J. M. RUTHRAUFF.
Harvester.

No. 205,423. Patented June 25, 1878.

Fig. 1.

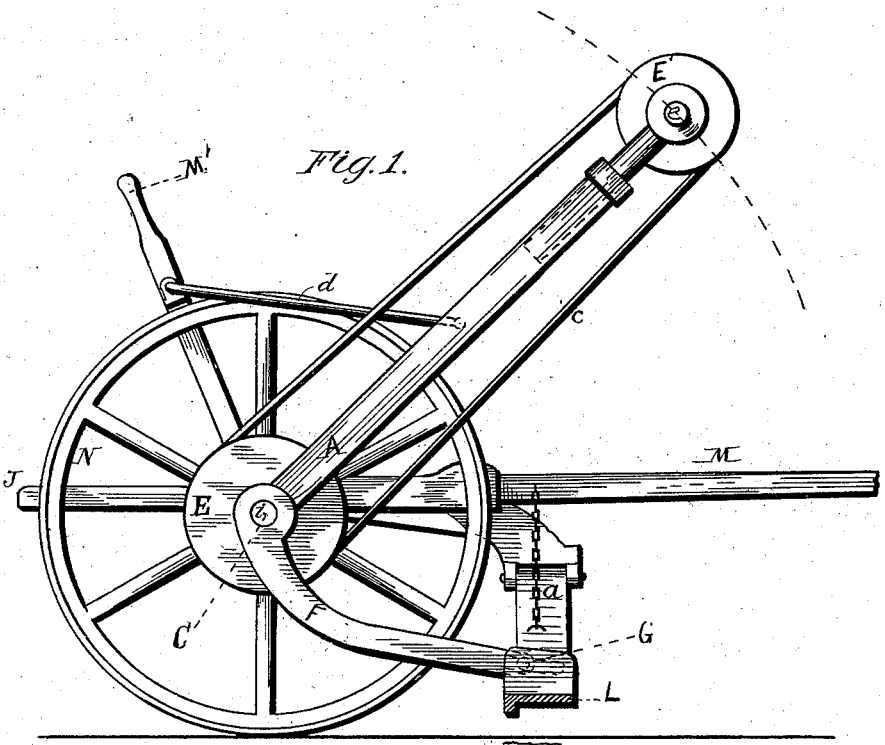


Fig. 2.

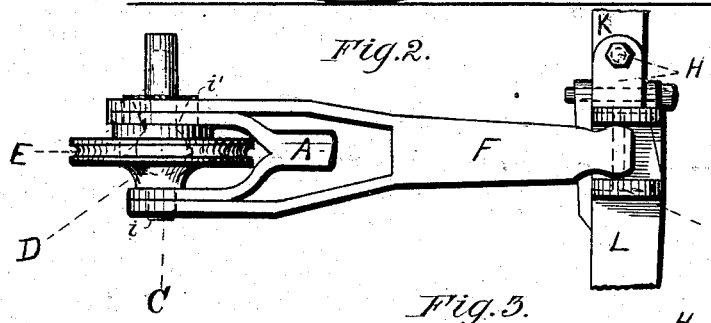


Fig. 4.

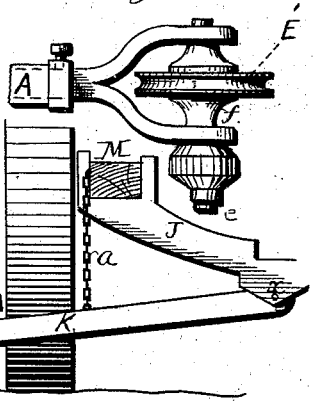
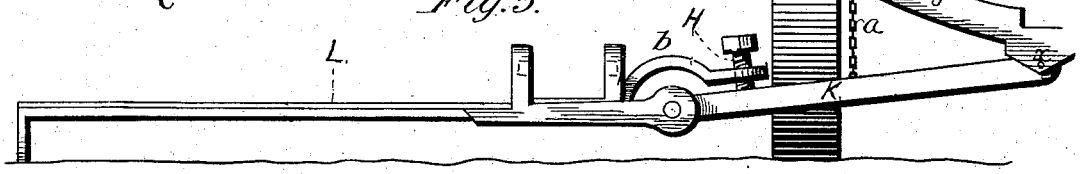


Fig. 3.



