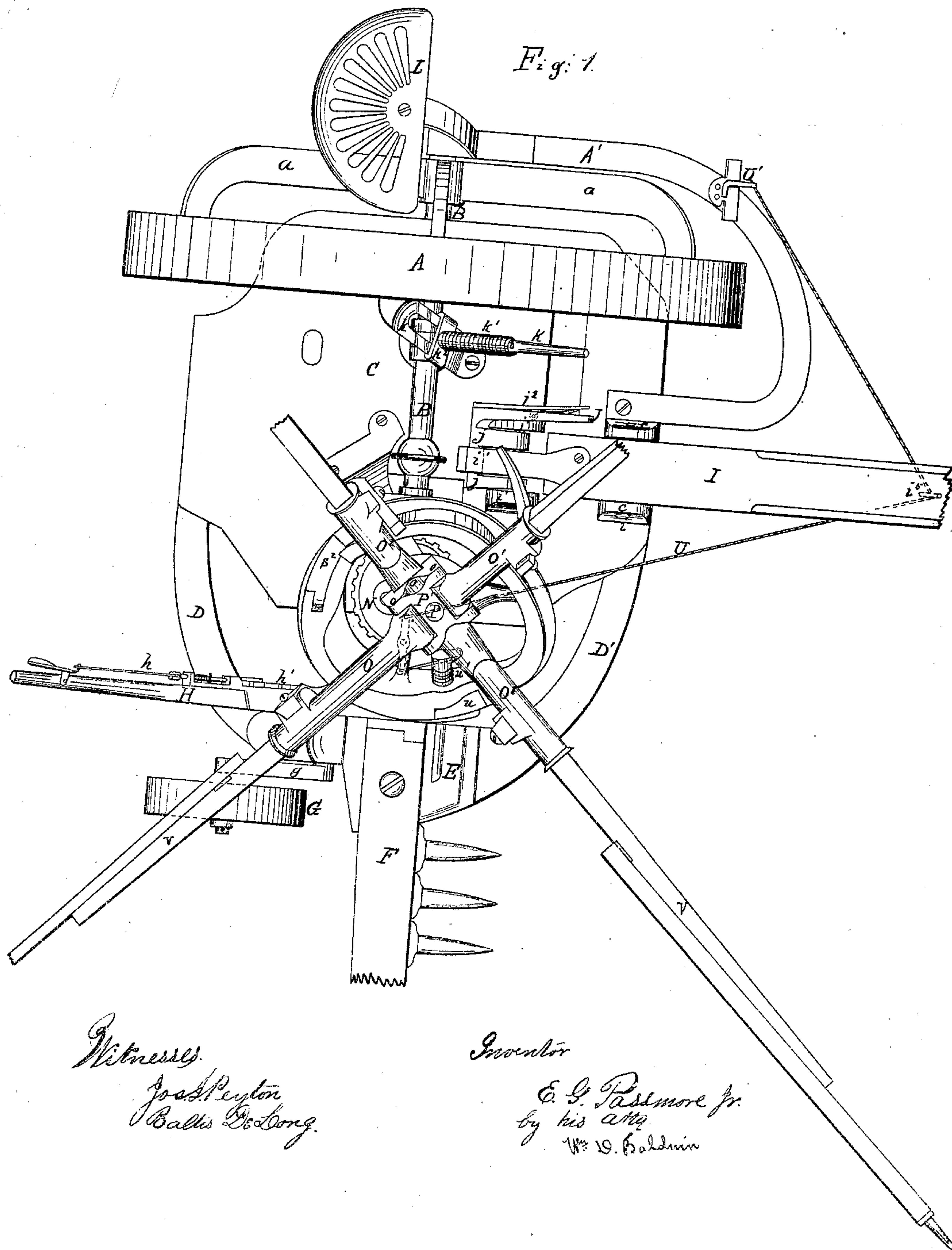


E. G. Passmore Jr

Imp^d Harvester Rake.

