

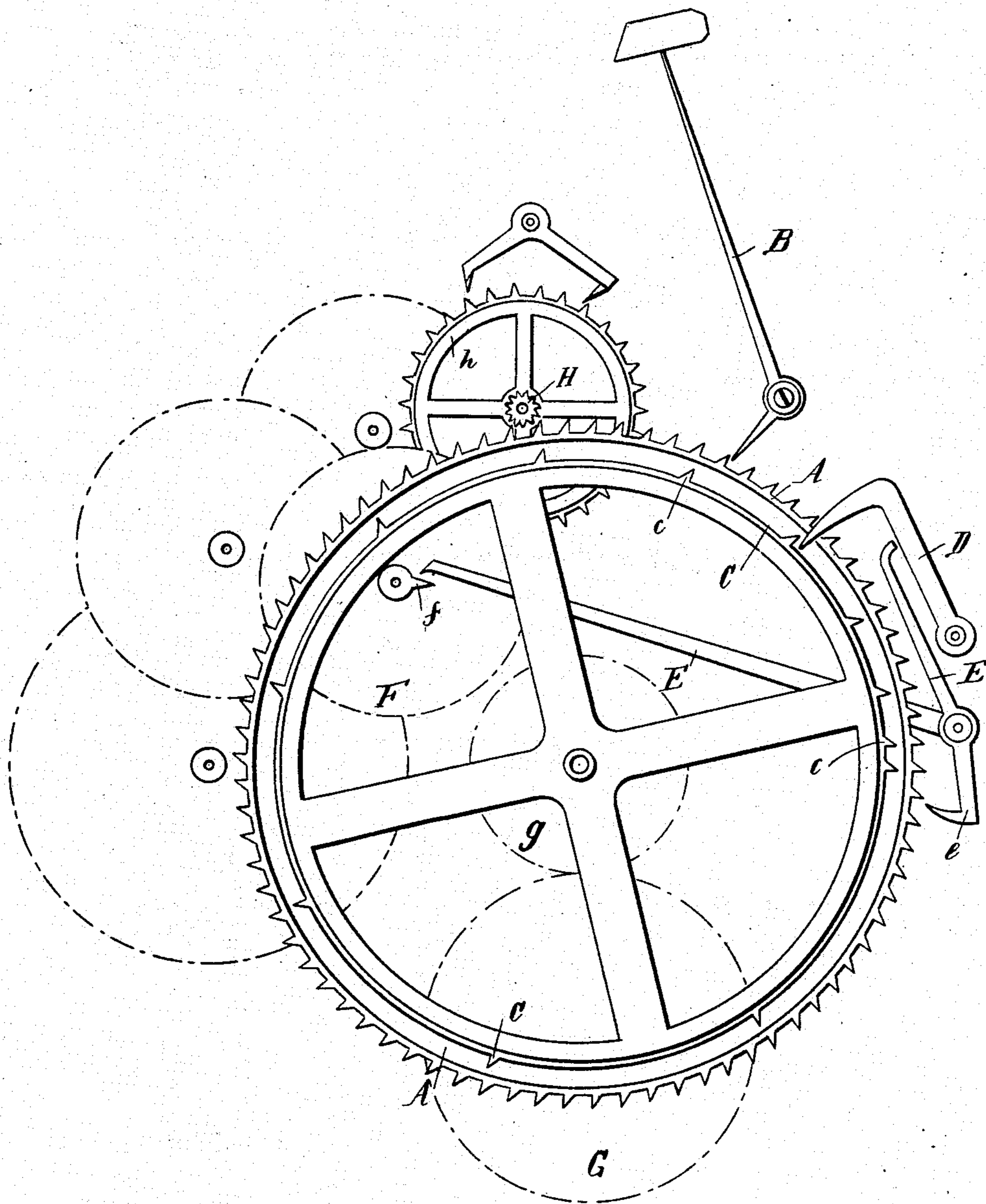
No. 677,004.

Patented June 25, 1901.

L. L. VOLPO.
CLOCK STRIKING MECHANISM.

(Application filed Nov. 17, 1899.)

