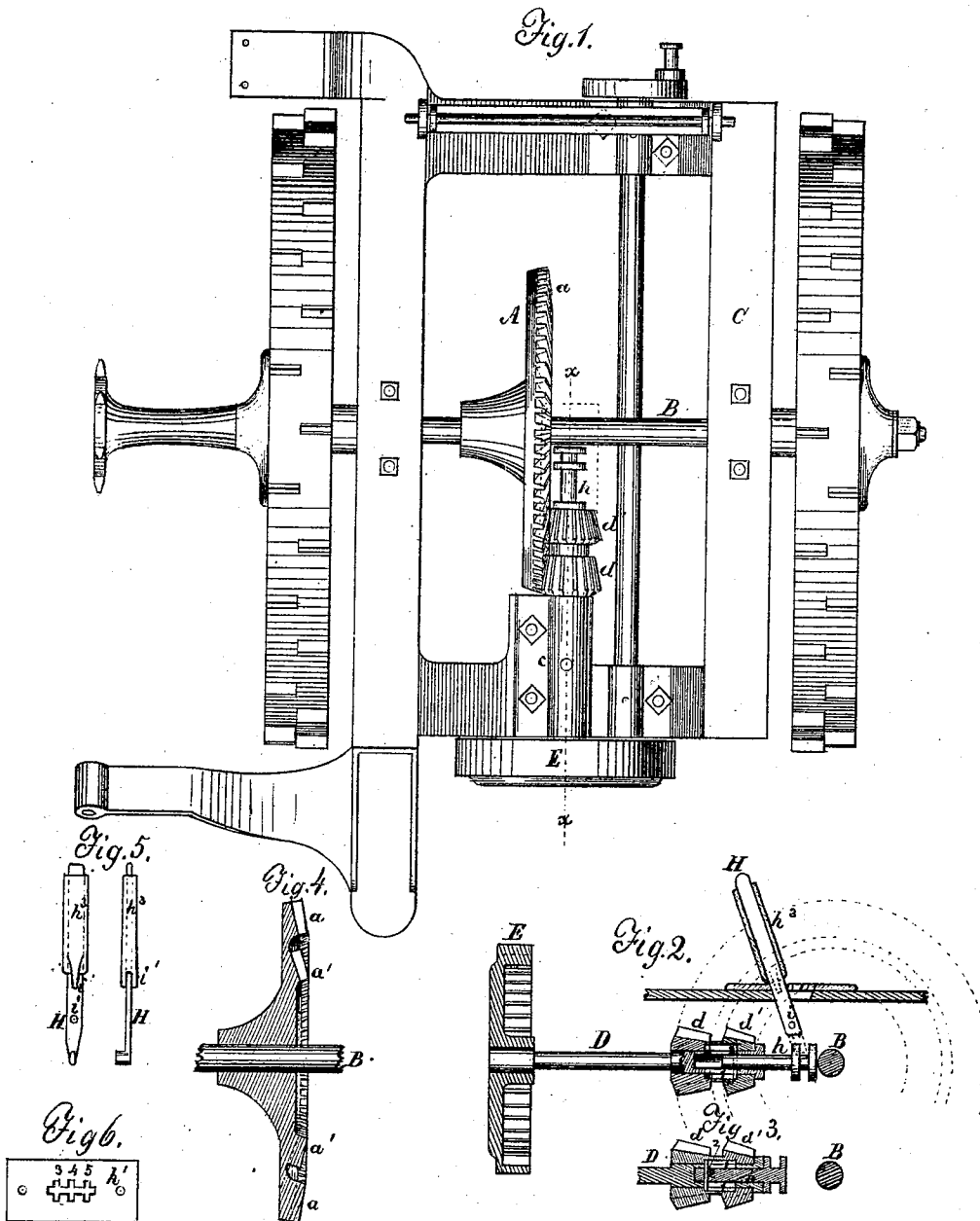


A. RANK.
HARVESTER.

No. 96,352.