N^o 82156

Patented Sept. 15, 1868.



Witnesses.

Josh. Peyton
Balth. DeLong.

Inventor

E. G. Passmore Jr.
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Wm. D. Baldwin

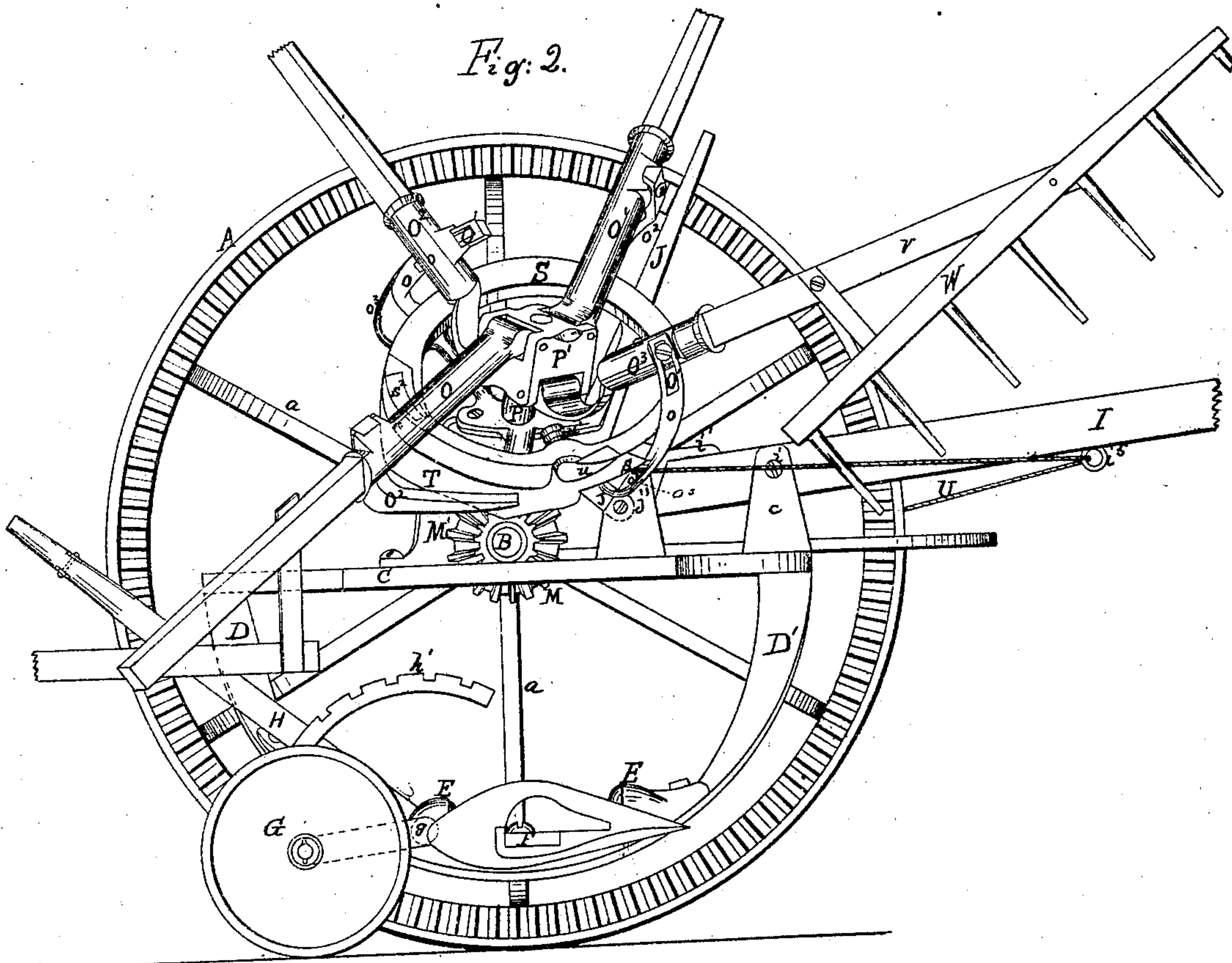
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Fig. 2.



