

(No Model.)

2 Sheets—Sheet 1.

E. C. BANKER.
HARVESTER.

No. 467,222.

Patented Jan. 19, 1892.

Fig. 1.

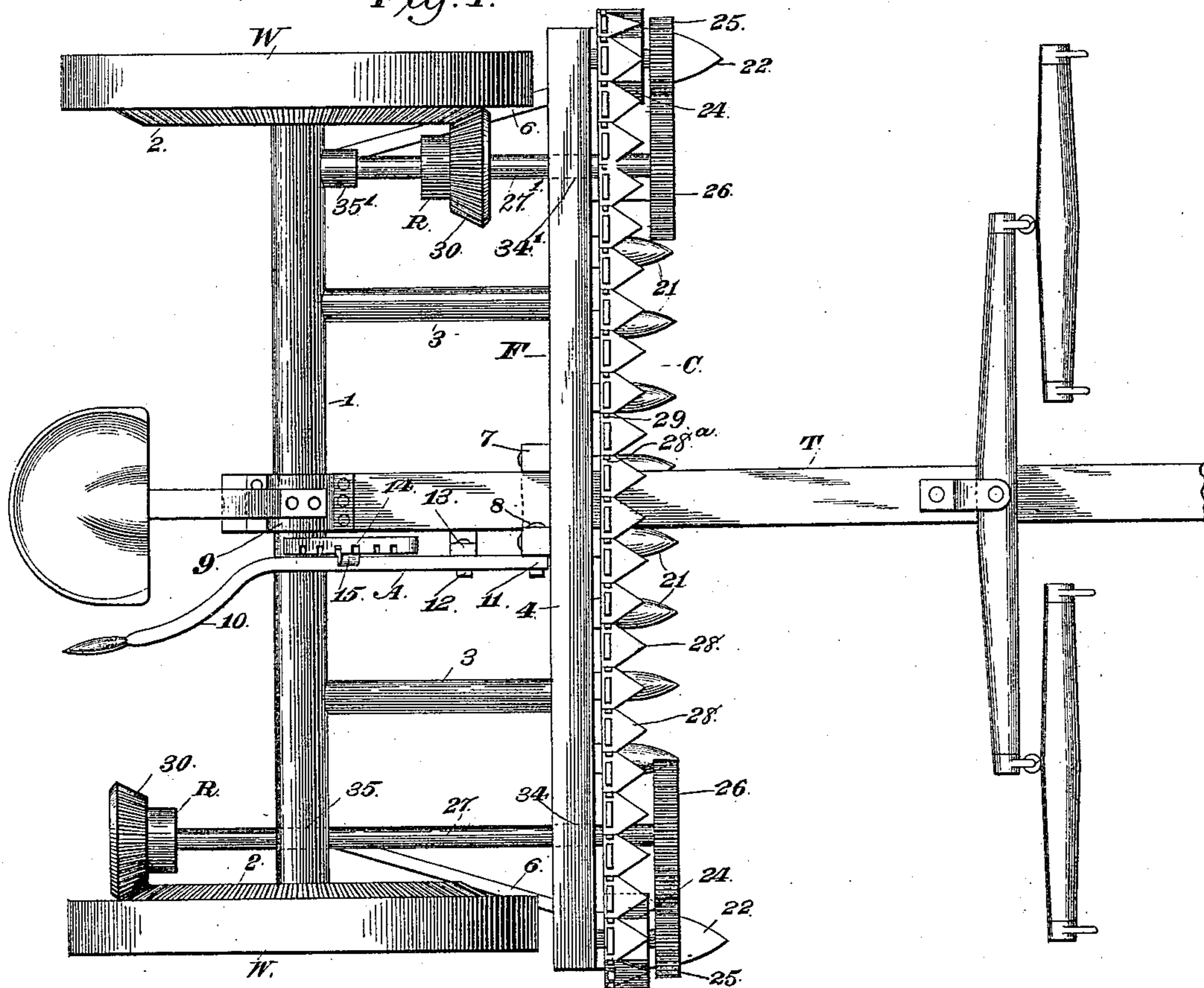
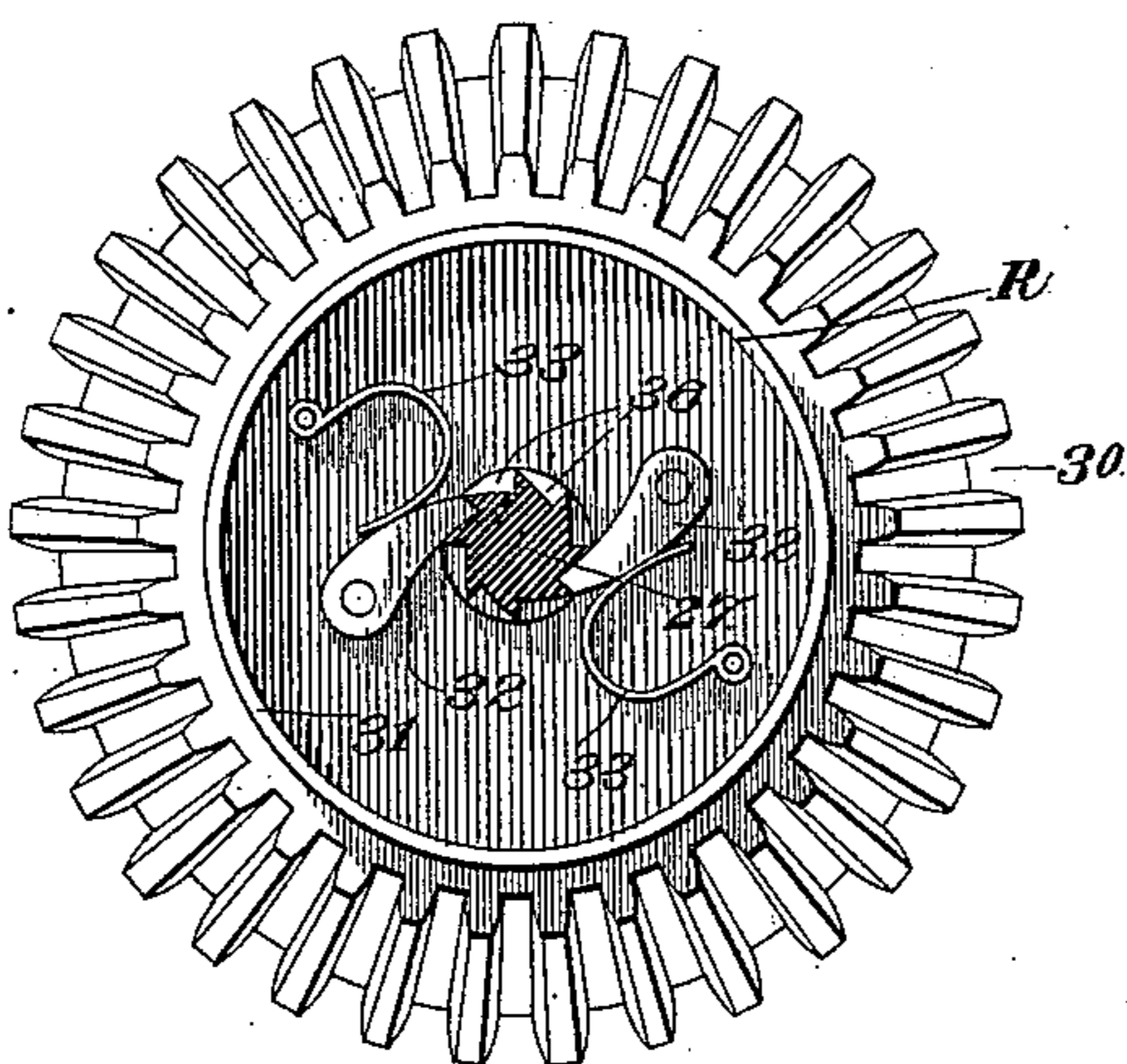


