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HARVESTER.

No. 191,486. Patented May 29, 1877.

Fig. 1

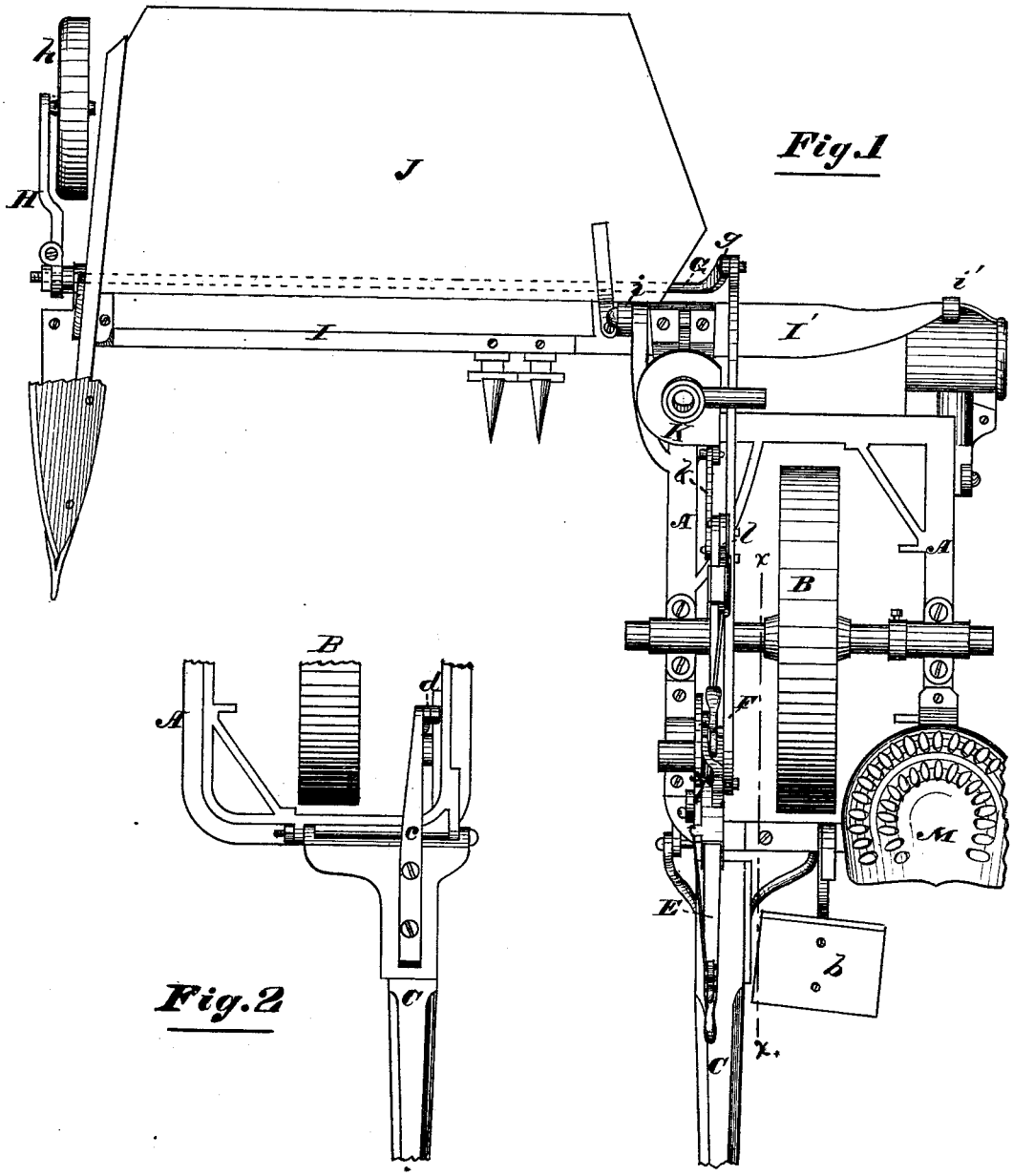

Fig. 2

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Fig. 5

