

No. 708,556.

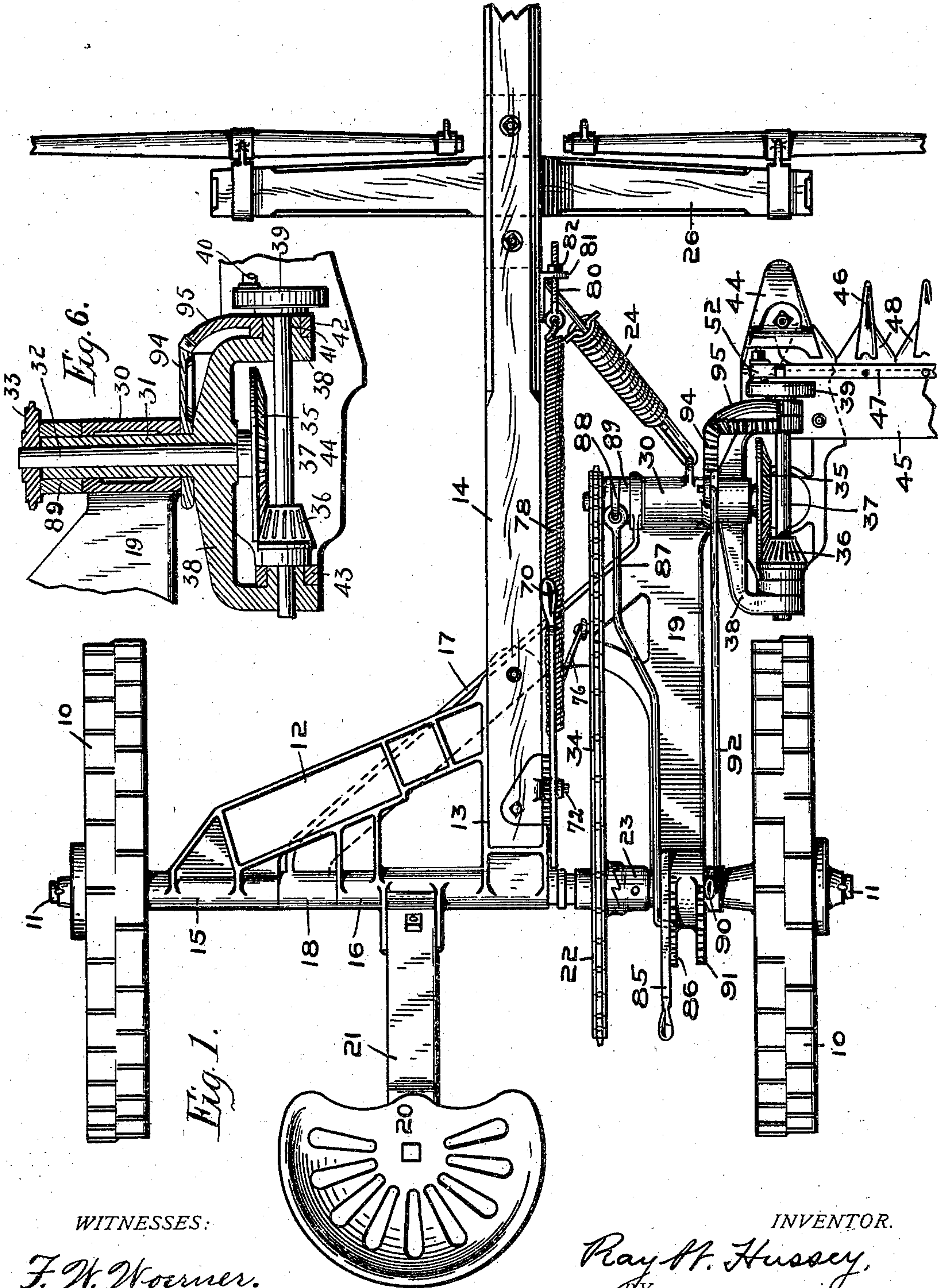
Patented Sept. 9, 1902.

