(No Model.)

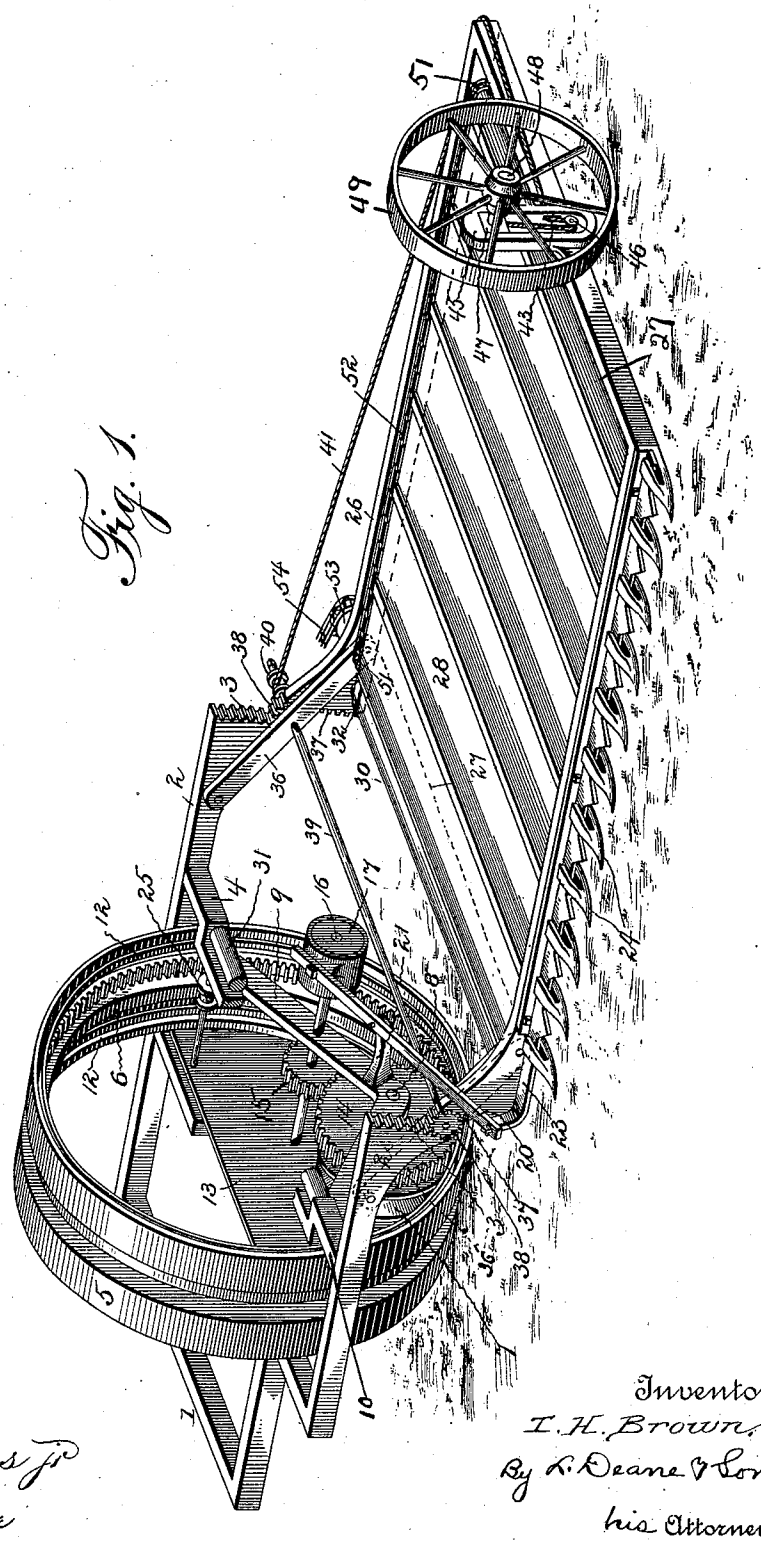
2 Sheets—Sheet 1.

T. H. BROWN.

HARVESTING MACHINE.

No. 590,821. Patented Sept. 28, 1897.

Fig. 1.



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(No Model.)

