

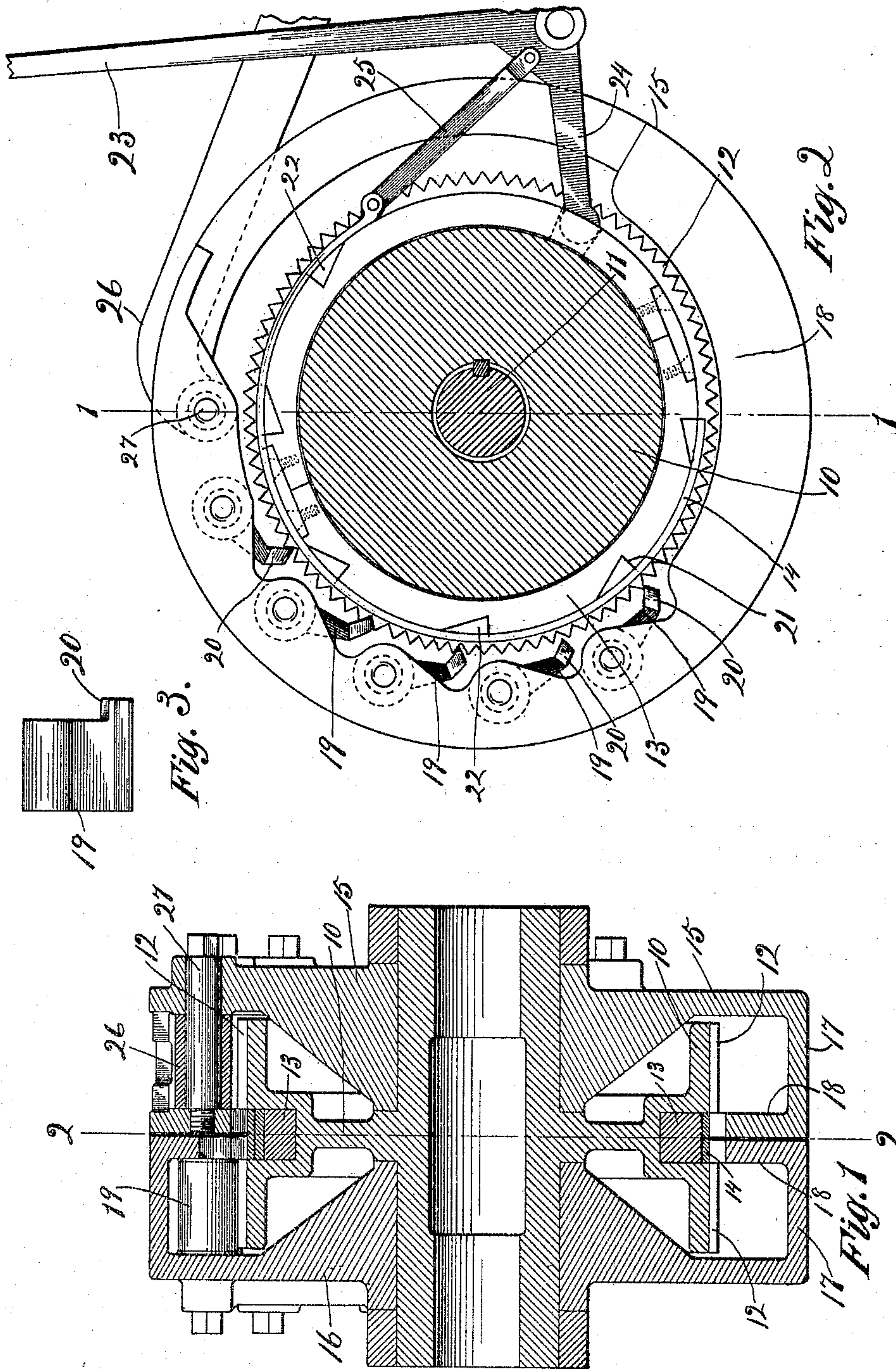
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RATCHET AND PAWL MECHANISM.

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NO MODEL.



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# UNITED STATES PATENT OFFICE.

MICHAEL CORRY AND RUBEN F. BARKER, OF MARINETTE, WISCONSIN.

## RATCHET-AND-PAWL MECHANISM.

**SPECIFICATION** forming part of Letters Patent No. 776,219, dated November 29, 1904.

Application filed September 10, 1903. Serial No. 172,626. (No model.)

*To all whom it may concern:*

Be it known that we, MICHAEL CORRY and RUBEN F. BARKER, citizens of the United States, and residents of Marinette, county of Marinette, and State of Wisconsin, have invented certain new and useful Improvements in Ratchet-and-Pawl Mechanism, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to ratchet-and-pawl mechanisms, and has for its object the provision of means for the continuous lubrication of the parts.

