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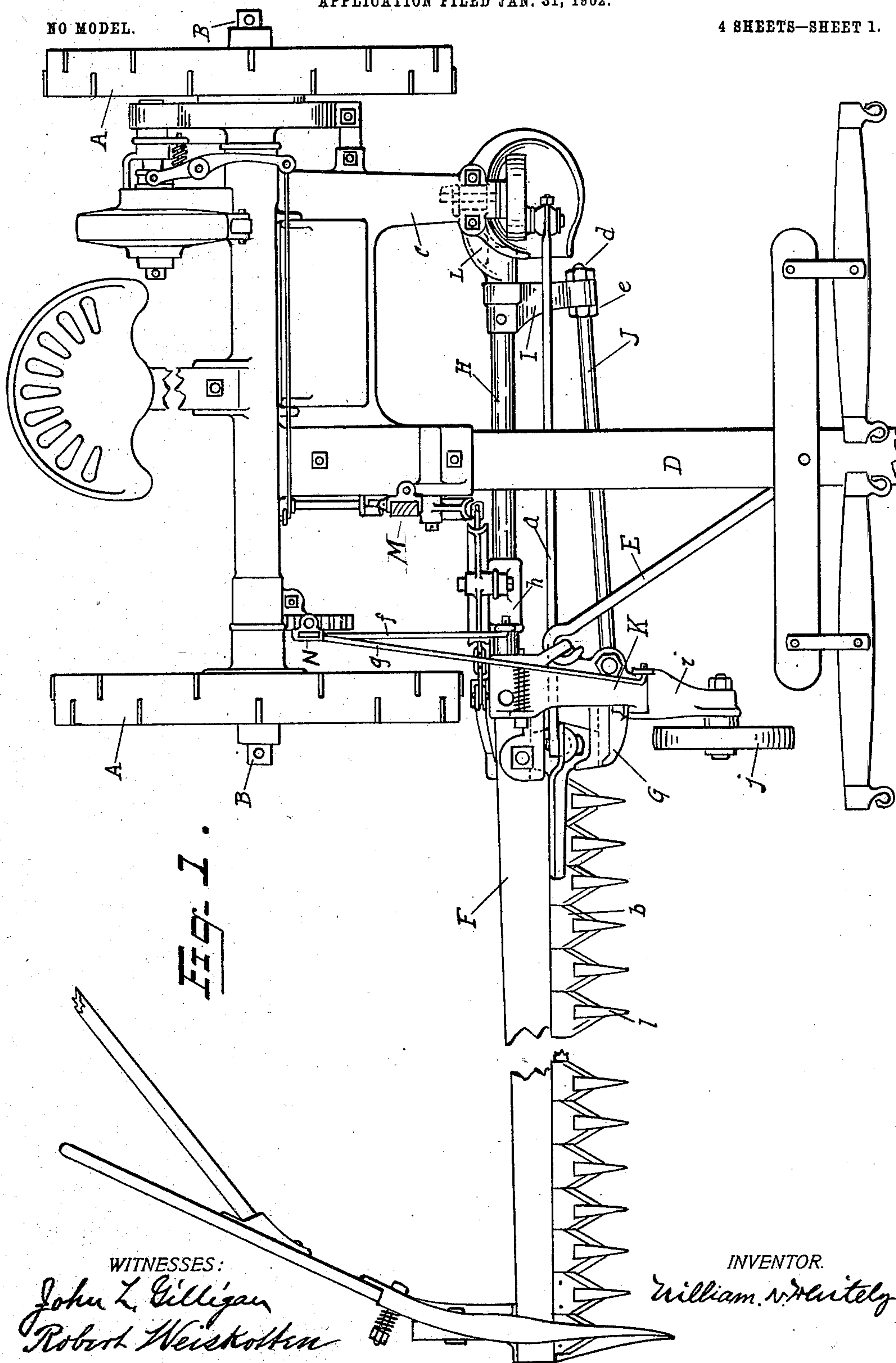
PATENTED AUG. 4, 1903.