2 Sheets—Sheet 2.

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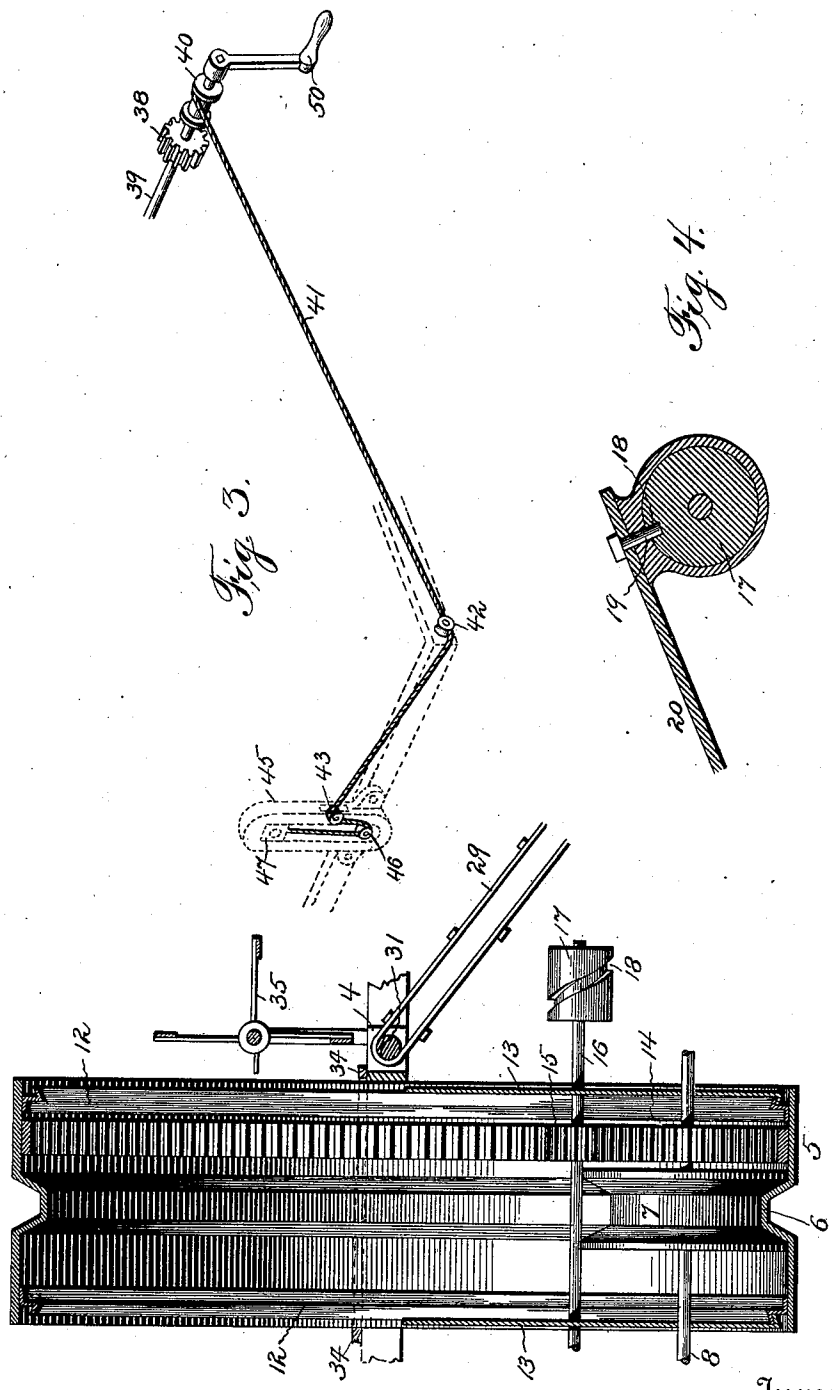

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UNITED STATES PATENT OFFICE.

THEODORE H. BROWN, OF VIROQUA, WISCONSIN.

HARVESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 590,821, dated September 28, 1897.

Application filed November 14, 1895. Serial No. 568,941. (No model.)

To all whom it may concern:

Be it known that I, THEODORE H. BROWN, a subject of the Queen of Great Britain, residing at Viroqua, in the county of Vernon and State of Wisconsin, have invented certain new and useful Improvements in Harvesting-Machines; and I do hereby 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.

My invention relates to grain-binding harvesters, and more particularly applies to improvements in the means for operating the sickle or cutter bar and delivering the grain to the binding-platform; and its object is to provide an improved construction of the same which shall possess superior advantages with respect to efficiency in operation.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of so much of a harvesting-machine as is necessary to illustrate my invention. Fig. 2 is a transverse sectional view. Fig. 3 is a detail perspective view of the means for elevating the outer end of the apron-frame. Fig. 4 is a detail sectional view of the cam-disk for operating the sickle-bar.