R. W. HUSSEY.  
GRASS OR GRAIN CUTTING MACHINE.

(Application filed Jan. 6, 1902.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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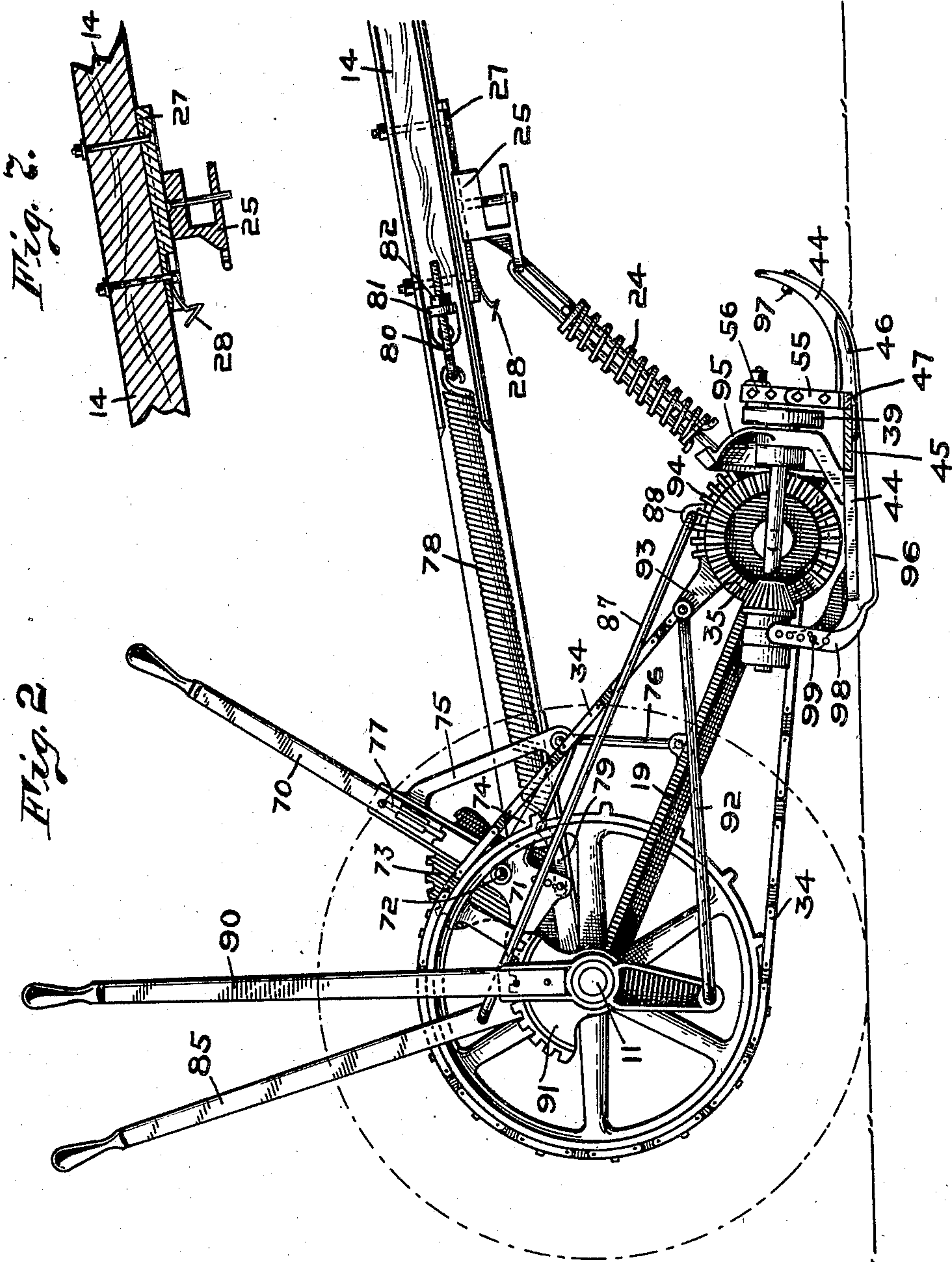
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(Application filed Jan. 8, 1902.)

(No Model.)

