

No. 795,095.

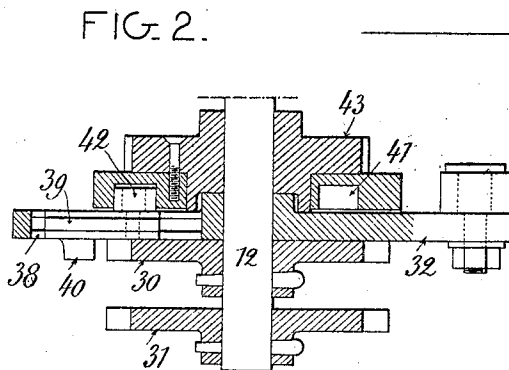
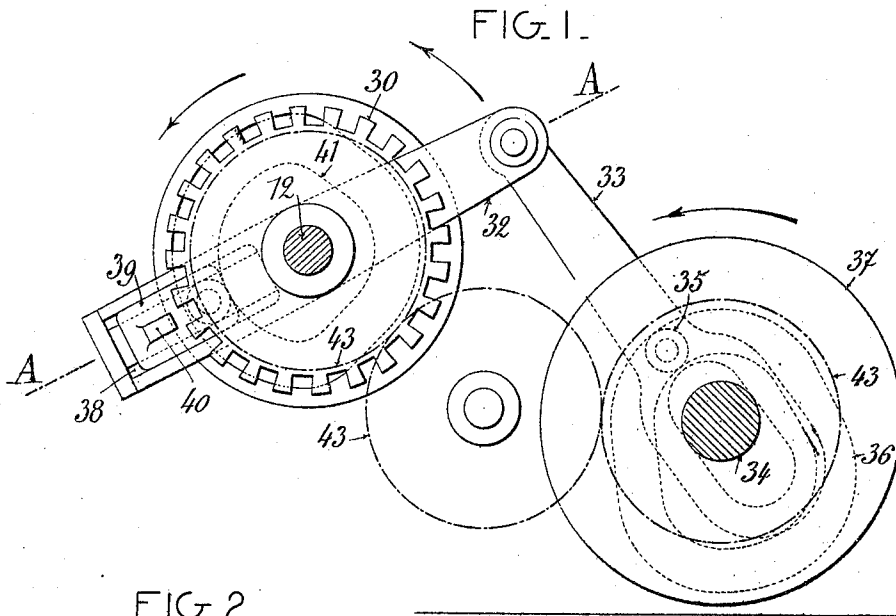
PATENTED JULY 18, 1905.

A. BENOÎT, J. GUÉNIFFET, J. NICAULT & E. DANGER.

RATCHET WHEEL MECHANISM.

APPLICATION FILED APR. 21, 1905.

2 SHEETS—SHEET 1.



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ANATOLE BENOÎT, JULIEN GUÉNIFFET, JULES NICAULT, AND ETIENNE
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RATCHET-WHEEL MECHANISM.

SPECIFICATION forming part of Letters Patent No. 795,095, dated July 18, 1905.

Application filed April 21, 1905. Serial No. 256,743.

To all whom it may concern:

Be it known that we, ANATOLE BENOÎT, JULIEN GUÉNIFFET, JULES NICAULT, and ETIENNE DANGER, mechanical engineers, citizens of the Republic of France, residing at 7 Rue Deparcieux, Paris, in the Republic of France, have invented certain new and useful Improvements in Ratchet-Wheel Mechanisms, of which the following is a specification.

This invention relates to ratchet-wheel mechanisms; and it has for its object to provide a mechanism of this character which will allow of the ratchet-wheel being rapidly revolved by a step-by-step rotation, while being prevented each time from turning farther than the distance at which the pawl has moved forward whatever may be the speed and momentum of the ratchet-wheel and the elements which revolve with the same.

The improved mechanism will be described in reference to the accompanying drawings, showing one embodiment of this invention, and in which—

Figure 1 is an elevation of the mechanism. Fig. 2 is a sectional view on line A A of Fig. 1. Fig. 3 is a plan view of the improved mechanism, and Fig. 4 is a detail shown in elevation.

On the shaft 12 are fixed a driving-wheel 30 and a stop-wheel 31, which when required may be made as a single wheel and are furnished with prismatic notches on their peripheries. A lever 32 is mounted loose on the same shaft and is connected by one of its ends to a sliding rod 33, guided on a continuously-rotating driving-shaft 34. This rod carries a roller 35, which takes into an eccentric groove 36 of a plate 37, fixed to the shaft 34, so that the rotation of the latter imparts a to-and-fro movement to the rod 33 and lever 32. The other end of the lever 32 is furnished with a radially-directed slide-guide 38 and in which moves a slide 39, carrying a tooth 40, intended to engage between the teeth of the wheel 30. This slide receives a to-and-fro motion by means of a grooved cam 41 acting upon a roller 42, placed on the slide. The said cam turns freely on the shaft 12 and has imparted

to it a continuous rotatory motion by gear-wheels 43, so that at each rotation of the driving-shaft 34 the cam 41 causes the tooth 40 to engage with the wheel 30 during a fraction of the revolution and causes it to disengage therefrom during the rest of the revolution.

The arrangement comprises also a stop-lever 44, oscillating on a fixed axis 45 and operated at one end by a cam 46, fixed to the shaft 34, and at the opposite end by a spring 47. On one end of this lever is fixed a tooth 48 opposite to the wheel 31, so that at each revolution of the shaft 34 the tooth 48 is engaged with the wheel during a fraction of the revolution and disengaged therefrom during the rest of the revolution.

The movements of the slide 39 and of the levers 32 and 44 are so related that the tooth 48 is disengaged from the wheel 31 after the tooth 40 is engaged with the wheel 30 and before the lever 32 oscillates in the forward direction (indicated by an arrow in Fig. 1) and that afterward the tooth 48 engages with the wheel 31 after the lever 32 has stopped and before the tooth 40 is disengaged from the wheel 30. The return movement of the lever 32 commences after the tooth 40 is disengaged and ends before this tooth engages afresh with the wheel 30. The result is that the system of wheels 30 31 is never left to itself and that its connections with the machine prevent its overrunning or acting irregularly whatever may be the frequency and rapidity of the intermittent advance movements.

While we show and preferably employ toothed wheels, we do not limit ourselves to the use of the same.

We claim—

1. A ratchet-wheel mechanism for giving to a shaft a rapid intermittent rotary movement, comprising two notched wheels 30, 31 fixed on the shaft, an oscillating lever 32, a slide 39 movable radially on this lever, a cam 41 loose on the shaft for actuating the slide, a feeding-tooth on this slide for engaging one of the notched wheels, and another oscillating lever 44 having a stop-tooth for engaging the other notched wheel, the said feeding and stop teeth

being moved alternately and in such manner that the two wheels are not left to themselves at any instant.

2. The combination of a revoluble shaft, a
5 plurality of wheels mounted rigidly there-
upon, a lever fulcrumed upon said shaft and
adapted to oscillate, a slide mounted upon said
lever and adapted to engage and disengage
10 one of said wheels so as to turn the same step
by step in accordance with the oscillations of
said lever, mechanism connected with said
shaft for actuating said slide positively, an-
other oscillating lever provided with a mem-
15 ber for engaging and disengaging the other
of said wheels, and means for actuating said

levers in such relation that the engagement of
one of said levers with its wheel corresponds
with the release of the other of said levers
from its wheel.

In testimony that we claim the foregoing as 20
our invention we have signed our names in
presence of two subscribing witnesses.

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