

J. F. KINGWILL.

Ratchet Pinions.

No. 135,991.

Patented Feb. 18, 1873.

Fig 1

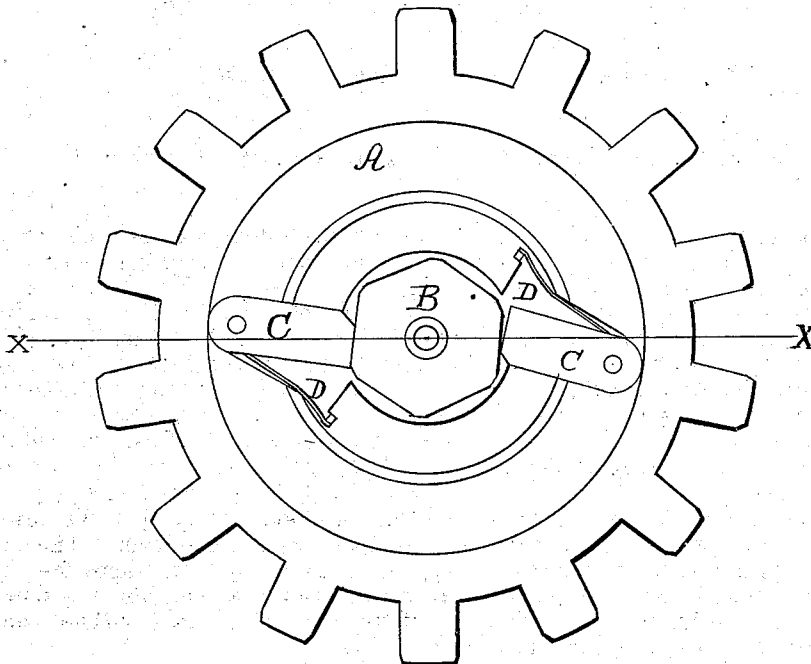
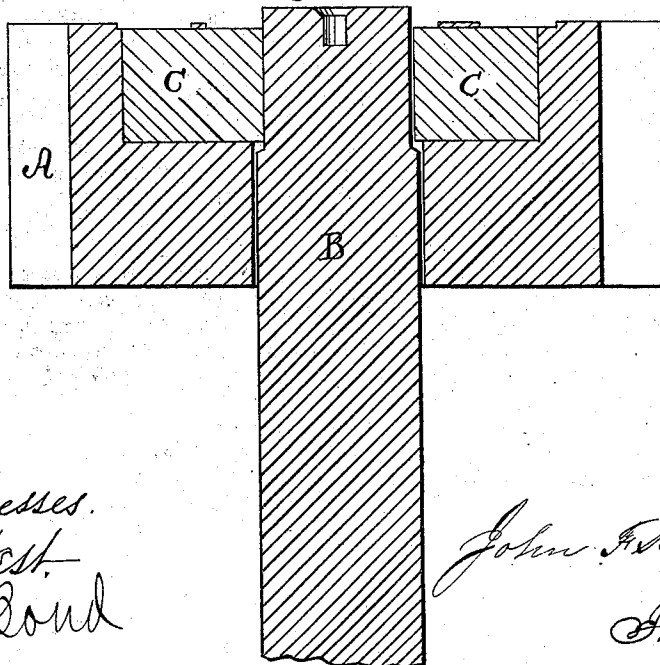


Fig 2



Witnesses.
E. A. West.
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UNITED STATES PATENT OFFICE.

JOHN F. KINGWILL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN RATCHET-PINIONS.

Specification forming part of Letters Patent No. **135,991**, dated February 18, 1873.

To all whom it may concern:

Be it known that I, JOHN F. KINGWILL, of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Ratchet-Pinions, of which the following is a full description, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is an end view, and Fig. 2 a longitudinal section on line *x x*.

The object of this invention is to provide a pinion-wheel which will revolve in one direction without operating the connecting machinery, and when revolving in the opposite direction will cause the machinery to operate; and its nature consists in placing hinged keys or bars within the body of the wheel, in making a portion of the shaft angular so that the ends of the keys will press against the angular or flattened portion of the shaft and lock the pinion thereon so that the shaft will revolve freely in the pinion when moving in one direction, and carry the pinion when moving in a reverse direction, thereby dispensing with ratchet-collars, and with devices for sliding the pinion into and out of gear.

In the drawing, A represents the pinion; B, the shaft; C, the hinged keys or stops; and D, springs. The pinion A is made in any of the known forms, and is provided with a recess sufficiently large to receive the keys C, and to permit of sufficient play at their inner ends to allow the shaft to revolve. The shaft B is made angular at the end for a distance equal to about half the thickness of the pinion, as shown at Fig. 2. As shown, the end of the shaft is made hexagonal, and I prefer this

form; but the pinion may be made to operate upon a square or other angular form.

The keys C are rounded at their outer ends so as to fit into the metal of the pinion, and are pivoted, as shown at Fig. 1, so that when in operation the strain, instead of coming upon the pivots, comes upon the outer ends, and the backs of said keys, giving them a very firm and strong position. When the shaft is revolved the keys swing out into the opening so that the shaft revolves freely.

I have applied springs D to the keys in order to make them act quicker. The action of these springs is beneficial where the pinion or shaft has a rapid motion, but in a slow movement the keys will operate without the aid of the springs.

In use a plate or other device is attached to the outer end of the shaft to keep the pinion in position. By placing these keys or stops within the body of the wheel I am enabled to put the bearing of the shaft close to the pinion, thereby giving the pinion a firmer support. This pinion is primarily designed to be used in reaping and mowing machines; but it will be advantageous in other machinery, especially where it is desired that the pinion should occupy a small space.

What I claim as new is as follows:

The combination of the stops or keys C, attached to and supported by the pinion, with the loose pinion A and angular shaft B, substantially as and for the purposes specified.

JOHN F. KINGWILL.

Witnesses:

E. A. WEST,
O. W. BOND.