J. H. ELWARD.

HARVESTER.

No. 113,990. Patented Apr. 25, 1871.

Fig. 1.

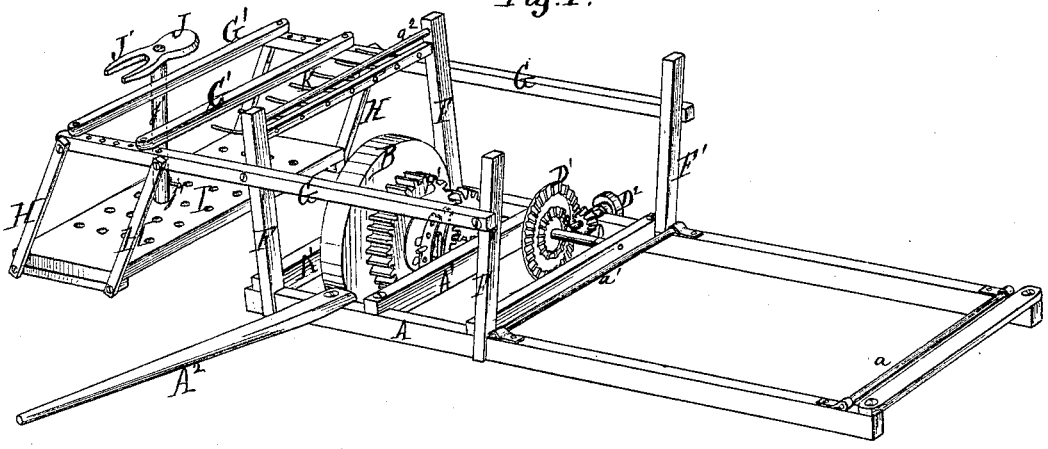
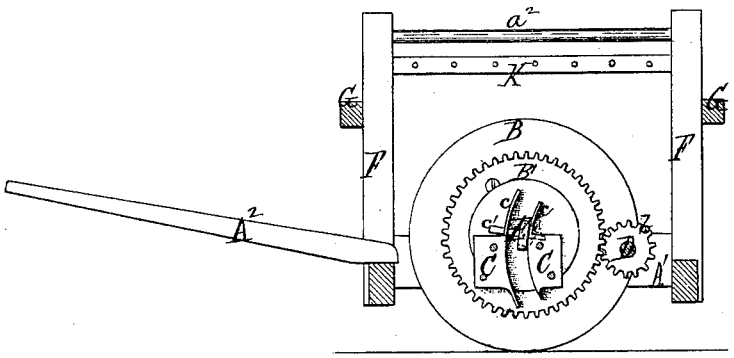


Fig. 2.



Witnesses.

Alex Mahon

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UNITED STATES PATENT OFFICE.

JOHN H. ELWARD, OF POLO, ILLINOIS.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **113,990**, dated April 25, 1871.

To all whom it may concern:

Be it known that I, JOHN H. ELWARD, of Polo, county of Ogle, State of Illinois, have invented certain new and useful Improvements in Harvesting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of a harvesting-machine embracing my improvements, and Fig. 2 is a vertical longitudinal section of the main frame at the inner side of the driving-wheel.

Similar letters of reference denote corresponding parts in both figures.

My invention consists, first, in a novel construction and arrangement of the binders' platform and binders' seat or support, the former being suspended by pendent parallel links from overhanging bars or supports, in such manner as to permit its adjustment in height, and the latter being made adjustable to varying positions for adapting them more perfectly to the character of the work, and to permit the binders to assume such positions relative to the work to be accomplished as experience or convenience may dictate. The invention consists, second, in a novel arrangement for supporting the drive-wheel, whereby the machine is thrown out of gear when backed, and into gear when drawn forward, without the aid of the backing ratchets or clutches ordinarily employed for that purpose.

To enable others to construct and use my improvements, I will proceed to describe the same with reference to the drawings, in which—

