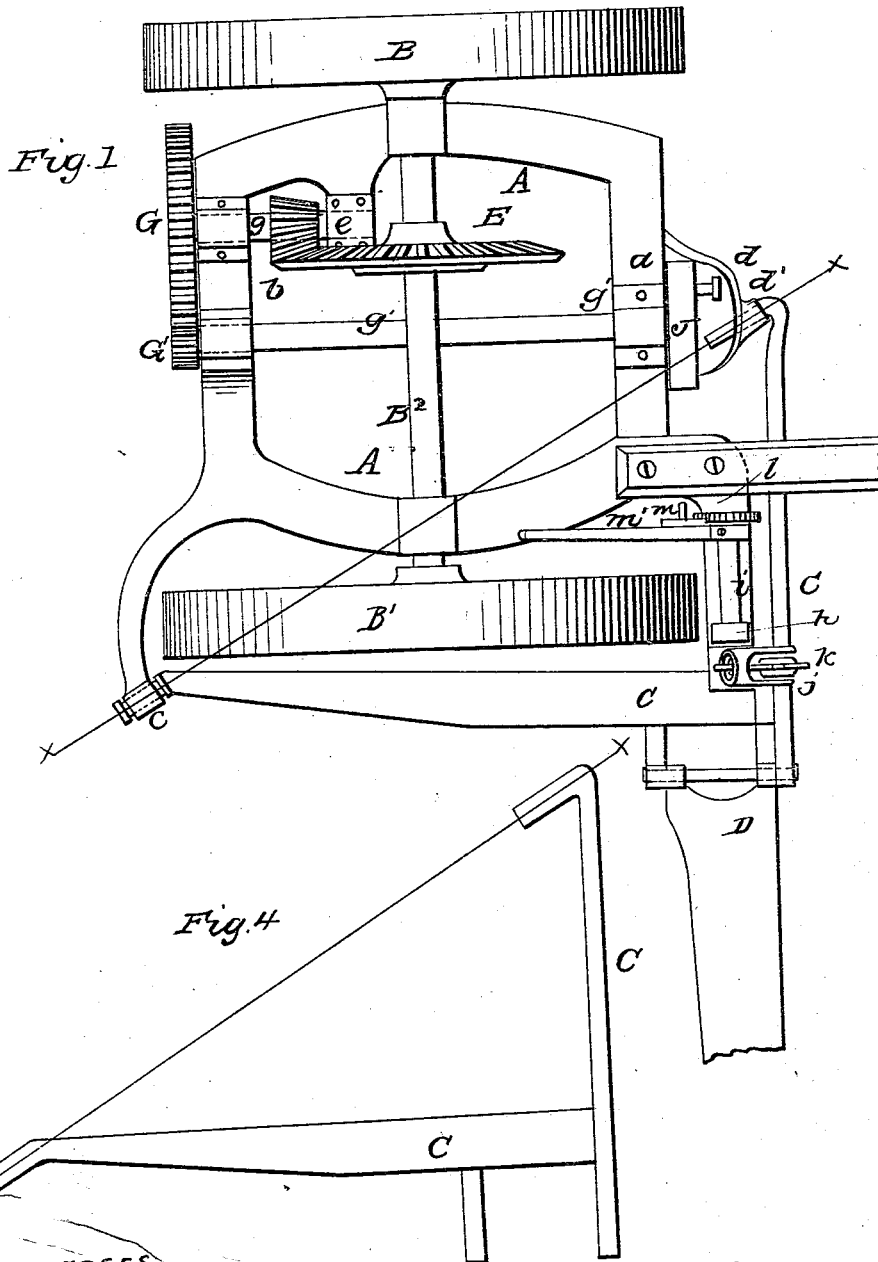


W. H. BURKHART.

Harvester.

No. 52,264.

Patented Jan'y 30, 1866.



