

J. WERNER, Jr.
Harvesters.

No. 219,330.

Patented Sept. 2, 1879.

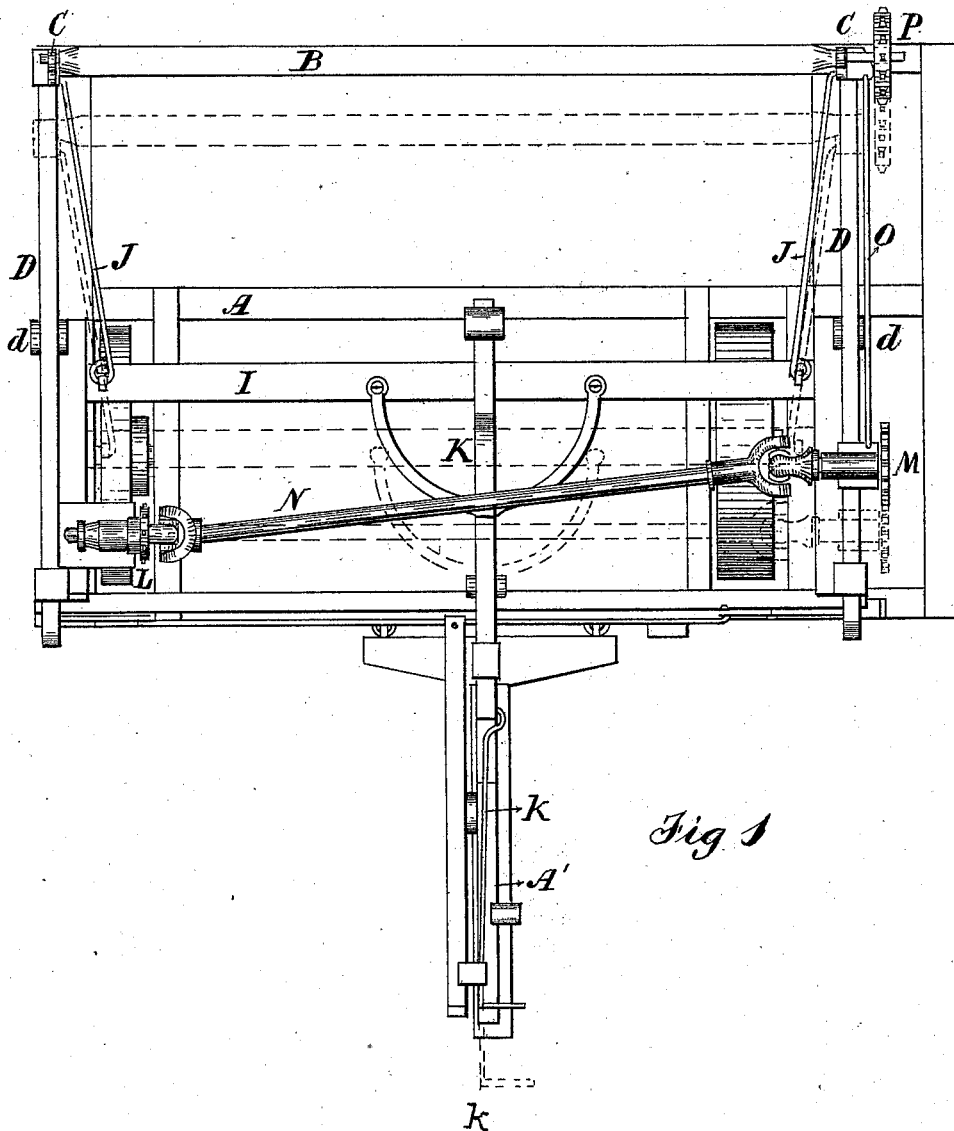


Fig 1

Witnesses

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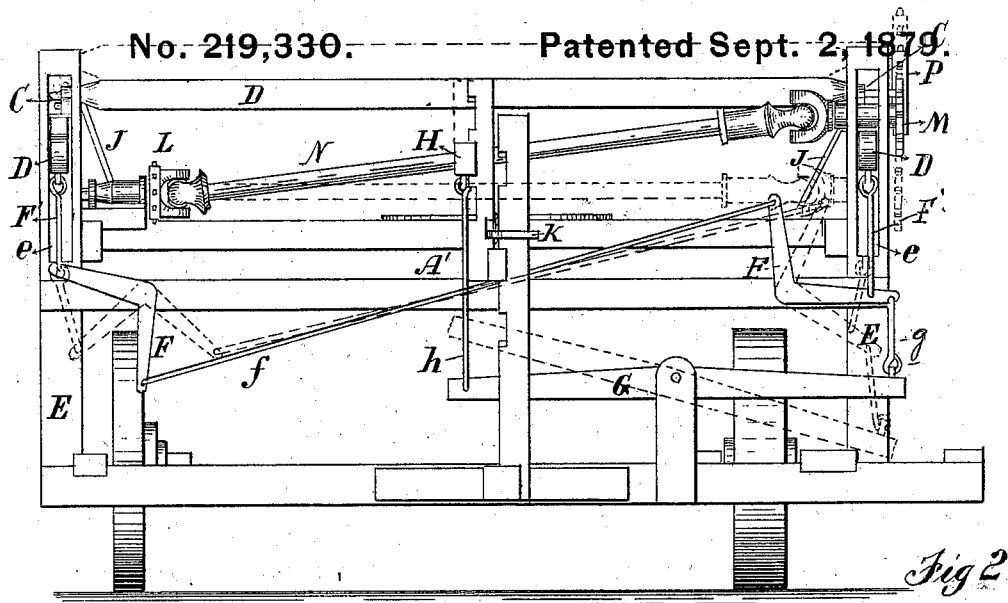


Fig. 2

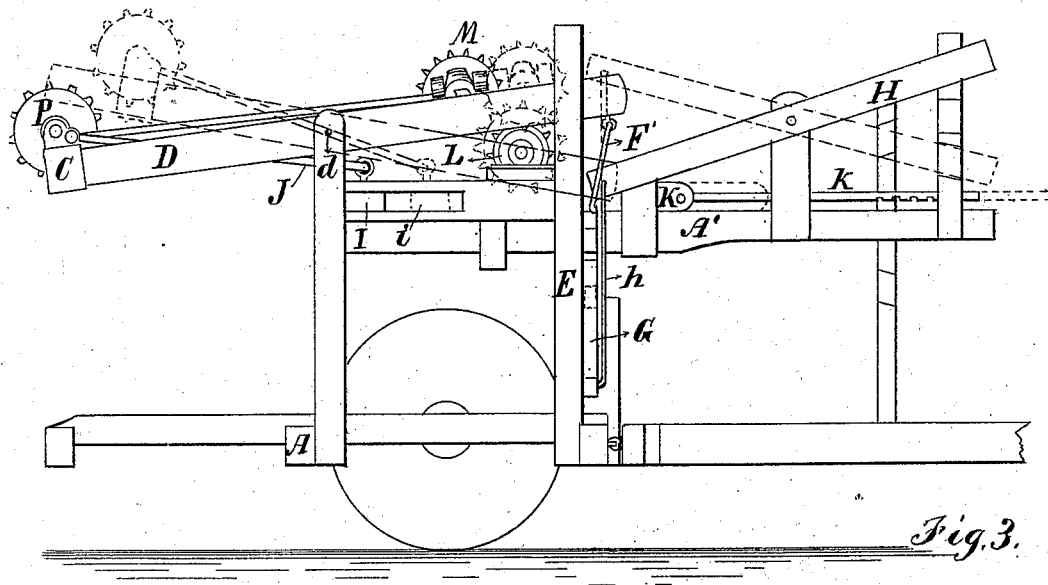


Fig. 3.

Witnesses

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IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **219,330**, dated September 2, 1879; application filed November 20, 1877.

To all whom it may concern:

Be it known that I, JOHN WERNER, JR., of Prairie du Sac, in the county of Sauk 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 embodying my improvements; Fig. 2, a rear elevation of the same, and Fig. 3 an end elevation of the same on the grain side of the machine.

My invention relates to that class of harvesters known as "headers," and to the particular variety known as "thrust-machines"—that is, in which the machine is pushed in front of the horses.

The invention consists in special devices whereby the reel may be driven in any position to which it may be adjusted without lengthening or shortening the driving-chains.

It also consists in various combinations of devices, all of which will be hereinafter more fully set forth.

In the drawings, A represents the frame of the header, so much of it being represented as is necessary to illustrate my invention. This frame is supported on wheels in the usual manner, and in all its principal features the machine is of ordinary construction, and therefore does not require description here.

The reel-shaft B is mounted in bearings C, which are supported on arms D, pivoted at *d* to upright posts of the main frame A, as shown in the drawings.

The bearings C are secured on the pivoted arms so as to be free to slide back and forth in a horizontal direction. The rear ends of the pivoted arms D pass through slots *e* in posts E, and are connected to the outer arms of bell-crank levers F by link-rods F'. The bell-crank levers are pivoted to the frame-work of the machine, and are arranged in a reverse position with reference to each other—that is, the inner arm of the lever at the grain end of the machine projects downward, while in the lever at the other end of the machine it projects upward, as shown in Fig. 2 of the drawings.