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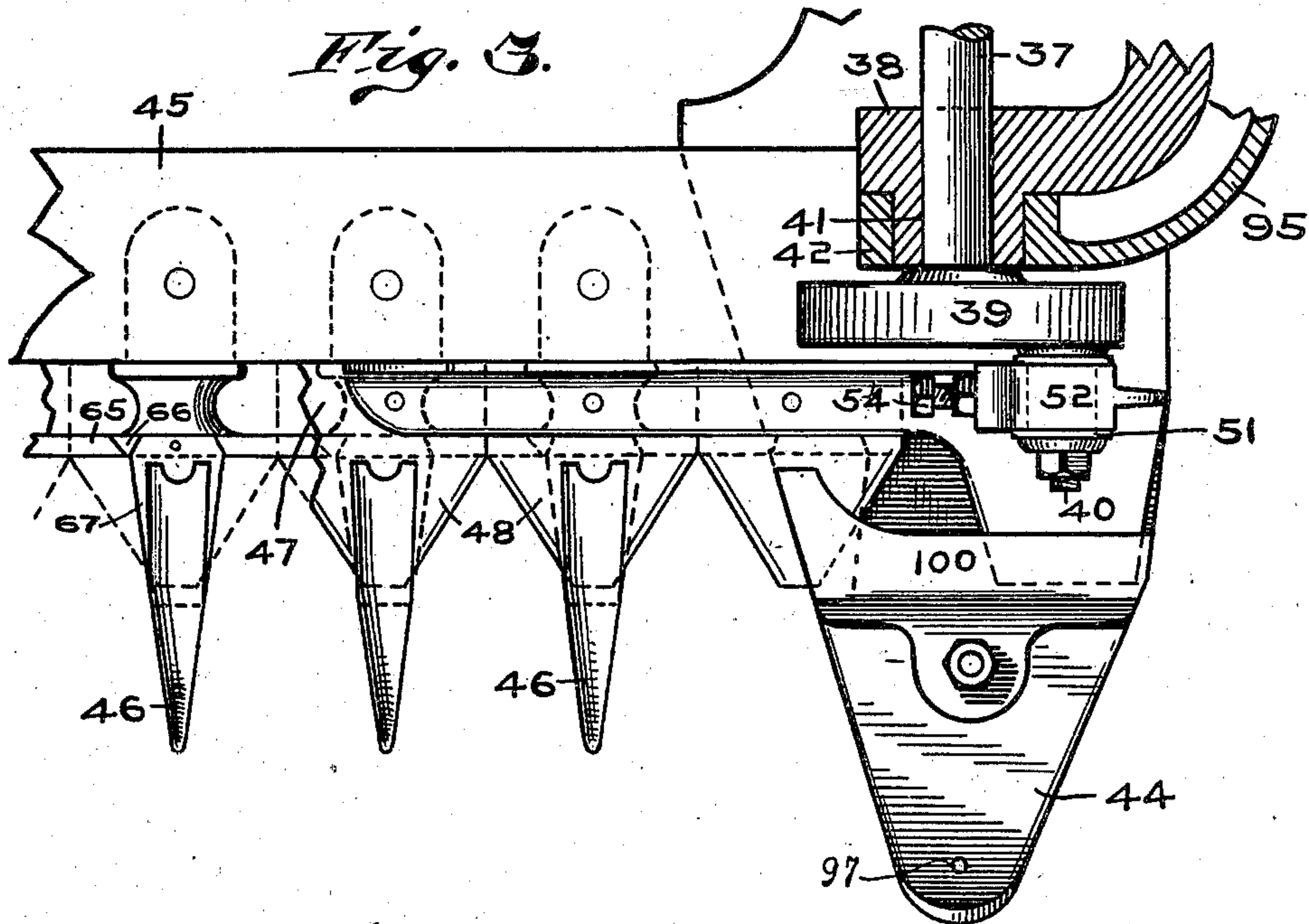
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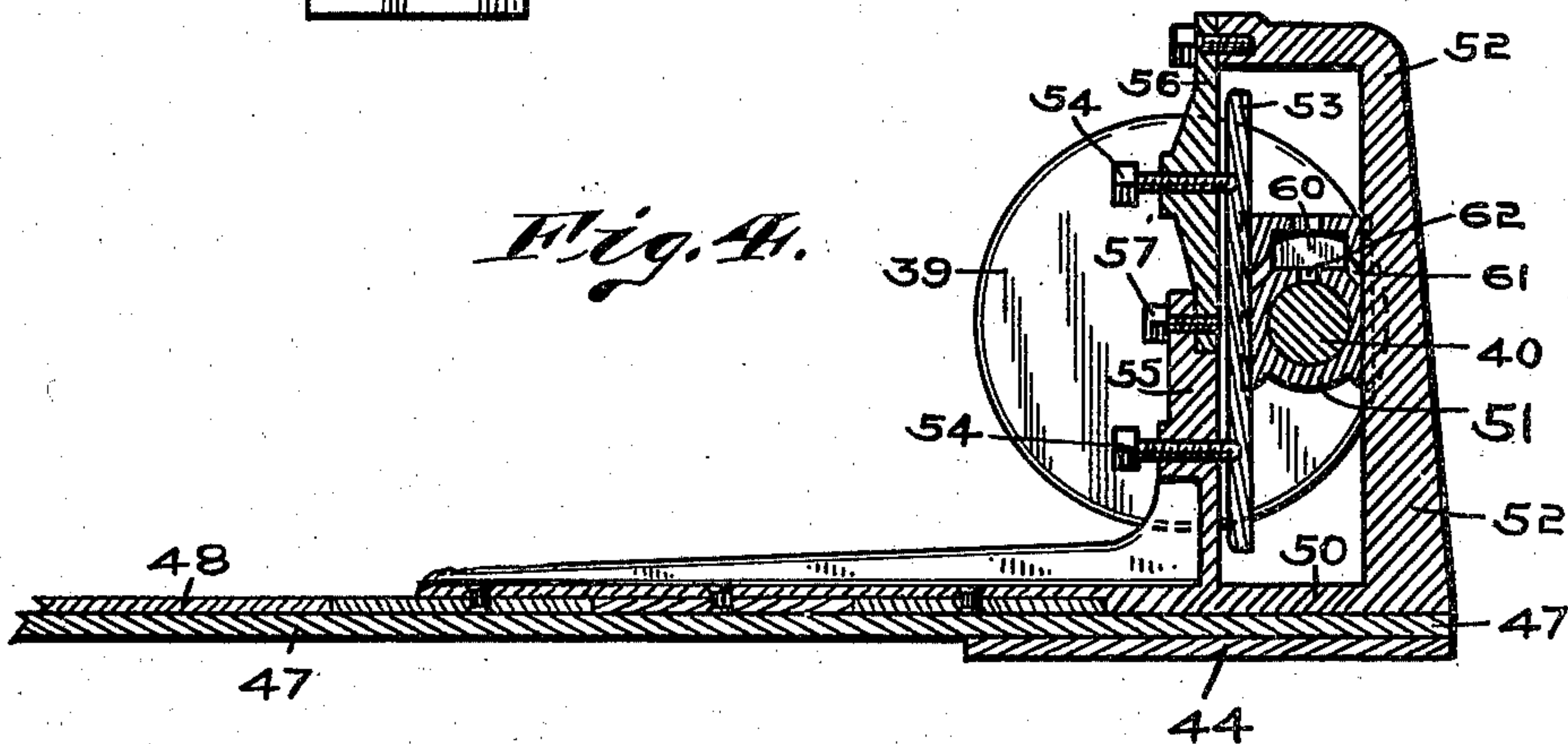
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*Fig. 5.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