W. N. WHITELY.  
MOWING MACHINE.

APPLICATION FILED JAN. 31, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



**WITNESSES:**

John L. Gilligan  
Robert Weiskotten

*INVENTOR.*

William. V. Wentz

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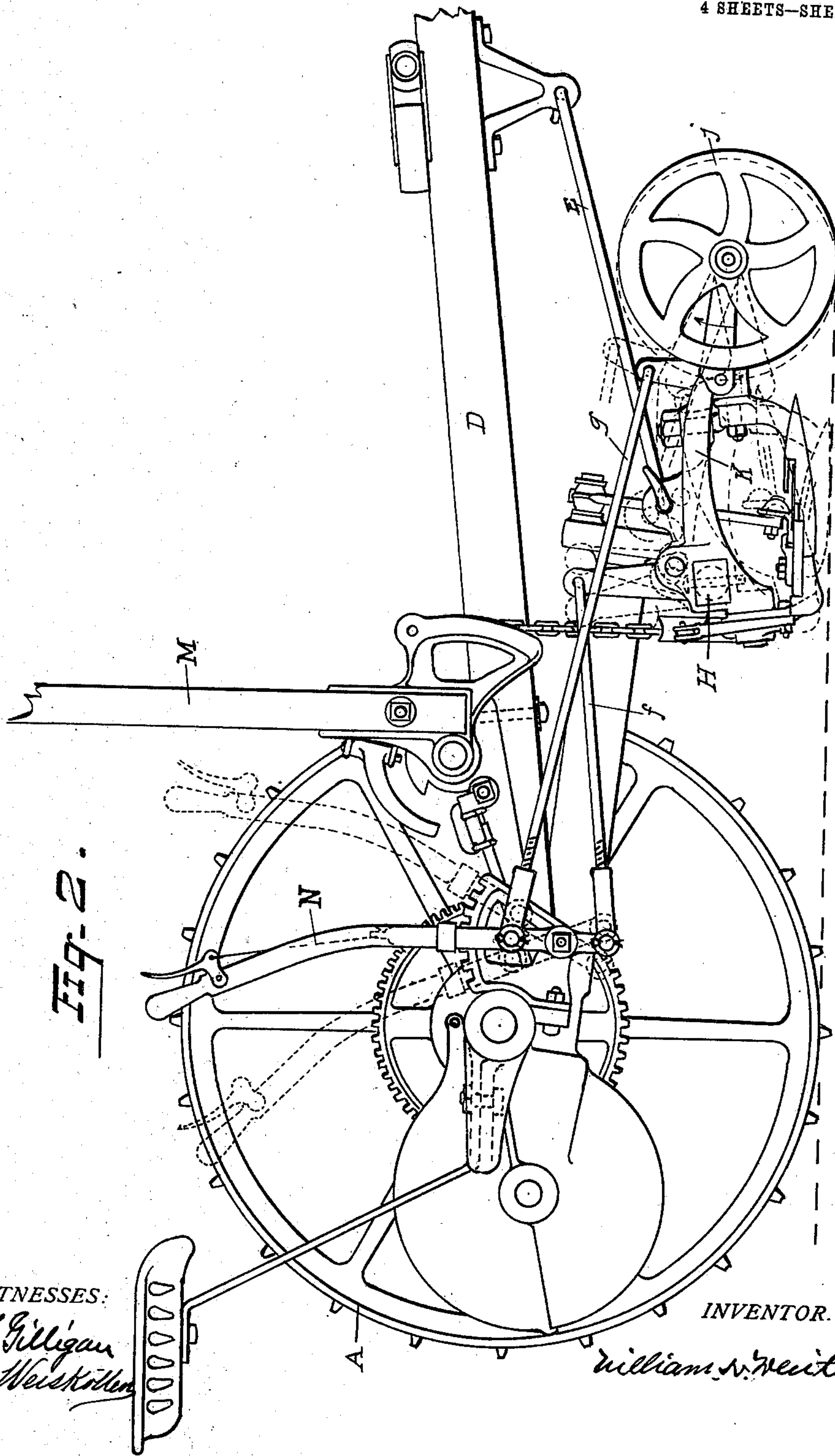
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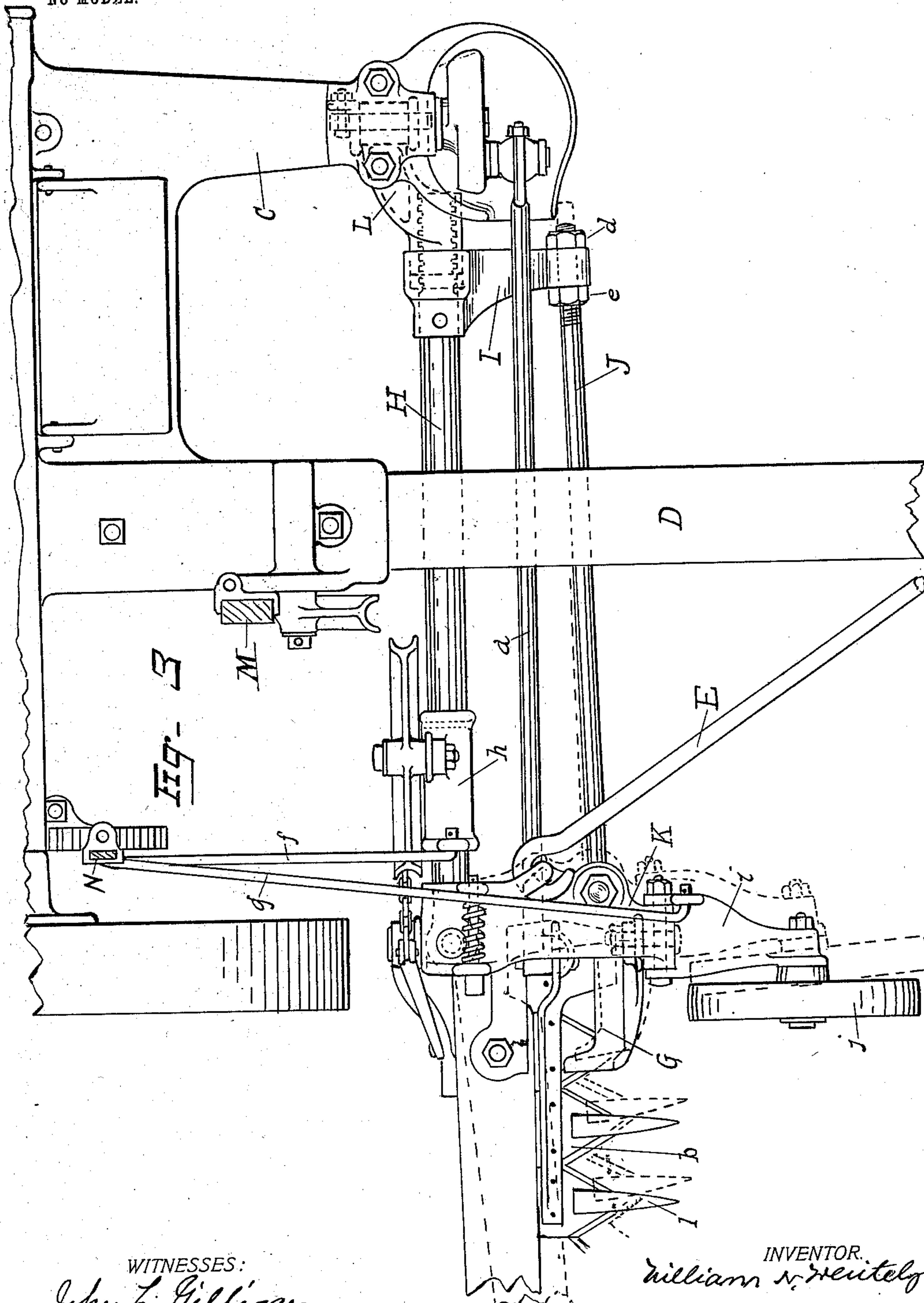
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4 SHEETS—SHEET 3.

