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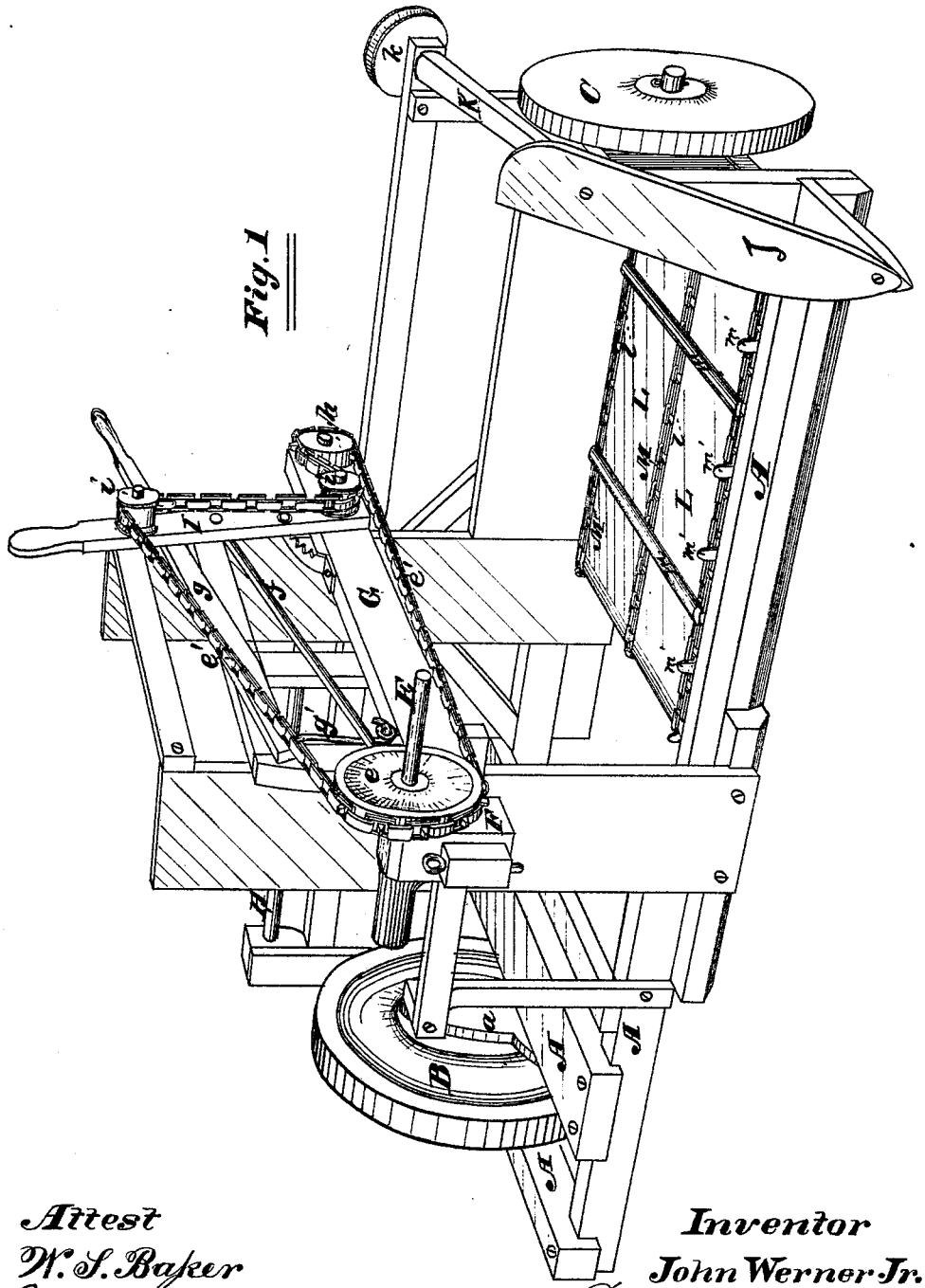
HARVESTER.

No. 183,730. Patented Oct. 24, 1876.

