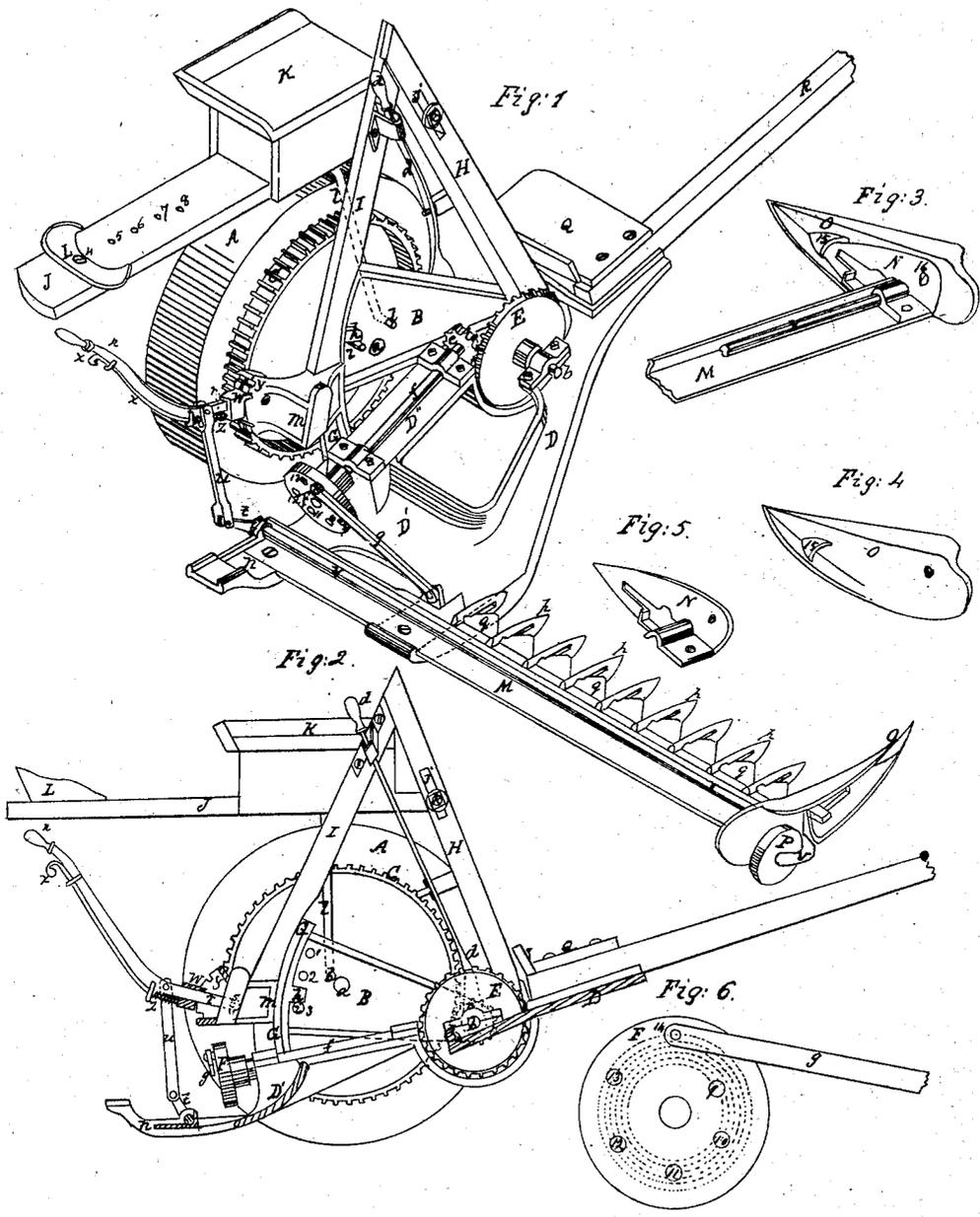


W. A. KIRBY.
HARVESTER.

No. 28,284.

Patented May 15, 1860.



Witnesses.
A. B. Sloughton
Thos. H. Hafferman.

Inventor.
Wm. A. Kirby

UNITED STATES PATENT OFFICE.

WILLIAM A. KIRBY, OF BUFFALO, NEW YORK.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 28,284, dated May 15, 1860.

To all whom it may concern:

Be it known that I, WILLIAM A. KIRBY, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Grain and Grass Harvesters; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of the machine. Fig. 2 represents a cross-section through the frame, leaving a portion of the frame and gearing in elevation. Figs. 3, 4, 5, and 6 represent details of the machine, which will be specially referred to.

Similar letters of reference, where they occur in the separate figures, denote like parts of the machine in all of them.