NO MODEL.



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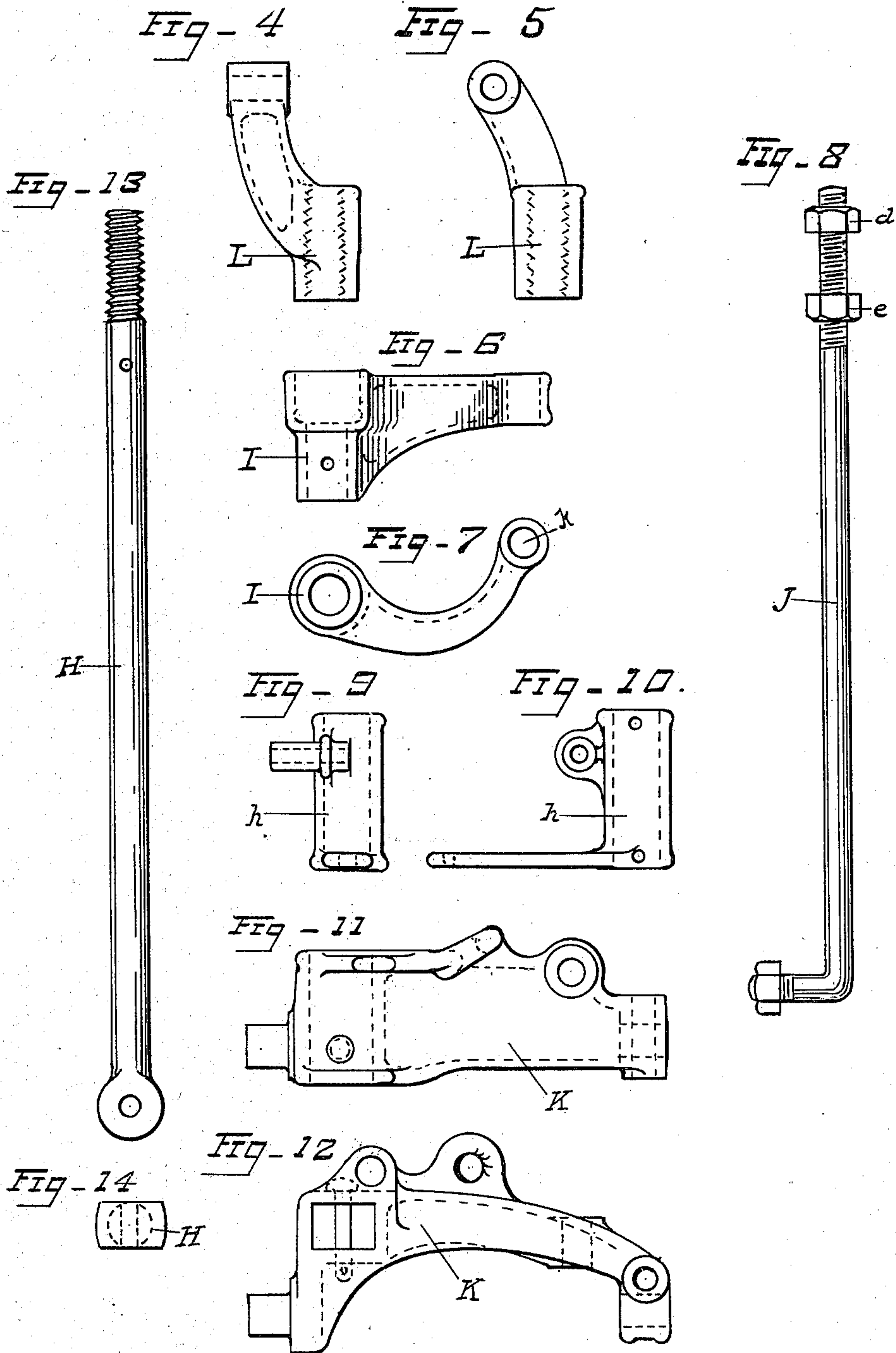
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4 SHEETS—SHEET 4.



WITNESSES:  
*John L. Gilligan*  
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# UNITED STATES PATENT OFFICE.

WILLIAM N. WHITELEY, OF SPRINGFIELD, OHIO.

## MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 735,326, dated August 4, 1903.

Application filed January 31, 1902. Serial No. 92,022. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. WHITELEY, a citizen of the United States, residing at No. 153 East High street, Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Mowing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in front-cut mowing-machines. The type of machine referred to is the cart style—that is, one having two main driving and supporting wheels, a main axle supporting said wheels, a main frame located between said wheels and mounted on said axle and carrying the gearing for operating the cutters, a finger-bar located forward of the main driving-wheels, a pitman extending from the crank-wheel to the reciprocating knife of the finger-bar to communicate motion to the knife. The tilting-lever on the main frame and its connecting-rod to the arm-bracket on the coupling-frame are not to draw or push the finger-bar over the ground, but only to hold the cutters at any angle desired in relation to the ground.

The object of my invention is to provide a perfect floating finger-bar that will rise and fall independently of the main frame and tongue and to provide a simple and efficient means for maintaining alinement between the finger-bar and the knife-pitman, so that the reciprocating knife may at all times be maintained in perfect alinement with the knife-pitman and guard-fingers of the finger-bar, and to perfect other details of the machine.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of a front-cut mowing-machine embodying my invention. Fig. 2 is a side elevation of same with one driving-wheel removed, the black lines showing the finger-bar tilted for a medium-height cut, the dotted lines showing the position of the finger-bar when tilted for high and low cut and the relative position of

the several parts to each other when the finger-bar is so tilted. Fig. 3 is a plan view of a portion of a mowing-machine, showing my improvements on a larger scale than shown in Fig. 1, the dotted lines showing the finger-bar drawn forward in alinement with the knife-pitman by means of my invention. Fig. 4 is a detail plan view of the swivel-head for the coupling-arm. Fig. 5 is a detail side elevation of same. Fig. 6 is a detail plan view of the connecting-bracket between the coupling-arm and adjusting-brace. Fig. 7 is a detail side elevation of same. Fig. 8 is a detail side elevation of the adjusting-brace complete with the adjusting-nuts. Fig. 9 is a detail plan view of the upward-extending arm-bracket rigidly mounted on the coupling-arm for the tilting-lever connecting-rod. Fig. 10 is a detail side elevation of same. Fig. 11 is a detail plan view of the hinge member of the coupling-frame. Fig. 12 is a detail side elevation of same. Fig. 13 is a detail plan view of the coupling-arm. Fig. 14 is an end view of the grassward end of same which pivotally connects to the hinge.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, A A represent the main driving and supporting wheels. B is the main axle, supported by said driving-wheels. C is the main frame, mounted on said axle.

D is the tongue.

E is the draw-bar.

F is the finger-bar.

G is the inside shoe.

H is the coupling-arm member of the coupling-frame.

I is the connecting-bracket between the coupling-arm member H and the adjusting-brace member J of the coupling-frame.

K is the yoke-hinge member of the coupling-frame.

L is the swivel screw-threaded head connected to the stubbleward end of the coupling-arm member H and pivotally connected to the main frame.

M is the lifting-lever for lifting the finger-bar.

N is the tilting-lever for tilting the guard-fingers up and down.

a is the knife-pitman.



In my construction what I term the "coupling-frame" consists, essentially, of three members, one member thereof a coupling-arm H which is the main support for said coupling-frame, the stubbleward end of said arm pivotally connected to the main frame, said arm extends from the finger-bar to the main frame across the path of the machine in a line forward of the driving-wheels A; another member thereof a yoke-hinge K mounted on the grassward end of said coupling-arm H and pivotally connected to and supporting the main shoe G of the finger-bar F and adapted to move with said coupling-arm H rotatively to tilt the cutters *b*, the pivotal connection of the two being maintained in constant alinement throughout all the various movements of the main shoe G of the finger-bar F on its pivots, said yoke-hinge K adapted to lateral oscillation on said coupling-arm H for the purpose of alinement of the finger-bar F with the knife-pitman *a*. The grassward end of said coupling-arm H where said yoke-hinge K is mounted on said arm may be of any form that will admit of oscillating adjustment in a horizontal plane of said yoke-hinge member K on said coupling-arm H when the two members are connected together, and while a pin may be used to connect said yoke-hinge K and said coupling-arm H together any other well-known means may be used to connect said two parts together that will admit of lateral oscillating movement of said yoke-hinge K on said arm H and perform the two movements required, said yoke-hinge K controlling the main shoe G of the finger-bar F in such manner that the alinement of the finger-bar F with the knife-pitman *a* is effected by adjusting said yoke-hinge K on said coupling-arm H entirely independent of the pivotal connection to the main shoe G of the finger-bar F to maintain the alinement of the forward and rearward pivotal connection of said yoke-hinge K and main shoe G in the same line of the joints of the pivots throughout the lateral adjustment or alinement of the finger-bar F through the instrumentality of said yoke-hinge K and its pivotal connections with the coupling-arm H, the stubbleward end of said arm having a swivel-head L screw-threaded thereon and pivotally connected to the main frame, allowing said arm to turn in said head when the finger-bar is tilted for high or low cutting. Rigidly mounted on said coupling-arm H and encircling a portion of said swivel-head L to permit of the adjustment of said arm in said head and also to strengthen and hold the several parts firmly together through the operation of tilting the cutters is a bracket I, having a smooth or screw-threaded eye *k* formed thereon for the reception of the stubbleward end of an adjusting-brace J, which is another member of said coupling-frame. The grassward end of said brace is pivotally connected forward of the cutters *b* to said yoke-hinge member K. The brace J may be adjustably

