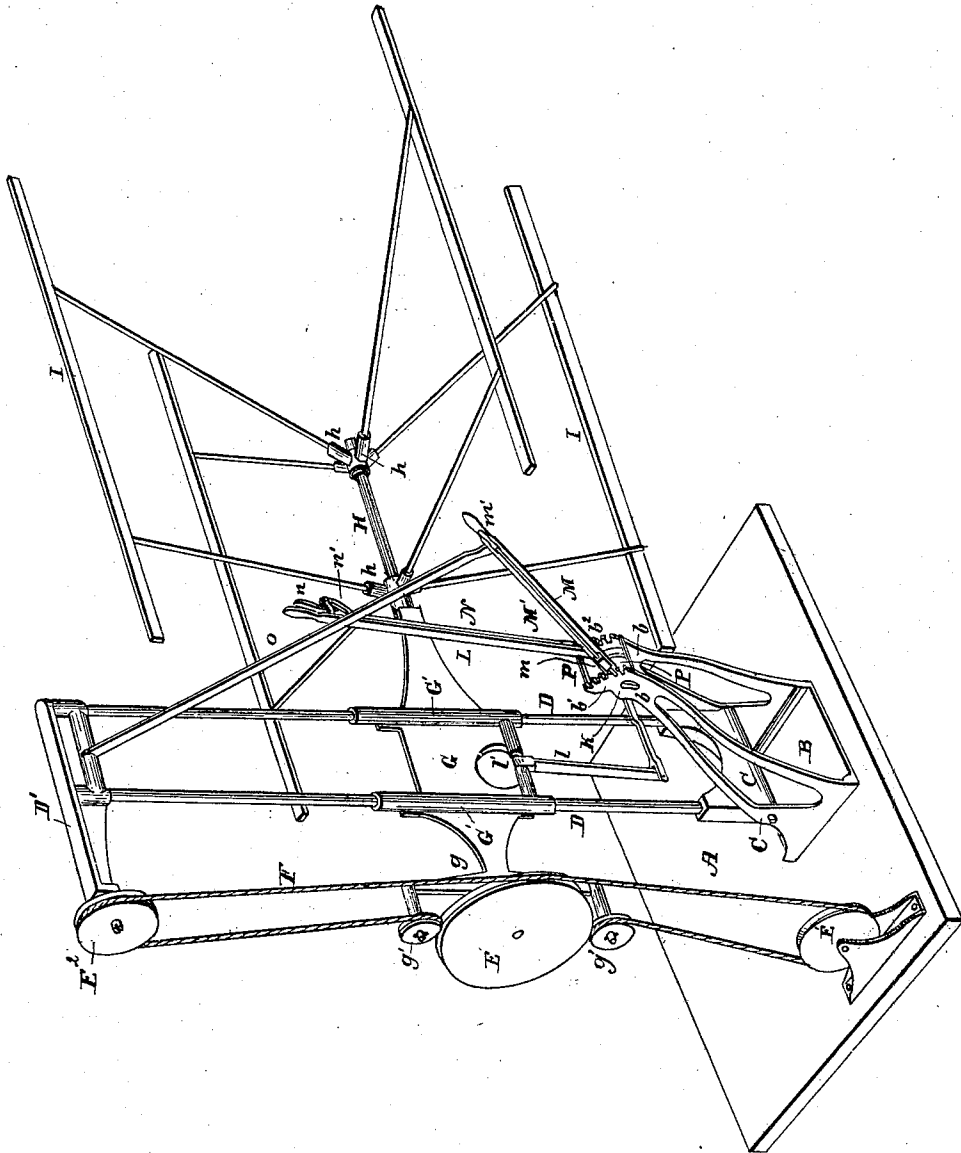


J. W. BOPE.
Harvester Reel.

No. 103,969.

Patented June 7, 1870.



Witnesses.
A. A. Hahn
H. H. Hahn

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UNITED STATES PATENT OFFICE.

JACOB W. BOPE, OF SOUTH BEND, INDIANA, ASSIGNOR TO HIMSELF AND C. AULTMAN, OF CANTON, OHIO.

IMPROVEMENT IN REELS FOR HARVESTERS.

Specification forming part of Letters Patent No. 103,969, dated June 7, 1870.

To all whom it may concern:

Be it known that I, JACOB W. BOPE, formerly of the city of Chicago, in the county of Cook and State of Illinois, but now of South Bend, St. Joseph county, Indiana, have invented certain new and useful Improvements in Harvester-Reels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, said drawing representing a front perspective view of the reel.

