(No Model.) 3 Sheets—Sheet 1.

O. O. LÖVAAS.

STRIKING MECHANISM FOR CLOCKS.

No. 276,437. Patented Apr. 24, 1883.

Fig. 3.

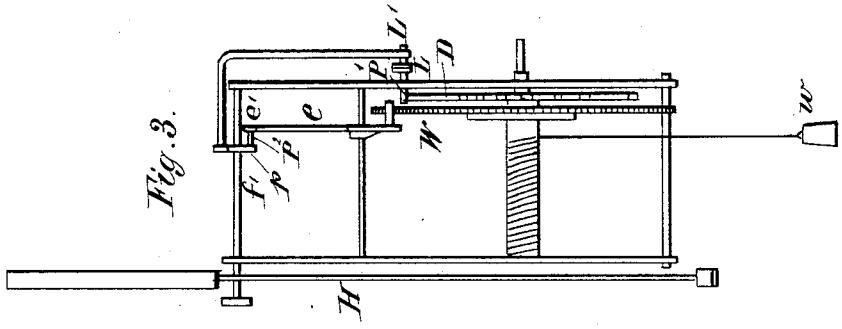
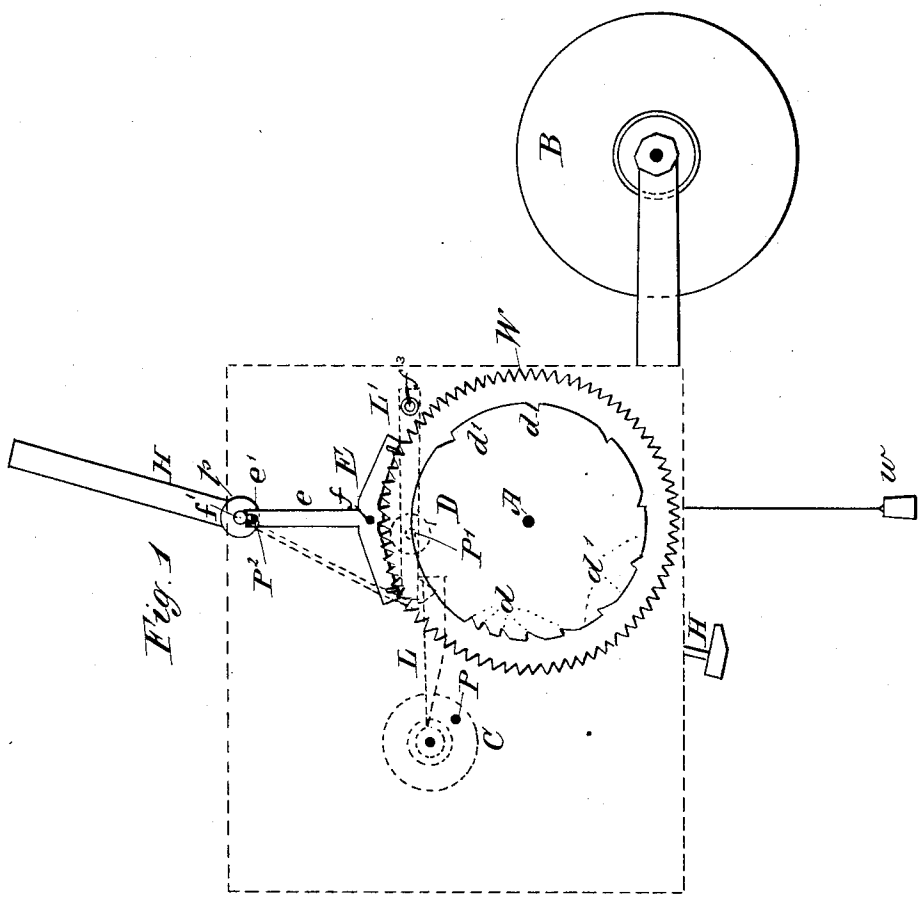


Fig. 1.



Witnesses:
H. A. Daniels
William S. Poulter

Inventor
Olaus Olsen Lövaas
per Henry Orth his att'y

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O. O. LÖVAAS.

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Fig. 5.

