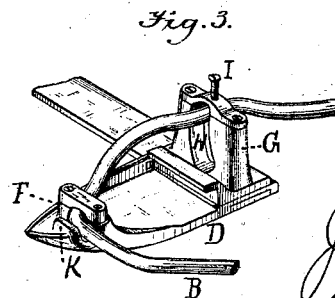
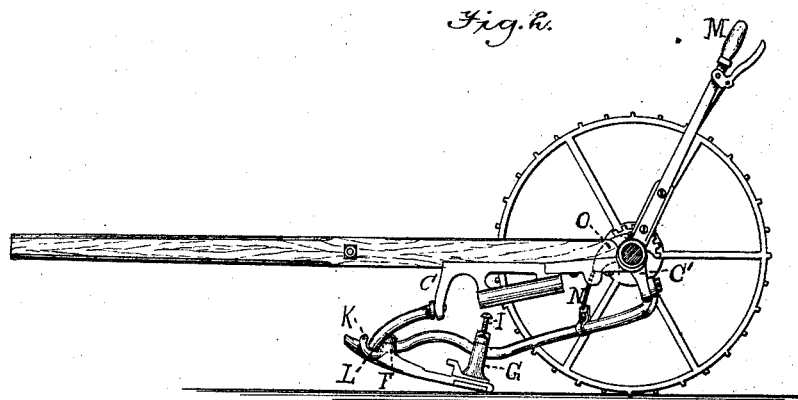
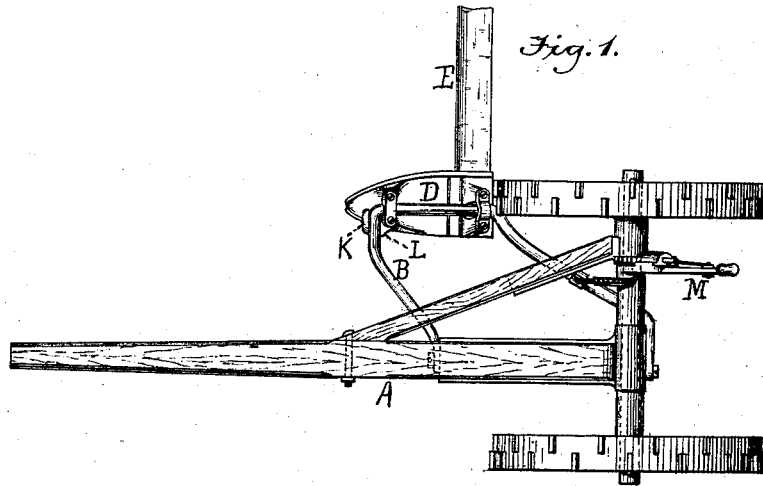


J. P. MANNY.  
Harvesters.

No. 216,744.

Patented June 24, 1879



Witnesses:

Robt H. Duncan  
Benja Smith

Inventor:

John P. Manny  
by Paul A. Duncan  
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# UNITED STATES PATENT OFFICE.

JOHN P. MANNY, OF ROCKFORD, ILLINOIS.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **216,744**, dated June 24, 1879; application filed October 15, 1877.

*To all whom it may concern:*

Be it known that I, JOHN P. MANNY, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Harvesters, of which the following is a specification.

The present invention relates to the two-wheeled front-cut harvesting-machine; and the object is to provide means for relieving, measurably, the cutting apparatus from the downward thrust or pressure of the coupling-frame as heretofore generally existing in machines of this class, and also to provide an economical and ready mode of tilting or rocking the cutters, so as to regulate the height of cut, and of lifting them over obstructions.

The invention is illustrated in the accompanying drawings, in which Figure 1 is a plan view of a machine embodying the invention. Fig. 2 is a side elevation with one wheel removed, and Fig. 3 is a perspective of the shoe and a part of the coupling-frame.

In the drawings, A represents the draft-frame, on the under side of which the gearing which drives the cutters is to be mounted. B is the coupling-frame, pivoted to the down-hangers C C'. D is the shoe, and E is the finger-beam, attached to the shoe in the usual manner.

The coupling-frame is, by preference, made of a single bar or rod of iron, which is bent into a shape approximately triangular, and the shoe is pivoted upon this coupling-frame at the forward angle of the latter, and near the toe of the shoe, by means of the ear F. The perforation in this ear, through which the rod constituting the coupling-frame passes, is made somewhat larger than such rod, so that not only is the shoe capable of being revolved upon the rod around an axis substantially coincident with the line of progression, but also the heel of the shoe, within certain prescribed limits, is free to rise and fall independently of its toe and the vertical movements of the coupling-frame.