RAY W. HUSSEY, OF PENDLETON, INDIANA.

## GRASS OR GRAIN CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,556, dated September 9, 1902.

Application filed January 6, 1902. Serial No. 88,948. (No model.)

*To all whom it may concern:*

Be it known that I, RAY W. HUSSEY, of Pendleton, county of Madison, and State of Indiana, have invented a certain new and useful Grass or Grain Cutting Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

10 This invention relates to improvements in grass and grain cutting machines of the type shown in my former patent, No. 666,055, dated January 15, 1901.

15 The full nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a plan view of the machine with the knife and finger-bar in a horizontal position and partly broken away and the tongue and doubletree broken away. 20 Fig. 2 is an elevation of the side of the machine which carries the knife, the knife and finger-bar being in section and the tongue broken away and the doubletree omitted. Fig. 3 is a plan view of a portion of the knife, finger-bar, shoe, and connecting mechanism. Fig. 4 is a longitudinal vertical section of the knife-head and its connection with the crank-wheel for driving it, said wheel being in elevation. Fig. 5 is a plan view of the bearing-block in the knife-head. Fig. 6 is a horizontal section of the means for mounting and controlling the knife and finger-bar. Fig. 7 is a central longitudinal section of a portion of the tongue and means for mounting the doubletree. 30

