O. HAJEK.

RATCHET WHEEL GEAR.

APPLICATION FILED OCT. 20, 1920.

1,404,604. Patented Jan. 24, 1922.

Fig. 3

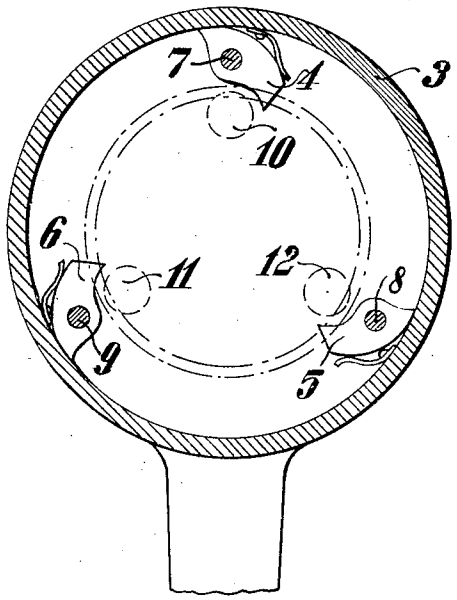


Fig. 1

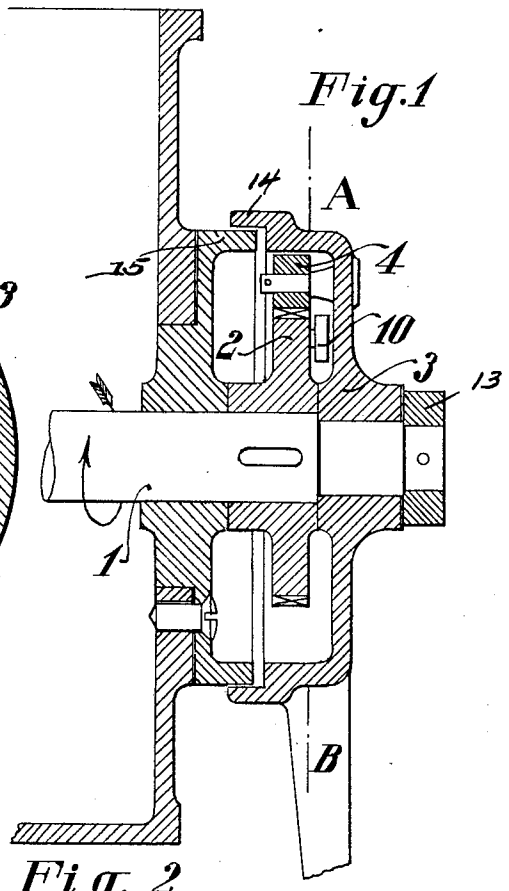
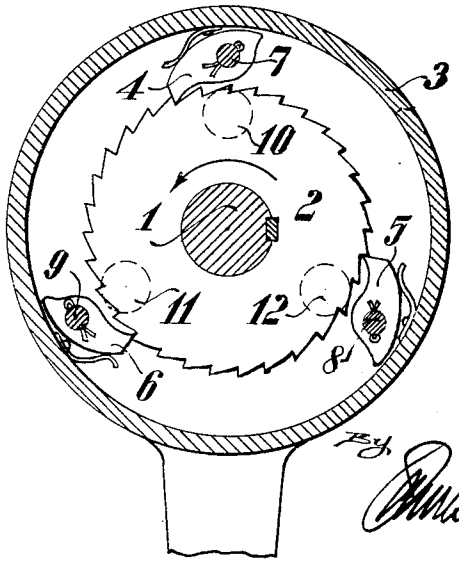


Fig. 2



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RATCHET-WHEEL GEAR.

1,404,604. Specification of Letters Patent. Patented Jan. 24, 1922.

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To all whom it may concern:

Be it known that I, OTTO HAJEK, a citizen of the Republic of Austria, residing at Vienna, in the Republic of Austria, have invented certain new and useful Improvements in a Ratchet-Wheel Gear, of which the following is a specification.

