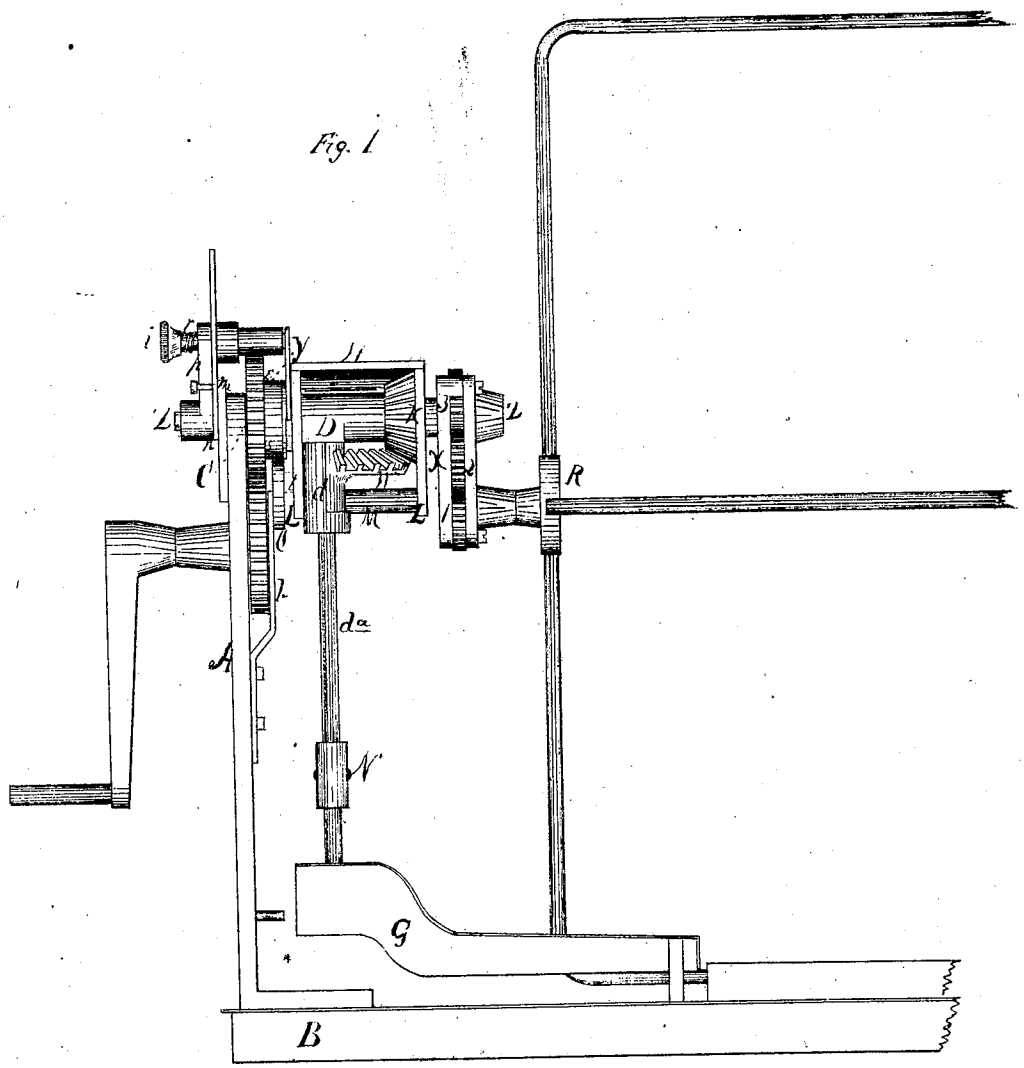
4 Sheets. Sheet 1.

A. & C. W. Palmer.

Harvester Rake.

No. 100,922. Patented. Mar. 15. 1870.

Fig. 1



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4 Sheets. Sheet 2.

Harvester Rake.

