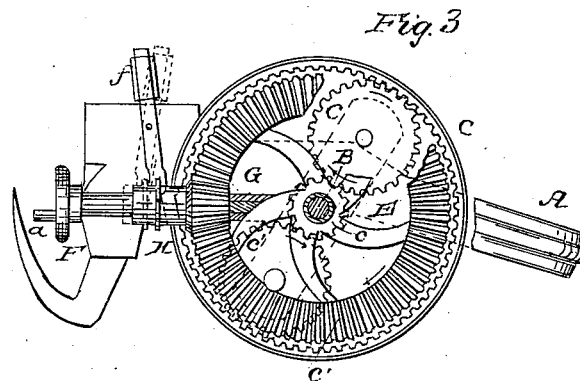
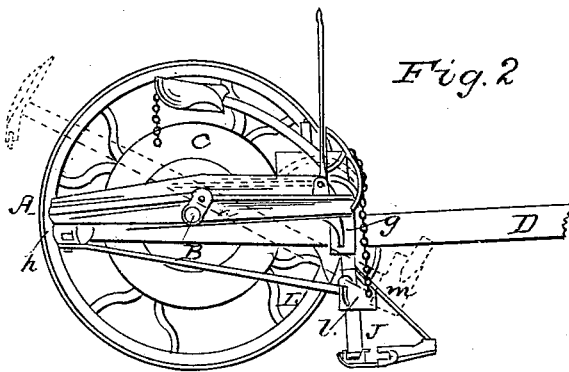
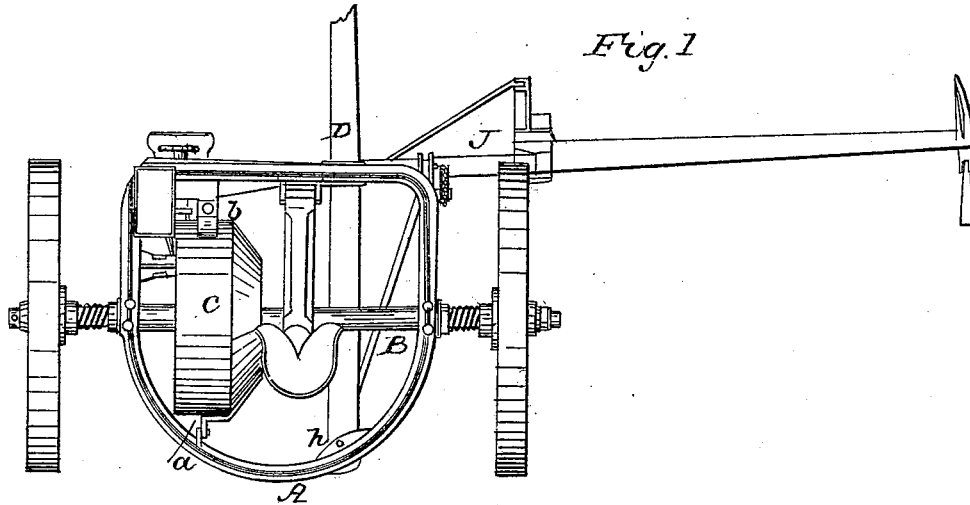


F. BRAMER.

Harvester.

No. 51,546.

Patented Dec. 19, 1865.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK BRAMER, OF FABIUS, NEW YORK.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 51,546, dated December 19, 1865.

To all whom it may concern:

Be it known that I, FRANK BRAMER, of Fabius, in the county of Onondaga and the State of New York, have invented certain new and useful Improvements in Harvesting or Mowing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a plan view; Fig. 2, a side view, and Fig. 3 a view of the driving-gear detached and enlarged.

My invention consists in a novel arrangement of the gearing and manner of mounting the same, a novel manner of securing the cutter-bar when not in use, and various other details, to be hereinafter described.

To enable others skilled in the art to construct and use my improvements, I will proceed to describe them in detail.

A represents the main frame, which is made of metal and cast in one piece and mounted centrally on the axle B, as clearly shown in Fig. 1.

A drum, C, cast hollow with an internal gear, as shown in Fig. 3, is slipped loosely on the axle B, and is secured to the frame A by means of the horizontal flange *b* at its front, and a vertical flange, *a*, at its rear edge, corresponding flanges being cast on the frame, to which the flanges *a* and *b* are bolted. In order to adjust the drum C either vertically or horizontally, thin plates or wedges are inserted between the flanges either at front or rear, as may be necessary. By this arrangement of the flanges it will be perceived that the drum C can be readily adjusted both vertically and horizontally, and thus secured in a position at right angles to the axle B, concentric therewith, which position is absolutely necessary to insure the free and perfect working of the gear.

It is obvious that by making slots in the flanges *a* and *b*, or in those to which they are bolted, or in both, the drum can be adjusted without the use of the wedges or plates, as above described; but this means of adjusting is not found to work as well in practice, for the reason that the parts are more liable to get

moved out of place by the jarring of the machinery. By my plan this is entirely obviated.