connected with said coupling-arm H along the line of its length, but distant from the grassward end of said arm, and serve the purpose of alinement and holding the finger-bar in any position desired. The object and purpose of my coupling-frame construction is to pivotally connect the finger-bar F to the main frame C, so that either end of said finger-bar F is free to rise and fall independently of the other end and to aline the finger-bar F with the knife-pitman *a* independent of the pivotal joints that connect the main shoe G of the finger-bar F with the yoke-hinge K. The stubbleward end of said brace is screw-threaded and adjustably connected to the forward end of said bracket I and held in adjustment with said bracket I by means of the adjusting-nuts *d* and *e* upon its threaded end, that when it is desired to draw said finger-bar forward to aline same with said knife-pitman said nut *e* is turned backward on said bar away from said bracket I and the adjusting-nut *d* screwed farther onto said brace J, and when said finger-bar has been brought into alinement said adjusting-nut *e* is then turned up until it is tight against said bracket I, so as to securely hold said finger-bar in alinement. By the action of the adjusting-nuts *d* and *e* on said brace J the finger-bar is drawn forward, and the yoke-hinge member K oscillates laterally on said coupling-arm H, bringing and maintaining the finger-bar in alinement with the knife-pitman. Said adjusting-brace J also protects the knife-pitman from injury by contact with stumps or other obstructions. While I show the draw-bar E pivotally connecting to said yoke-hinge member K, it may be pivotally connected to either of the other members of said coupling-frame. This "coupling-frame," as I designate it, rises and falls independently of the main frame at one end and is adapted to rock or roll in the line of its length to tilt the points of the guard-fingers up and down. Rigidly mounted on said coupling-arm H of the coupling-frame is an upward-extending arm-bracket *h*. Said bracket is pivotally connected by a link *f*, extending rearward and adjustably pivotally connected, as shown, to a tilting-lever N, pivotally mounted on said main frame C. Pivotally connected to the forward end of said yoke-hinge K in front of the inner shoe of the finger-bar is an arm *i*. To the forward end of said arm *i* an automatic self-adjusting lead-wheel *j* is journally connected, said wheel traveling in advance of the inner shoe of the finger-bar and employed to carry said finger-bar over the ground and to guide same over ridges, ditches, and other irregularities of the ground. Pivotally connected to said arm *i* is a connecting-link *g*, which extends rearward and is adjustably pivotally connected to said tilting-lever N, as shown in Fig. 2, so that when the upper end of said tilting-lever N is thrown forward the connecting-link *f* is drawn backward, causing said coupling-arm H to