Upon the rear of the shoe is located a standard, G, provided with a slot, H, through which the rod of the coupling-frame passes, and the cross-bar upon this standard is provided with a set-screw, I, for regulating the amount of vertical play of the heel of the shoe upon the

coupling-frame and of the frame in the slot H. The coupling-frame is slightly arched between the ear F and the standard G, to permit of the free play of the pitman, and in order to avoid the driving-wheel, it is bent inward in rear of the standard G.

Upon the toe of the shoe, just in front of the ear F, is placed a lug, K, which receives the thrust of the coupling-frame when the machine is in action under ordinary conditions, and attached to the shoe directly underneath the forward arm of the coupling-frame is a stop, L, to aid in raising the outer end of the finger-beam. Instead of the lug K, it is plain that a pin or collar or other form of stop may be variously used to take the thrust of the coupling-frame.

The lifting-lever M, which is constructed in the usual manner, and is here shown as mounted directly on the main axle, is connected with the rear arm of the coupling-frame by the flexible cord or chain N, running over a segment of a sheave, O, mounted eccentrically on the sleeve which supports the lever.

It will readily be seen that under the foregoing construction, if the set-screw I be so adjusted that the coupling-frame will have free vertical play in the slotted standard on the heel of the shoe, the effect of pressing the lifting-lever backward will be to raise the toe of the shoe, and thus rock the finger-beam and correspondingly raise the points of the fingers; and inasmuch as the power which under such circumstances moves the cutting apparatus forward over the ground is applied at a point in advance of the line of the finger-beam, it follows that the shoe becomes in fact a drag-bar, the forward end of which is held suspended above the ground and follows the vertical movements of the coupling-frame, and the rear end of which, together with all connected parts, (finger-beam, guards, and cutters,) is free, within the limits of the slot in the shoe-standard, to rise and fall automatically and independently of the coupling-frame, so as to move forward over the ground without downward pressure from such frame.

The above is the normal adjustment of the parts for ordinary work; and as the finger-beam and cutters are thus, as it were, drawn forward by the application of the power to the

shoe at a point in advance of the finger-beam, the machine is relieved from that downward pressure upon the ground which is a characteristic of those machines in which the finger-beam is pushed forward, and the draft of the machine is correspondingly lessened, and its liability to injurious strain and wear greatly diminished.

If at any time it becomes desirable to depress the points of the guards, as in clearing up a lodged spot, the point of the shoe may, by a movement of the lifting-lever, be dropped down until the coupling-frame touches the bottom of the slot in the standard G. This will bring the finger-bar flat upon the ground, and at the same time will bring a downward pressure from the coupling-frame to bear upon the heel of the shoe to hold the cutters down to their work, much as in older machines. For exceptional work the coupling-frame may be confined to the bottom of the slot by means of the set-screw provided for that purpose.

The slot H in the shoe-standard is made slightly inclined and curved, as shown, for the purpose of preserving the coincidence of the joints of the finger-beam and the pitman as the heel of the shoe rises and falls.

It will be observed that under the construction above described the lifting-lever serves also as a tilting-lever, thus dispensing with the use of a second lever for this purpose.

The segmental sheave over which the lifting-cord runs is mounted eccentrically on the sleeve which holds the lever to the axle. This construction gives a slow upward movement to the coupling-frame when it first begins to rise, which is desirable in tilting or rocking the finger-beam to secure the requisite vertical adjustment of the cutters for steady work; but an increased speed, according to the eccentricity of the sheave, attends the further upward movement of the coupling-frame, which

is specially desirable in lifting the cutting apparatus bodily over obstructions.

It is not intended to limit the present invention to the special construction of the individual parts shown and described further than such limitation may be found necessary to the embodiment of those principles of operation which distinguish this invention from those of earlier date.

What is claimed as new is—

1. The combination, in a front-cut harvester, of a finger-beam and a shoe connected at its forward end to the coupling-frame, the rear end of the shoe and the finger-beam being left free to rise and fall, substantially as and for the purpose set forth.

2. The combination, in a front-cut harvester, of a coupling-frame, a cutting apparatus pivoted thereto at a point in advance of the line of the finger-beam, and a slotted standard upon the heel of the shoe, the parts being constructed and arranged to operate substantially as set forth.

3. In combination with the coupling-frame and the shoe, a standard mounted on the heel of the latter, and provided with a slot made inclined and curved, substantially as and for the purpose set forth.

4. In combination with the coupling-frame of a front-cut harvester, a stop located on the shoe in advance of the finger-beam, and operating substantially as set forth, to take the thrust of the coupling-frame, the heel of the shoe being left free to rise and fall, substantially as set forth.

5. In combination with a lifting or tilting lever, an eccentric sheave, operating substantially as and for the purpose described.

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Witnesses:

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