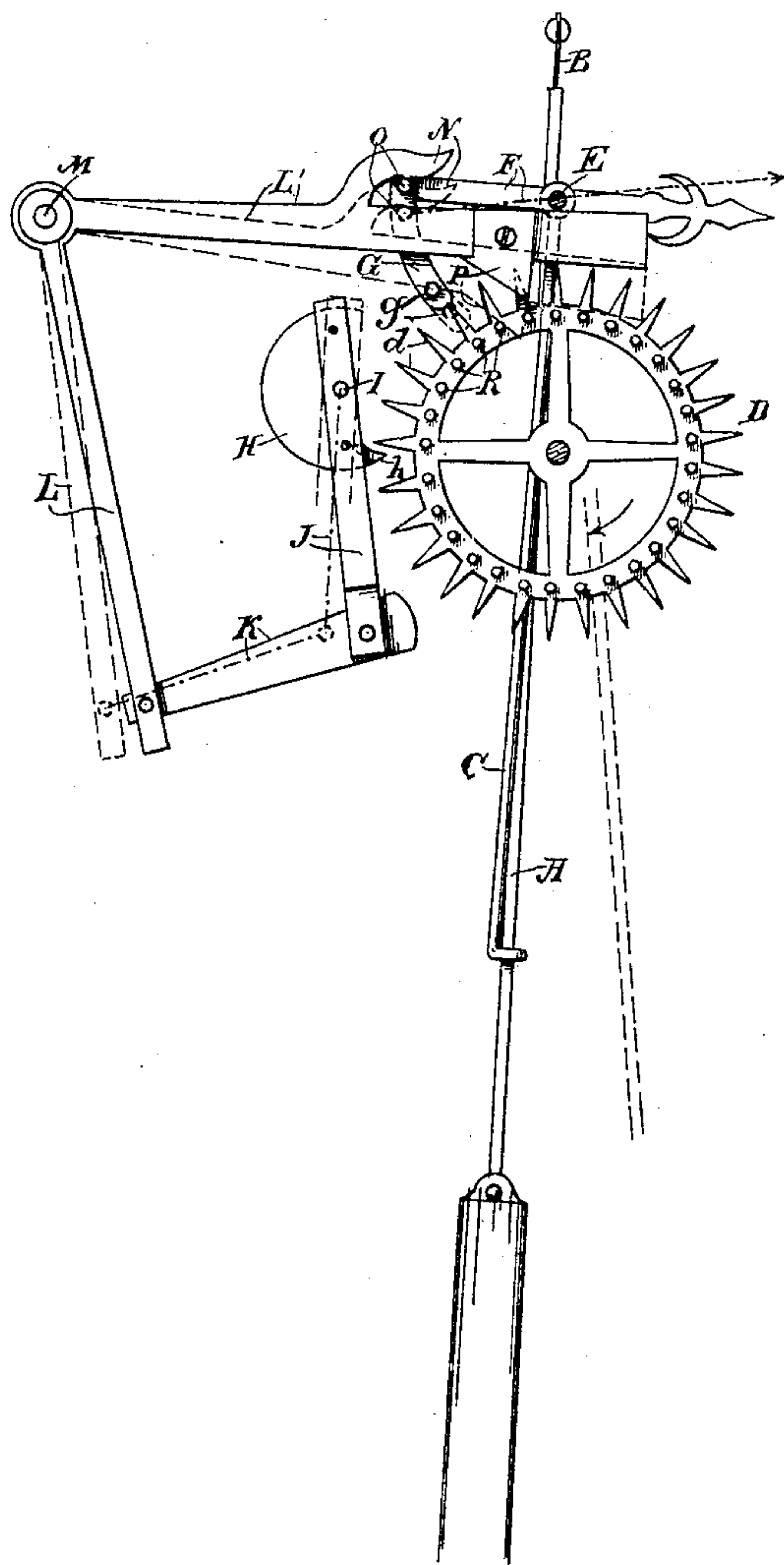


(No Model.)

F. BAGINSKI.
PENDULUM ESCAPEMENT.

No. 603,419.

Patented May 3, 1898.



Witnesses,
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UNITED STATES PATENT OFFICE.

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PENDULUM-ESCAPEMENT.

SPECIFICATION forming part of Letters Patent No. 603,419, dated May 3, 1898.

Application filed October 27, 1897. Serial No. 656,610. (No model.) Patented in Germany November 14, 1893, No. 71,845.

To all whom it may concern:

Be it known that I, FERDINAND BAGINSKI, a citizen of Germany, residing at Allenstein, East Prussia, Germany, have invented an Improvement in Escapements for Timepieces, (for which I have obtained Letters Patent in Germany, No. 71,845, dated November 14, 1893;) and I hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to an escapement mechanism for timepieces and other similar purposes.

It consists, essentially, in details of construction which will be more fully explained by reference to the accompanying drawing, in which the figure is a front view of my device.

In the present case I have only shown so much of my mechanism as is necessary to illustrate the operation of the escapement.

A is the pendulum-rod, having a flexible suspension-strip B at the upper end in the usual manner.

C is the carrier, bent or looped at the lower end to embrace the pendulum-rod at a point below its suspension-point, so that the movement of this carrier by the action of the escapement is imparted to the pendulum-rod.

D is the toothed escapement-wheel.