Fig. 1



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W. S. Baker
L. M. Harris

Inventor
John Werner Jr.
By Coburn & Thacher

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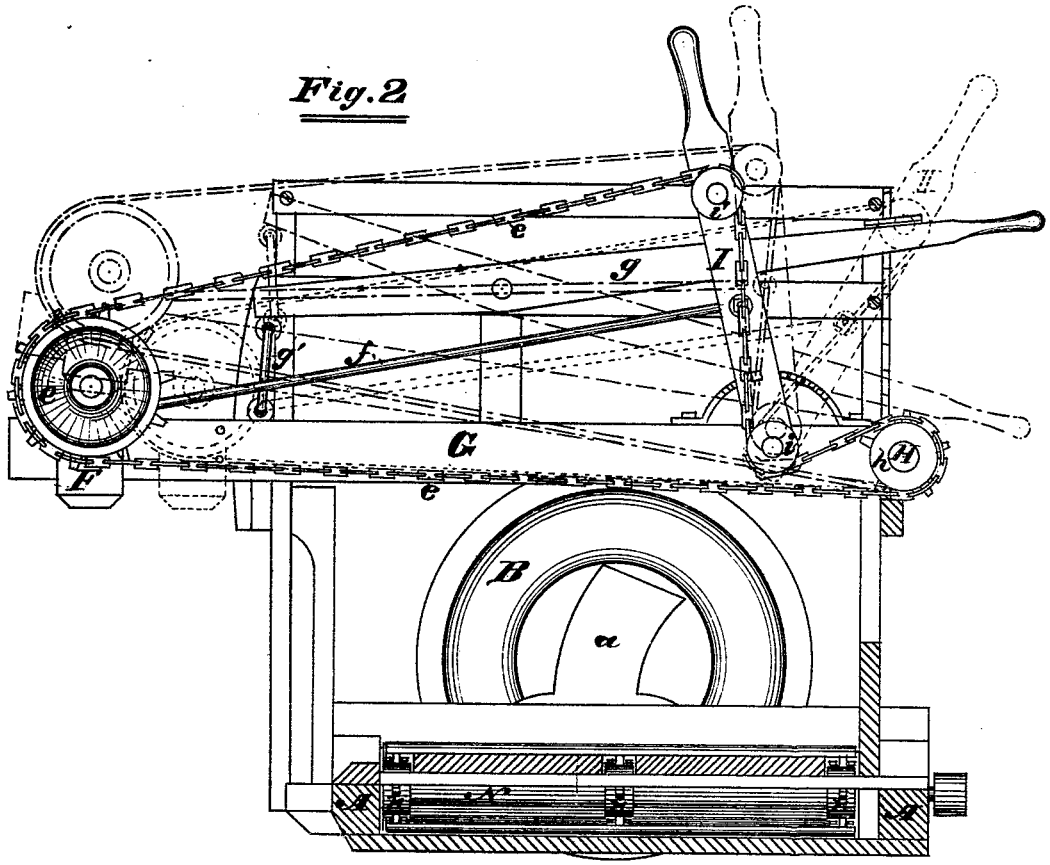
Fig. 2



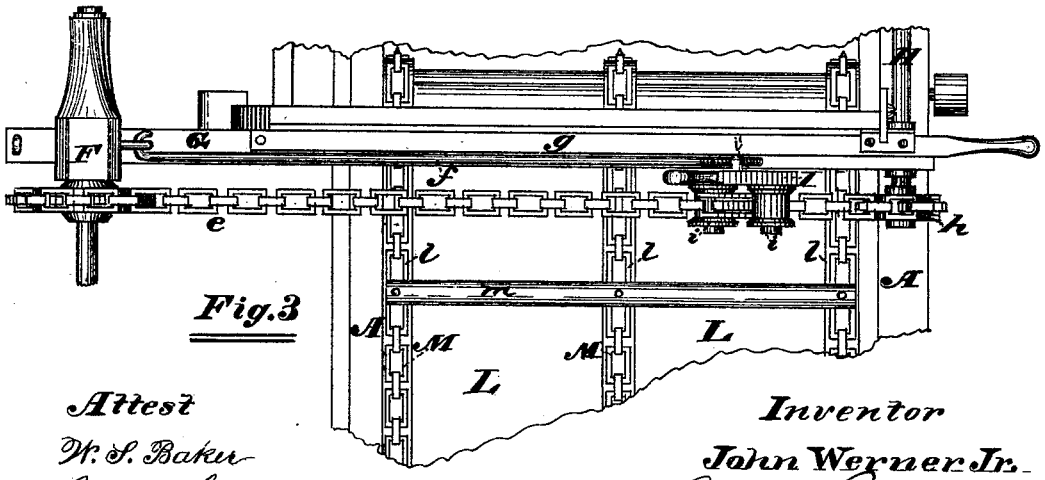


Fig. 3

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W. S. Baker

L. M. Harris

Inventor

John Werner Jr.