The invention relates to a novel and effective construction and arrangement of the devices for adjusting the position of the reel, both vertically and horizontally, relative to the position of the cutting apparatus; but the nature of the invention will be clearly understood from the following description:

A represents the support for the reel, which may be located upon either the main frame, grain-platform, shoe, or the inner end of the cutter-bar, as the nature of circumstances may require. B is a metallic base-plate, arms or extensions *b b* of which form the support for the levers, hereinafter described.

Mounted in ears or flanges of this plate B is a rock-shaft, C, and in mortises or sockets at each end of this shaft are supported two rods or ways, D D. These rods may be either solid or tubular, though, for the sake of combining strength and lightness, I usually make them tubular.

To the upper end of the ways is attached an arm or T-piece, D', one end of which extends inward—that is, toward the main frame of the machine.

Upon the inner end of this arm is hung a loose grooved pulley, E², over which passes the belt F. G is a yoke or cross-head, supported at right angles to the ways D D, by means of the tubular guides or sleeves G' G'. H is the reel-shaft, rotating in bearings (not shown in the drawing) attached to each end of the yoke G in any usual manner.

At the inner end of said yoke is a cross-piece, *g*, either formed in one piece with the yoke, or made separate and secured to it.

Upon two horizontal arms of this cross-piece *g* are mounted the loose sheaves *g' g'*,

by means of which the belt F is deflected and made to conform more closely to the periphery of the wheel E, thereby securing a greater extent of friction-surface. E is a grooved pulley or sheave, keyed firmly upon and driving the reel-shaft H.

E¹ represents the pulley, by means of which, in connection with the belt F, motion is communicated to the wheel E and reel-shaft H.

This wheel E¹ is connected with and driven by the main driving-wheel in any desired manner, and is mounted on, or nearly on, the same line as that about which the standards or ways D D vibrate, the result of which is, that the horizontal adjustments of the reel may be made without affecting the relation existing between the wheels E, E¹, and E², thereby preserving the necessary tension of the belt F, and a satisfactory working of the parts.

The hubs *h h*, secured to the reel-shaft H, have short sockets or stubs for the insertion of the arms supporting the beaters L. The extensions *b b* of the plate B are expanded at their upper ends, in the form of an arc of a circle, the center of which is at K. This arc is toothed, as shown at *b¹ b²*, for a purpose which will be explained. L is a lever, either bent or straight, as may be most convenient to operate, pivoted upon the pin K and connected by means of the link *l* to a wrist formed on the cross-head G at *l'*. N is a latch or pawl, vibrating in a loop or guide, or firmly attached to the lever L. This latch N is operated by a bell-crank, *n*, pivoted to a lug, *n'*, near the upper end of the lever L. M is another hand-lever, pivoted upon the pin K. O is a link, connected at one end with the lever M, and at the other with the cross-piece D'. M' is a pawl vibrating in a guide, *m*, at the lower end of lever M, and operated by a bell-crank, *m'*, pivoted in a lug at or near the upper end of lever M.

The bell-cranks *m'* and *n* are actuated by springs placed between them and the levers to which they are respectively attached, in such manner that the pawls N and M' are always engaged with the toothed arcs *b¹ b²*, except when intentionally withdrawn by the operator.

From the foregoing description it will be seen that, by pulling backward or thrusting forward the lever L, the cross-head G, carrying with it the reel, may be set at any desired height relative to the cutting apparatus; and further, that, when such adjustment shall have been effected, it may be maintained by means of the pawl N engaging with the toothed arc b^2 .

In a similar manner the horizontal adjustment of the reel is effected by means of the lever M and link O. This latter adjustment is also maintained by means of the pawl M' and toothed arc b^1 . P P are transverse ribs, serving the twofold purpose of connecting and strengthening the supporting-arms $b^1 b^2$, and also of limiting the throw of the levers L and M.

Having described the construction and operation of my reel, what I claim as new, and wish to secure by Letters Patent, is—

1. The base-plate B, upon which the reel-

post is pivoted, provided with uprights or arms b , forming a support for the levers through which the reel is adjusted vertically.

2. The base-plate B, provided with uprights or arms b , in combination with the levers M and L, for adjusting the reel both vertically and horizontally.

3. The base-plate B, provided with uprights b and toothed rack b^1 , in combination with lever M, pawl M', and link O, for effecting the horizontal or backward and forward adjustment of the reel.

4. The toothed racks $b^1 b^2$, in combination with bars $p p$, which connect said racks and also serve as stops to limit the throw or sweep of levers L and M.

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Witnesses:

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