The carrier C is pivoted or fulcrumed, as shown at E, and has extending approximately at right angles with it, at its upper end, a transverse arm F, which is fixed to or forms a part of it, so as to oscillate upon the fulcrum E with the oscillations of the pendulum. This arm F is properly counterbalanced and has a curved arm G projecting downwardly from one end, the curvature being an arc with its radius about the center E. This arm G has a pin *g* projecting from one side and adapted to engage one tooth *d* of the escapement-wheel when the arm F is tilted down until the pin *g* is within the line of movement of the teeth *d*, and when this arm is tilted upwardly by the opposite swing of the pendulum it disengages from the tooth.

The other part of the escapement consists of a segment H, having a projecting point or tooth *h*, adapted also to engage with the teeth *d* when this portion of the escapement is

caused to swing, so that the point *h* engages with either of the teeth *d*. The segment H is pivoted or fulcrumed, as shown at I, and has an arm J fixed to it extending downwardly, as shown. This arm J is connected by a link K with the arm L, the link being loosely pivoted to both the arm J and the arm L.

L is one arm of a right-angle or bell-crank lever, the other weighted arm L' of which projects above the escapement-wheel and just at one side of the oscillating arm F of the pendulum-rod carrier.

The arms L L' are fulcrumed, as shown at M. The arm L' has a hook N extending upward a short distance and then essentially parallel with the part L', and this hook engages with a pin O upon the end of the arm F at its junction with the segment G. The arm L' also carries an inclined projection or lug P, and the escapement-wheel has a series of pins R projecting from one side, with which this incline P is adapted to engage during a certain portion of the oscillation of the pendulum.

The operation of the device will then be as follows: The direction of motion of the escapement-wheel D is shown by the arrow. When the pendulum swings to the left, as shown in the drawing, the arm F tilts with it, lifting up the segment G until the pin *g* is disengaged from the tooth *d* of the escapement-wheel with which it was previously engaged. At the same time the pin O, engaging with the hook N, assists to lift the lever L' and move it about its fulcrum-point M. One of the pins R contacting with the incline P the impulse of the escapement-wheel, which is now free to move, causes this pin to act upon the incline and thus give an impulse to move the arm L' about its fulcrum-point. This movement correspondingly moves the arm L, and through the link K it acts upon the swinging arm J, and thus turning the segment H about its fulcrum-point I moves the point *h* between the teeth *d* of the escapement-wheel, so as to intercept the movement of the latter and allow it to move forward only one tooth when the pin *g* has been withdrawn to allow it to turn. The pendulum having reached the end of its oscillation to the left now re-

turns and swings to the right and thus tilts the arm F and moves the arm G and the pin g between the teeth d to again intercept and interrupt the movement of the escapement-wheel. This movement allows the arm L' to tilt by reason of the downward movement of the pin O, and this carries the incline P between two of the pins R of the escapement-wheel, and also moves the arm L correspondingly with its own movement, and through the link K draws the arm J outward, thus withdrawing the point h from between the teeth. The weighted end of the lever L' also acts through the hook N to press upon the pin O and thus give a direct impulse to the arm F and through it to the carrier C as it moves to the right. The operation is then continued at each oscillation of the pendulum, and the action of the escapement proceeds.

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

1. The combination with an escapement-wheel of the oscillatory pendulum-carrier having the transverse arm fixed to and movable therewith, a pin carried by said arm adapted to alternately engage with and disengage from the teeth of the escapement-wheel, an independent weighted bell-crank arm or lever fulcrumed with relation to the escapement and pendulum, a segment having a projecting point adapted to engage with and disengage from the teeth of the escapement-wheel in alternation with the movement of the first-named point, said point being connected by a link with the bell-crank lever and actuated thereby.

2. The combination with a toothed escapement-wheel of an oscillatory pendulum and a carrier having an arm fixed transversely and movable with it, a pin carried by said arm adapted to alternately engage with and disengage from the teeth of the escapement, a second point also adapted to engage with and

disengage from the escapement and alternately with the corresponding engagement of the first-named point, a weighted bell-crank lever fulcrumed and connected by a link with the carrier of the second point, said lever having a hook or arm projecting in the plane parallel with the plane of movement of the arm carried by the pendulum, a pin projecting from said arm and engaging with the hook or projection whereby the movements of the two parts are made in unison.

3. In an escapement mechanism, a toothed escapement-wheel having pins projecting from the side of its periphery, an oscillatory pendulum and a carrier having a transverse arm movable with it, a pin carried by said arm adapted to engage with and disengage from the teeth of the escapement-wheel by the oscillations of the pendulum, a second oscillating escapement-point adapted to engage with and disengage from the teeth of the escapement-wheel in alternation with the movements of the first-named point, a weighted bell-crank lever fulcrumed, having one arm connected with the second escapement-point whereby the latter is oscillated in conjunction with the movement of the bell-crank lever, a hook or projection from the other arm of said bell-crank lever, a pin projecting from the arm carried by the pendulum and adapted to engage said hook whereby the movements of the pendulum-arm and the bell-crank lever are made in unison, a beveled or inclined lug or projection upon said arm of the bell-crank lever adapted to be engaged by the pins upon the escapement-wheel at each release of said wheel whereby the impulse is given to continue the movement of the pendulum.

In witness whereof I have hereunto set my hand.

FERDINAND BAGINSKI.

Witnesses:

GEORG MOLLE,

P. WUNZEL UHRMACHAR.