G. F. UNDERHILL & O. COOLEY.

HARVESTER RAKE.

No. 185,000. Patented Dec. 5, 1876.

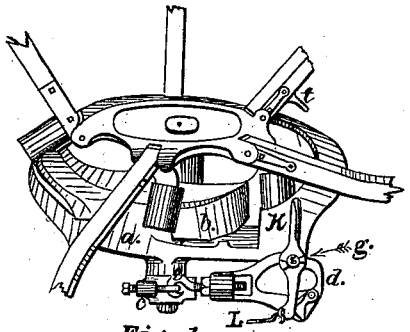

Fig. 1.

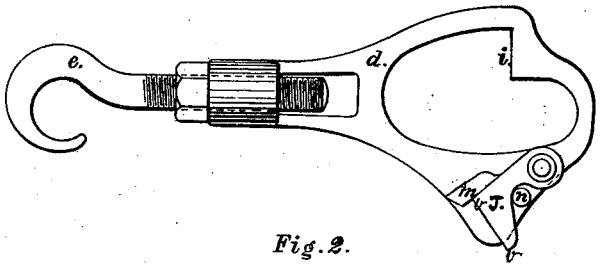

Fig. 2.

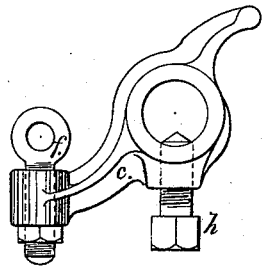

Fig. 3.

Witnesses;

C. A. Dewey

F. S. Stebbins.

Inventor;

Geo. F. Underhill

Orville Cooley

UNITED STATES PATENT OFFICE.

GEORGE F. UNDERHILL AND ORVILLE COOLEY, OF BROCKPORT, NEW YORK, ASSIGNORS TO JOHNSTON HARVESTER COMPANY, OF SAME PLACE.

IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. **185,000**, dated December 5, 1876; application filed December 18, 1875.

To all whom it may concern:

Be it known that we, GEORGE F. UNDERHILL and ORVILLE COOLEY, both of Brockport, in the county of Monroe and State of New York, have invented a new and useful Improvement in Reapers and Harvesters; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view, showing the cam and rake-arms of a revolving rake-harvester, and showing the application of our improved apparatus for operating the cam-gate or switch. Fig. 2 is a plan view of the gate-latch complete, and Fig. 3 is a plan of the adjustable gate-lever complete.

Similar letters of reference in the accompanying drawings denote the same parts.

The object of this invention is to improve the means by which the cam-gate or switch is latched or unlatched and opened or closed to control the movement of the rake-arms; and to this end the invention consists in the devices and combinations substantially as we will now proceed to set forth.

The essential parts of our invention consist of a gate-lever, in the form substantially as shown in Fig. 3, a gate-latch, of the form substantially as shown in Fig. 2, and an operating-lever, by which the rake-arm raises the gate-latch, unlocks the gate, and allows the spring to open the gate.

The gate-lever is constructed of a metal plate, *c*, provided with an adjustable-screw eyebolt, *f*, and with a set-screw, *h*, by which the plate *c* is secured to the lower end of the gate-post or pivot. The gate-latch is constructed of a slotted plate, *d*, having an internal shoulder, *i*, an adjustable screw-hook, *e*, and a gravitating latch, J. The gravitating latch has an inclined lower edge, *v v*, and a projecting arm, *m*, and rests against a stop, *n*. The operating-lever is represented at K, and is pivoted to the cam-plate or the rake-standard by means of a pin, *g*. The lower end of the lever K has an eye to which to attach a rod, L, extending to the driver's foot-treadle, and it is also provided with a stout lug or stud on its inner side, which normally rests under and against the incline *v v* of the latch J. The cam *a*, by which the movements of the rake-arms are controlled, is of the form in general use in this class of harvesters, and is provided with a gate, *b*, which is closed by the continued forward movement of the rake-arm, and opened by the operation of a concealed spring, in the usual manner. This gate is rigidly fixed to an oscillating vertical bolt that extends down through the cam-plate. To the lower end of said bolt, beneath the cam-plate, the plate *c* of the gate-lever is also fixed by means of the clamping-screw *h*, above described. The hook and eye *e f* are connected together, and the slot of the plate *d* is placed over the pin *g*. The lever K is attached to said pin *g*, outside of the gate-latch, holding the latter securely in place.

The closing of the gate *b*, as shown in Fig. 1, draws the latch-plate *d* toward the left hand, causing the shoulder *i* to drop over the pin *g*, and lock the gate closed. When the proper rake-arm comes around to the lever, a spur, *t*, on the under side thereof, strikes the top of the lever, throwing it over toward the left hand, and causing the stud on the inner side of its lower end to move toward the right under the incline *v v*, and thus raise the latch-plate *d*. As soon as the latch-plate has been raised sufficiently to allow the shoulder *i* to clear the pin *g* the concealed gate-spring opens the gate. The continued movement of the rake-arm in due time again closes the gate, and the movement of the latter causes the shoulder *i* to again lock over the pin *g*. The lever K is set again by a movement of the driver's foot by means of the treadle and the rod L, the latch J swinging up out of the way to allow the lower end of the lever to pass back and resume its normal position in contact with the upper end of the incline *v v* in the angle formed by the projecting arm *m*. If, for any reason, it is desired to prevent the raking-arm from coming into operation during a revolution of the rake, such object is easily effected by drawing the lever K out of the path of the pin *t*, after which the rake will continue to revolve without opening the gate.

The treadle may be arranged so that when

depressed by the driver's foot it will unlatch the gate, and when the foot is removed the weight of the parts will set the lever K again for operation, in which case the driver can open the gate at will or keep it closed for any length of time at will.

Having thus described our invention, we claim as new—

1. The gate-lever, constructed substantially as shown in Fig. 3.

2. The gate-latch, constructed substantially as shown in Fig. 2.

3. The combination of the gate-latch, which is suitably connected to the gate-pivot, with the lever K, substantially as described.

4. The gate-latch, composed of supplementary lever-latch J, combined with the gate-latch *d*, substantially as described.

5. The combination of the spring-gate *b*, cam-plate *a*, and rake-arms, with the gate-lever, gate-latch, and tripping-lever, substantially as described.

6. The combination of the spring-gate *b*, cam-plate *a*, and rake-arms, with an adjustable gate-lever, adjustable gate-latch, and tripping-lever, substantially as described.

7. The combination of the spring-gate, cam-plate, rake-arms, with the described gate-lever, gate-latch, and tripping-lever, for automatic operation, and the rod L, for operation at the will of the driver, substantially as described.

GEO. F. UNDERHILL.
ORVILLE COOLEY.

Witnesses:
C. D. DEWEY,
F. S. STEBBINS.