roll backward, tilting the guard-fingers *l* upward, and by the same movement of said tilting-lever *N* the connecting-link *g* is pushed forward, pressing said lead-wheel *j* firmly on the ground, and as the upper end of said tilting-lever *N* is drawn backward said connecting-link *f* is pushed forward, rolling said coupling-arm member *H* forward, tilting the guard-fingers *l* downward, and by the same movement of the tilting-lever *N* the connecting-link *g* is drawn backward, causing said lead-wheel *j* by the pivotal connection between said arm *i* and yoke-hinge member *K* to always remain on the ground regardless of the adjustment of the guard-fingers for high or low cut, so that when the guard-fingers are tilted upward the lead-wheel is pressed downward, and when the guard-fingers are tilted downward for low cutting the lead-wheel is tilted upward, and by means of its pivotal connections the lead-wheel always follows the ground in whatever position the guard-fingers are tilted, maintaining its same position on the ground to carry the finger-bar freely over the ground. While in my construction I have shown and prefer to employ a lead-wheel pivotally connected forward of the inner shoe of the finger-bar and traveling in advance of the cutters, I do not confine myself to this construction, as the lead-wheel, connecting-arm supporting said wheel, and the adjusting-rod for said wheel may be dispensed with.

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

1. In a mowing-machine, in combination, a coupling-arm pivotally connected with a main frame, a yoke-hinge member directly and pivotally connected to said coupling-arm for oscillating adjustment in a horizontal plane on said arm, the main shoe of the finger-bar pivotally connected to and supported by said yoke-hinge member, an adjusting and holding member connected with the forward portion of said yoke-hinge member and extending to and connected with said coupling-arm to aline and sustain the finger-bar.

2. In a mowing-machine, in combination, a coupling-frame comprising a coupling-arm member pivotally connected to the main frame, a yoke-hinge member directly and pivotally connected to said coupling-arm for oscillating adjustment in a horizontal plane on said arm, a main shoe of the finger-bar pivotally connected to and supported by said yoke-hinge member, an adjusting-brace member connected to one end of said yoke-hinge and connecting with said coupling-arm, said brace member provided with screw-threaded adjusting means for the alinement of and holding the finger-bar in the desired position.

3. In a mowing-machine, in combination, a finger-bar, a main shoe rigidly secured to said bar, a yoke-hinge member pivotally connected to and supporting said shoe, a coupling-arm to which said yoke-hinge is attached, a swivel-head screw-threaded upon one end

thereof and pivotally connected to the main frame, a bracket rigidly connected to said coupling-arm and encircling a portion of said swivel-head, an adjusting-brace, its stubbleward end connected to said bracket, its grassward end connected to said yoke-hinge member to support said finger-bar.

4. In a mowing-machine, in combination, a coupling-arm, a yoke-hinge member directly and pivotally connected to said arm for oscillating adjustment in a horizontal plane on said arm, a main shoe of the finger-bar pivotally connected to and supported by said yoke-hinge member, an adjusting-brace member, one end connected to said yoke-hinge member, a bracket extending from said coupling-arm and supporting the stubbleward end of said brace member, a swivel-head fitting on said coupling-arm and pivotally connected to the main frame that said coupling-arm may turn in said swivel-head.

5. In a mowing-machine, in combination, a coupling-frame between the main frame and finger-bar and comprising a lateral oscillating yoke-hinge member the stubbleward end of said coupling-frame pivotally connected to the main frame of the machine, a shoe of the finger-bar pivotally connected to and supported by the yoke-hinge member of said coupling-frame, a tilting-lever and connecting-rod pivotally connecting said lateral oscillating yoke-hinge member with the main frame to tilt the coupling-frame and finger-bar up and down to cut high or low as may be desired.

6. In a mowing-machine, in combination, a coupling-arm, one end pivotally connected to the main frame, a yoke-hinge member directly and pivotally connected to the other end of said coupling-arm for oscillating adjustment in a horizontal plane on said arm, a main shoe of the finger-bar pivotally connected to and supported by said yoke-hinge member, a forward brace pivotally connected to said yoke-hinge member near its forward end, a bracket rigidly secured to said coupling-arm and adjustably connected with the stubbleward end of said brace for the purpose of adjustably oscillating said yoke-hinge in a horizontal plane upon said coupling-arm and therewith the finger-bar into proper alinement with the knife-pitman.