(No Model.)



Witnesses.

William James Cox.
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UNITED STATES PATENT OFFICE.

LEISER LEVI VOLPO, OF JERUSALEM, PALESTINE, TURKEY IN ASIA.

CLOCK STRIKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 677,004, dated June 25, 1901.

Application filed November 17, 1899. Serial No. 737,366. (No model.)

To all whom it may concern:

Be it known that I, LEISER LEVI VOLPO, a British subject, residing at Jerusalem, Palestine, Turkey in Asia, have invented Improvements in Striking Mechanism for Clocks and Watches, of which the following is a specification.

This invention relates to improvements in the striking mechanism of clocks and watches, having for their object to simplify the construction and economize power and to regulate the speed of the striking apparatus by the escapement-wheel.

According to my invention the toothed wheel which actuates the hammer is caused to engage with a small pinion upon the axle of the escapement-wheel, which retards the motion of the toothed striking-wheel, so as to regulate its speed. In the normal position of the parts the pinion on the escapement-wheel does not engage with the striking-wheel; but when this is to be brought into action it is released by a pawl and the teeth are caused to engage with the pinion. By this means the fly-wheel and connections commonly used to regulate the speed of the striking apparatus are dispensed with and the power generally wasted in this is economized, so that timepieces which are intended to go for a long time with one winding can be provided with striking mechanism.

The accompanying drawing shows a method of carrying out my invention, in which mechanism for striking the hours is illustrated.

A is the toothed wheel, which actuates the hammer B in the well-known manner. This wheel in the construction shown has seventy-eight teeth, corresponding to the number of strokes in twelve hours, in the case of a timepiece striking only at the hours, and each of these teeth causes a stroke to be given by drawing back the hammer and releasing it. On this wheel is fitted the counting-wheel C, which may consist of a rim fixed to the rim of the wheel A. This counting-wheel has twelve teeth *c*, arranged successively at distances apart of one, two, three, &c., teeth of the striking-wheel.

Engaging with the teeth of the counting-

wheel is the pawl or catch D, which is released by means of the crank-lever E, also provided with catch *e*, which engages with the teeth of the wheel A. The lever E is operated by the small arm *f* upon the minute-wheel F, which at each hour as it passes raises the lever E, releases the catch D from the counting-wheel, and engages the catch or pawl *e* with the striking-wheel A. When the arm *f* passes the end of the lever, this drops, and the striking-wheel A is released until the catch D engages with the next tooth of the counting-wheel.

The striking-wheel is driven by the drum G, containing a spring and gearing with the toothed wheel *g* upon the striking-wheel; but the method of driving the striking-wheel can be of any well-known kind. Its speed is regulated by the small pinion H upon the escapement-wheel *h*. This pinion or small toothed wheel does not engage with the teeth of the striking-wheel when the latter is in its normal position, held by the catches D or *e*, as the distance between the teeth of the wheel A is sufficient to allow the pinion to operate without engaging when in a position intermediate between the two teeth. Immediately, however, the wheel A is released and is driven by the drum G or other means the pinion engages with the teeth and allows the wheel to travel only at the required speed, so that the strokes of the bell are at regular intervals.

The drawing shows an arrangement for striking the hours only; but it is of course to be understood that a similar apparatus is applicable to striking at either one-half or one-quarter hour or at other intervals, the arrangement required for this being well known and forming no part of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In striking apparatus for timepieces, a small pinion or toothed wheel upon the escapement-wheel and means for bringing a toothed wheel connected with the striking mechanism into engagement with the pinions for the purpose of regulating the speed of the strokes.

2. In striking mechanism for timepieces,

the combination with a small toothed wheel
upon the escapement-wheel, of a toothed
striking-wheel actuating the hammer and
means for engaging and releasing the strik-
5 ing-wheel at the required points causing its
teeth to engage the small toothed wheel when
required, substantially as herein described
and shown.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

LEISER LEVI VOLPO.

Witnesses:

JOSEPH JAMAL,

CHARLES ALEXANDER HORNSTEIN.