A represents the frame of the machine; B the main ground-wheel, and B′ the driving spur-wheel secured thereto. The manner of mounting the drive-wheel in the frame is as follows: A^1 A^1 are longitudinal bars of the main frame, between which the driving-wheel is placed, and the adjacent sides of which have secured to them metal bearing-plates C, provided with parallel flanges *c c*, curved in the arc of a circle, of which the pinion-shaft D is the center, said flanges extending above and below the frame-bars A^1 and plates C to any extent desired, to provide for the necessary vertical adjustment of the frame and cutting apparatus, to adapt the machine to both reaping and mowing. E is the drive-wheel axle, the ends of which are squared or flattened, and extend within the grooves formed by the curved flanges *c*, and are perforated to receive pins *c′* passing through said ends and through the flanges *c*, which are also perforated, as shown in Fig. 1, for the purpose of holding the axle at the required point of adjustment. The squared ends of the axle are of less width than the grooves or space between the flanges *c c*, as shown in Fig. 2, to permit a horizontal vibration of the axle for the purpose of throwing the machine into and out of gear, as follows, viz: When the machine is drawn forward by means of the tongue A^2 attached to the main frame, the traction of the wheel forces the axle backward until the ends rest against the rear flanges *c*, at which time the spur-gear B′ will be in mesh with and will cause the rotation of the pinion *b* as long as the forward movement of the machine continues. When, however, the machine is backed, the resistance of the drive-wheel forces the axle forward, or the frame and pinion-shaft backward, until the ends of the axle rest against the forward segment-flanges *c*, when the pinion *b*, together with the several mechanisms operated by it, is thrown out of gear. The pinion-shaft D is provided with a bevel-wheel or disk, D^1, on the vertical side or face of which are a series (two or more) of concentric rings of cogs or teeth, with either of which a sliding pinion, on a driving or crank-shaft, D^2, may be made to engage, and by means of which the speed of the cutters may be varied to adapt the machine to reaping or mowing, as required. The frame A is armed with a series of rollers, *a* a^1 a^2, to accommodate the endless horizontal and inclined apron or aprons which carry the grain to the binders, the last named of said rollers, viz., a^2, being mounted in uprights F of the frame A, in a position above and outside of the drive-wheel B. F′ are additional uprights attached to frame A, at or near the inner end of the cutting apparatus or grain-platform; and near the upper ends of these uprights F F′ are two horizontal transverse bars, G, one in front and the other in rear of the drive-wheel, the outer ends of which bars extend some distance beyond the main frame, overhanging the same on the stubble side, as shown clearly in Fig. 1.

H H are pendent parallel links or rods, pivoted at their upper ends to the overhanging bars G, (two to each,) and I is the platform suspended on links H by a pivotal connection at each of its four corners. By this arrangement the platform may be swung inward toward the frame, and lowered by swinging in the arc of a circle, or outward and upward, as may be required to suit the height or convenience of the binders. Any suitable device may be employed for setting the platform, or it may be allowed to swing freely on links H, as desired. The bars G are perforated vertically at their overhanging ends to permit the adjustment of longitudinal bars G′, constituting supports for the binders, as explained in Patent No. 104,290, issued June 14, 1870; and the attachments of said bars G to uprights F F′ are made by a single bolt, *f*, in each, so that by removing the bolts from uprights F′ the bars G, together with the links H and platform I, may be folded up into a vertical or nearly vertical position for transportation, or for passing through gates. The bars G may be made of any suitable material, but I prefer, ordinarily, that they shall be slightly flexible or elastic, to give greater ease to the operator on the platform. The platform is perforated, as shown in Fig. 1, to receive binders' seats J, either additional to the bars G′, or as a substitute therefor. These seats J are mounted on standards *j*, and in addition to the seat part J are provided with a fork, J′, or table upon which the grain may be bound after removing it from the receptacle K, where it is deposited by the discharging-apron. The standard *j* is perforated at various heights to receive pins or stirrups *j′* to accommodate the foot or limb of the operator.

The object of this last-described construction of support for the binder is to provide for the want felt by many of our farmers who suffered loss of limb during the war, and who are unable to do the work of binding by reason only of their inability to stand or ride upon the machine, as heretofore constructed.

The construction herein described affords a seat, J, a table, J′, and a support or stirrup, *j′*, in which to rest the disabled limb, thereby enabling the class of persons referred to to do the work equally well with those upon whom the farming community have heretofore been entirely dependent.

Parts of the machine not specifically referred to may be constructed in any usual manner.

Having now described my improvements, what I claim as new, and desire to secure by Letters Patent, is—

1. The suspended binders' platform I, in combination with the transverse overhanging bars G G, connected with the main frame in such manner as to permit their being readily folded thereon, substantially as and for the purpose set forth.

2. The movable binders' seat J, provided with the fork J′ and stirrup *j′*, in combination with the binders' stand or platform, as described.

3. The axle E, adapted to slide on pins *o′*, in combination with the curved flanges or segments *e*, whereby the machine is thrown into and out of gear without the aid of backing ratchets or clutches, as described.

In testimony whereof I hereunto set my hand and name, and affix my seal in the presence of two subscribing witnesses, this 6th day of September, A. D. 1870.

JOHN H. ELWARD. [L. S.]

Witnesses:
H. C. BROWN,
C. H. WALDEN.