portion of the cutting apparatus may be raised to a substantially vertical position by means of the usual hand-operated lifting-lever, and particularly to that class wherein the sickle or knife is thrown out of action when the finger-bar has been raised to a predetermined height or angle relative to the frame of the machine and is automatically thrown into action as the finger-bar is lowered to its operative position.

The objects of my invention are, first, to provide means by which the usual clutch mechanism forming a part of the power or driving mechanism may be either operated through suitable connections with the usual hand-operated lever for raising or lowering the cutting apparatus or by which it may be independently operated to unclutch said mechanism, and, second, to so improve the construction of the various parts of the machine and their organization as to make it more reliable for the purpose intended.

The invention consists, substantially, in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally set forth forth in the appended claims.

Referring to the accompanying drawings, and to the various views and reference-numerals appearing thereon, Figure 1 is a plan view of a part of a mowing-machine having my invention forming a part thereof. Fig. 2 is a rear view of Fig. 1. Fig. 3 is a side view of Fig. 1. Fig. 4 is a detail of part of the adjusting mechanism.

The same reference-numerals designate the same parts throughout the various views.

1 is the frame of the mower; 2 and 2', the road-wheels; 3, the main or master gear-wheel secured to the axle, and 4 the pinion deriving

motion therefrom. The pinion 4 is secured to the end of a cross-shaft 5, journaled in the ends of arms 6 and 7, extending rearward from the frame 1. A bevel gear-wheel 8 derives motion from the shaft 5 through the instrumentality of any of the well-known clutch mechanisms common to machines of this class wherein a lever 9 is connected with one member of the clutch and is given a vibratable movement for the purpose of clutching or unclutching the two members by means of contacting cam-surfaces or otherwise.

10 is the usual bevel-pinion secured to the rear end of the crank-shaft, transmitting motion thereto from the bevel-wheel 8, the forward end of the shaft being provided with the usual crank-wheel connected with the cutting apparatus by means of the pitman in a well-known way.

A coupling-arm 11 is pivoted at one end to the frame 1 and at its opposite end has the shoe-supporting yoke 12 sleeved thereon, said yoke being provided with depending ears 14 and 15, having pivotal connection with the upstanding lugs 16 and 17 on the shoe 18 by means of the joint-pins 19 and 20. A draft-rod 11' connects the yoke 12 with a bracket 12', secured to the pole. To the shoe 18 is secured the finger-bar 21, and a curved arm 22 is pivoted to the shoe near its rear side in an adjustable manner, the adjustment being controlled by means of the set-screw 23, threaded into a socket 24, forming a part of the curved arm 22, the head of the set-screw resting upon the lug 17.

A flexible connection, such as a chain 24, is secured near the lower end of the curved arm and is held from lateral displacement by means of the sheave-like form of the back of said arm.

A three-armed lever 25 is pivotally connected with the pole 26, and the chain 24 is adjustably connected to its lower depending arm by means of the threaded eyepiece 24' and link-nut 24<sup>2</sup>, passing beneath a small sheave 27, that is journaled between the arms of a forked support 28, pivoted in a longitudinal bearing 29 on the sleeve portion of the yoke 12. The upper arm of the lever 25 is provided with a slotted portion 30, adapted to receive the hooked end of a rod 31, connected at its rear



end with the lifting-lever 32, pivoted at its lower end to the frame of the machine. The rear arm of the lever 25 has the curved link 33 attached thereto, and a counterbalancing-spring 34 connects the opposite end of the link with an adjustable attachment toward the forward end of the pole. By means of the curve in the link 33 its pivotal connection with the rearward-extending arm of the lever 25 is approximately in line with the axis of the said lever and the points of attachment of the counterbalancing-spring when the cutting apparatus is in operative position upon the ground, and a minimum lifting effect is produced by the counterbalancing mechanism.

The rearward-extended and downward-depending arms of the lever 25 are connected by means of the curved bar 35, provided with a slot 36, adapted to receive the hooked end of a rod 37, that has its opposite end pivotally connected with a foot-lever 38, that has its opposite end pivotally connected with the frame of the machine, the purpose of the slots in the lever 25 being to allow a free floating movement of the bar of the cutting apparatus upon the ground without transmitting it to the adjusting-levers through the medium of the connecting-links 31 and 37.

39 is the tilting lever, pivoted below the axis of the frame at 40 and having its lower short arm connected to the yoke 12 by means of the link 41 and the arm 42. The lever 39 is provided with a slot concentric with its pivot, through which passes the end of the frame. Said frame is provided with a tooth or short radial rib 43 on its upper surface, and a portion of the upper side of the slot in the lever is provided with notches adapted to engage with said radial tooth, as shown in Fig. 3. The lever is yieldingly held against lateral movement on its pivot by means of the spring 44. It is released from engagement with the tooth 43 when desired by pressing its upper end outward against the action of the spring and allowing it to assume its normal position in engagement with the tooth to secure it in any adjustment within its range.

The lifting-lever 32 is pivoted to the frame of the machine at 45 and is yieldingly held against lateral movement thereon in a like manner with the tilting lever by means of the spring 46. Concentric with the pivot of the lever is a sector 47, that has its peripheral edge curved laterally relative to the longitudinal axis of the pivotal connection, and the lever is held against the face of the sector by the action of the spring 46.

In the ordinary operation of the machine the cutting apparatus is free to rise and fall to accommodate itself to the unevenness of the ground, and to raise it above the smaller obstructions, such as stones and low stumps, it is not necessary to throw the lifting-lever to the rear limit provided for by the mechanism.