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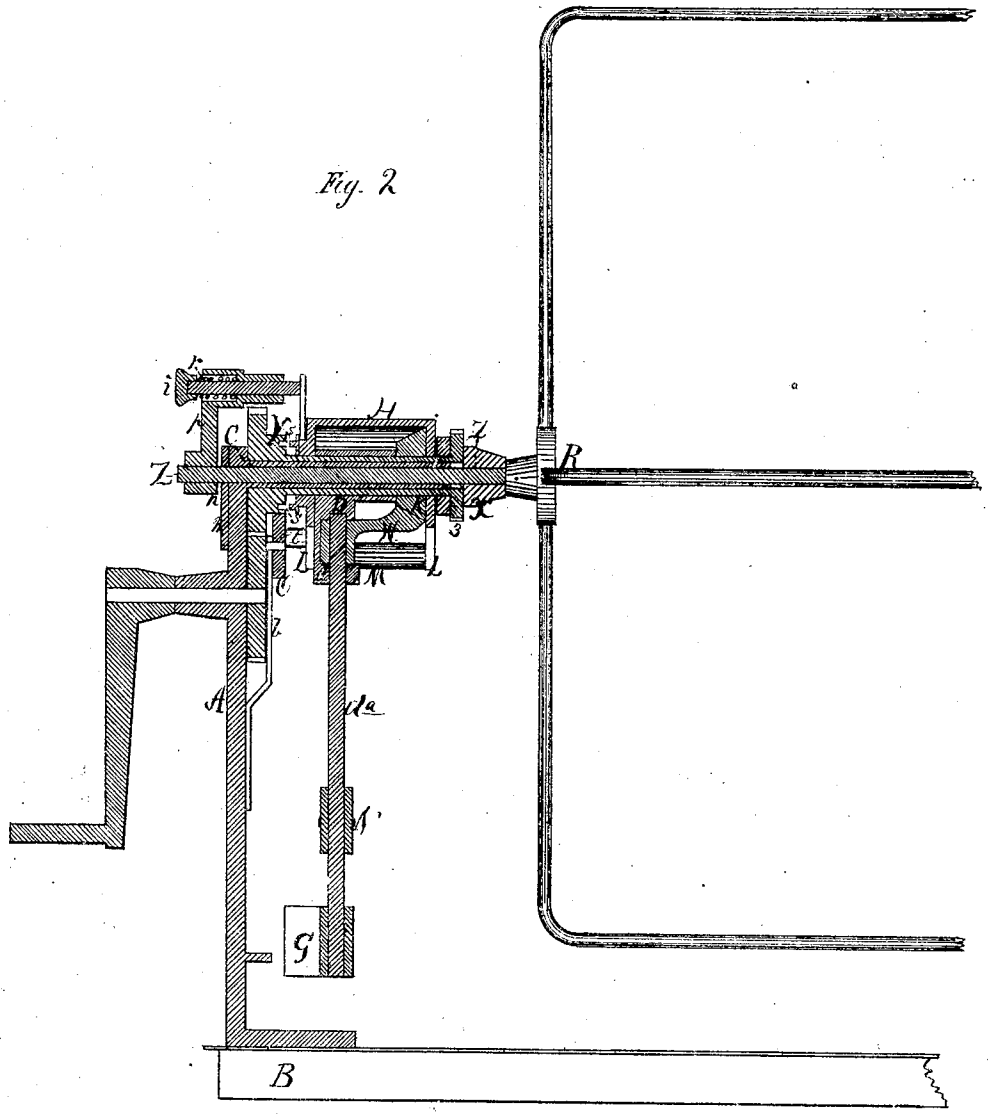
Patented Mar. 15, 1870.

Fig. 2



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Harvester Rake.