Fig. 3.



Witnesses

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2 Sheets—Sheet 2.

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Fig. 5.

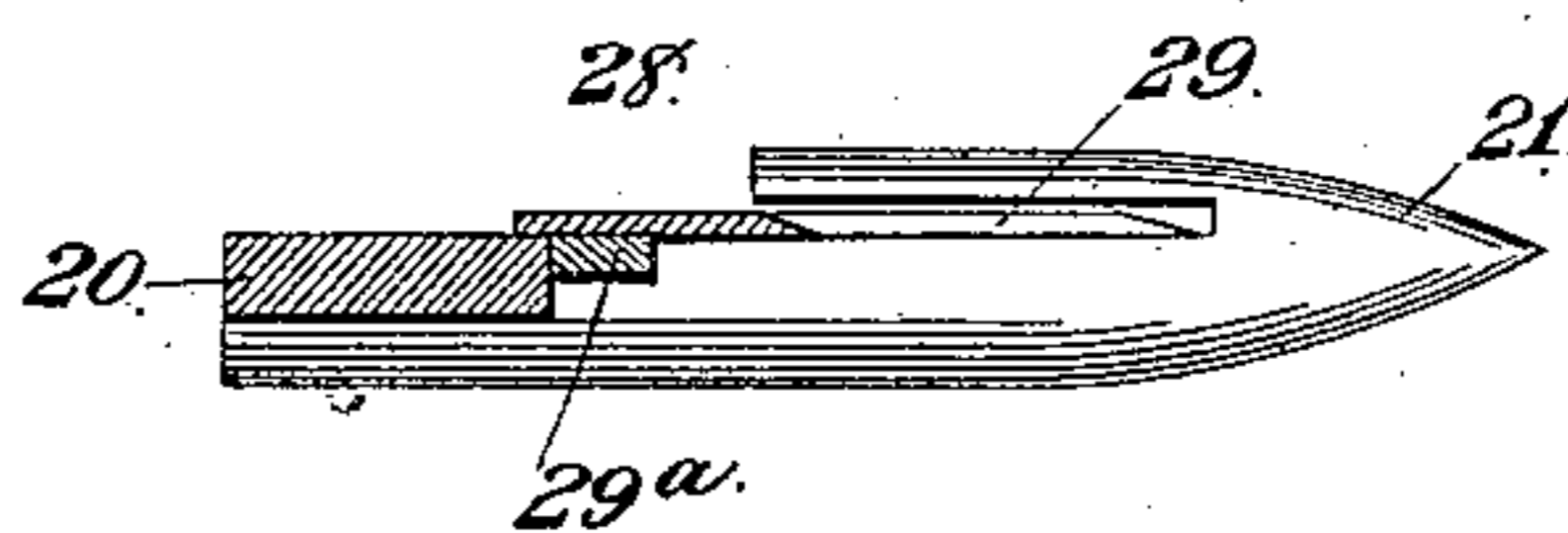


Fig. 2.