To raise the cutter-bar to substantially a vertical position, the lever is moved to its rearward limit beyond the end of the sector 47 and is allowed to move laterally in a manner to bring its forward edge against the end of the sector. The cam-surface of the sector moves the lever laterally outward as it is moved rearward, and the spring 46 operates to move it inward as soon as it has passed the end of the sector and holds the lever from accidental disengagement therefrom.

48 is a downwardly-depending bracket secured to the tongue of the machine and designed to limit the upward movement of the coupling-bar and shoe connections for the purpose of utilizing any further movement of the lifting-lever rearward in the lifting of the cutter-bar to a vertical position.

I will now describe the means employed to unclutch the parts of the driving mechanism when the cutting apparatus has been raised a predetermined height, as regulated by the bracket 48.

49 is a vibratable lever pivoted at 50 on the lower side of the frame and extending transversely the machine parallel with the main shaft or axle. It is connected at one end to the clutch-lever 9 by means of the link 51 and at the opposite end to the small hand-lever 52 by means of the link 53. The hand-lever 52 is provided with a lug 54, with which the lever 32 will contact when being thrown rearward to raise the cutter-bar to a vertical position and cause the two levers to move in unison. The movement of the lever 52 rearward about its pivot vibrates the lever 49 through the link connection 53, and said lever 49 through its connection with the shifting-lever 9 unclutches the driving-gear and stops the operation of the cutting apparatus before the cutter-bar has been elevated to such a degree of inclination relative to the driving mechanism as would render it unsafe and impractical to continue the reciprocating movement of the knife as commonly driven in the class of machines represented.

It is to be understood that the clutch mechanism may be any of the ordinary devices used in this class of machines where a spring, such as 55, operates to move the members into engagement when released from the control of the shipper-lever.

In the operation of my invention the hand-lever 32 will carry the lever 52 with it during a part of its rearward movement, and when the hand-lever 32 is moved to its forward position the action of the clutch-spring 55 in moving the clutch members into engagement will return the lever 52 to its normal position. The lever 52 may be operated independently of the lever 32. It is pivoted on the same axis, and the spring 46 operates to hold both levers yieldingly at right angles with said axis, and when desired lever 52 may be rocked endwise relative to its axis to disengage the



lug 54 from the lever 32 or the end of the sector-plate 47.

To regulate the degree of inclination to which the cutter-bar may be raised is the object of the curved arm 22 being made adjustable on the shoe 18.

I am aware that it is not new to provide means by which the point of attachment of the flexible connection to the arms may be varied longitudinally relative to the cutter-bar.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a mowing-machine the combination of the main frame, the road-wheels, the main drive shaft or axle journaled in the frame, a cutting apparatus, a coupling-frame connecting said cutting apparatus with said main frame and adapted to be raised or lowered relative thereto, a motion-transmitting gearing connecting the road-wheels with the cutting apparatus, a clutch mechanism adapted to break the continuity of the motion of said gearing, a shipping-lever forming part of said clutch mechanism, a vibrating lever pivoted on the main frame, a lifting-lever pivoted on said frame and connected with said coupling-frame in such manner as to raise or lower it when operated, a supplemental hand-lever pivoted on the main frame and adapted to engage with the lifting-lever and be moved rearward therewith, a link connection between said supplemental lever and one end of said vibrating lever, the opposite end of said vibrating lever being connected to the shipping-lever of the clutch mechanism.

2. In a mowing-machine the combination of the main frame, the road-wheels, the main drive shaft or axle journaled in the frame, a cutting apparatus, a coupling-frame connecting said cutting apparatus with the main frame and adapted to be raised or lowered relative thereto, a motion-transmitting gearing connecting the road-wheels with the cutting apparatus, a clutch mechanism adapted to break the continuity of the motion of said gearing, a shipping-lever forming a part of said clutch mechanism, a vibrating lever pivoted on the main frame, a lifting-lever pivoted on said frame and connected with said coupling-frame in such manner as to raise or lower it when operated, a supplemental lever pivoted on the main frame coaxially with the said lifting-lever and adapted to engage with the

lifting-lever and be moved rearward therewith, a link connection between said supplemental lever and one end of said vibrating lever, the opposite end of said vibrating lever being connected to the shipping-lever of the clutch mechanism.

3. In a mowing-machine the combination of a main frame, a coupling-frame connected to the main frame and adapted to be raised or lowered relative thereto, a lifting-lever pivoted on the main frame and connected with said coupling-frame, a sector-plate concentric with the pivot of the lifting-lever, the peripheral edge of said sector-plate being inclined rearwardly and laterally toward the lever.

4. In a mowing-machine the combination of a main frame, a coupling-frame connected to the main frame and adapted to be raised or lowered relative thereto, a lifting-lever pivoted on the main frame and connected with said coupling-frame, a sector-plate concentric with the pivot of said lifting-lever, the peripheral edge of said sector-plate being inclined rearwardly and laterally toward the lever and a spring that yieldingly holds the lever against longitudinal movement on its pivotal axis and against the face of the sector-plate.

5. In a mowing-machine the combination of the main frame, a coupling-frame connected thereto, comprising in part a coupling-brace pivotally connected at one end to the main frame, a cutting apparatus comprising in part a shoe and a finger-bar secured thereto, a shoe-supporting yoke sleeved upon the coupling-brace and adapted to rock thereon, a tilting lever pivoted at a point on the main frame below the axle and having a slot concentric with the pivot through which passes one end of the main frame, a tooth on the main frame and notches in the upper portion of the slot adapted to engage with the said tooth, a spring operating to yieldingly hold the lever against longitudinal movement on its pivot and in engagement with said tooth, and a connecting-link between said tilting lever and said shoe-supporting yoke.

In witness whereof I hereto affix my signature in presence of two witnesses.

HERBERT B. SPERRY.

Witnesses:

WILLIAM H. GUTHRIE, Jr.,  
EDGAR A. SANDERS.