By Coburn & Thacher

Attorneys

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Fig. 4

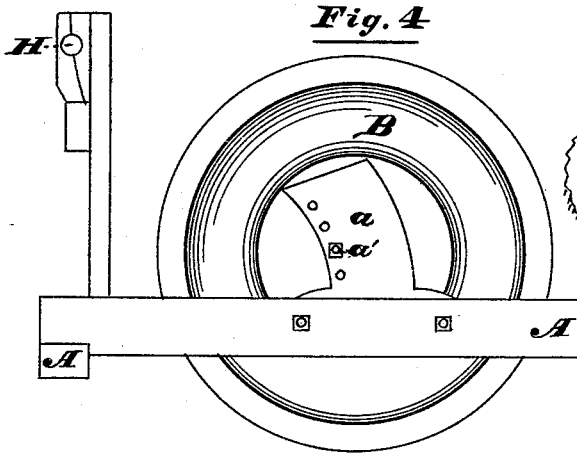

Fig. 8

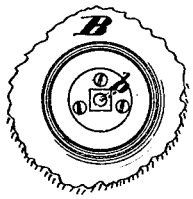

Fig. 5

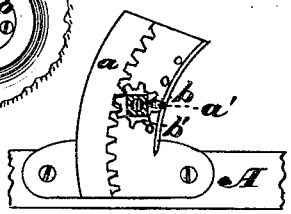

Fig. 6

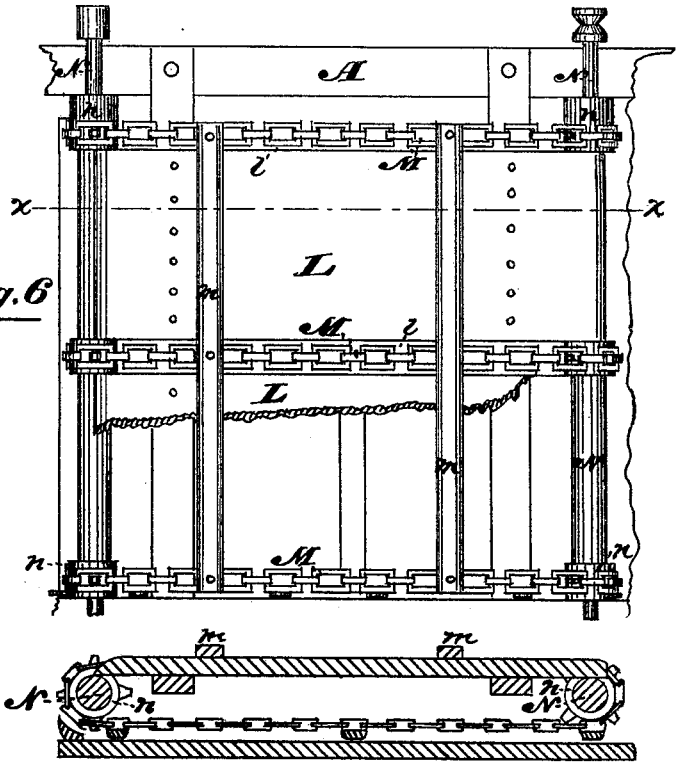

Fig. 9

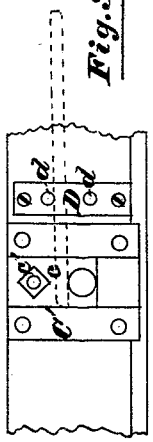

Fig. 10

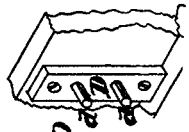

Fig. 7

Attest

W. L. Baker

L. M. Harris

Inventor

John Werner Jr.

By Coburn & Thacher

Attorneys.

UNITED STATES PATENT OFFICE.

JOHN WERNER, JR., OF PRAIRIE DU SAC, WISCONSIN.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **183,730**, dated October 24, 1876; application filed June 8, 1876.