It consists in a pawl-carrier annular in form and inclosing the rim of a ratchet-wheel, the rim of the pawl-carrier being provided with an annular oil-holding recess, within which the pawls are pivotally carried, as hereinafter described and as illustrated in the accompanying drawings, in which—

Figure 1 is a diametrical section through the mechanism, taken on the line 1 1 of Fig. 2. Fig. 2 is a diametrical section on the line 2 2 of Fig. 1, and Fig. 3 is a detail of one of the pawls.

As illustrated, the device is especially adapted for use in connection with the set-shaft of a sawmill-carriage, which is shown at 11. Upon this shaft is keyed a ratchet-wheel 10, having a broad face 12, adapted to cooperate with two sets of pawls. The face of the wheel is annularly and centrally recessed to receive an annulus 13, by which a pawl-lifter 14, mounted therein, is actuated for the purpose of allowing the recession of the shaft 11. A pair of pawl-carriers 15 16 are mounted to turn upon the hub of the ratchet-wheel 10. These pawl-carriers being alike, except that one is the reverse of the other, but one need be described. It consists of a disk having at its periphery an axially-disposed flange 17, which is approximately one-half the width of the face of the wheel 10, so that with its companion flange of the other pawl-carrier it entirely covers the wheel. A flange 18 projects inwardly from the inner end of the flange 17 almost but not quite to the face of the ratchet-wheel.

Pawls 19, preferably a plurality, as shown, five, are pivotally mounted in each of the

pawl-carriers, their pivots being set through the disk thereof and through the flange 18, and each pawl is provided with a laterally-projecting finger 20, which extends over the pawl-lifter and serves as the means by which the pawl may be raised out of engagement with the ratchet-teeth.

The annulus 13 is provided with a series of cam-recesses 21, within which fit corresponding wedge-shaped blocks 22, fixed to the inner face of the cam-lifter 14. A bell-crank hand-lever 23, pivoted to any suitable support, engages by its short arm 24 a socket in the annulus 13, and a link 25 connects the longer arm of the bell-crank with one end of the pawl-lifter 14, so that as the bell-crank lever is oscillated the annulus is moved in one direction and the pawl-lifter in the opposite direction, thereby causing the wedge-blocks 22 to ride out of and into the recesses 21, expanding or contracting the pawl-lifter, and consequently raising or lowering the pawls.

The pawl-carrier is oscillated through the medium of a link 26, connected with the carrier by means of a pivot-pin 27. While we have shown but one of the pawl-carrier-operating links, it will be understood that it is the practice in this art to provide a similar link for each carrier, so that they may oscillate in alternation, thereby giving the ratchet-wheel a continuous advance movement.

By employing an annular pawl-carrier, as shown, a plurality of pawls may be radially mounted in each carrier, and being differentiated in their spacing relatively as to the spacing of the ratchet-teeth but one pawl is in engagement at a time, and a very slight backward movement of the pawl-carrier is always sufficient to bring a pawl into position for immediate engagement of the ratchet-tooth upon the reversal of the carrier, thereby reducing the lost motion to a minimum, while permitting the use of the comparatively large, and hence strong, ratchet-teeth.

The form of pawl-carrier is such that its disk wheel, together with the flanges 17 and 18, forms an oil-pocket within which may be retained a sufficient quantity of the lubricant to insure continuous bathing of the face of the ratchet-wheel, the oil being sufficiently splashed in the operation of the machine to



throw it constantly against the wheel-face. By this means the accumulation of dirt in the ratchet-teeth is entirely prevented, a consideration of very great importance in the  
5 sawmilling art, for the reason that when the teeth become foul the movement of the wheel is changed, and as a consequence the setting action is varied, thereby producing irregular cuts of lumber. The oil being thrown con-  
10 tinuously upon the face of the ratchet-wheel is carried around to the pawls, and they in turn are constantly lubricated, so that their free action is certain at all times.

The form of pawl-carrier shown has a fur-  
15 ther advantage in that it almost completely boxes in the ratchet-wheel and pawl mechanism, thereby reducing to the minimum the accumulation of dust or dirt upon these parts.

We claim as our invention—

In combination, a ratchet-wheel; a pair of 20 independently-movable pawl-carriers journaled upon the hub of the wheel and upon opposite sides thereof and each having a closed radial wall, a closed rim overhanging the face of the wheel and a closed instanding 25 flange at the edge of such rim; and pawls pivotally attached to the radial wall and instanding flange of each carrier.

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