This invention relates to a ratchet mechanism of that type wherein a plurality of pawls carried by an actuating member engage a ratchet wheel carried by a driven member. Where such pawls are spring-actuated or even when they are mounted to fall by gravity into engagement with the ratchet wheel, there is frequently difficulty in assembling the parts of the apparatus by reason of the pawls coming into engagement with the face of the ratchet wheel. This is particularly true where there are a plurality of pawls and where the pawls and the ratchet wheel are enclosed in a housing.

The object of my invention is to provide a pawl and ratchet mechanism wherein, when the apparatus is assembled, the pawls may be set in such manner as not to come into contact with the face of the ratchet wheel but to easily move into engagement with the teeth of such wheel.

Other objects of the invention are to provide a ratchet and pawl mechanism which will be simple in construction and wherein the pawls and ratchet wheel will be enclosed and thus not accumulate dust and dirt which might interfere with their satisfactory operation.

In the accompanying drawing:—

Fig. 1 is a sectional view of a pawl and ratchet mechanism embodying my invention.

Fig. 2 is a section on the line A—B, Fig. 1, and

Fig. 3 is a view of the driving member and the pawls carried thereby, showing the position assumed by the pawls before said part is assembled with the ratchet wheel and also showing in broken lines the members carried bythe ratchet wheel for lifting the pawls when the apparatus is assembled.

Referring to the drawings, 1 indicates the shaft to be driven and 2 a ratchet wheel keyed to said shaft. A member 3 is mounted to rotate on said shaft and is held in position on said shaft by any suitable means, such as a collar 13. A plurality of pawls, shown in the drawings as three in number, 4, 5 and 6, are mounted to rock on pins 7, 8 and 9 carried by the inner face of the member 3. These pawls are shown as being moved toward the ratchet wheel 2 by suitable springs, as is well understood in the art. The member 3 is shown as provided with a flange 14 which surrounds a complemental flange 15 on the bearing for the shaft 1 so as to form a housing for the ratchet wheel 2 and the pawls.

A plurality of pins, which are equal in number to the pawls carried by the member 3 and which are designated by the reference characters 10, 11 and 12, respectively, are mounted on that face of the ratchet wheel which is adjacent to the member 3. These pins 10, 11 and 12 are arranged at the same angular distance on the ratchet wheel as the pawls 4, 5 and 6 are arranged on the member 3 and project sufficiently beyond the pitch circle of the ratchet wheel to engage and lift the pawls when the members 2 and 3 are rotated relatively to one another.

In assembling the apparatus, the member 3 is mounted on the shaft 1 and is moved toward the ratchet wheel 2. When the pawls come into engagement with the face of the ratchet wheel 2, or nearly so, the member 3 is partly rotated on the shaft 1 to bring the pins 10, 11 and 12 into engagement with the pawls 4, 5 and 6, respectively, so as to lift said pawls and bring each of them opposite one of the teeth of the ratchet wheel. The member 3 is then moved further toward the ratchet wheel 2 and the collar 13 is placed in position on the end of the shaft 1 to maintain the member 3 in proper position for the pawls 4, 5 and 6 to engage the teeth of the ratchet wheel.

Having now described my invention, what I claim as new and desire to protect by Letters Patent is:—

1. A ratchet mechanism comprising a ratchet wheel, a member mounted to rotate relatively to said ratchet wheel, pawls carried by said member to engage the teeth of said ratchet wheel, and means associated with said ratchet wheel to raise said pawls when said ratchet wheel and member are assembled.

2. A ratchet mechanism comprising a ratchet wheel, a pawl - carrying member adapted to be mounted to rotate co-axially with said ratchet wheel, a plurality of pawls carried by said member to engage the teeth of said ratchet wheel, and a plurality of pawl-lifting members carried by said ratchet

wheel and projecting beyond the pitch circle of said ratchet wheel to engage and lift said pawls when said pawl-carrying means is given an axial and rotating movement with reference to the ratchet wheel in assembling said mechanism.

3. A ratchet mechanism comprising a shaft, a ratchet wheel keyed to said shaft, a pawl-carrying member having a flange to enclose said ratchet wheel and adapted to be mounted to rotate on said shaft, pawls carried by said member for engagement with the teeth of the ratchet wheel, and means associated with said ratchet wheel to lift said pawls when said pawl-carrying member is given an axial and rotating movement on said shaft in assembling said mechanism.

In testimony whereof I have hereunto set my hand.

OTTO HAJEK.