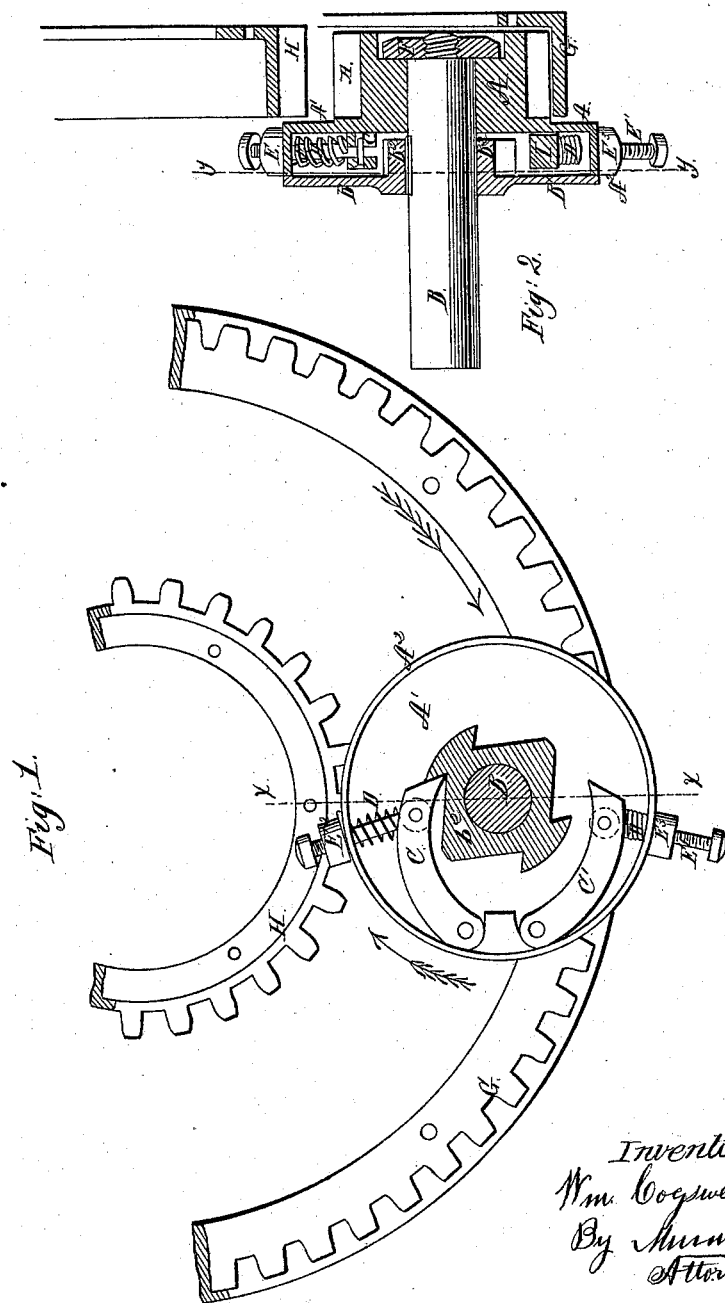


*W. Cogswell,*  
*Ratchet Attachment.*

*N<sup>o</sup> 54,689.*

*Patented May 15, 1866.*



*Witnesses:*  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN RATCHET ATTACHMENTS FOR HARVESTERS, &c.

Specification forming part of Letters Patent No. 54,689, dated May 15, 1866.

*To all whom it may concern:*

Be it known that I, WILLIAM COGSWELL, of Ottawa, in the county of La Salle and State of Illinois, have invented a new and useful Ratchet Attachment for Harvesters and other Machines; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a sectional side elevation of my improved ratchet attachment, the plane of section being on line *yy*, Fig. 2. Fig. 2 is a section through the plane indicated by the line *xx*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

The subject of this invention is a device in which two pawls are adapted to be adjusted with respect to a ratchet device so as to admit of a reversal of the motion or the suspension of the operation during reverse movements of the machine or apparatus.

The invention will be well understood by considering it in connection with a machine in which the motion of the parts is reversed in consequence of the shifting of the pinion through which a cutting apparatus receives motion from the driving-wheel.

