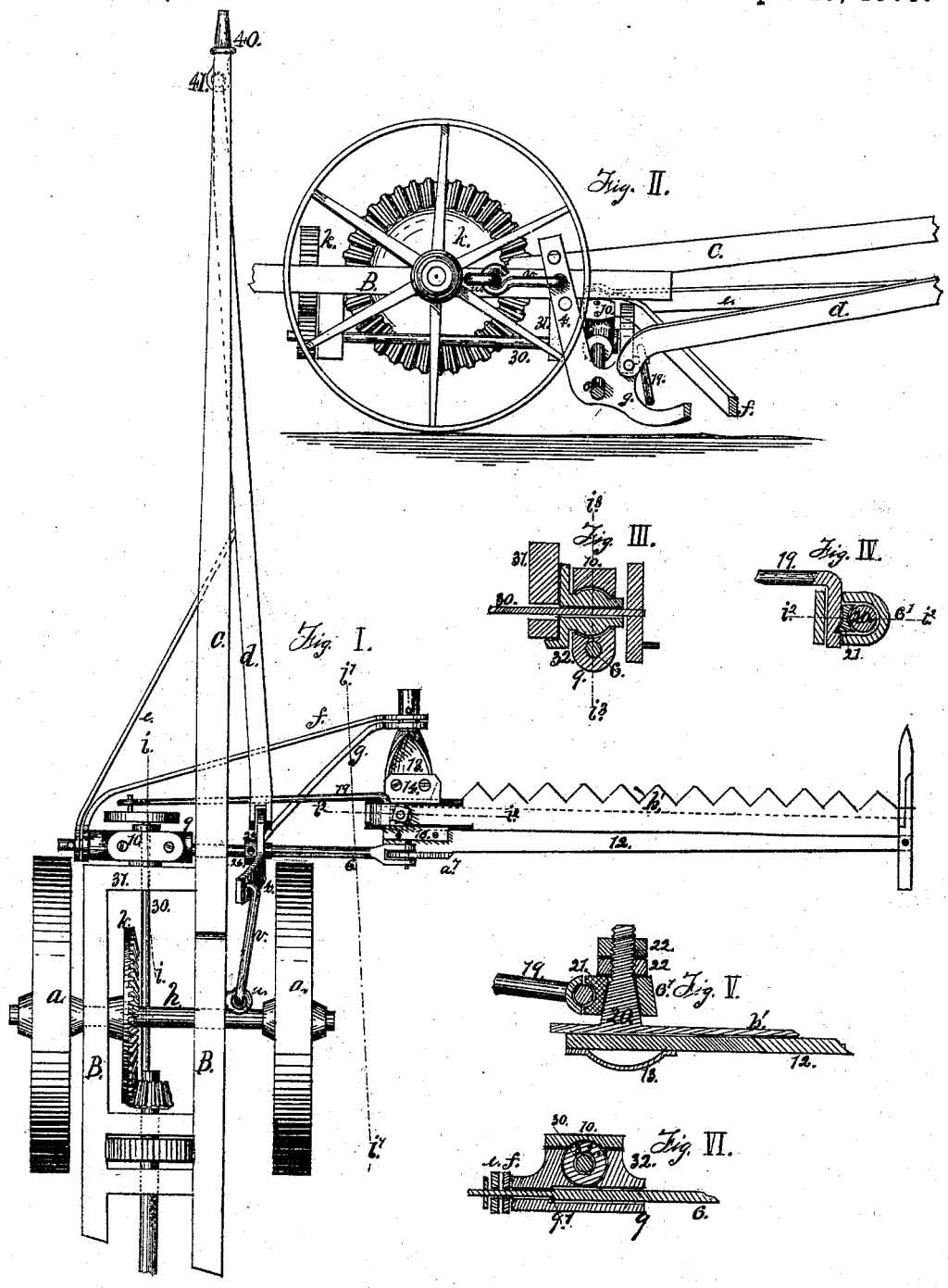
H. H. BRIDENTHAL, Jr.

MOWER.

No. 182,552. Patented Sept. 26, 1876.



WITNESSES

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IMPROVEMENT IN MOWERS.