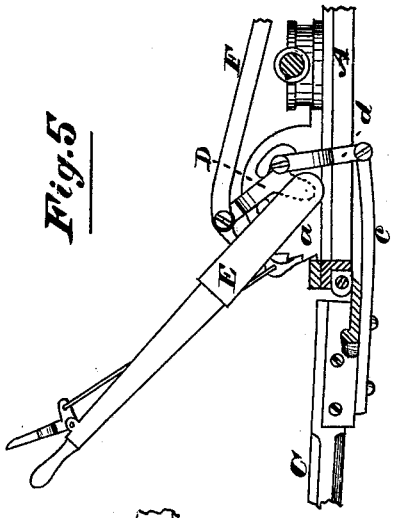


Fig. 4

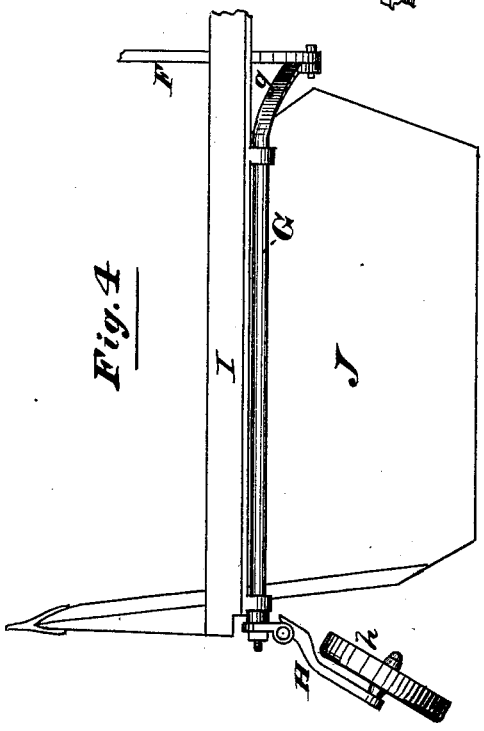
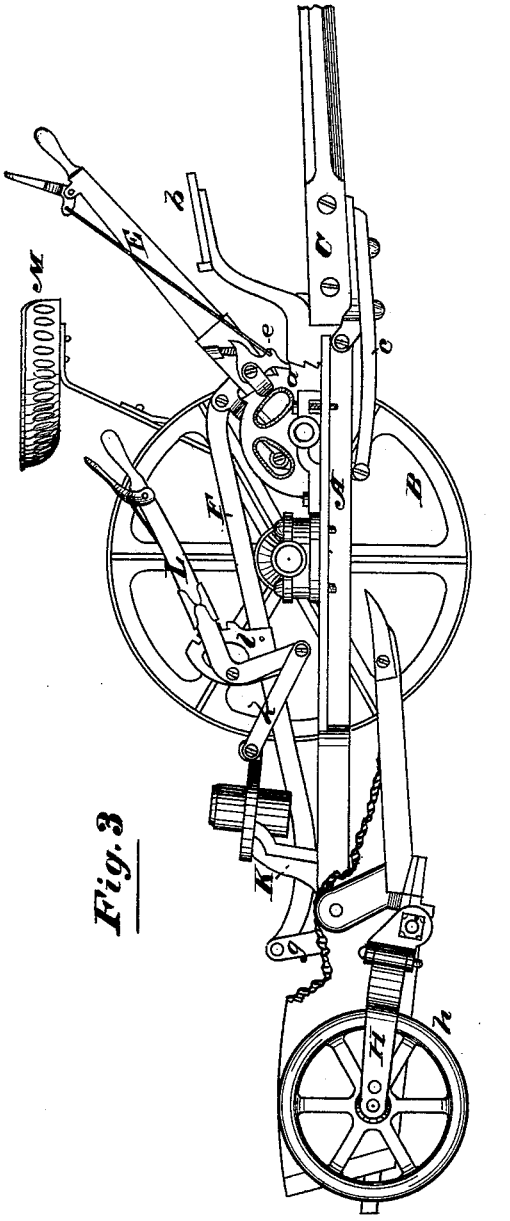


Fig. 3



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UNITED STATES PATENT OFFICE.

