2 Sheets--Sheet 1.

B. ILLINGWORTH.

Improvement in Harvester-Rakes.

No. 114,441. Patented May 2, 1871.

Fig 1.

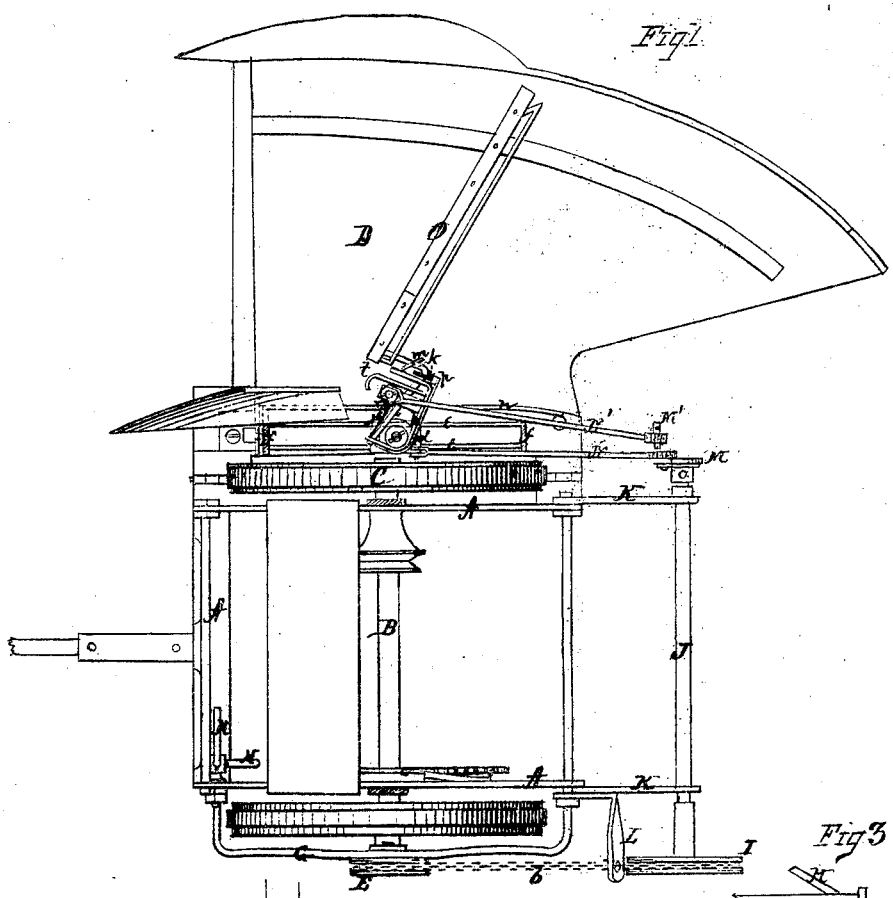


Fig 2

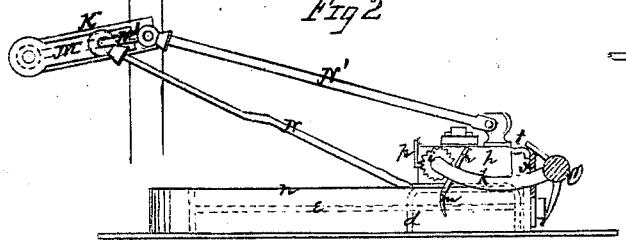
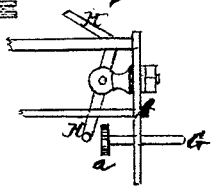


Fig 3



Witnesses.

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C. L. Evert.

Inventor.

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2 Sheets--Sheet 2.

B. ILLINGWORTH.

Improvement in Harvester-Rakes.

No. 114,441. Patented May 2, 1871.

Fig: 4.

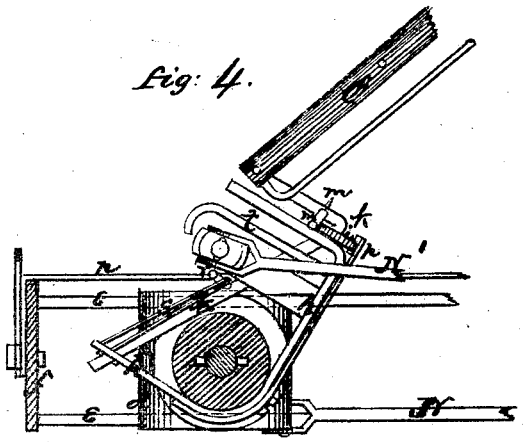
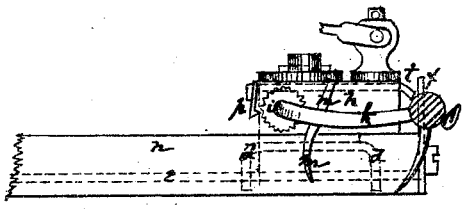


Fig: 5



Witnesses.