A pair of ground-wheels 10 carry an axle 11. Two frames are mounted on this axle. One of these frames consists of an oblique bar 12, secured at one end to the bar 13, to which the tongue 14 is bolted. The sleeves 15 and 16 are parts of this frame, being connected with bars 12 and 13, and fit on the axle 11. The other frame consists of an oblique bar 17, having at one end the sleeve 18 on the axle 11 and secured at its other end to the bar 19, which at one end is likewise mounted loosely on the axle. The seat 20 is supported on the spring 21, that is bolted to a projection from the sleeve 16. A sprocket-wheel 22 is loosely mounted on the axle 11, and a union between the axle and sprocket- 40

wheel is effected by the clutch mechanism 23. This clutch is made in the usual way, and the details need not here be explained. 55 The second frame described rests under the tongue and first frame and is while the machine is in operation inclined downward to the front, as shown in Fig. 2, and at its front end carries the mechanism for supporting 60 and controlling the knife and finger-bar. The forward end of this lower frame is connected by the spring 24 with a block 25, that carries the doubletree 26. The block 25 is slidably mounted on the bar 27 beneath the tongue 65 and is held from rearward escape by the stop 28, which is secured to bar 27. In the front end of the lower frame there is a sleeve 30, (shown best in Fig. 6,) that forms a bearing for a hollow shaft 31, and a shaft 32 is 70 mounted within said hollow shaft. Said shaft 32 carries on its inner end a sprocket-wheel 33, to which power is transmitted by the chain 34, whereby the knife is driven. A beveled gear 35 is secured to the outer end of the shaft 32 and meshes with another 75 beveled gear 36, that is secured on the shaft 37, mounted in the arms 38, extending oppositely from the hollow shaft 31. The shaft 37 extends at a right angle to the shaft 32, 80 and the axis of one of said shafts would intersect the axis of the other if extended. Said shaft 37 carries a crank-wheel 39, with the crank-pin 40 thereon, which directly actuates the knife. The diverging arms 38 extend from the hollow shaft 31 and have bearing-sleeves 41, that are mounted in the posts 42 and 43, that extend upward from the shoe 44. The finger-bar 45 is secured to said shoe. The fingers 46 are secured to the finger-bar, 90 and on them the knife-bar 47, with the blades 48 secured thereto, is mounted and reciprocates.

The knife-head 50 has a vertical slot in it for the vertical movement of the bearing- 95 block 51, in which the crank-pin 40 from the crank-wheel 39 fits and operates, as shown in Fig. 4. This vertical slot for the bearing-block is formed by a stationary arm 52, that is a part of the knife-head, and the adjustable bar 53, held by the cap-screws 54 in a position opposite the stationary arm 52. The bearing-block is recessed at each end, as shown in Fig. 5, and the arm 52 fits in one re- 100



cess, while the bar 53 fits in the other, whereby the bearing-block is held from escape. One cap-screw 54, that holds the bar 53, extends through the arm 55, forming a part of the knife-head, and the other cap-screw through a supplementary plate 56, that is secured to the arm 55 by the cap-screw 57. The upper end of the plate 56 is secured to the upper end of the arm 52. With this arrangement the position of the bar 53 is rendered adjustable, and therefore the dimensions of the slot for the bearing-block 51 may be modified to accommodate said block with exactness and to take up any wear. With this construction by removing cap-screw 57 the knife may be readily removed when desired.

The bearing-block 51 contains an oil-chamber 60, with outlets 61 therefrom downward to the bearing-surfaces of said block and the knife-head and the outlet 62 to the crank-pin 40. This oiling apparatus is a prominent feature of this invention, inasmuch as it is a practical oiling means where the knife is driven as herein set forth.

In this type of machine the knife operates while the finger-bar is in any position to which it may be possible to move it. It may be folded upward or downward or it may be tilted or rocked forward or backward without affecting the operation of the knife. The knife, finger-bar, and mechanism for supporting and controlling the same are elevated by the lever 70, that is secured to the casting 71, which is pivoted at 72 to the plate 73, that is secured on the inner side of the tongue. Said casting has an arm 74 extending forward at a right angle therefrom, which is reinforced by the brace 75. A link 76 extends from the outer end of the arm 74 and is pivotally connected with the frame-bar 19. By throwing the lever 70 backward the frame-bar 19 will be elevated, and thereby the knife and finger-bar elevated. The plate 73 has a rack on its upper edge that is engaged by a suitable bolt 77 for holding the lever 70 in place. The weight of the knife, finger-bar, and the means for supporting and controlling the same is considerable, and to counteract it to some extent I provide an adjustable spring 78, that extends along the side of the tongue and is at its rear end attached to the bar 79, which is pivotally connected to the lower end of the casting 71. The other end of the spring is connected with the threaded bolt 80, that extends through a bracket 81 on the side of the tongue and is held by the nut 82. By means of this nut the tension of said spring may be adjusted so as to greatly aid the lever 70 while elevating the parts above mentioned. This spring 78 also tends to lighten the weight on the shoe 44 during the operation of the machine. The spring 24 also coöperates with the spring 78 in the matter of lessening the weight of these parts and in elevating them during the draft of the team and causes the shoe to pass over the ground lightly. The knife and finger-bar are rocked forward or