WITNESSES

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Fig. 2

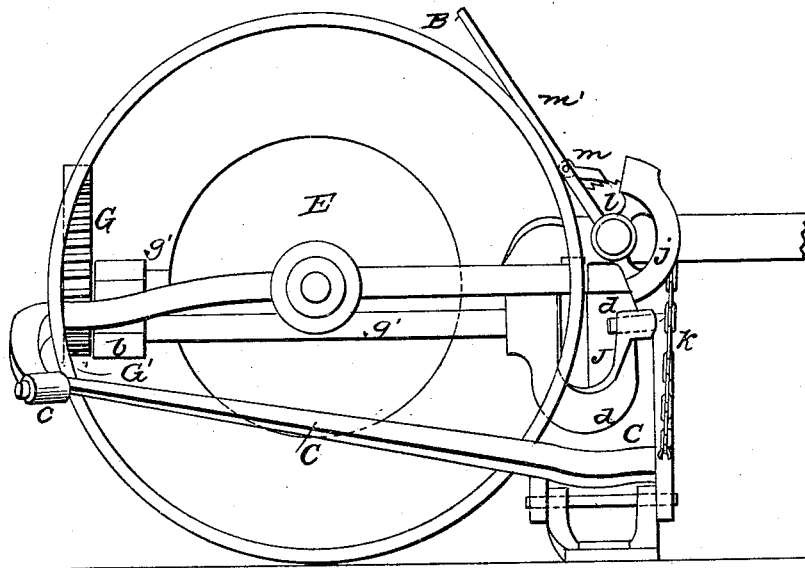
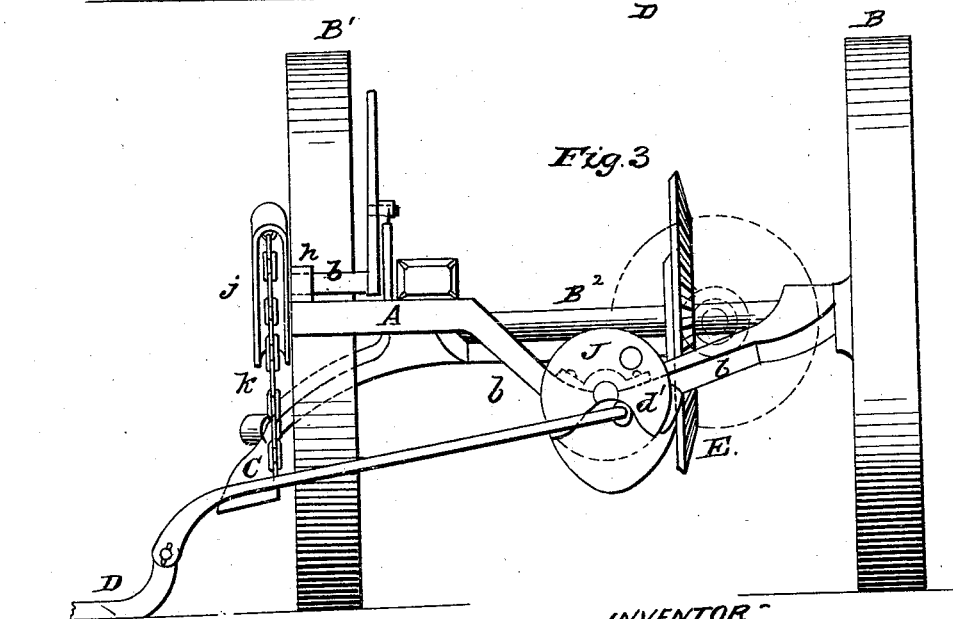


Fig. 3



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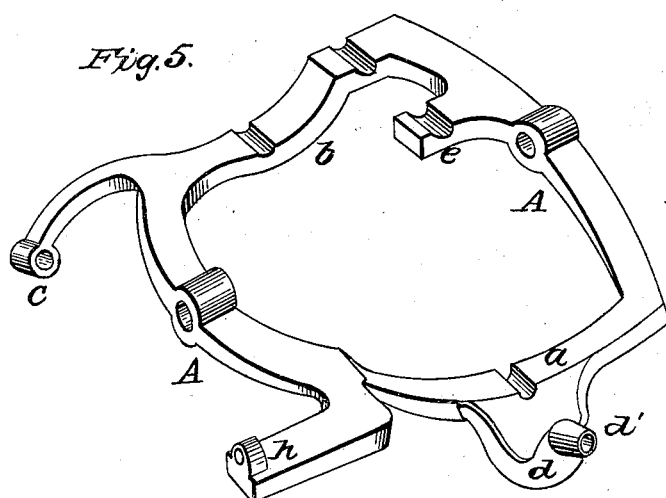
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN HARVESTING-MACHINES.

Specification forming part of Letters Patent No. 52,264, dated January 30, 1866.

To all whom it may concern:

Be it known that I, WILLIAM H. BURKHART, of Bucyrus, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Harvesting-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of that portion of a harvesting-machine which I have improved. Fig. 2 is an elevation of that side of the machine which carries the cutting apparatus. Fig. 3 is a front elevation of the machine. Fig. 4 is a top view of the rectangular brace for the cutting apparatus. Fig. 5 is a perspective view, showing the form of the main frame.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates, first, to a novel mode of hinging the finger-beam of the cutting apparatus to the main or draft frame of the machine; second, to a novel guard and bearing formed on the front part of the main frame, in connection with a novel journal of the brace or coupling of the cutting apparatus and finger-beam; third, to a novel construction of the main or draft frame as a whole; fourth, to a novel construction of the coupling or brace of the finger-beam and cutting apparatus.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The frame A is supported upon two transporting-wheels, B B', with the axle B² running through it, and this frame consists of two side bars, which are curved outward, and two transverse bars, *a b*, which are both depressed. The rear portion, *b*, of the frame is extended around behind the wheel B', and has a tubular bearing, *c*, formed on it, and the forward portion of this frame is extended horizontally across the front part of said wheel, and forms a support for the contrivance for raising and lowering the cutting apparatus, which will be hereinafter described. At an intermediate point between the ends of the front bar *a*, I cast with the frame a cup-shaped guard, *d*, which projects from the lower side of said bar and forward thereof, and receives within it the crank-wheel which gives motion to the sickle.