Patented Nov. 2, 1869.



Witnesses
J. S. Clayton
Balthus De Long.

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AMOS RANK, OF SALEM, OHIO.

Letters Patent No. 96,352, dated November 2, 1869.

HARVESTER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, AMOS RANK, of Salem, in the county of Columbiana, and State of Ohio, have invented certain new and useful Improvements in Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 is a plan view of so much of a harvester embracing my improvements as is necessary to illustrate the invention herein claimed;

Figure 2, a vertical section through the gearing, at the line *x x* of fig. 1;

Figure 3 is a similar section, showing the clutch-mechanism in another position;

Figure 4, an axial transverse section through the main bevel-wheel;

Figure 5, a side and an edge view of the shipping-lever; and

Figure 6, a plan of the locking-plate, and the slot in which the shipping-lever works.

The invention herein claimed relates to novel devices for changing the speed of the cutters, hereinafter fully set forth.

In order to carry out the object of my invention, I mount a bevel-wheel, A, on an axle, B, supported in proper bearings in a frame, C.

The wheel A has two concentric bevel-gears, *a a'*, on one of its faces, which respectively drive corresponding bevel-pinions *d d'*, on a countershaft, D.

An internally-geared spur-wheel, E, on this shaft, drives a spur-pinion on a crank-shaft, which drives the cutters, in the usual way.

The countershaft D revolves in a long box, *c*, on the frame. Its rear end projects beyond the box, is provided with a transverse slot, I, figs. 2 and 3, and is made hollow, to receive a slide-rod, *h*, which moves freely endwise in the hollow part of the shaft, but is prevented from slipping out by a transverse pin, 2, which plays in the slot I.

A shipping lever, H, rocks on a pivot, *i*. A toe or yoke on this lever fits between lugs or flanges on the rod *h*, and thus moves it in or out.

The shipping-lever passes through a slotted plate, *h'*, having three notches, 3, 4, 5, in it.

The pinions *d d'* run loosely on their shaft. The

pinion *d* has a notch cut in its rear side, and the pinion *d'* a similar one in its front side.

The pin 2 projects far enough beyond the shaft to enter these notches, and thus locks the pinions alternately on the shaft D, so as to revolve with it.

A sleeve, *h'*, slides endwise on the shipping-lever, and a nose, *i*, fig. 5, on its lower end, enters the notches in the plate *h'*.

When the shipping-lever is thrown forward, the sleeve is locked in the front notch 3, the pin 2 locks the pinion *d'* to the shaft D, (as in fig. 2,) and the smaller bevel-gear *a'* being then in gear, the speed of the cutters is diminished to adapt them to reaping.

When the lever is locked in the back notch 5, the pinion *d* is in gear, and the other one, *d'*, disengaged, as shown in fig. 3. The larger bevel-wheel *a* is then in gear, and the speed of the cutters is increased to adapt them to mowing.

When the lever is locked in the middle notch 4, the pin 2 rests in a space between the pinions *d d'*, and both of them are out of gear.

In the drawings, I have shown my apparatus as adapted to the well-known *Ætna* harvester. It is obviously, however, adaptable to other arrangements of gearing. In this instance, the bevel-wheel runs with the main axle, but in other forms of gear it might be mounted on a secondary shaft.

It will be seen, that by my improvement I am enabled to vary the speed of the cutters without moving the pinions, and to hold the pinions positively in or out of gear by means of the notched plate and sliding sleeve.

What I claim as my invention; and desire to secure by Letters Patent, is—

1. The combination of the hollow slotted shaft, the loose pinions thereon, the slide-rod, and its locking-pin, all constructed to operate as hereinbefore set forth.

2. The combination of the shipping-lever, its sliding sleeve, the locking-plate, the slide-rod, and the pinions, all constructed to operate as hereinbefore set forth.

In testimony whereof, I have hereunto subscribed my name.

Witnesses:

THOS. S. BAIRD,

JOHN W. SATTERTHWAIT.

AMOS RANK.