I will proceed to describe it in connection with the harvester for which Letters Patent were granted to me on the 6th day of December, 1859, and reissued on the 20th day of June, 1865.

The harvester described in said patent is provided with a pinion, through which motion is transmitted from the main wheel or axle to the cutting apparatus, and with two sets of cogs for increasing or diminishing the speed, the pinion being made to engage with either set of cogs by means of an eccentric and lever. One set of cogs are formed on the interior circumference or rim of the main driving-wheel and the small set are on a cog-wheel concentric with the main driving-wheel.

The present improvement consists in combining a pair of adjustable pawls with a ratchet or retaining device, which is fixed rigidly on the shaft, which receives motion from the driving-pinion above mentioned, and which communicates motion to the cutting apparatus

or subserves an analogous function in other machinery. The pawls are pivoted to a head or piece which is cast and moves with the driving-pinion, and in this example employed to prevent the rotation of the ratchet-shaft and suspend the operation of the cutter-bar when the machine is backing and when the pinion is engaged with either set of cogs.

The following description will enable others skilled in the art to which my invention appertains to fully understand and use the same.

A represents the driving-pinion, placed loosely on the end of a shaft, B, which transmits motion to the cutting apparatus through any suitable connections, such as gear-wheels. The pinion A is formed or cast in one piece with a head or piece, A', and flange, A<sup>2</sup>.

On the shaft B is formed or cast a head or disk, B', and a ratchet or detaining device, B<sup>2</sup>.

The parts A', A<sup>2</sup>, and B' form a box or casing, which, when the parts are properly put together, incloses the ratchet B<sup>2</sup> and pawls C C'.

The pawls C C' are pivoted to the head A', as represented, and they are acted upon by the springs D D, which have a tendency to force them inward, so as to engage them with the ratchet B<sup>2</sup>; but by means of the screw-bolts E E' and nuts E<sup>2</sup> E<sup>3</sup> the pawls C C' may be held out of contact with the ratchet.

The parts A A' A<sup>2</sup> and B B' B<sup>2</sup> are coupled or connected together by means of the nut F, which is fixed upon the threaded end of the shaft B.

The operation of the above-described devices is as follows: By means of a lever and eccentric the pinion A may be thrown into connection with the cogs G on the main driving-wheel or with the cogs of the wheel H. The pinion A is shifted from G to H to diminish the speed of the cutting apparatus, and vice versa. When the pinion A is engaged with G the nut E<sup>2</sup> is turned until the screw-bolt E is projected inward sufficiently to bring the pawl C into contact with the ratchet B<sup>2</sup>, and the nut E<sup>3</sup> is turned so as to retract the screw-bolt E and draw the pawl C' out of contact with the ratchet. Under this adjustment of the parts the pinion A and shaft B will rotate together, and the cutting apparatus will receive the requisite motion during the forward movement of the machine; but if the machine be backed

the consequent reversal of the rotation of the pinion A will cause the pawl C to glide over the ratchet B without imparting motion thereto, so that the cutting apparatus ceases to operate until the machine again starts forward. When the pinion A is engaged with the cogs of H to reduce the speed the effective rotation of the pinion A is necessarily the reverse of that which it receives from the cogs G, and hence the pawl C would not be available for the purposes above described, but on the contrary would suspend the motion of the shaft B and cutting apparatus during the forward movement of the machine and put them in operation if the machine were backed. Therefore the pawl C is drawn away from the ratchet B<sup>2</sup> and the pawl C' advanced so as to engage therewith, when the operation proceeds as before. The screw-bolts may be connected with the pawls by pivots.

It is obvious that this ratchet-and-pawl arrangement can be used in many other machines. In fact it is applicable wherever there

is a reversal of the motion or a variation of speed and a shifting of some of the parts to effect such variation. Hence I do not wish to be understood as having described a device to be used in connection with harvesters exclusively, the detailed description in connection with the harvester having been made simply by way of elucidation.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The combination, with the pinion A and shaft B, of the adjustable pawls C C' and ratchet B<sup>2</sup>, substantially as described, to operate in the manner and for the purpose set forth.

2. The combination, with the pawls C C' and ratchet B<sup>2</sup>, of the screw-bolts E E' and nuts E E<sup>3</sup>, as and for the purpose described.

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Witnesses:

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