Within the drum C a cross-bar, E, is rigidly secured to the axle B, and upon pins or journals protruding from the face of this cross-bar E are mounted the two planet-wheels *c* and *c'*. These wheels are of such a diameter that they will just fill the space between and gear into the internal gear of drum C on one side, and on the other into the pinion *e*, which latter, together with the bevel-gear F, are rigidly secured to the sleeve *e'*, which latter works loosely upon the axle B, as shown in Fig. 3.

Upon the shaft I, which is placed at a right angle to the axle B, and supported near its front end by a suitable bearing in the front part of the main frame A, and at its rear end by an arm cast on the frame and projecting inward for that purpose, is secured the bevel-pinion G, so located as to gear into the bevel-wheel F.

It will thus be seen that as the machine moves forward the arm E is made to revolve with the axle in the direction indicated by the red arrow, the wheels *c* and *c'* being made to rotate on their axes in the direction indicated by the black arrows while moving forward with the arms E, to which they are attached. The wheels *c* and *c'* cause the pinion *e*, and with it the bevel-gear F, to revolve, as indicated by the arrows, and as wheel F gears into pinion G, motion will be thereby imparted to it, and consequently to crank-pin *d* at the front end of shaft I, to which pin *d* the pitman or connecting-rod of the sickle is attached.

A clutch H, sliding upon shaft I and operated by the lever *j*, serves to throw the mechanism in and out of gear at pleasure.

The tongue D passes loosely through a stirrup or box, *g*, cast for it on the under front side of frame A, as shown in Fig. 2, and is secured at its rear end in a hollow lug or projection, *h*, which is also cast on the frame for that purpose. It will be observed that by this method of attaching the tongue the line of draft is thrown below the axle, and as some chance is given for a vertical play of the tongue in the stirrup *g*, it will be seen that when the force exerted in drawing the machine is brought upon the rear attachment of the tongue at *h* it

will tend to pull the rear portion of the frame down, thereby elevating the front portion, and thus relieving the animals' necks from the downward pressure of the tongue, so common in ordinary machines.

I attach the push-bar L to main frame A at the same point at which the tongue is fastened, by which the power used to propel the cutting apparatus is taken from the same point where the draft is applied, and thus the frame A is relieved from the strain that would be thrown upon it if the push-bar was attached at some other point.

The swing-bar J, which unites the cutting apparatus to the frame of the machine, is attached at its upper end by a ball-and-socket joint, which permits the cutting devices to adjust themselves to the surface of the ground automatically; but, to prevent the tendency of the front of the shoe and sickle to rise up, and to keep them down in proper position, I attach the push-bar L to the swing-bar J by means of the plate *l*, which projects upward from the top of bar J. The front end of L being pivoted at *m* above and in front of J constantly tends to push the front of the sickle down upon the ground and hold it to its work.

A slot is made in plate *l*, as shown in Fig. 2, through which a set-screw may be inserted and screwed into rod L, as indicated in red, for the purpose of rendering the shoe and cutting apparatus rigid and preventing them from having the rolling or undulating motion common to them when not thus secured. This is found to be important when the machine is used for cutting heavy clover and similar substances, but in ordinary use the set-screw is not required.

On the right-hand end of the axles and outside of the wheel is secured a metallic piece, *n*, which, being loose on the axle, can be turned up into the position shown in Fig. 2. This piece *n* has a groove in its projecting end of proper size to receive the back edge of the finger-bar when the latter is raised up and

turned over back, as shown in Fig. 2. A pin passing through a hole in the piece *n*, and also in the cutter-bar serves to secure the latter in place.

The drum C is cast with a back to it, in which a central hole is made for the axle to pass through after being secured in place. The front of the drum is closed by a wooden or thin metallic cover, by which means the gearing is all inclosed except the bevel-pinion G, and in this way the gearing is protected from injury by dust, grit, sticks, &c., which would otherwise get into it.

By this construction and arrangement of parts I am enabled to produce a machine that operates in a most perfect and satisfactory manner, it being light, easy to manage, and very desirable.

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

1. The drum C, provided with the vertical flange *a*, the horizontal flange *b*, and the internal gearing, in combination with the planet-wheels *cc'*, mounted on the arm E, sleeve *e'*, provided with the pinion *e*, bevel-wheels F and G, and clutch H, all arranged and operating as herein shown and described.

2. The rest *n*, constructed as shown, and secured to the end of the axle for the purpose of holding the cutter-bar securely when folded back, as shown in red in Fig. 2.

3. The slotted plate *l*, attached to the brace-bar J, in combination with the push-bar L, having its front end pivoted at *m*, as shown and described.

4. Adjusting the drum C by means of plates or wedges inserted between the vertical flanges *a* at the rear, and between the horizontal flanges *b* at the front, either or both, as may be desired.

FRANK BRAMER.

Witnesses:

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