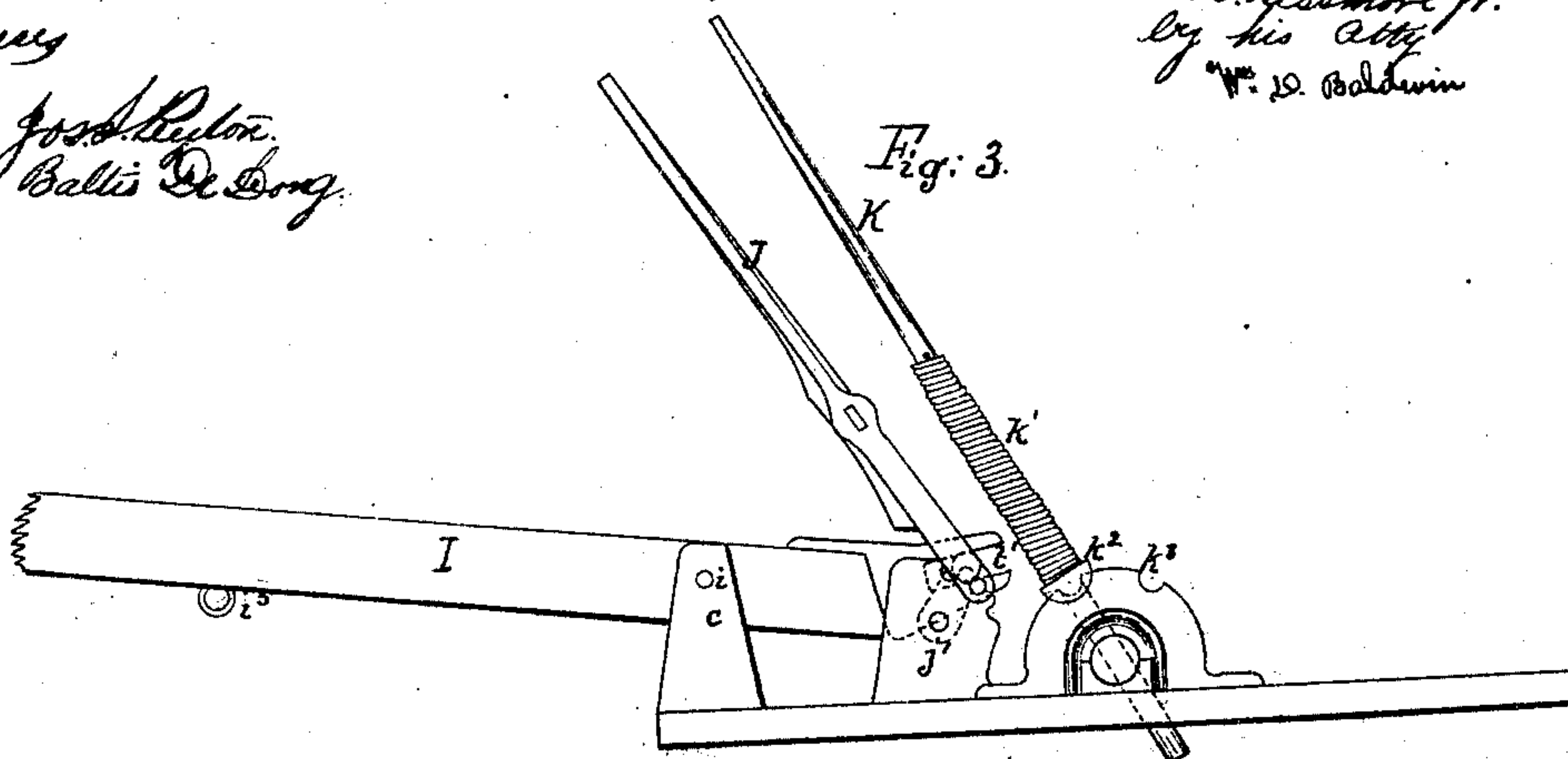
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Fig. 3.