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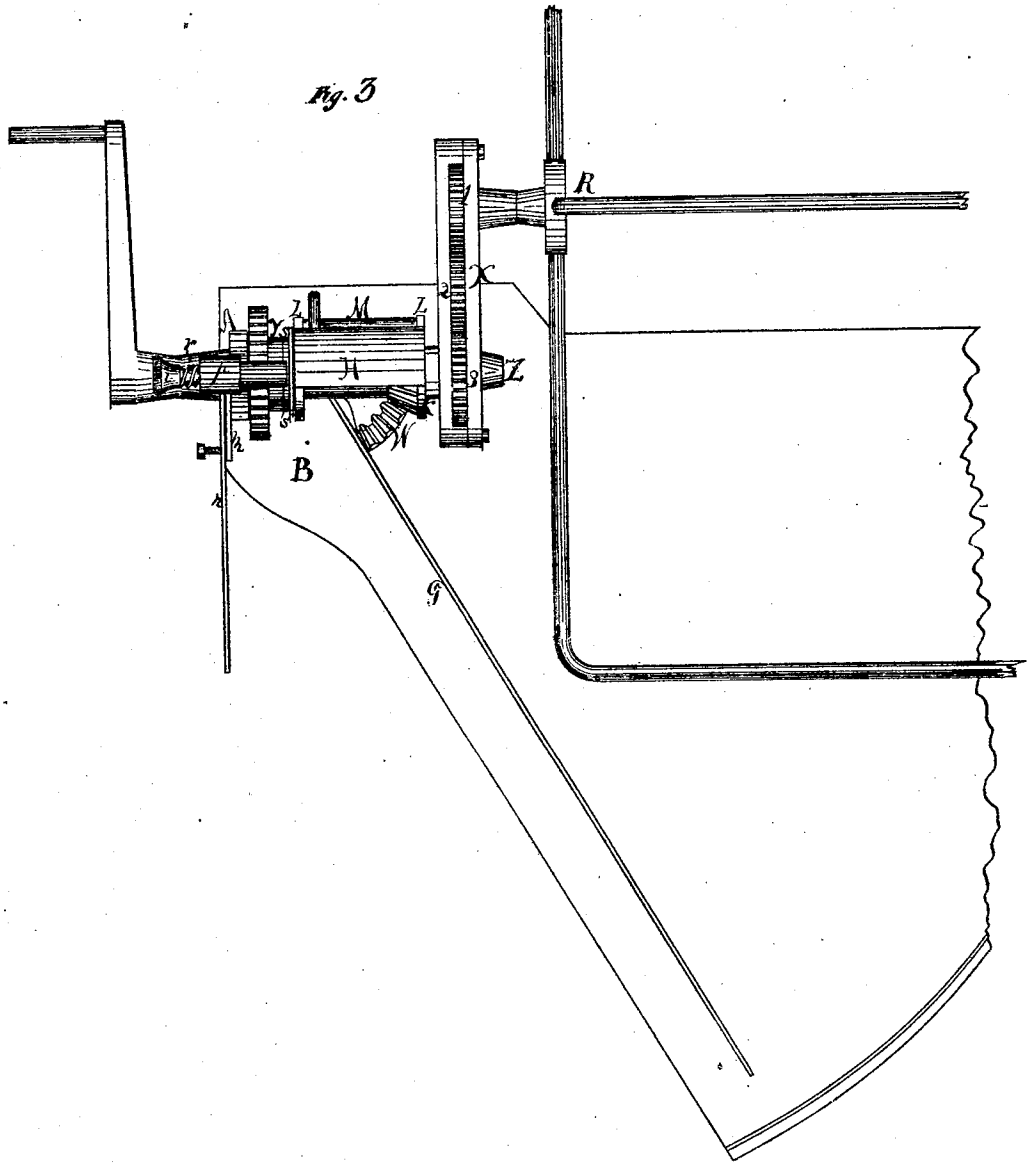
Fig. 3



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4 Sheets. Sheet. 4.

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Harvester Rake.

No. 100922. Patented. Mar. 15. 1870.