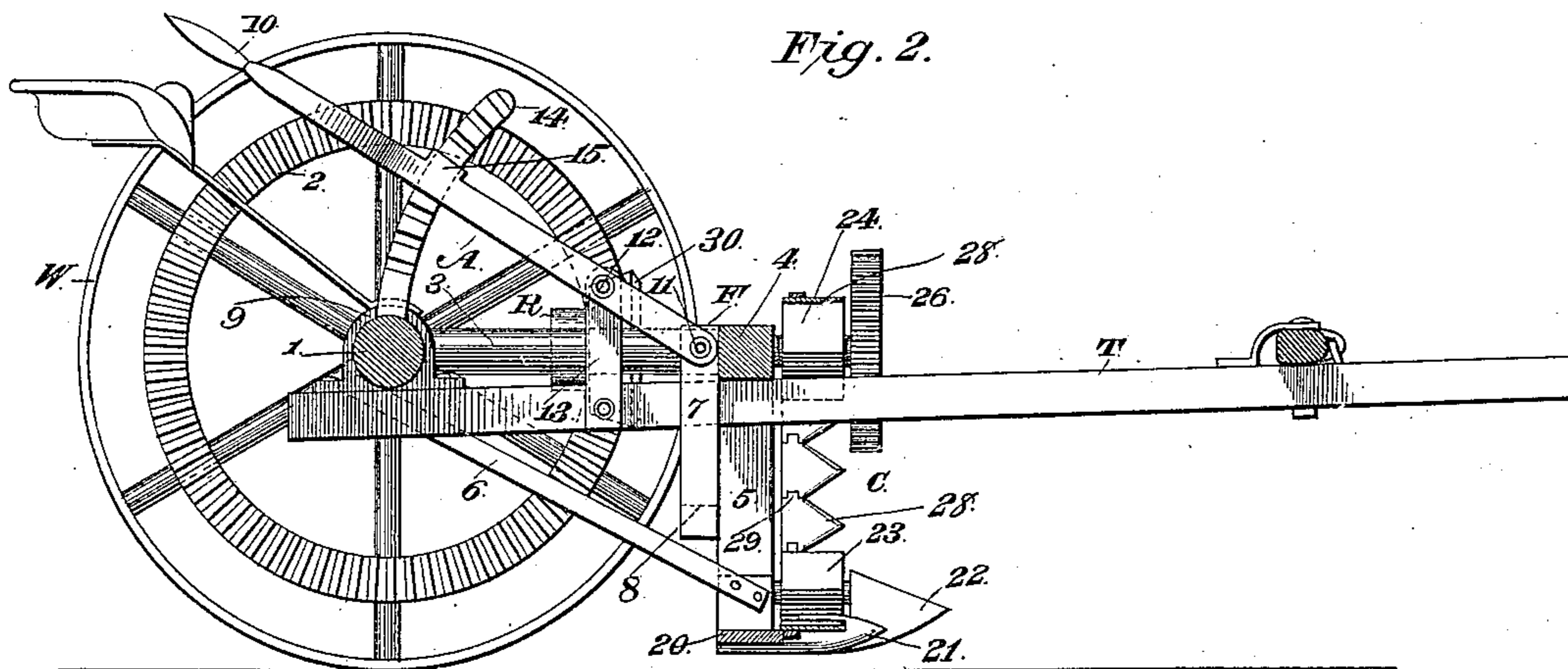
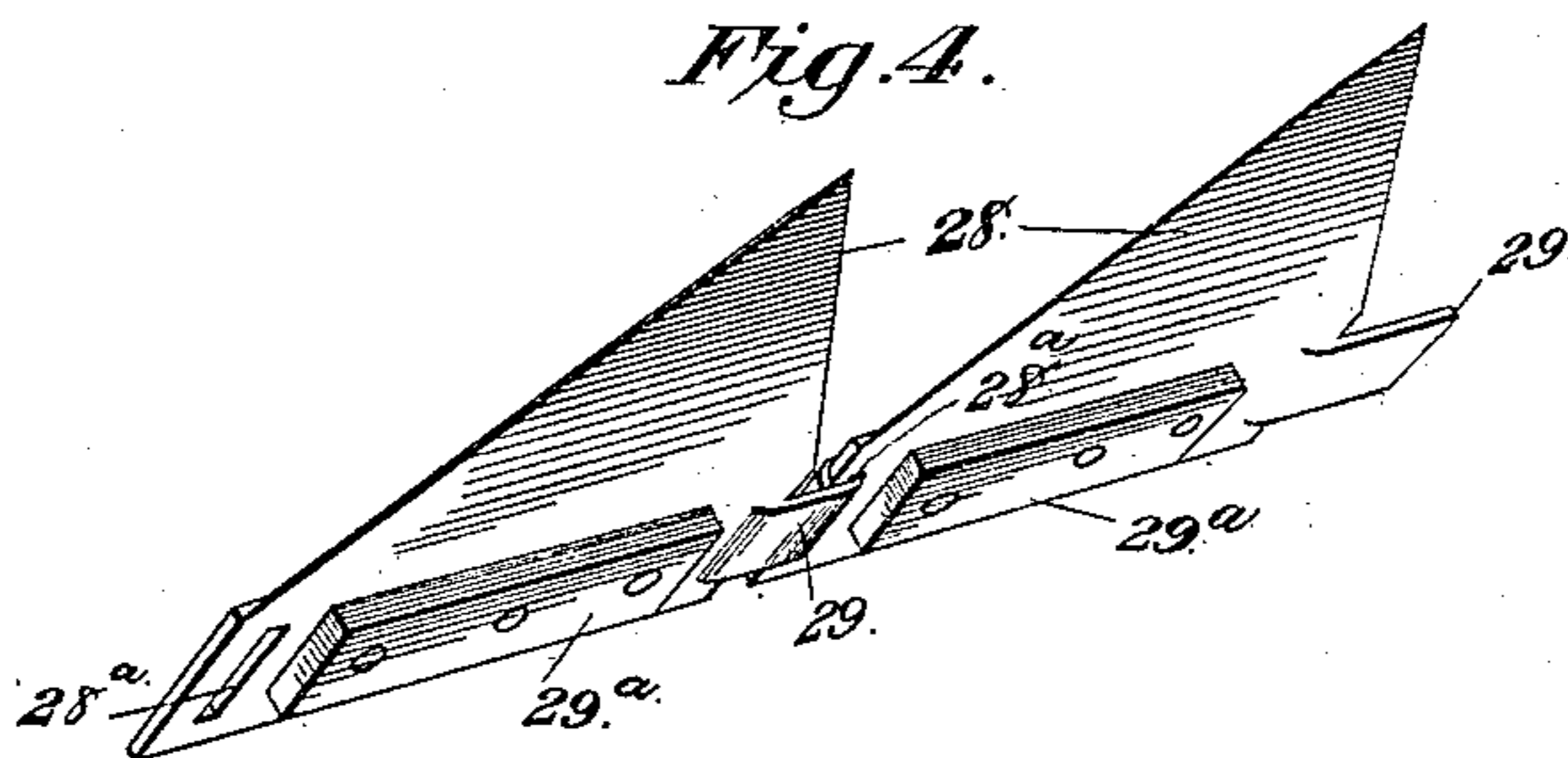