UNITED STATES PATENT OFFICE.

EVERETT G. PASSMORE, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **82,156**, dated September 15, 1868.

To all whom it may concern:

Be it known that I, EVERETT G. PASSMORE, Jr., of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a plan or top view of so much of a harvester embracing my improvements as is necessary to illustrate my invention. Fig. 2 represents a view, in elevation, of the same as seen from the grain-side; and Fig. 3 represents a view, in elevation, of the tongue and the apparatus for disconnecting the gearing.

Letters Patent of the United States, numbered 53,862, for an improvement in harvesters, were granted to me April 10, 1866. The improvements herein claimed relate to certain improvements in the construction of the machine therein shown.

In the accompanying drawings, A represents a large driving and supporting wheel, having its spokes *a* curved outward beyond its side, in order to arrange the gearing for driving the cutters within its periphery, and fast on an axle, B, turning in suitable bearings in a main frame, consisting mainly, in this instance, of a large plate, C, of cast-iron.

Bent arms D D' support a shoe, E, carrying a finger-beam, F, and cutting apparatus of suitable construction, and hinged in any well-known way to allow the outer end of the finger-beam to rise and fall independently of the main frame. The finger-beam, as it were, forms a prolongation of the main axle, but on a lower level.

A supporting-wheel, G, runs on a crank-arm, *g*, rocking in its bearing in the heel of the shoe, and is raised, lowered, or locked in any desired position by a lever-handle, H, spring-detent *h*, and notched sector *h'*, of the usual well-known construction. This device is only used, however, when mowing, as hereinafter explained.

The tongue I is pivoted to play vertically on its fulcrum *i* between lugs *c* on the frame, and has a fork or open slot, *i'*, on its rear end. This slot or fork embraces a crank, *j*, vibrating on trunnions in lugs *j'*, and controlled by a

hand-lever, J, and spring-detent *j'*. As the tongue is supported by the team, the frame may be tipped on its axis by working this lever backward or forward, and thus raise or lower the points of the guards, and lock them in any desired position; and when this device is used in combination with the crank-wheel, the cutting apparatus may be adjusted at any desired height from the ground, and still be kept level, as hereinafter explained.

The raking and driving mechanisms are simultaneously thrown into or out of gear by means of a slipping-lever, K, passing through a hole in the frame, embracing the axle by means of a collar, (arranged between two shoulders on the axle to prevent the collar from moving sidewise without the axle,) and working through a slot in an arch, *k*, secured to the frame. A spring, *k'*, coiled around the lever presses a stop-plate, *k''*, into the notches of the arch *k*. By moving the lever backward and forward, the driving-axle is moved endwise, and thus connects or disconnects the gearing.

A seat, L, for the driver is mounted outside of the driving-wheel on a curved bar, A', embracing the wheel, and attached to the outer end of the main axle. From this position the driver can readily reach over the wheel to grasp the levers J K.

A bevel-pinion, M, on the inner end of the main axle, drives a corresponding pinion, N, on the bottom of a slightly-inclined shaft, P, mounted in suitable supports, and carrying at top a boss, P', in which the sockets which carry the rake and reel arms V are pivoted.

The sockets O O' are straight, and pivoted opposite each other at the top of the boss, while the others, O² O³, are curved at their inner ends, and pivoted to the bottom of the boss. The sockets O² and O³ carry curved guides *o*, adjustable vertically by means of slots and set-screws *o'*, which guides travel in the track *s* of the cam-guide S, which is of the form proper to give the desired traverse to the rake-arms, which path varies according to the construction of the machine. Curved rods *o''*, Fig. 2, on the guides *o*, travel below the camway, and prevent the arms from rising too high.