Fig. 5

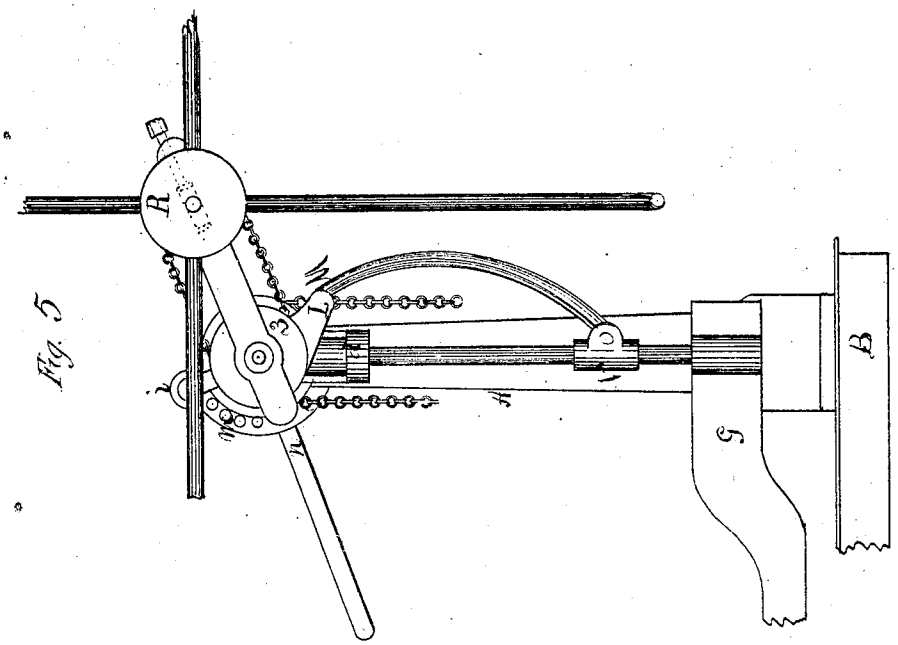
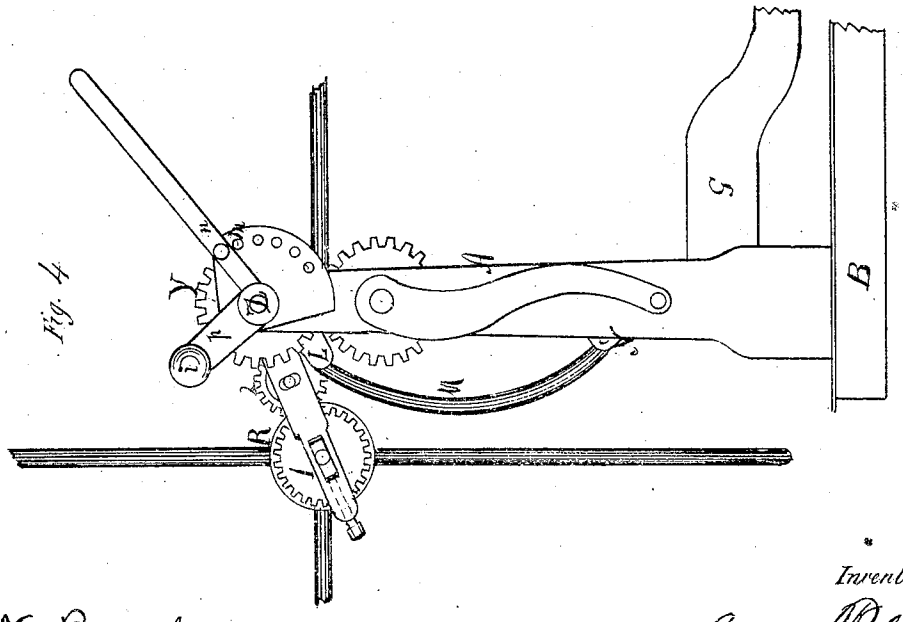


Fig. 4



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United States Patent Office.

AARON PALMER AND CHARLES W. PALMER, OF BROCKPORT, NEW YORK.

Letters Patent No. 100,922, *dated March* 15, 1870.

IMPROVEMENT IN HARVESTER-RAKES.

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

We, AARON PALMER and CHARLES W. PALMER, of Brockport, county of Monroe, and State of New York, have invented certain Improvements in Harvesters, of which the following is a specification.

Nature and Object.

Our invention relates to certain additional improvements upon an invention embraced in Letters Patent of the United States dated February 1, 1870, No. 99,340, for "raking apparatus;" and consists in the combination of an adjustable reel with said apparatus in such a manner that it may be raised and lowered during the progress of the machine, at the pleasure of the operator.

Description of Drawings.

Figure 1, sheet 1, is an elevation of the apparatus as seen from the rear of the machine.

Figure 2, sheet 2, is a vertical section through the axis of the driving-shaft.

Figure 3, sheet 3, is a top view as seen from the side of the machine where the power is applied.

Figure 4, sheet 4, is an end view, as seen from the side of the machine where the power is applied.

Figure 5, same sheet, is an end view from the grain-side of the machine, and shows a chain for driving the reel, instead of gearing, as in the other views.

Like letters refer to like parts in all the drawings.

A is the post for supporting the entire raking and reeling devices, and it is locate dupon the platform B or any other convenient portion of the machine, by which the rake-head may be brought to coincide with a plane, parallel, or nearly so, to the center of the finger-bar of the machine, the object of which will be hereafter explained.

At or near the upper end of the post A is a hollow arm or bracket, C, of metal, firmly secured to post A in any convenient manner.

Through said arm C extends a shaft or axle Z, which serves as a support for the arm that carries the reel, and upon its opposite end, or that nearest to the operator, is fastened the lever *n*, by which the reel is raised or lowered.

Upon the arm C is a sleeve, Y, and upon its inner end, or that next to the post A, is a toothed or chain-wheel to receive motion from any convenient driving-mechanism of the machine.

Upon the other end of said sleeve is another wheel for imparting motion to the reel, either by intermediate toothed wheels or a chain, as shown in fig. 5, the action of which will be hereafter explained.