At the upper and forward extremity of this guard *d* is formed a tubular bearing, *d'*, the axis of which coincides with that of the tubular bearing *c* at the rear part of the frame, as clearly shown in Figs. 1 and 5. On the inside of the side bar of frame A which is nearest the wheel B is a projection, *e*, which is intended to form a forward bearing for a short pinion-shaft, *g*, the rear end of which is supported upon the bar *b*. Semicircular depressions are formed in the frame A at suitable points, to receive the transverse axle B², and the two longitudinal shafts *g g'*, as shown in Fig. 5, and an eye-bearing, *h*, may be cast on the projection in front of the wheel B', to receive the end of a transverse shaft which is used in raising and depressing the cutting apparatus. The frame A thus constructed presents the form shown in Fig. 5, and it is cast in one piece so as to possess strength and lightness. To this frame is pivoted a rectangular brace, C, consisting of a longitudinal bar extending from the tubular bearing *c* outside of the wheel B' to a transverse bar which extends from the tubular bearing *d'* downward and outward in front of wheel B', and has pivoted to it the finger-beam B, as shown in Figs. 1, 2, and 3.

The brace C is shown clearly in Figs. 1 and 4, and it will be seen that the two bars thereof are rigidly connected together, and that the ends of these bars are hooked, so that if continued across they would form the hypotenuse of a right-angle triangle, as indicated by the red line *x x*, Fig. 4. This line *x x* will be the axis of motion of the brace C when it is pivoted to the bearings *c d'*, as indicated in Figs. 1, 2, and 3, and in raising it from the ground it will move backward. The same result would be obtained if, instead of the tube *c*, the rear end of the brace C were connected by a hook-and-eye or link fastening to the frame A. I prefer, though, to employ the tubular bearings at both ends of the frame, as described. By thus pivoting the brace C to the frame A it affords an unyielding resistance to the finger-beam D against backward thrust and holds the cutters firmly down to their work, at the same time allowing the cutting apparatus to rise and fall in passing over uneven surfaces. Another advantage which arises from this mode of connecting the brace

is that there is so little play allowed that the joints will not be liable to wear loose and cause an imperfect working of the sickle.

To the outer end of the short shaft *i* a segment, *j*, is keyed, which is constructed with a groove and tube for receiving a chain, *k*, which is connected to the brace C. The upper end of the groove has a slot in it for receiving and retaining the chain *k*, and admitting of this chain being shortened or lengthened at pleasure. The opposite end of the rock-shaft *i* has its bearings in a toothed or ratchet segment, *l*, which is suitably affixed to the frame A, and which is intended for receiving a pawl, *m*, that is pivoted to a lever, *m'*, upon the shaft *i*. The pawl catches into the teeth of the segment and sustains the cutting apparatus in an elevated position when desired.

A large bevel spur-wheel, E, is keyed on the axle B², and engages with the teeth of a pinion-wheel which is keyed on a short shaft, *g*, which is supported in bearings upon frame A at both ends, as above described. On the rear end of this shaft *g* is a large spur-wheel, G, which engages with a pinion, G', on a shaft, *g'*. This shaft has its bearings on the front and rear ends of the frame A, and carries on its front end the crank-wheel J, which turns freely in a guard, *d*, which protects it from grass, &c., and which constitutes a bearing for the forward end of the swinging-brace C, as above

described. The object of providing a forward bearing for the pinion-shaft *g* is to prevent this shaft from wearing untrue, as it would do if it had but one point of support.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Pivoting the ends of the rectangular finger-beam brace C to the frame of the machine, substantially in the manner shown and described, so that the axes of motion of these ends or pivots will coincide with each other and admit of the finger-beam being elevated or depressed bodily.

2. The concave guard *d*, constructed with the oblique bearing *d'* and formed upon the front part of the frame A, in combination with the brace or coupling C, constructed with an oblique journal to work in bearing *d'*, substantially as described.

3. The construction of the frame A in the manner represented in Fig. 5, and as herein described, for the purpose set forth.

4. The construction of the brace or coupling arm C C as represented in Fig. 4, and as herein described, for the purpose set forth.

W. H. BURKHART.

Witnesses:

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J. R. CLYMER.