C. B. Withington.

Harvester Rake.

No. 27252 Patented Feb. 21, 1860.

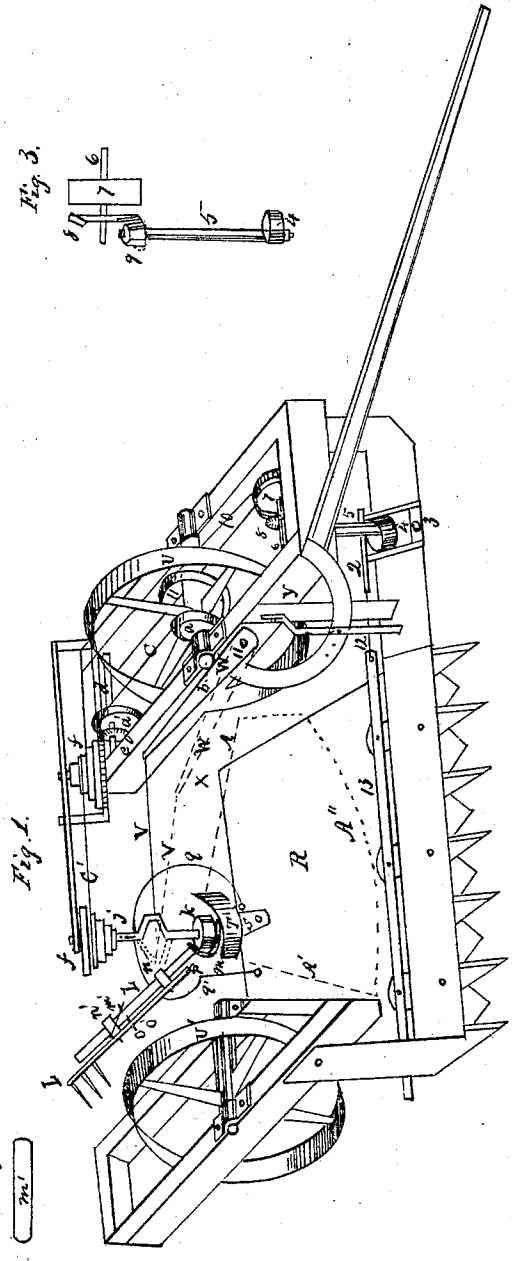


Fig. 3.

Fig. 4



Fig. 5



Fig. 6



Fig. 7

Fig. 8

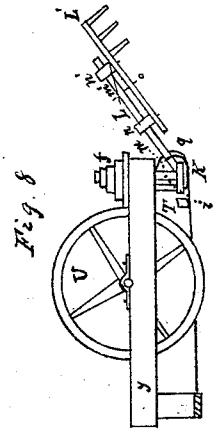
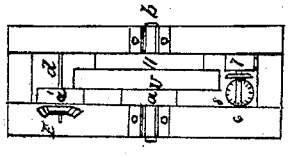


Fig. 2.



Witnesses.

David Clow

H. G. Clow

Inventor.

Chas B. Withington

UNITED STATES PATENT OFFICE.

CHARLES B. WITHINGTON, OF ROCK, WISCONSIN.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **27,252**, dated February 21, 1860.

To all whom it may concern:

Be it known that I, CHARLES B. WITHINGTON, of the town of Rock, in the county of Rock and State of Wisconsin, have invented and added sundry Improvements to the Harvesting-Machine. I denominate my invention "Withington's Climax Harvester;" and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 is a perspective elevation of my improved harvester; Fig. 2, a transverse section; Fig. 3, a perspective elevation of the gearing that connects with the cutting apparatus; Fig. 4, a perspective view of the under side of the loose pulley, catch, and spring; Fig. 5, a ratchet-wheel; Fig. 6, the rake-head; Fig. 7, an elastic spring.

The same figures and letters refer to corresponding parts in all the figures.

The supporting-frame and also the cutting apparatus I construct very nearly in the usual way.

My invention relates to an improvement in the raking apparatus, and the manner of discharging the cut grain from the platform.