DANIEL STRUNK, OF JANESVILLE, WISCONSIN, ASSIGNOR TO HARRIS MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **191,486**, dated May 29, 1877; application filed August 1, 1876.

To all whom it may concern:

Be it known that I, DANIEL STRUNK, of Janesville, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in Harvesters, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a harvesting-machine containing my improvements; Fig. 2, a detail view of the under side of the machine, showing the method of connecting the tongue to the main frame; Fig. 3, a side elevation of the machine, looking from the grain side; Fig. 4, a plan view of the under side of the grain-platform; and Fig. 5, a detail sectional view taken on the line *x x*, Fig. 1.

The object of my invention is to provide for the adjustment of the hinged tongue and main frame, and also the platform and cutting apparatus, so that the platform may be maintained in a level position, although the relation between the main frame and hinged tongue may be changed; and, also, to provide for the relief of the strain upon the cutting apparatus in passing over obstacles, or when the main wheel drops into a ditch or dead-furrow.

In the drawings, A represents the main frame of the machine, which is supported upon the axle of the main driving-wheel B. The tongue or pole C is hinged to the forward end of the main frame, and from the under side thereof, at its rear end, projects a rigid arm, *c*.

A small bell-crank lever, D, is pivoted at one end to the main frame of the machine. A link, *d*, connects the arm *c* with this lever D, being hinged to the rear end of the arm *c* and to the lever D at the angle formed by its two arms. A hand-lever, E, is also pivoted to the main frame of the machine, its pivotal connection being preferably the same as that of the lever D, although this is not absolutely necessary.

The upper end of the lever D is provided with a projection extending slightly forward, so as to rest upon the upper edge of the lever E, as shown in Figs. 1 and 5 of the drawings. Whenever, therefore, the lever E is thrust backward, the bell-crank lever D is vibrated in the same direction, and, through the medium of the link *d*, the main frame and hinged tongue are adjusted with relation to each other.

Upon the main frame A is an ordinary notched sector, *a*, with which a spring-catch, *e*, on the lever E engages, so as to hold the latter in any desired position. A rod, F, is pivoted at its forward end to the cranked lever D. It extends backward and beyond the main frame of the machine, and at its rear end is pivoted to the crank-arm *g* of a rock-shaft, G, which extends underneath the grain-platform, alongside of the finger-bar, to which it is connected by suitable bearings.

To the outer end of the rock-shaft G is fastened a swinging arm, H, of ordinary construction, which extends backward from the rock-shaft, and carries the grain-wheel *h*.

The finger-beam I is hinged to the main frame at *i*, and is provided with an extension, I′, which projects inward, and is pivoted to the main frame, or a piece rigidly attached thereto, at *i′*. The joints *i* and *i′* are so constructed and arranged that the finger-beam may have a rocking or rolling motion upon these joints as a center.

The grain-platform J is attached to the finger-beam in any ordinary way. A rake-post or standard, K, is mounted upon the finger-beam I, or the extension thereof, and is intended to carry a revolving sweep rake and reel. This post may also, if desired, be mounted upon the platform instead of the finger-beam, though I prefer to attach it to the latter. A straight link-bar, *k*, is pivoted at one end to the upper end of the rake post K. The other end is hinged to the short arm of a right-angled or bell-cranked hand-lever, L, which is pivoted to a rack-piece, *l*, rigidly attached to the rod F. The lever L is arranged so that its short arm will project downward below the top of the standard K.

It is evident, therefore, that the vibration of this lever L will rock the finger-beam upon its hinges, and thus adjust the angle or pitch of the fingers. The supporting-piece *l* is provided with a toothed segment, with which a

spring-catch on the lever L engages, so that the latter may be fixed and held in any position desired.

The adjustment of the fingers and cutting apparatus by the rocking of the finger-bar, as described above, may be effected independently of the adjustment of other parts of the machine, if it is desired.