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 perspective view of a harvester with my improvement attached; Fig. 2, an end elevation, looking from the grain side of the machine, showing the method of adjusting the reel; Fig. 3, a plan view of the reel-support and adjusting mechanism; Figs. 4, 5, and 8, detail views, showing the method of supporting the main frame upon the carrying-wheel; Fig. 6, a plan view of the grain platform and carrier, a portion of the platform being broken away; Fig. 7, a section view taken on the line *x x*, Fig. 6; and Figs. 9 and 10, detail views of adjusting attachments on the grain end of the machine.

My invention relates, first, to devices for supporting and adjusting the main frame upon the main supporting-wheel at the stubble end of the machine; second, to devices for adjusting the reel both vertically and horizontally; third, to an improvement in the construction of the grain platform and conveyer, consisting in the combination of a slotted platform, carrying-chains, sprocket-wheels, and slats attached to the chains.

I have shown my invention applied to a harvesting-machine, on which it is intended the grain shall be bound by persons riding on the machine. The main features of the machine may be of any ordinary construction, and need not be described here, as their construction is well known. Only those parts of the machine which embody improvements will be fully described in this specification.

In the drawings, A represents the main frame of the harvester, and B the main supporting or drive wheel. Curved supporting-standards *a* are attached to the transverse bars of the main frame at the stubble side of the machine. These supports are constructed with a wide groove upon their inner faces, within which is a circular rack or cogged segment, as clearly shown in Fig. 5 of the drawings. The wheel B is mounted loosely upon an axle, *b*, and upon each end of this axle is rigidly fastened a toothed pinion, *b'*, which engage with the racks on the post *a*, and travel up and down in the grooves in said supporting-posts. The outer end of the hub of the wheel is finished with a square piece or nut, and the inner face of the outer pinion is provided with a similar square piece or nut. In the outer post or standard *a* is a series of holes, as shown in Figs. 4 and 5 of the drawings. Through any one of these holes a fastening-bolt, *a'*, is thrust, having a head upon its inner end, and a screw-thread upon its outer end, to which a screw-nut is attached outside of the post. The bolt is passed between two teeth of the outer pinion, through one of the holes in the post, and held in position by the nut on its outer end, which is turned up firmly against the post, thus holding the frame securely in any position to which it may be adjusted.

The grain-wheel C is mounted upon a stub-axle on a slide, *c*, running in a grooved and slotted plate, C', on the grain end of the main frame. The slide is held in place in the ordinary way by a nut, *c'*, on a bolt running through the slide, and moving in a slot in the holding-plate. A second plate, D, is attached to the frame either in front or rear of the grain-wheel support. This plate is provided with two or more studs or projections, *d*, which serve either as a fulcrum or support for a lever used in raising and lowering this end of the main frame, as will be hereinafter set forth in the description of the operation of my improvements.

The reel-shaft E is mounted in a sliding journal-box, F, on the forward end of a bar, G, which is pivoted at its rear end to the upright portion of the main frame of the machine. A sprocket-wheel, *e*, is fixed upon the reel-shaft, over which runs a drive-chain, *e'*, extending backward, and passing over a second sprocket-wheel, *h*, on the end of the driving-shaft H, which also answers as the pivotal bearing of the reel-support G. A rod, *f*, is hooked to the sliding journal-box F, and fastened at its rear end to a lever, I, pivoted to the reel-support G. This rod *f* is threaded at its rear end, and passes through a threaded nut, *i'*, on the lever, so that the rod may

be unhooked and adjusted to regulate the distance between the lever I and journal-box F. The drive-chain e' passes around two pulleys, i, on the lever I, as shown in Figs. 1 and 2 of the drawings, one of the pulleys being arranged on a line with the pivot of the lever, and the other near the upper end of the latter.

A second lever, g, is pivoted to the upright portion of the main frame, and connected by a link, g', at its forward end to the pivoted reel-supporting arm G. It is evident, therefore, that by vibrating the lever g the supporting-arm G and reel-shaft will be raised and lowered, and by moving the lever I back and forth the sliding journal will be correspondingly moved, thus adjusting the reel horizontally.