A rod, *f*, connects the two inner arms of the bent levers. The outer arm of the bent

lever at the stubble end of the machine is connected to one end of a pivoted lever, G, by a link, *g*, which lever is in turn connected at its other end with one end of a hand-lever, H, by means of a link-rod, *h*, the hand-lever being arranged in a convenient position to be operated by the attendant while riding on the machine, and provided with any ordinary devices for holding it in any position desired.

It is evident that whenever the hand-lever is vibrated the reel-supporting arm at the stubble end of the machine will also be vibrated, and a corresponding movement will be given to the similar arm at the grain end of the machine through the medium of the bent levers F and connecting-rod *f*, and thus the reel may be adjusted vertically at the will of the attendant.

A horizontal bar, I, is extended from one end of the machine to the other, and is fitted at its ends in slotted supports *i*, which serve as guides and supports to the bar, while at the same time permitting it to move back and forth. A link-rod, J, at each end of this bar connects the latter to each of the sliding reel-bearings C, and an arm, K, is attached to the central portion of the bar I, and extends backward therefrom along the tilting arm A' of the main frame, to which it is held by suitable guides and loops, which permit it to slide freely back and forth along its support. A rod or handle, *k*, is attached to the rear end of the arm K, and extends directly back to the attendant, so that from his position on the machine he can push the bar back and forth, the handle *k* being also provided with some suitable catching and holding device by means of which it can be secured in any desired position.

It is evident that by means of the mechanism just described the attendant can also adjust the reel horizontally at pleasure, for when the bar I is pushed in and out it will move the reel-bearings correspondingly on their supporting-arms D by means of the link-rods J. The reel is therefore entirely under the control of the driver, who can adjust it both vertically and horizontally and fasten it in any position desired without leaving his position on the machine. The bar I also serves as a stretcher to keep the connections with the reel-shaft spread the proper distance.

In order to accommodate the adjustments of the reel, I have also devised special means for driving the latter. At the grain end of the machine I mount a sprocket-wheel, L, arranged above the grain-wheel, from which it is driven by a suitable chain. This sprocket-wheel is mounted in fixed bearings.

Near the rear end of the pivoted reel-supporting arm D, at the opposite end of the machine, another sprocket-wheel, M, is mounted in a bearing which is constructed so as to slide back and forth on the arm like the bearings of the reel-shaft. These two sprocket-wheels L and M are connected by a tumbling-shaft, N, and the movable bearing of the sprocket-wheel M is connected by a stiff rod, O, to the sliding bearing on the same arm. A sprocket-wheel, P, is mounted upon the reel-shaft at this end of the machine, which is driven by a chain from the wheel M.

It is evident that whenever the reel-shaft bearing is adjusted horizontally the sprocket-wheel M will be moved in a corresponding direction by the connecting-rod O, and, the bearings of the two sprocket-wheels M and P being on the same pivoted arm, the vibration of the latter will not affect the relation of the former; hence the relative position of these two wheels will not be changed by either the vertical or the horizontal adjustment of the reel. The driving-chain extending from one to the other would therefore require no take-up or compensating device, and, as the wheel M may be driven in any position by means of the tumbling-shaft N, it is evident that the steady revolution of the reel will not be affected in the least by its various adjustments.

The rod connecting the sliding bearings of the wheels M and P may be made adjustable by cutting a screw-thread on its rear end and passing it through a threaded nut on the rear sliding bearing, so that the tension of the drive-chain may be regulated.

It is evident that the precise construction and arrangement of some of the devices herein described may be changed without materially modifying the operation; and I do not therefore limit myself to the special construction and arrangement of levers and connections which are shown in the drawings and described above, for I intend to modify these details of construction to suit different machines, so as to make my invention applicable thereto.

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

1. The reel-shaft mounted in bearings arranged to slide upon its supporting-arms, in combination with the reciprocating cross-bar I and independent link-rods J, connecting the bar to the bearings, substantially as and for the purpose set forth.

2. The reciprocating cross-bar I, in combination with the operating slide-bar K, attached to the former and provided with a handle, k, the independent connecting-rods J, and sliding bearings C, substantially as and for the purpose set forth.

3. The sprocket-wheel M, for driving the reel, mounted in a bearing arranged to slide upon the rear end of one of the reel-supporting arms, and connected to the sliding reel-shaft bearing on the same arm, whereby the adjustment of the latter will correspondingly adjust the former, substantially as and for the purpose set forth.

4. The fixed sprocket-wheel L, in combination with the adjustable sprocket-wheel M, the tumbling-shaft N, sliding reel-shaft bearing C, and connecting-rod O, substantially as and for the purpose set forth.

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Witnesses:

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