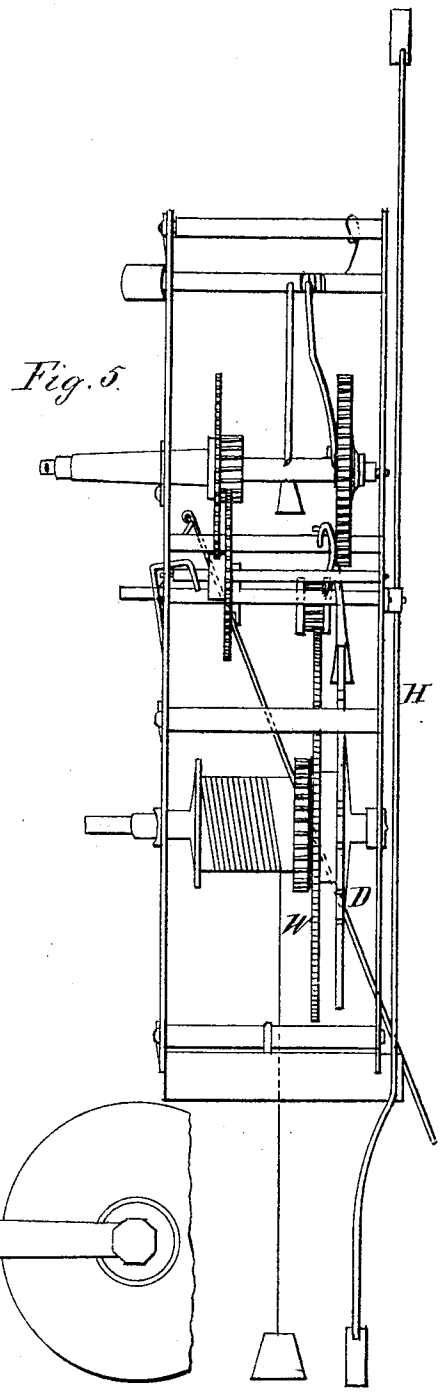
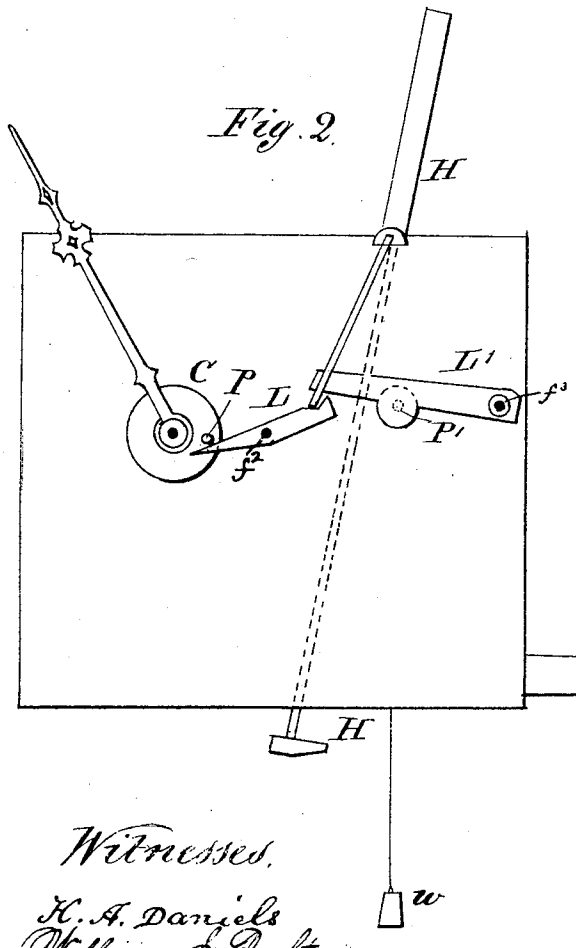


Fig. 2.



Witnessed.
K. A. Daniels
William S. Goulter

Inventor.
Olaus Olsen Lövaas
by Henry Orth
his att'y.

(No Model.) 3 Sheets—Sheet 3.

O. O. LÖVAAS.

STRIKING MECHANISM FOR CLOCKS.