The arrangement of the pulleys upon the lever I is such that they operate as an equalizing device to compensate for the variation in the distance between the reel-shaft and the driving-shaft H, while the adjustability of the connecting-rod f permits such an adjustment of the relation between the lever I and reel-shaft as to compensate for any stretching of the chain, or any change in its length; or by any other means, so that the chain may be always kept taut. The levers I and g are held in any desired position by suitable notched racks or segments.

In addition to the ordinary grain-divider J, I also employ a rotating shaft or drum, K, which is mounted, in any suitable manner, at the grain end of the machine, and is provided with a driving-pulley, k, by means of which it is revolved. This shaft or drum may be of any suitable form, and its surface may be fluted, if desired. It should be caused to revolve inward toward the machine, so as to deflect the cut grain that falls upon it toward the conveyer, and may be driven from the conveyer, or in any other suitable manner.

The grain-platform L is provided with longitudinal slots l, as clearly shown in the drawings. In each of these slots runs a sprocket-chain, M, to which are attached carrying-slats m, which pass above the platform L. At each end of the platform is a shaft, N, upon which are mounted sprocket-wheels n, over which pass the conveyer-chains M, the shafts being driven in any ordinary way from the main driving-gear of the machine. By this arrangement the conveyer is made to run evenly, the movement of the chain being regular and positive.

The chain at the front of the grain-platform is provided with projections m', at suitable distances apart, which serve to force the butts of the cut grain forward, and prevent them from falling behind, as is the case with nothing but a plain conveyer.

The driver's seat is mounted upon the main frame of the machine in such a position that the levers I and g may be conveniently reached therefrom.

The operation of my improvement is as follows: To adjust the frame upon the main wheel, the nut on the fastening-bolt is first removed, and the square shank of the pinion grasped by a suitable wrench, so that it may be held in place by the attendant, and the bolt taken out. The frame may then be raised or lowered by turning the pinions with the wrench; or, if the square shanks on both the pinion and hub of the wheel are grasped at once with the wrench, the wheel becomes locked to the axle, and by turning the wheel the pinions are also rotated, and the frame moved accordingly. When adjusted to the desired height, the frame is secured in position by replacing the fastening-bolt in one of the holes of the standard. In order to adjust the height of the other end of the frame, when the plate D is placed in rear of the axle of the grain-wheel, the front end of a suitable lever is placed on the upper side of the wheel hub or axle, and the lever is then carried under one of the projections on the plate. The locking-nut of the slide is then loosened, when the frame can be raised or lowered by means of the lever, and again secured at any point desired by turning up the locking-nut again. This adjustment can be effected by a single attendant.

The operation of the remaining devices has been set forth fully in the preceding description.

The following are some of the advantages attending the employment of these devices: The reel is under the easy control of the driver, so that it may be adjusted both vertically and horizontally without stopping the machine, while at the same time the driving-chain is kept taut, and may be tightened by the adjusting-rod whenever it becomes necessary.

In my construction of platforms and conveyer I secure the advantages of the cheapness of plain slats, and the positive motion of the conveyer due to the use of sprocket-wheels and chains. At the same time the weight of the chains causes the slats to hug the surface of the platform, thus insuring a clean sweep of the grain from the latter, and the projections on the front chain carry the butts forward evenly with the rest of the cut grain.

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

1. The combination of the main frame, cogged standard a, having a series of holes, main axle b, pinion b', and fastening-bolt a', inserted laterally into the free space between two cogs of the pinion b', substantially as and for the purpose set forth.

2. The combination of the main wheel B, constructed with a square shank or nut on one end of the hub, the main axle b and the pinion b', having a similar shank or nut on its inner face, substantially as and for the purpose set forth.

3. The combination of the sliding journal-box F, connecting-rod f, lever I, sprocket-

wheels *e* and *n*, driven chain *e'*, and pulleys *i i*, both on the lever I, substantially as and for the purpose set forth.

4. The combination of the sliding box F, connecting-rod *f*, having a screw-thread at one end, lever I, and threaded nut *i'* on said lever, substantially as and for the purpose set forth.

5. The combination of the slotted platform L, sprocket-chains M, plain slats *m*, and sprocket-wheels *n* on shafts N, all arranged, so that the chains run in the slots of the platform, and the slats are carried above the upper surface of the latter, substantially as described.

JOHN WERNER, JR.

Witnesses:
EDWARD OERTEL,
THOMAS BAKER.