The other sockets, O O' carry guides *o''*, of different shape from the others, being longer,

curved backward, and straight at their ends, instead of being hooked like the others. These guides do not travel in the same track as the others, but outside of it. While passing over the platform, these guides travel on a secondary rail, T, outside of and below the other track. This is the arrangement when two rakes are used. When only one rake is applied, a guide like those, o, first mentioned, is to be used.

A latch, u, is pivoted to play vertically in the cam-track s, being ordinarily held up by a coiled spring, u', on its pivot, so as always to let the rake sweep off the gavel, but is drawn down, when required to pass over the gavel, by a crank-arm, lever, and cord, U, which latter passes through a ring or pulley, v, on the tongue in front of the driving-wheel, and is then attached to a hand or foot lever, U', operated by the driver, who thus sits on one side of the driving-wheel and operates a latch controlling a rake on the other.

For reaping, a platform of suitable form is to be attached to the finger-beam in any proper well-known way.

The operation of the machine is as follows: In mowing, the rake is removed, and the operation is so well understood as to require no description except as to the lifting devices. The finger-beam can be raised or lowered by the hand-lever H, and held in any desired position by the rack and detent in the usual way. This adjustment, however, tips the cutters, and for this tipping I compensate by means of the rocking lever J, thus enabling me to keep the guards level at any elevation.

For reaping, the wheel G and lever H are removed, and the heel end of the finger-beam rigidly connected with the main frame by an extension-bar, such as shown in my former patent, or other equivalent device, and a platform is attached, supported at the divider end by a suitable grain-wheel. As the rake and reel arms revolve, the guides o², the arms of which carry the beaters, travel outside of the track s, and are held up, when passing over the platform, by the supplementary cam-rail T. The guide-arms o, on the contrary, which carry the rake-sockets, always travel in the track s, and would sweep the grain from the platform every time they passed over it.

To regulate the size of the gavels I lift the rake-arms, when desired, by depressing the latch u. When this is done the rake-guide rises on the latch, and runs on top of the rail s, thus passing over the gavel until the rake

has passed over the platform, when it runs on the latch s², which sinks, and thus guides it back into the track s again. As the guides are adjustable on their socket-arms by means of the slots and set-screws o¹, the reel and beater arms can be set to work higher or lower, as desired. The arrangement of the beater-arms is such that they descend into the standing grain in advance of the cutters, so as to lift up any inclined grain, and rise as they approach the cutters, so as to turn the grain over upon the platform as it is cut, and thus pass over. This peculiar lifting feature I regard as of great value. The rake-arm, on the contrary, descends upon the platform behind the cutters, and sweeps off the grain.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, substantially as set forth, of the main frame, the driving-wheel, the finger-beam, arranged in the same vertical plane as the main axle, but on a lower level, the vertically-moving pivoted tongue, the adjusting-crank, and the hand-lever J, whereby the guards may be tipped at the will of the operator.

2. The combination, substantially as set forth, of the independently-hinged combined reel and rake arms, the double-tracked cam, and the vertically-adjustable guide-arms, whereby the beaters are caused to descend into the standing grain in advance of the cutters, and to rise before reaching the cutters, as set forth.

3. The combination, as set forth, of the rake-arm, guide, and camway s with the latch-spring u, which is lowered to lift the rake, and the latch s², which falls to guide it back to the track, whereby the gavel is always removed unless the rake is lifted by the latch.

4. The combination, in a harvester, substantially as set forth, of a series of independently-hinged rotating rake and reel arms with the double-tracked camway and connecting-guides, when so arranged that the rake descends upon the platform behind the cutters, to sweep off the gavel while the beaters descend into the grain in advance of the cutters, and rise before reaching them to lift fallen grain.

In testimony whereof I have hereunto subscribed my name.

E. G. PASSMORE, JR.

Witnesses:

SAML. EMLLEN,
J. H. GRAHAM.