

J. BARNES.
Harvester-Rakes.

No. 157,567.

Patented Dec. 8, 1874.

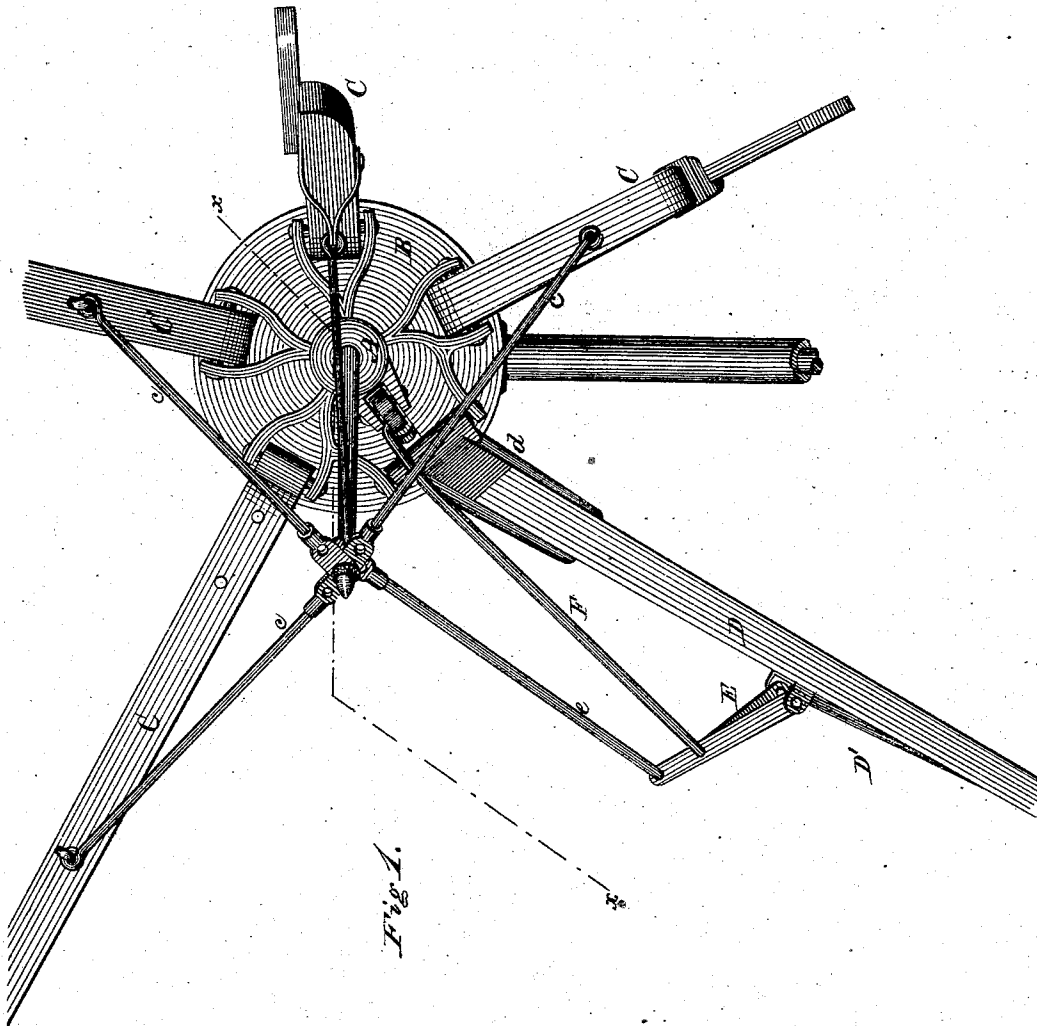


Fig. 1.

WITNESSES

Harry King
H. H. Young

INVENTOR

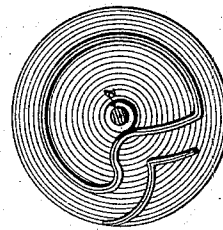
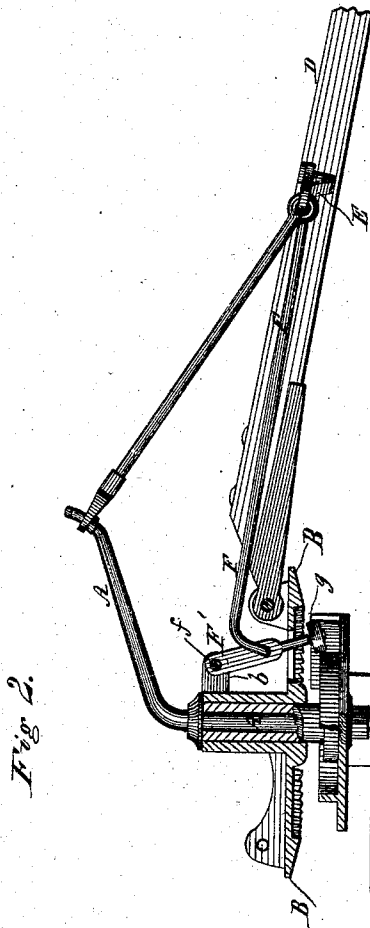
John Barnes
By his Attorney

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UNITED STATES PATENT OFFICE.