Specification forming part of Letters Patent No. **182,552**, dated September 26, 1876; application filed October 7, 1875.

To all whom it may concern:

Be it known that I, HARRY H. BRIDENTHAL, Jr., of the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Interchangeable Grain-Binding Harvester and Mower; and I do declare the following to be a clear, full, and exact description of the same as adapted to mowing, reference being had to the drawings forming a part of this specification, in which—

Figure 1 represents a top view of my improved machine, showing the general plan. Fig. 2 is a vertical sectional view taken through the line i^1 i^1, Fig. 1. Fig. 3 is a vertical sectional view of the sleeve-connection, taken through the line *i i*, Fig. 1. Fig. 4 is a horizontal sectional view of the pitman-connection, showing its construction. Fig. 5 is a vertical section of the same; and Fig. 6 is a vertical section of the sleeve-connection, taken through the line i^3 i^3, Fig. 3, showing the arrangement of the sleeve 9 and the brace 6.

Similar letters and numbers of reference, where they occur in different figures, refer to like parts of the machine in all of the drawings.

The subject-matter of this application for Letters Patent relates to my machine as arranged and adapted for mowing; and the object of my invention is to improve the general construction of mowers, making them more easily operated, convenient to use, and more effective in operation; and it consists in the construction, combination, and arrangement of the various parts hereinafter more fully described and specifically claimed.

In the drawings, *a a* represent the drive-wheels of my machine, which are attached to the ends of the main shaft or axle *h*, in the usual manner. B B is the frame, and *k k* is the gearing. The said frame and gearing do not differ materially from that usually used in this class of harvesters and mowers. To the forward end 31 of the frame B is firmly secured the sleeve 32, which is provided with a base-plate or lugs for the purpose. Near the middle of the said sleeve 32 is formed a ball corresponding with a socket formed in the sleeve 9, which fits loosely thereon, and is secured by means of the cap 10, which is held in place by screw-bolts or other suitable means. Within the sleeve 32 is formed a bearing, in which is placed the crank-shaft 30, the end piece 31 of the frame being perforated opposite the said bearing for the purpose, and the opposite end of the crank-shaft is pivoted to the rear end of the frame, where it is connected with the gearing in the usual manner. Within the sleeve 9 is formed a shoulder corresponding with a shoulder near the end of the brace 6, which fits snugly but not tightly within, the shoulder preventing it from passing too far through. The end of the brace-rod 6 is made long enough to pass through the sleeve 9 and receive the braces *e* and *f*, which are secured thereon by means of a pin or nut, as shown in Figs. 1 and 6. The opposite end of the brace 6 is hinged to the finger-bar 12 by means of a hinge hereinafter described. The brace 6 passes through an eye formed in the lower end of the arm 4, which is secured to near the middle of the said brace by a collar formed thereon and by the movable collar 24. The lower end of the arm 4 is curved forward and outward nearly at right angles, passing forward beneath the pitman, and, by means of an eye formed on its end, is secured to the forward end of the shoe 13, in the same manner as is the brace *f*, the opposite end of which is with the brace *e*, secured to the sleeve 9 and the brace-rod 6, as before described. The upper end of the arm 4 is provided with a number of holes about opposite the tongue when the cutter-bar is down, for the purpose of connecting the link *v* and adjusting it so as to cause the said arm to stand forward or farther back, as may be desired.

The opposite end of the link *v* is secured to the main frame by means of the eyebolt *u*. Near the angle of the arm 4 and the brace *g* is formed an eye, to which is secured the rear end of the secondary tongue *d*, which has for its purpose to support the finger-bar laterally, the opposite end being provided with a hook, which is secured to a suitable eye on the main tongue near its point. To the tongue *d*, and as far forward as practicable to leave room for the team, is secured the forward end of the brace *e*. The opposite end thereof is secured to the brace and sleeve 9 6, as shown in Figs. 1 and 6. By this construction the finger-bar is carried along the surface of the ground by