In its general characteristics this machine is very much like those covered by patents heretofore granted to me; but I have made important improvements upon my former invention, which I propose to embrace in this application, and which I shall more particularly refer to without going into a formal description of the whole machine, as my present invention relates to the details of the machine.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the main driving and supporting wheel, which turns on a journal, *a*, permanently attached to the segment-plate B. This segment-plate has a hub upon it, through which the shaft *b* passes, and so that said plate may freely move on said shaft. On one end of this shaft there is a pinion, *c*, which, when thrown up toward the cogged rim C on the main wheel A by the clutch-lever *d*, receives motion therefrom and communicates it to said shaft *b*. The shaft *b* is supported by and turns in suitable boxes arranged on the triangular main frame D D' D'', which is all cast in one piece. The shaft *b* carries a bevel-gear wheel, E, which turns a bevel-pinion, *e*, on the forward end of a shaft, *f*, and to the rear end of this shaft *f* there is affixed a crank-wheel, F, to which the cutter-bar and cutters are connected by a pitman, *g*.

G is a curved piece permanently affixed to the main frame, and serves both as a guide for the movement of the segment B, as also a

means of adjusting the distance that the main frame may rise and fall by means of a projection, *h*, thereon, and a pin, *i*, in said segment-plate in one of the adjusting-holes 1 2 3.

H I are two braces firmly fixed at their lower ends to the main frame, and inclining toward each other are framed together at their tops. In a slot, *j*, in the brace H, so as to make it adjustable, is arranged a pin or journal, *k*, to which the lever-piece J is hinged, and on which lever-piece is placed a driver's seat, K, and an adjustable raker's seat, L, which can be moved and fastened at any one of the points 4 5 6, &c., to make the weight of the raker aid in balancing the machine. This lever-piece J is also supported by rods *l*, that extend from it down to the segment-plate on one side of the wheel and to the journal *a* on the other side of it, or to the stirrup on said journal.

m is the stirrup for the right foot of the raker.

To two projecting pieces, *n o*, in rear of the main frame is attached by screws or otherwise the finger-bar M, on which the guards *p*, through which the cutters *q* vibrate, are affixed. This finger-bar is made of angle-iron, and has upon its outer end a false shoe, N, to which the divider or outer shoe, O, is attached, as will be hereinafter explained, so as to make it easily removed when the machine is to be converted from a mower to a reaper.

r is a lever pivoted to a part of the rigid frame at *s*. This lever is connected to a crank, *t*, by a rod, *u*, and the crank-*t* is fastened to or a part of a rod, *v*, which lies in the angle of the finger-beam M, and supported so as to freely rock thereon. This rod has upon its outer end a wheel or roller, P, so arranged as that the turning of said rod will convert the wheel P into a lifting-wheel to raise up the outer end of the finger-beam or to let it down entirely onto the ground.

w is a dog, which can slide on the lever *r*, and to this dog is connected a rod, *x*, that extends along the under side of the lever to or near its handle, so that when the operator wants to raise or lower the cutters or finger-beam he can clutch both the lever *r* and the rod *x* with one hand. By drawing first upon the rod *x* the dog *w* is drawn out of the ratchet *y*, (which is a permanent fixture,) and then by raising or lowering the lever the cutters, &c., will be lowered and raised to the proper height. When this is done, let go the rod *x* and the

spring z will throw the dog into the ratchet, and there hold the lever fixed, and of course the parts attached to it, and this constitutes one of my improvements.

The crank-wheel F is furnished with a series of holes, 9 10 11 12 13 14, through either of which the wrist-pin on the end of the pitman may pass to change the motion or speed of the cutters, which is very necessary, according to the condition of the grain or grass to be cut, said holes being nearer to or farther from the center of the crank-wheel, and the change being almost instantly effected.

In many mowing-machines there have been devices for clearing away a track for the machine on its return swath. Instead of moving away the grass for this purpose when mowing, I form that part D' of my main frame into a runner form—that is, curved up in front and low at its rear—so that its front will mount up or over the cut grass, and its rear mash or crush it down flat, and thus I flatten down the cut grass, so as to prevent it from raising up the cutters and to obviate the necessity of an open space at that point.

On the outer end of the finger-beam is fastened the false shoe N, it having an opening through or under it, through which the rod v can pass, as also suitable openings for the cutter-bar and outside cutter to vibrate in, and the front of this false shoe is run out to a point. The real shoe O is so formed as to lie snugly up against this false shoe, and has a kind of

pocket, 15, cast upon it, through or into which the point of the false shoe enters, and then by a single screw, 16, the two are permanently united. It is obvious that if the point of the false shoe were not protected the grass, &c., would catch and lodge against it; but by allowing it to pass into the pocket of the real shoe this is entirely avoided, while it affords a simple but efficient fastening also.

Q is a foot-rest for the driver, and R is the tongue, which is fastened to the point of the main frame. The form of that part of the frame D', it will be perceived, obviates all necessity of a track-clearer or of an open space, and by crushing down the cut grass the cutter-bar will not be raised up by it, and I thus by crushing down the grass avoid a difficulty and dispense with the track-clearer heretofore provided for overcoming that difficulty.

Having thus fully described the nature and object of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

In combination with the rod and lifting-wheel, the lever and rod z , with their attachments, substantially as described, for the purpose of raising, lowering, and holding the cutters at different heights, as set forth.

WM. A. KIRBY.

Witnesses:

A. B. STOUGHTON,
THOS. H. UPPERMAN.