C. L. Emerson

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UNITED STATES PATENT OFFICE.

BENJAMIN ILLINGWORTH, OF LE ROY, MINNESOTA.

IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. **114,441**, dated May 2, 1871.

To all whom it may concern:

Be it known that I, BENJAMIN ILLINGWORTH, of Le Roy, in the county of Mower, and in the State of Minnesota, have invented a certain new and useful Improvement in Rake Attachment for Reapers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a rake attachment for reapers, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of my machine. Fig. 2 is a side view of the rake attachment. Fig. 3 is a view of a device by means of which the action of the rake may be stopped at any time. Fig. 4 is an enlarged plan view, and Fig. 5 an enlarged side view, of the rake connection.

A represents the frame of a reaper. B is the axle, and C C the driving-wheels, said axle and wheels being provided with the usual pawl and ratchet or other device for rotating the axle when the machine is moving forward, and keeping it stationary when moving backward.

D represents the platform, which may be either hinged and adjustable, as shown in the drawing, or bolted solid to the main frame, as is generally the case in one-wheeled machines. Upon the end of the axle B, on the side opposite to the platform D, is placed a pulley, E, with clutch on the hub of the wheel, said pulley being pressed inward, so as to gear with said clutch by means of a spring, G. The front end of this spring passes through the side of the frame A, in front of the wheel, and is inside of the frame provided with a head, *a*.

A foot-lever, H, is pivoted to the frame, and its lower end is against the head *a*, so that by pressing down upon said lever the spring G is forced outward, disengaging the pulley E from the clutch.

A chain, *b*, passes over the pulley B, and, being crossed, is also passed over a pulley, I, upon the end of a horizontal shaft, J, which shaft has its bearings in two slotted arms, K K, extending from the rear portion of the frame A. These arms being slotted, the distance of the shaft J from the rear end of the machine may readily be regulated by merely changing said arms out or in.

The chain *b*, between the two pulleys E and I, passes through an adjustable arm, L, which acts as a regulator for the chain to make up for the adjustment of the shaft J to or from the machine. On the opposite end of the shaft J—that is, on the end nearest, or on the same side as the platform D—is a crank, M, and to the outer end thereof is attached a second crank, M′, extending in the same direction as the first.

On the two cranks M M′ are placed the two pitmen N N′, respectively. The inner pitman, N, connects with and moves a carriage, *d*, back and forth on the rods *e e*, which are placed in supports *f f*, along the inner edge of the platform D. On this carriage is a small upright post, upon which the head *h* is pivoted, and the outer pitman, N′, is connected with said head in such a manner as to turn in the proper direction to give the rake the necessary circular motion.

A shaft, *k*, passes diagonally through the head *h*, and the outer end of this shaft is curved, as shown in Fig. 2, and has the rake O attached to it.

The action of the two cranks M M′ and pitmen N N′ gives to the rake O the necessary motion to rake the grain from the front edge of the platform D to the rear edge, as shown in Fig. 1.

As soon as the carriage *d* has been drawn to its rearmost point and the rake O deposited the grain at the rear edge of the platform, a pin, *m*, which passes through the shaft *k* outside of the head *h*, strikes with its lower end against a flange, *n*, on the platform D, parallel with the guide-rods *e e*, and causes the shaft *k* to turn so as to lift the rake up from the platform a certain distance, and a small toothed wheel, *i*, on the shaft immediately outside of the head *h*, is caught by a spring-pawl, *p*, thus holding the rake in this elevated position.

As the carriage *d* moves forward again, the

lower end of the pin *m*, following the flange *n*, still farther raises the rake, and then the upper end of said pin is caught under the pitman N′, so as to turn the rake until the teeth are almost horizontal, the ratchet-wheel *i* and pawl *p* holding it in this position. On the shaft *k*, within the head *h*, is another pin, *r*, which, as the shaft is turned, as above described, bears against a spring, *s*.

When the rake has arrived above the front edge of the platform a pin, *t*, attached to the spring-pawl *p*, strikes a stop, *x*, forcing the said pawl away from the ratchet-wheel *i*. The spring *s* then bearing against the pin *r* throws the rake down in position to rake the grain over the platform.

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

1. The combination of the within-described parts forming the operating mechanism of a rake attachment for reapers—namely, the carriage *d*, head *h*, shaft *k*, pin *m*, ratchet-wheel *i*, and spring-pawl *p*, all constructed and arranged as described, and operating in connection with the rods *e e*, rake O, flange *n*, and stop *x*, substantially as and for the purpose herein set forth.

2. In combination with the mechanism above described for operating the rake O, the pitmen N N′, cranks M M′, shaft J, slotted arms K K, pulleys I E, chain *b*, and regulator L, all constructed and arranged with a reaper, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of February, 1871.

BENJAMIN ILLINGWORTH.

Witnesses:

THOS. YOUNG,

SAMUEL J. BACON.