Upon sleeve Y, which is upon the arm C, is a sleeve D, to which the rake-arm is attached by means of a sleeve, *d*, formed on the side of sleeve D, one side of which, *d*, is left open for the segment of a bevel-wheel, W, which is fastened upon the rake-arm d^a, to partially turn in. The sleeve *d* serves as a collar upon the rake-arm to hold it in working combination with the sleeve D.

Exterior to the sleeve D, but concentric with it, is an open sleeve, H, each end of which is fitted to work closely upon the sleeve Y or arm C, which carries it. The cylindrical portion of said open sleeve is made sufficiently large to permit the sleeve D to work freely within it, and a sufficient portion of it is left open to permit the rake-arm to play back and forth within it.

At one end of said sleeve H, and within it, is a beveled toothed wheel, K, which engages with the segment W to control the motion of the rake, as explained in the previous patent already referred to.

At L L, upon the sleeve H, are two arms, to which is pivoted the lifting-arm M, said arm being T-shaped and attached to a sliding sleeve, N, that surrounds the rake-arm.

Upon the upper side of the pivoted axis of the arm M is formed a stud, *t*, which extends out from the axis beyond the end of sleeve H sufficiently far to engage with a friction-wheel, O, which is fastened upon a bracket, *b*, upon post A.

At *s s*, upon the inner end of the sleeve H, are pins, which engage in holes in the face of the inner wheel upon the sleeve Y like the teeth of a clutch, and by which motion is imparted to sleeves H and D, and thence to the rake G.

Upon the outer extremity of the axis Z is fastened an arm, X, which extends forward over the front of the cutting apparatus sufficiently far to support the reel-shaft, so far forward of the cut grain upon the platform as that the reel beaters cannot strike the gavel under any circumstances.

At or near the outer extremity of the arm X suitable bearings for the reel-shaft are mounted, and upon them the wheel R is supported. These bearings may also be made adjustable in arm X, as indicated in the drawings.

At 1, 2, and 3 are toothed wheels to impart motion from the sleeve Y to the reel R, and the diameter of these wheels may be so varied that any desired speed of the reel may be readily obtained, or a chain and wheels may be substituted for the gear wheels, as shown at fig. 5, sheet 4.

Upon the opposite end of the axis Z from the reel, a lever, *n*, is fastened in such a position that the operator of the machine may easily reach it, and by which the axis Z is partially rotated to raise or lower the reel.

On any convenient point of the lever *n* a stop may be affixed to engage in notches or holes in an arc, as at *m*, upon the post A, for the purpose of holding the reel at any desired height.

Upon a bracket, *p*, fastened upon the axis Z, is mounted a sliding rod *i*, one end of which is forked, to

span the inner end of the sleeve H, in such a manner as to serve as a shipping device to stop and start the rake whenever desired.

When the rod *i* is shoved from the operator, the sleeves H and D will be moved from the inner end of the sleeve H, and the clutch-pins will then be released so that the rake may stop, and by using a spring, as at *r*, upon the shipping-rod *r*, they will be brought in contact as soon as the pressure is removed from the shipper.

The operation is as follows:

Power being applied to the sleeve Y, either by gear or belts applied at its inner end, and the pins *s s* of the sleeve H being engaged in the holes at *s s* on the sleeve Y, the rake is caused to perform the same motions as specified in the patent already referred to, the wheel K imparting motion to the segment W, causing the rake to sweep across the platform to remove the grain, which being accomplished, the rake is then lifted by the arm M and carried up and over the arm C, the gear K and W guiding the rake to coincide with one of the beaters of the reel, and following it until it reaches a point at or near the front edge of the platform. Pressure being applied to the shipping-rod *i*, the sleeves H and D are disconnected, and the rake ceases its motion at the pleasure of the operator.

Claims.

1. The combination of the axis Z, the hollow arm C, the arm X, and the lever *n*, for the purposes hereinbefore set forth.

2. The sleeve Y upon the arm C, for driving the reel, as hereinbefore set forth.

3. The sleeve Y upon arm C, in combination with the sleeves H and D, toothed gear K and W for imparting motion to the rake, as hereinbefore set forth.

4. The sleeve Y, in combination with the sleeve H, arms L L, lifting-arm M, projection *t*, and wheel O, upon bracket *b*, for the purposes set forth.

5. The slotted arm X, for sliding the reel bearings to and from the rake center, when such arm is mounted upon the axis Z, for the purposes set forth.

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