rearward by the lever 85, which is pivotally mounted on the axle beside the plate 86, and the connecting-rod 87 extends therefrom to the crank 88 on the sleeve 89, that is secured rigidly on the hollow shaft 31. When said lever 85 is drawn backward or pushed forward, the shoe and all the mechanism mounted thereon will rock forward or rearward accordingly, and this may be done so as to place the finger-bar at quite a considerable inclination during the operation of the machine if necessary to run over an obstruction or for cutting the stubble high or low. By the lever 90 the knife-bar is folded—that is, its outer end is elevated or depressed from a vertical upward position to about forty degrees depression from the vertical by the lever 90. The lever 90 is pivoted on the axle beside the plate 91 and has an end extending below the axle that is connected by a connecting-rod 92 with a crank 93 on the partial or mutilated bevel-gear 94, that is mounted loosely on the hollow shaft 31. Said mutilated bevel-gear meshes with a curved segmental rack 95, integral with the post 42 from the shoe. When the lever 90 is actuated in either direction, it will, through said gears 94 and 95, cause the shoe and finger-bar to rotate on the bearing-sleeves 41 of the arms 38, extending from the hollow shaft 31. The various positions into which the finger-bar may be moved by the foregoing means does not interfere with the operation of the knife either during the alteration of the position or after the position of the finger-bar has been altered.

A plate 100 is secured on the upper side of the shoe 44 to furnish a guideway for the knife at the inner end, as appears in Fig. 3. As seen in Fig. 2, an adjustable sole 96 is made for the shoe 44, it being a plate secured at the front end by the bolt 97 and at its rear end having an upwardly-extending arm 98, with a series of holes therein, through which a pin 99 is inserted for securing it to the rear end of the shoe.

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

1. In a machine of the class described, a crank-wheel with a pin for driving the knife, a knife-head with a vertical slot, and a bearing-block vertically slidable in said slot to receive the crank-pin, said block having an oil-chamber in its upper side with outlet-ori-fices therefrom to each side of the bearing-block and to the pin, substantially as and for the purpose shown and described.

2. In a machine of the class described, a crank-wheel with a pin for driving the knife, a knife-head with a pair of oppositely-placed rigid vertical arms, a bar adjustably mounted in one arm and opposite the other to form a vertical slot, and a bearing-block slidable in said slot to receive said crank-pin.

3. In a machine of the class described, a crank-wheel with a pin to drive the knife, a bearing-block in which said pin fits and a knife-head having a vertical slot for the



bearing-block which is formed by a rigid vertical arm turned at its upper end, a rigid oppositely-placed shorter arm, a supplementary plate connected at one end to the short arm 5 and at the other end with the turned upper end of the long arm, and a bar held in a vertical position opposite said long arm by a lag-screw near one end extending through said short arm and by a lag-screw at the other end 10 extending through the supplementary plate.

4. In a machine of the class described, an axle, a frame pivotally mounted thereon, means for supporting the knife and finger-bar at the forward end of said frame, a tongue, 15 a lever mechanism fulcrumed above its lower end beside the tongue with an arm extending therefrom, a link connecting said arm and the frame to be elevated, a spring adjustably connected with the tongue and the lower 20 end of the lever, a block slidably mounted on the tongue, doubletrees mounted in said

block, and a spring connected to said sliding block and the forward end of said frame.

5. In a machine of the class described, an axle, a frame pivotally mounted thereon, 25 means for supporting the knife and finger-bar at the forward end of the frame, a tongue, a guide-bar on the tongue, a block slidably mounted on said guide-bar, doubletrees 30 mounted in said block, a spring connecting the sliding block to the forward end of said frame, and a spring-stop secured to the guide-bar that permits the insertion of the sliding block thereon and limits its rearward movement. 35

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

RAY W. HUSSEY.

Witnesses:

FLORENCE E. BRYANT,  
V. H. LOCKWOOD.