the secondary tongue *d*, and allowed to play vertically, and to adjust itself to the inequalities of the field, the tongue *d* being connected forwardly higher than the cutter-bar. Hence the draft has a tendency to assist in raising it over obstructions, and as the draft of the finger-bar only is imposed upon the tongue *d*, which is not in any way influenced by the draft of the drive-wheels, the cutter-bar is not raised by excessive resistance or draft of the said drive-wheels, but only when it comes in contact with some obstruction. The upper end of the arm 4 being connected to the main frame by means of the short link *v*, it is evident that when the finger-bar is raised above the plane of cut, or drops below it, the upper end of the said arm 4 moves in the arc of a circle about the eyebolt *u*, which causes the points of the guards to be raised relative to the bar. Hence, when the bar drops into a rut or depression, the guards rise obliquely, enabling the bar to rise out without running them into the bank or ground, and when the said bar is raised or rises over a stone or hillock, the finger-bar is rolled backward, as before described, and in a measure protecting the knife from injury, and causing the bar to more easily pass the obstruction. To the inner end of the cutter-bar *b* is secured a conical stud, 20, about which works the corresponding conical bearing within the block 6′, and at right angles with the stud-bearing is formed the bearing of the pitman 19. Between the said pitman and stud-bearings is placed the follower-block 21, which is grooved at right angles on its opposite sides to correspond with the stud and pitman bearings, in the latter of which is formed a projection, which enters an annular groove in the pitman-journal, thus securing it in place, and preventing it from coming out except when the block 6′ is removed from the stud 20 and the follower-block withdrawn.

The block 6′ is secured to the stud by means of the check-nuts 22, which serve to adjust the aforesaid bearings to compensate for wear by drawing the said block down upon the larger part of the stud 20, which thus serves as purpose of a cotter. By this construction the cutter-bar and pitman are relieved of undue strain when the finger-bar is rolled or adjusted to different positions. It also allows the use of long substantial bearings for the pitman, which can always be kept tight.

The inner end of the cutter *b′* is beveled on its opposite sides or edges, the rear of which corresponds with the beveled slide 16 attached to the finger-bar 12. 14 is a similar beveled block placed at the forward side of the said cutter-bar and secured to the inner shoe or finger bar by means of screw-bolts which pass through slotted holes therein, thus providing means of adjusting the slides and compensating for wear, and keeping the inner end of the cutter-bar securely in place.

The inner shoe 13 is formed of a single thin piece of metal, corrugated or curved laterally throughout its length, and the edges are turned outwardly, forming lips, which secure it to the finger-bar, and at the rear end is a lip turned upward and projecting past the rear edge of the bar, and far enough to form a stud, to which is hinged the brace 6, which is divided at the end, forming jaws, which receives the said lip, and is secured by means of a through bolt or pin, thus forming a hinge. The forward end of the shoe 13 is rolled together, as shown in Fig. 1, forming a pivot, which enters the eyes formed in the ends of the braces *g* and *f*.

By this construction and arrangement of shoe-braces and secondary tongue I am enabled to construct the machine very light, and secure, at the same time, sufficient strength, as nearly all of the strains are imposed upon the parts in the direction of their length, the main frame being relieved of the angular strain caused by the usual manner of bracing front-cut machines. It can, therefore, be made much lighter than usual in this class of mowers.

When the machine is to be transported, as from one field to another, the link *v* is removed from the arm 4, when the finger-bar may conveniently be folded across the tongue.

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

1. The combination of the pole C, secondary pole *d*, arm 4, and the braces *e f g*, these members constructed and operating substantially as and for the purpose herein specified.

2. The combination of the frame 31, sleeve and ball 32, shaft 30, socket-sleeve 9, and the braces *e f* and 6, substantially as and for the purpose set forth.

3. In combination with the braces 6 and 9, the removable collar 24, as and for the purpose herein specified.

4. The combination of the arm 4, link *v*, frame B, and the brace *g*, these members constructed and operating substantially as and for the purposes herein specified.

5. The herein-described shoe 13, consisting of a thin metallic plate, corrugated lengthwise, and provided with lips and pivots, all constructed substantially in the manner and for the purposes herein specified.

6. The brace 6 and the sleeve 9, provided with the shoulders 9′, substantially as and for the purposes herein set forth.

7. The cutter-bar *b′*, conical stud 20, block 6′, follower-block 21, and the pitman 19, these members all combined and constructed substantially in the manner and for the purposes herein specified.

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Witnesses:
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