From the description above it is evident that whenever the bell-crank lever D is forced backward by means of the hand-lever E, the rod F will operate to rock the shaft G, thereby raising the outer end of the platform and finger-beam by means of the arm H and grain-wheel *h*. At the same time, as heretofore described, the relative position of the main frame and tongue will be changed, the forward end of the main frame being depressed, thereby raising the rear end of said frame, and so elevating the inner end of the finger-beam and platform.

As the supporting-piece to which the lever L is pivoted is rigidly attached to the connecting-rod, F, whenever the latter is forced backward to raise the finger-beam or platform, as described, the lever L will also be carried backward bodily, and thus, by means of the link-bar *k*, the finger beam will be rocked slightly at the same time, so as to maintain the platform in a nearly horizontal or a level position, to whatever height it may be adjusted, without vibrating the lever L. If, however, the adjustment is not entirely satisfactory, it may be rectified and the platform brought to a level by vibrating the lever L independently of the other mechanism.

The latter adjustment may also be employed to change the angle or pitch of the fingers without moving the lever E, either to depress the fingers to pick up lodged grain or grass, or to elevate them so as to more readily pass over obstacles.

The connecting-rod F and lever D are not connected to the lever E; but the arrangement of the parts is such that there is a constant forward thrust upon the rod F, which is sufficient to hold the upper end of the lever D in contact with the lever E. The same result would also be obtained if the connecting-rod F should be omitted, for the reason that, as the several parts of the machine are arranged, the greater weight is behind the axle of the main wheel, and hence there is a constant tendency in the rear end of the machine to drop to the ground, which acts as a constant force to tilt upward the forward end, thereby thrusting the lever D forward against the lever E. At the same time, from the fact that the lever D and connecting-rod F are loose—that is, disconnected from the lever E—the cutting apparatus and platform are free to rise whenever they strike an obstruction, so as to pass over it with ease, and return to their original position automatically.

For the same reason, whenever the main wheel drops into a ditch or dead-furrow, and the finger-beam and platform strike the ground, they will rise, or, rather, the wheel will drop without resistance, and all strain upon the main frame will be obviated, and all the parts will readjust themselves after passing the ditch or furrow. This result cannot be obtained with a stiff frame or with fixed connections. The devices heretofore described enable the driver from his seat, M, to adjust the tongue, main frame, finger-beam, and platform together, or to tilt the finger-beam and platform by means of the lever L whenever it is desired.

A foot-rest, *b*, is attached to the front end of the main frame, for the accommodation of the driver, and the levers E and L are arranged so as to be within his reach when sitting on the seat M.

It will be noticed that the rod or bar F is connected both to the tongue and the platform or finger-beam, so that whenever the tongue is adjusted with reference to the main frame, the platform is also adjusted, as heretofore described.

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

1. The combination of a vibrating main frame, mounted upon the main axle, a tongue hinged thereto, a cutting apparatus, connected to the main frame by a rolling joint, and devices for adjusting the tongue and main frame, and cutting apparatus and main frame, through the instrumentality of a lever, connected together, but disconnected from the adjusting-lever E, substantially as and for the purpose set forth.

2. The combination of the vibrating main frame mounted on the main axle, tongue C, hinged thereto, angular lever D, linked to the tongue, connecting-rod F, cranked rock-shaft G, carrying the grain-wheel *h*, and cutting apparatus, attached to the main frame by a rolling joint, substantially as described.

3. The combination of the tongue C, hinged to the main frame, lever D, linked thereto, connecting-rod F, rock-shaft G, and independent or disconnected lever E, substantially as described.

4. The combination of the tongue C, hinged to the main frame, rear extension-arm *c*, lever D, link *d*, connecting-rod F, and independent lever E, substantially as described.

5. The combination of the reciprocating connecting-rod F, lever L, link *k*, rake-standard K, and rocking finger-beam I, substantially as described.

DANIEL STRUNK.

Witnesses:
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CHARLES P. JACOBS.