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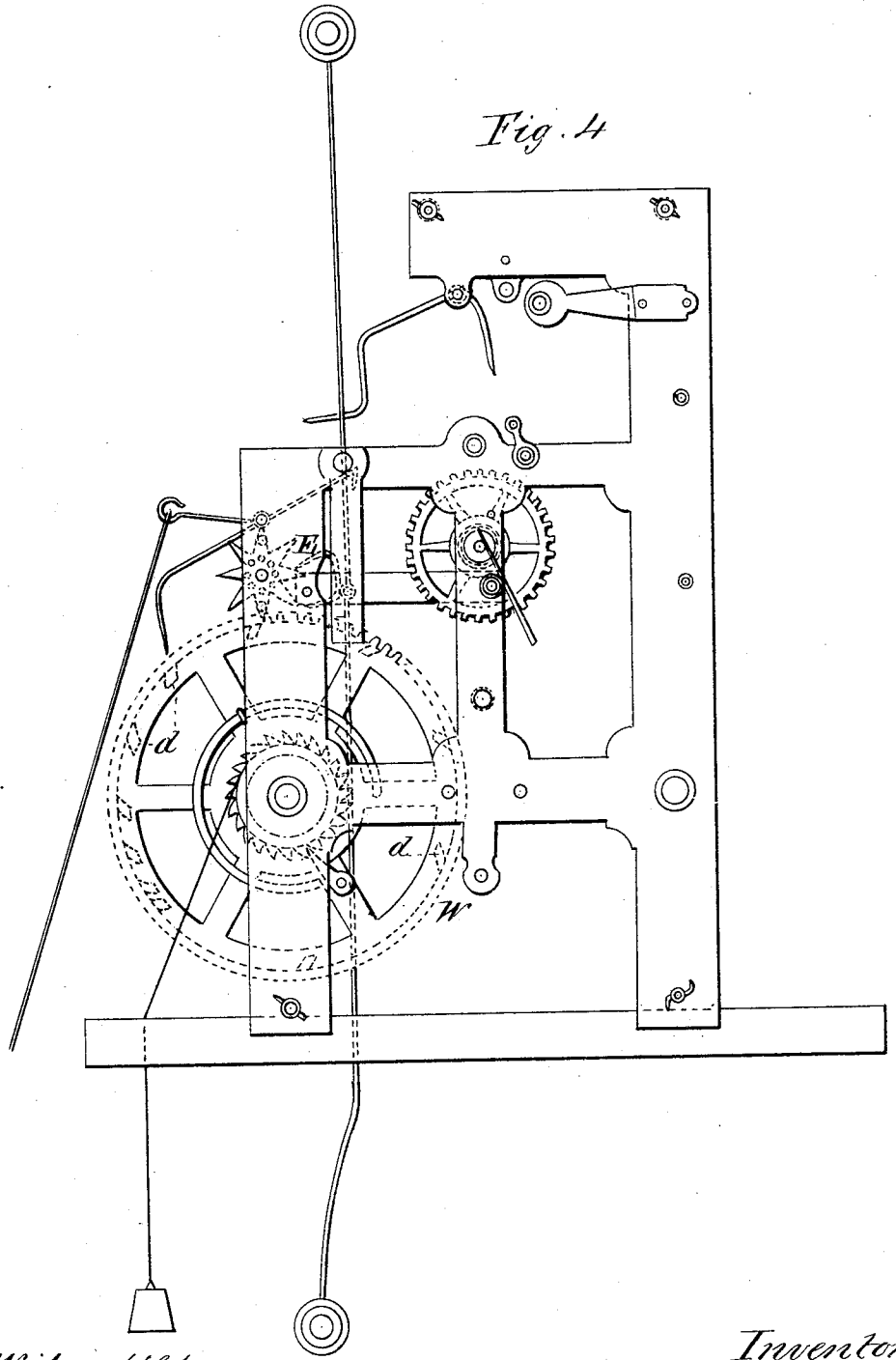
Fig. 4



Witnesses:
H. A. Daniels.
William L. Poulter.

Inventor
Olaus Olsen Lövaas
per Henry Orth
his attys

UNITED STATES PATENT OFFICE.

OLAUS OLSEN LÖVAAS, OF MOSS, NORWAY.

STRIKING MECHANISM FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 276,437, dated April 24, 1883.