JOHN BARNES, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. **157,567**, dated December 8, 1874; application filed October 23, 1874.

To all whom it may concern:

Be it known that I, JOHN BARNES, of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Harvester-Rakes, of which the following is a specification:

My invention relates to that class of combined reel and rakes shown in Letters Patent of the United States granted to me, and respectively numbered and dated No. 85,723 of January 12, 1869, and No. 114,094 of April 21, 1871.

The subject-matter claimed is hereinafter specified.

The accompanying drawings show so much of the raking apparatus as is necessary to illustrate my invention.

Figure 1 is a plan; Fig. 2, a vertical transverse section therethrough on the line *xx* of Fig. 1. Fig. 3 is a view of the cam.

My improvements obviously may readily be adapted to any of the improved harvesters of the present day.

A bent arm or guide-post, *A*, is fixed in suitable supports on the frame. A crown-wheel, *B*, revolves freely upon, or concentrically with, the bottom part of this guide-post, and may be driven in any suitable well-known way. A series of reel-arms, *C*, are pivoted on this crown-wheel, and connected with the upper part of the guide-post, at a point eccentric with the axis of the crown-wheel, by means of hinged links *c*, in a manner similar to that shown in my patents hereinbefore referred to. A rake-arm, *D*, is secured to a hinge, *d*, turning in lugs on the crown-wheel.

The pivot of this hinge is perpendicular to a radial line drawn through it from the axis of the crown-wheel, while the hinge or arm is inclined backward, relatively to its pivot, at an angle of about fifty-five degrees, the effect of which is to bring the rake squarely into the grain in front of the cutters, and give a greater backward sweep than would be practicable with the simple radial arm, while it also enables me, when using a fixed guide-post, as in this instance, to set the post in advance of the finger-beam, the advantage of which will be hereinafter set forth.

This oblique arrangement of the rake-arm is not claimed here, as it forms part of the subject-matter of another application now pending.

A rake-head, *D'*, is mounted on the rake-arm *D* in a well-known way. A swinging arm or bracket, *E*, is pivoted on the rake-arm near the inner end of the rake-head, so as to have a slight horizontal play around said pivot. A link, *e*, connects the outer end of this bracket with the guide-post. A pitman, *F*, is pivoted at one end to the swinging bracket, while its other end is pivoted to a pendulum-lever, *F'*, pin-jointed at *f* to lugs *b* on the crown-wheel. The lower end of this lever carries a friction-roller, *g*, which travels in a cam-guide fixed on the frame underneath the crown-wheel.

This pendulum-lever, it will be observed, works through a radial slot in the crown-wheel.

The contour of the cam-guide is shown in Fig. 3.

In operation, the reel-arms successively describe a uniform path in their revolution, descending upon the standing grain, and moving over the platform at a uniform elevation while depositing the grain upon the platform. The rake-arm descends into the standing grain squarely in advance of the cutters, with the swinging bracket at about a right angle to the plane of the rake-head. As it moves backward over the platform, the rake-head rapidly assumes a position oblique to the finger-beam, as quickly turning and drawing in the grain toward the driving-wheel. The yielding of the hinged or swinging bracket during this movement virtually increases the length of the guide-link to the extent necessary to compensate for the obliquity of the movement caused by the backward inclination of the rake-arm, hereinbefore explained.

The relative arrangement of the cam-guide, pendulum-lever, and pitman is such that the rake is positively controlled in its movement, and held firmly down upon the platform while raking off.

I claim as of my own invention—

The combination, substantially as hereinbefore set forth, of a guide-post, a crown-

wheel revolving concentrically therewith, a revolving rising and falling rake-arm carried by the crown-wheel, a swinging bracket carried by the rake-arm, a link connecting said bracket with the guide-post at a point eccentric with the axis of the crown-wheel, a cam-guide fixed on the frame, and a pitman controlled by the cam-guide and pivoted to the swinging bracket, whereby the rake is posi-

tively controlled during its rotation, as hereinbefore described.

In testimony whereof I have hereunto subscribed my name.

JOHN BARNES.

Witnesses:

JOS. I. PEYTON,
WM. J. PEYTON.