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

EDWIN CHARLES BANKER, OF BUCK CREEK, WISCONSIN.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 467,222, dated January 19, 1892.

Application filed June 30, 1891. Serial No. 398,084. (No model.)

To all whom it may concern:

Be it known that I, EDWIN CHARLES BANKER, a citizen of the United States, residing at Buck Creek, in the county of Richland and State of Wisconsin, have invented a new and useful Harvester, of which the following is a specification.

This invention relates to harvesters of that class known as "endless cutting" apparatus; and the object of the same is to effect certain improvements therein.

To this end the invention consists in the novel features of construction incidentally set forth in the following specification, pointed out in the claims, and illustrated on the two sheets of drawings, wherein—

Figure 1 is a plan view of this device. Fig. 2 is a central longitudinal section thereof. Fig. 3 is an enlarged elevation in detail of one of the ratchet-boxes. Fig. 4 is an enlarged perspective detail showing the connection between two of the knives. Fig. 5 is a detail sectional view.

In the said drawings, the letter F designates, broadly, the frame-work carried by the supporting-wheels W. T is the tongue to which the power is attached. A is the adjusting mechanism for raising and lowering the cutting apparatus C, and R are the "ratchet-boxes," so called because of their function, these parts being, respectively, of the constructions shown and more particularly described below, although it is to be understood that considerable change may be made therein without departing from the spirit of my invention.

On the ends of the main axle 1 are mounted the supporting-wheels W, each of which has a ring of gear-teeth 2, preferably on its inner face and near its periphery.

The frame-work F comprises bars 3, projecting forwardly from the axle 1 and connected by a cross-piece 4, from whose ends depend hangers 5, carrying the cutting apparatus C, and the lower ends of these hangers are connected by inclined braces 6 with the axle, whereby the entire frame-work is supported from the axle, and hence by the main wheels. Depending from the center of the cross-piece 4 is a bracket 7, having a vertical slot 8, and the tongue T passes through this

slot and is pivotally connected in any suitable manner, as at 9, to the center of the axle below the driver's seat, as shown.

The adjusting mechanism A comprises a lever 10, pivotally connected, through the bracket 7, to a cross-piece 4 of the frame-work, and pivotally connected near its front end at the point 12 to an upright 13, rising from the tongue T. This lever extends past a toothed arc 14, rising from the axle at one side of the driver's seat, and has a flange or lip 15, adapted to engage the teeth thereof. By this construction, the tongue being supported by the team in approximately horizontal position, if the driver depress the rear end of the lever 10 the latter will turn on its pivot 12, and its front end 11 will elevate the cross-piece 4 and thereby raise the entire cutting apparatus C. By this means the driver, from his seat, can adjust the height from the ground at which the cutting apparatus shall travel, and the lip by being brought into engagement with the proper tooth on the arc 14 will hold the cutting apparatus in its adjusted position.