In the said drawings the reference numeral 1 designates the binder-frame for supporting the binder-platform, (not shown,) which may be of any ordinary or suitable construction. This frame is formed with outward extensions 2, the ends of which are formed with segment-racks 3, for a purpose hereinafter described, and said frame is also provided with an inward-extending bar 4. Located between the outer end of the binder-frame and the said bar 4 is a spokeless wheel or rim 5, formed on its inner surface with an annular V-shaped track 6, with which engages a grooved wheel 7, the shaft 8 of which is journaled in inclined bracket 9, secured to bar 4 and to the part 10 of the binder-frame. To the inner end of this shaft is secured the gearing (not shown) which drives the binding mechanism. To each edge of said rim is secured a Z-shaped annular ring 12, with which engages the bent ends of semicircular plates 13, which are secured, respectively, to the bracket 9 and portion 10 and serve to prevent dirt and trash from getting within the rim. These plates are stationary, while the rim revolves. Journaled to the shaft 8 is a cog-wheel 14, which meshes with cogs formed on the interior of the rim. Also meshing with said wheel 14 is a pinion 15, fixed to a shaft 16, journaled in the bracket 9 and in the portion 10. At its outer end this shaft is provided with a disk 17, having a cam-groove 18, with which engages a stud 19 on one end of a lever 20, pivoted to a bracket 21. The other end of this lever is connected with the inner end of the sickle or cutter bar 23, which works between the fingers 24, as usual.

The numeral 25 designates grooved guide-rollers (see Fig. 1) engaging with the inner surface of the rim for guiding and steadying the same.

The numeral 26 designates the apron-frame, having rollers 27 at each end, over which passes the slotted apron 28, which carries the grain cut by the sickle to an inclined apron 29, traveling over rollers 30 and 31, which are driven by a belt 32 from the inner roller 27. The grain from this inclined apron is forced or driven over a platform 34 to the binder-frame by means of a reel 35, driven by the binder mechanism.

The inner end of the apron-frame is pivoted to arms 36, secured to the extensions 2, and the side bars of said frame are formed with segment-racks 37, which engage with a pinion 38 on each end of a shaft 39. These pinions also engage or mesh with the racks 3. Secured to shaft 39 is a pulley 40, to which is secured a rope 41, extending to the end of the apron-frame, where it passes over a pulley 42 and then extends around the end of said frame, around a pulley 43 of a bracket 45, secured to said frame, then down and around another pulley 46, and then up to a vertically-movable journal-box 47, to which it is secured. To this box is journaled the axle 48 of a supporting-wheel 49. The shaft 39 may be rotated by a crank 50. The rollers 27 of the apron-frame are provided with sprockets 51, over which pass sprocket-chains 52, to which the apron is secured, and the inner roller 27 is driven by a sprocket 53 and a chain 54, connected with the binding mechanism.

The operation is as follows: As the harvester is drawn along the rim will revolve the weight coming upon the grooved wheel, which will be rotated by frictional contact to drive the binding mechanism. At the same time the cogs of the rim, engaging with the cog-wheel, which in turn meshing with the pinion, will through the medium of the slot, ted disk rapidly reciprocate the sickle or cutter bar. The grain as it is cut will fall upon the apron and be carried to the inclined apron, which will deliver it to the platform at the center of the rim, from which it will be forced by the reel to the binding-frame. By means of the cogged segments and the pinions engaging therewith and their shaft the apron-frame may be elevated. The rope extending from the pulley on said shaft to the bracket at the outer end of the apron-frame will at the same time elevate said outer end of the frame.

Having thus fully described my invention, what I claim is—

1. In a harvesting-machine, the combination with the frame having extensions with cogged segments, and the apron-frame having similar segments, of the shaft, the pinions mounted thereon engaging with said segments, and the links pivoted to the frames concentric with said segments, substantially as described.

2. In a harvesting-machine, the combination with the frame having extensions with cogged segments and the apron-frame having similar segments, of the shaft, the pinions mounted thereon engaging with said segments and links pivoted to the frames concentric with said segments, substantially as described.

3. In a harvesting-machine, the combination with the frame having extensions with cogged segments, the apron-frame having similar segments, the shaft, the pinions mounted thereon, engaging with said segments and the links pivoted to the frame concentric with the segments, and means connected with said shaft and with the outer end of said frame, for elevating and lowering said end by the rotation of said shaft, substantially as described.

4. In a harvesting-machine of the character described, the combination with the frame, of the cogged rim having a V-shaped track, the grooved wheel, the cog-wheel and pinion, of the annular Z-shaped ring secured to said rim at each edge, and the stationary semicircular plates having their edges bent and engaging with said rings, substantially as described.

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

THEODORE H. BROWN.

Witnesses:
C. J. SMITH,
I. S. GRIFFIN.