a is a pulley upon the main supporting-shaft, and on the inside of the main supporting-wheel *c* is a belt, which encircles the said pulley and connects it with the pulley *a'* on the counter-shaft *d*. Upon this said counter-shaft, and on the inside of the last-named pulley, is a bevel cog-wheel, E. Corresponding with and geared into this said cog-wheel are other cogs, attached to and a part of the first series of conical pulleys, *f*. Encircling this said series of pulleys, and extending to and encircling the second series of pulleys, *f'*, is another belt, *c'*. Upon the under side of the last-mentioned pulley is permanently attached a spring, *g*, and catch *h*. This said pulley is loose upon the upright shaft *i*, and rests upon the ratchet-wheel *j*, which is permanently attached to the said upright shaft. Just below the said ratchet-wheel the said shaft is bent so as to form a crank therein. At the foot, and permanently attached to this said shaft, is a hub, *k*, and in the top thereof is a recess, into which the end of the arm L is inserted and pivoted there. Encircling the foot of the said shaft, and also the said arm, is an elastic spring, *m*. Attached to the said arm by means of the guide-boxes *n n'* is the rake-head L', containing teeth, more or less, as may be required. Encircling the guide-box *n'*, and also the pin *o*, (which is permanently fixed in the said arm,) is a second elastic spring, *m'*. In the end of the said rake-head is a friction-roller, *p*. Encircling the said upright shaft and all its appendages is the guide rod or cam *q*, which is permanently fastened at both ends to the platform R, upon which the grain falls. Attached to the said platform, also, is the arm S, that supports the said upright shaft. Upon this said arm, and just in front of the said shaft, is a cam, T. Attached to the said crank is the end of the rod V, the other end of which is attached to the spring W, which is fastened to the main supporting-frame *y* with the screw-bolt Z.

Having fully described the mechanical construction of my said improvement, I will now try and explain the principle of operation.

As the machine moves forward upon the wheels U U' the belt *c* turns shaft *d*; the cog-wheel E upon said shaft turns pulleys *f*; belt *c'*, encircling said pulleys and extending to pulleys *f'*, causes it also to rotate, and consequently the shaft *i*, to which it is attached. It is manifest, however, that the said shaft would not turn (the pulleys being loose) were it not for the ratchet-wheel and the said catch and spring *g* and *h*, which, as before stated, are permanently attached to the under side of the said pulley; but, the ratchet-wheel being keyed upon the said shaft permanently, the said catch pressing against the teeth of the said wheel, and the said spring pressing down upon the said catch, holds it there, and consequently the said upright shaft must and does turn with the said pulley. Now, it is equally manifest, also, that when the machinery is reversed or backing the said shaft will stand still, from the fact that the said catch *h* will have no effect upon the said ratchet-wheel, but will easily slide over the teeth on account of their oblique construction or eccentric inclination. It will also appear manifest from the position of the aforesaid conical pulleys, when considered in the relation they bear to each other, that the motive of the one—to wit, *f'*—may be easily varied from slow to fast, and vice versa, by the shifting of the belt *c'*, and this is a very important desideratum, inasmuch as a slow motion is required in light grain and a quick motion in heavy grain. As the said up-

right shaft *i* rotates the arm L must of necessity rotate with it, inasmuch as it is, as before stated, permanently attached to it. Now, let us suppose the arm L, with its appendages, resting upon the platform R at the dotted line A. As the machine moves forward the said arm will begin to rise upon the guide-rod *q*, (which rises gently at an angle of about forty-five degrees,) and when it arrives at the highest point of inclination on the said guide rod or cam, and at the angle *q'* in the same, it will drop down upon the said platform R at or near the dotted line A'. The spiral spring *m* is intended to steady the said arm and hold it snugly to the said platform while passing over it. We will now suppose the said arm and rake resting upon the said platform at the dotted line A'. From this said point the spring W exerts its power upon the shaft *i*, and consequently upon the said arm and rake, and forces them over the platform with great rapidity, describing the circle of the dotted line A''. The friction-roller *p* in the end of the rake-head L rests against the cam T, which forces the said rake-head outward and longitudinally, sliding upon the said arm L by means of the guide-boxes *n n'*, and returns to its place by the power of the other elastic spring, *m'*. The pin *o* enters a slot, *o'*, in the said rake-head, which admits of its free action, and at the same time steadies it and keeps it in its proper position. As the rake passes over the platform R it carries before it the cut grain and deposits it upon the ground, in the rear and at left thereof.

It will be observed that the crank in the shaft *i* and the connecting-rod V and spring W stand at the dotted lines which represent them when the rake stands at the point A'. The instant the said spring W ceases to operate upon the said crank the catch *h* drops into the teeth of the ratchet-wheel *j* and forces the shaft around. The crank then begins to draw upon the said spring, and vice versa, at the different points mentioned.

Having thus fully described the construction and operation of my improvement on the harvesting-machine, what I claim, and desire to secure by Letters Patent, is—

The combination of the spring W, connecting-rod V, shaft *i*, sliding rake-head L', guide *q*, loose pulley *f'*, ratchet-wheel *j*, spring *g*, and catch *h*, when these several parts are arranged in relation to each other and to the main frame and platform in the manner described, for the purposes specified.

The above specification of my improvements in the harvesting-machine signed and witnessed this 3d day of November, 1859.

CHAS. B. WITHINGTON.

Witnesses:
DANIEL CLOW,
H. M. CLOW.