The said cutting apparatus C comprises a horizontal finger-bar 20, from which project forwardly fingers 21, and at each end of this bar is the usual shoe 22, in which is mounted on a horizontal axis a wheel 23, preferably having a number of flat faces. At the ends of the cross-piece 4 are journaled other wheels 24 of a similar construction, and integral therewith or connected thereto are gear-wheels 25, intermeshing with large gears 26 on the front ends of shafts 27 and 27', which extend rearwardly, as shown. The knives 28 are connected in an endless chain or belt, which passes over and around the four wheels 24 24 23 23, and receives its motion through the gears 26 in a manner set forth below. The connection of the knives with each other is best seen in Fig. 4, and is made by forming an eye 28^a in one edge of each knife near its base and a tongue 29 at the other edge thereof, the tongues being passed through the eyes in adjacent knives and turned over so that the knives in the belt will be loosely connected with each other to permit their passage over the four wheels at the corners of the cutting apparatus. Bolted or riveted to the under side of this knife is a

block 29^a, which, as seen in Fig. 5, moves against the front edge of the finger-bar 20 and through transverse grooves across the fingers 21, and by this means the backward movement of the chain or knives under the resistance afforded in the act of cutting is resisted. In practice there will probably be a hood carried by the cross-piece 4 and covering the upper side of the endless chain as well as the gear-wheels 25 and 26, in order that no accident may befall the operator or the horses.

In Fig. 3 is seen a ratchet-box R, which consists of a gear-wheel 30, having a hollow hub 31, wherein on opposite sides of the center are pivoted pawls 32, whose tips are pressed normally inward by springs 33. The above-mentioned shaft 27 passes through the cross-piece 4 at the point 34 and through the axle at the point 35, and has journals at both said points, and the above-described ratchet-box is mounted on the shaft in rear of the right end of the main axle 1, the shaft being provided with recesses 36, forming teeth with which the tips of the pawls 32 engage, as will be clearly understood. At the other end of the axle 1 a bearing 35' projects forwardly from said axle, and the shaft 27' is journaled at 34' in the cross-piece and at its rear end in said bearing 35', but does not extend to the rear of this end of the axle. A similar box is also mounted on this shaft in such position that its gear 30 will engage the ring 2 on the left driving-wheel W. These ratchet-boxes are obviously for the purpose of permitting the machine to be backed without driving the cutting apparatus, or of permitting it to turn corners, when one wheel W will travel faster than the other, and not break the belt of knives by driving one large gear 26 faster than the other. If preferred, only one of the boxes might be used without departing from the spirit of my invention.

With a machine of the above construction a team is hitched to the tongue, the driver takes his seat, and the device is drawn over the ground. The gears 30 of the ratchet-boxes R engage the toothed rings 2 on the wheels W and turn the shafts 27 and 27' in the same direction and at the same speed, which is quite high, because said rings 2 are so near the peripheries of the wheels. The large gears 26 intermesh with the smaller ones 25 and drive

the wheels 24 at the upper corners of the cutting apparatus simultaneously and at very high speed, and this causes the endless chain of knives to pass through the fingers 21 and cut the grain. The latter falls over the finger-bar 20 and through the chain of knives, and as the hangers 5 are of considerable length the cross-piece 4 of the frame F is so high above the finger-bar 20 that the grain can fall to the rear and pass between the wheels without interruption.

When it is desired to adjust the height of the cutting apparatus from the ground, the operator grasps the rear end of the lever 10 and raises or lowers it in accordance with whether he desires the cutting apparatus respectively lowered or raised, the weight of said cutting apparatus being sustained at the proper point by engaging the lip 15 under the proper tooth of the arc 14, as above described.

What is claimed as new is—

1. In a harvester, the combination, with a frame-work carried by the main axle, supporting-wheels at the ends of the latter having toothed rings, gears engaging said rings, and driving-shafts leading from said gears through the frame, of hangers depending from the cross-piece of said frame, a finger-bar connecting said hangers, wheels at the ends of said finger-bar and cross-piece, an endless chain of knives passing over said wheels and through the fingers, and gears connecting the wheels at the ends of the frame with those on the shafts, as set forth.

2. In a harvester, the combination, with an axle, driving-wheels thereon having rings of teeth, a frame-work projecting forwardly from the axle, and a cutting apparatus carried by said frame-work, of driving-shafts for said apparatus passing rearwardly through and journaled in the cross-bar of said frame-work, one passing also through the axle, ratchet-boxes on said driving-shafts, and gears connected to said boxes and engaging said toothed rings, one in rear and the other in front of the axle, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDWIN CHARLES BANKER.

Witnesses:

O. F. BLACK,
W. E. BLACK.