Witnesses.
Henry Ruthrauff
Joseph Warren Hoover

Inventor.
John Mosheim Ruthrauff.

UNITED STATES PATENT OFFICE.

JOHN M. RUTHRAUFF, OF WASHINGTONVILLE, OHIO.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **205,423**, dated June 25, 1878; application filed May 31, 1878.

To all whom it may concern:

Be it known that I, JOHN MOSHEIM RUTHRAUFF, of Washingtonville, Columbiana county, Ohio, have invented certain Improvements in Reapers, of which the following is a specification:

My invention is a reaping-machine in which the reel is supported, as fully described hereinafter, by an arm connected at or opposite the end of the axle, and the connection is made with the cutter-bar so as to maintain the axis of the reel practically parallel therewith.

In the accompanying drawing, which forms part of this specification, Figure 1 is a side elevation of sufficient of a harvester to show my improvements. Fig. 2 is a partial plan view; Fig. 3, a partial front view, and Fig. 4 a detached view.

J represents the frame of the reaper, constructed in any suitable manner, supported by one or more wheels, N, and provided with the pole M, cutter-bar L, and connecting-bar K, attached to the cutter-bar and to the frame at *x*, Fig. 3, as usual.

The connecting-bar K is connected to a chain, *a*, and the cutter-bar is provided with an arm, *b*, overhanging the bar K, and carrying a set-screw, H, by which the angle of the cutter and connecting bars may be regulated at pleasure.

Heretofore the reel-post, when at the outside of the wheel, has been supported by the axle, or by a bracket or frame supported by the frame of the machine.

In order to avoid the weight, complexity, and expense of such a structure, I employ an arm or brace, F, which is connected at one end to the cutter-bar, and is supported at the other end by the axle C, and at this end in any suitable manner supports the bearings of the reel-post A, which thus turns on the same center as the axle.

The reel-post is held in position adjustably by a catch-lever, M′, connected to the post by a rod, *d*, and carries the reel, the shaft *e* of which is driven by a band or chain, *c*, passing around a pulley, E, driven by the axle, and around a pulley, E′, on the hub *f* of the reel.

The reel-post may thus be supported outside of the wheel—that is, on the side next the cutters—without the usual complex appliances, whether the reaper has one or two wheels, and whether the cutter-bar be connected to the frame rigidly or by a joint, as shown.

In order to maintain the axis of the reel-shaft parallel with the cutter-bar when the latter is jointed to the frame, I connect the brace F opposite the end of the axle by a joint, so that the brace will tilt as the cutter-bar rises and falls, maintaining its relative position to the cutter-bar, and carrying the reel-post with it.

The brace may be jointed at or opposite the end of the axle, and may carry the reel-post in any suitable manner to permit these movements. I prefer, however, to form a ball-and-socket or universal-joint connection between the end of the axle C and a hub, D, which carries the pulley E, and has trunnions *i i′*, on which the brace and reel-post may move or swing, while all the parts retain the same relative position, thus maintaining the axis of the reel practically parallel to the cutter-bar.

I, however, do not limit myself to the construction of joint or mode of connecting the parts shown, as any means permitting the brace to swing laterally and carrying the reel-post with the brace, while allowing it to swing round the axis of the axle C, may be employed.

The brace F is connected to the cutter-bar by a shifting joint.

I claim—

1. The combination, in a reaper, of a brace, F, connected to the cutter-bar and supported at the other end by the axle, and the reel-post A, arranged outside the wheel, and supported at one side of the wheel by the brace, substantially as set forth.

2. The brace F, connected to the cutter-bar, and pivoted opposite the end of and supported by the axle, in combination with the reel-post vibrating with the brace, as set forth.

3. The combination, with the reel-post and axle C, of the brace F, connected by a universal joint to the axle, and carrying the driving-pulley E, operated from the axle, as set forth.

4. The combination of the reel-post, the driving-pulley, and swinging brace F, all having a common axis upon a hub, D, attached to the driving-shaft by a universal joint, substantially as set forth.

JOHN MOSHEIM RUTHRAUFF.

Witnesses:
HENRY RUTHRAUFF,
JOSEPH WARREN HOOVER.