7. In a mowing-machine, in combination, a coupling-frame comprising a coupling-arm, a swivel-head on said arm and pivotally connected to the main frame, a yoke-hinge member pivotally connected to and supporting the main shoe of the finger-bar and pivotally connected to the grassward end of said coupling-arm for oscillating adjustment of said yoke-hinge member in a horizontal plane on said arm, a brace, one end connected to the front end of said yoke-hinge member, a bracket on said coupling-arm supporting the stubbleward end of said brace and rigidly connecting it with said coupling-arm.

8. In a mowing-machine, in combination, a



coupling-arm pivotally connecting with the main frame at its stubbleward end, a yoke-hinge member directly and adjustably connected to said coupling-arm for oscillation in  
 5 a horizontal plane on said arm, a finger-bar shoe pivotally connected to and supported by said yoke-hinge member forward and rearward of the cutters, a lead-wheel carrying-arm pivotally connected to the forward part  
 10 of said yoke-hinge member, a lead-wheel journal mounted on and supported by said carrying-arm and controlled in its movements by said arm in relation to the adjustments of said yoke-hinge member, an adjusting-lever  
 15 pivotally mounted on the main frame, a link pivotally connected to said adjusting-lever and extending forward and pivotally connected with a member of the coupling-frame, a link pivotally connected to said adjusting-  
 20 lever and extending forward and pivotally connected to said lead-wheel carrying and supporting arm.

9. In a mowing-machine, in combination, a main shoe for the finger-bar, a lead-wheel lo-  
 25 cated in front of said main shoe of the finger-bar and to the grassward side thereof, a carrying-arm for said wheel, a yoke-hinge member pivotally supporting the main shoe of the finger-bar and pivotally supporting said car-  
 30 rying-arm on its forward end, a coupling-arm extending across the path of the machine, its grassward end pivotally supporting said yoke-hinge member at the rear of the finger-bar for oscillating adjustment in a horizontal  
 35 plane on said arm, its stubbleward end pivotally connected upon the main frame of the machine, a tilting-lever pivotally mounted upon the main frame of the machine for turning the points of the guards up and down, a  
 40 link pivotally connected to said lever and extending forward to a member of the coupling-frame, a link pivotally connected to said tilting-lever and extending forward and pivotally connected to said carrying-arm of said  
 45 lead-wheel for the purpose of adjusting said wheel in relation to the finger-bar.

10. In a mowing-machine, in combination, a finger-bar, a main shoe rigidly secured to said bar, a lead-wheel in front of the main

shoe of said finger-bar, a carrying-arm for 50  
 said wheel, a yoke-hinge member pivotally supporting the main shoe of the finger-bar, a coupling-arm member located rearward of the knife-pitman and extending across the path  
 of the machine and pivotally connected with 55  
 the main frame, said yoke-hinge member pivotally mounted on the grassward end of said arm for oscillating adjustment in a horizontal plane on said arm, a tilting-lever pivotally  
 mounted on the main frame, a link pivotally 60  
 connected to said tilting-lever and extending forward, and pivotally connected with a member of the coupling-frame, a link pivotally  
 connected to said tilting-lever and extending 65  
 forward and pivotally connected to said lead-wheel carrying-arm.

11. In a mowing-machine, in combination, a finger-bar, a main shoe rigidly secured to said bar, a coupling-arm extending across the  
 path of the machine, a yoke-hinge member 70  
 mounted on the grassward end of said arm for oscillating adjustment in a horizontal plane on said arm, said yoke-hinge member pivotally connected to and pivotally support-  
 ing said inner shoe of said finger-bar forward 75  
 and rearward of the cutters, an adjusting and supporting brace, its grassward end connected to the front end of said yoke-hinge member, a bracket extending from said coupling-  
 arm member sustaining and supporting the 80  
 stubbleward end of said brace, a swivel-head fitting on said coupling-arm and pivotally connected to the main frame, a tilting mechanism pivotally mounted upon the main  
 frame and pivotally connected with said coup- 85  
 ling-frame to tilt the finger-bar up or down, a lifting mechanism pivotally mounted upon the main frame and pivotally connected with the coupling-frame and finger-bar to raise  
 said coupling-frame and finger-bar off the 90  
 ground.

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

WILLIAM N. WHITELEY.

Witnesses:

JOHN L. GILLIGAN,  
 ROBERT WEISKOTTEN.