Application filed December 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, OLAUS OLSEN LÖVAAS, a subject of the King of Norway, residing at Moss, in Norway, have invented a certain new and useful Improvement in the Striking Mechanism of a Clock; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its object to simplify the striking mechanism of clocks by reducing the constituent parts thereof to comparatively few, thereby lessening the liability of such mechanism getting out of repair, and at the same time increasing the durability thereof by reducing the frictional wear of its constituent parts.

To these ends the invention consists in the combination, construction, and arrangement of the several parts of said mechanism, as hereinafter described, and as specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation, one of the frame-plates being removed in order to better illustrate the striking mechanism. Fig. 2 is a like view illustrating the mechanism employed for releasing the striking mechanism. Fig. 3 is a side elevation of the striking mechanism; and Figs. 4 and 5 illustrate the application of the striking mechanism to a clock of usual construction by a front and a side elevation, respectively.

In the above figures of drawings like letters indicate like parts.

An escapement-wheel, W, provided with seventy-eight teeth, is actuated either by means of the ordinary spring or by means of a weight, *w*. Upon the arbor A of the wheel W is mounted a snail or time wheel or disk, D, provided with the usual notches, *d*, and intervening spaces *d'*, that determine the number of blows delivered by the hammer at a given time, said disk being divided into the usual twelve parts, as shown.

E is an escapement-lever fulcrumed at *f*, and having a vertical arm, *e*, the upper end of which is forked, as shown at *e'*, Fig. 1. An eccentric pin, P^2, upon a disk, *p*, secured to the arbor or fulcrum *f'* of the pendulum or vibrating hammer H, engages with the fork *e'* of the escapement-lever E, and a vibratory movement is imparted to the hammer through the medium of said escapement-lever E and wheel W, when the latter is released.

Upon the tubular arbor of the minute-sleeve, or upon a collar, C, of said arbor, is secured a pin, P, that engages with one end of a lever, L, fulcrumed at f^2. The nose *l*, at the other end of said lever, is adapted to engage the free end of a lever, L', that has its fulcrum at f^3, and carries a laterally-projecting pin, P', that rides on the periphery of the timing wheel or disk D. As the minute-hand rotates with its tubular arbor and is about to complete one revolution the pin P engages the end of the lever L, gradually depressing said end, and simultaneously elevating the opposite end of the lever L, and with it the lever L', to disengage the pin P' from the notch *d*, in which said pin may lie for the time being until the minute-hand has completed its revolution, when the disk D will be free to rotate under the influence of its motive spring or weight *w*. The pin P of the minute-hand will at the same time glide off the end of the lever L, and said lever and the lever L' will fall back into their normal positions, the pin P' of the latter lever now lying upon a space, *d'*, of the disk D. The rotation of the disk D imparts a vibrating movement to the escapement-lever E, which movement is communicated to the pendulum or vibrating hammer H through the eccentric pin P^2, as plainly shown in Figs. 1, 2, and 3. The teeth of the wheel W determine the number of complete vibrations imparted to the hammer H at each revolution of said wheel, while the spaces *d'* between the notches *d* on the periphery of the disk D determine the number of vibrations imparted to the hammer at any given hour. As the wheel W has seventy-eight teeth, it revolves only once every twelve hours, the same as the disk D; hence as the wheel W rotates a distance equal to that between two teeth thereof a complete vibration is imparted to the escapement-lever E, and through the latter to the hammer H, causing said hammer to deliver one blow upon a gong or bell, B, at each of such movements of the wheel W, as will be readily understood.

The relative arrangement of the vibrating hammer H and the arm *e* of the escapement-lever E is such that said hammer, when in a position of rest, will have its axis or plane at an angle to the vertical axis or plane of the escapement-arm to permit its vibrating or swinging in the direction of the bell B as soon as the pin P′ of the lever L′ releases the wheel W.

In Figs. 4 and 5 the improved striking mechanism is shown in its relation to a clock mechanism as usually constructed in the United States, the striking mechanism being modified in its construction and arrangement to suit such clock mechanism, the principles of construction and operation of said striking mechanism being, however, unchanged. The striking mechanism can also be applied to watches by means of a balance.

Having now described my invention, what I claim is—

1. In a striking mechanism for clocks, the combination, with the pendulum or vibrating hammer H of the escapement-lever E, escapement-wheel W, and the timing-disk D, of the lever L′ and its pin P′, substantially as and for the purposes specified.

2. The combination, with the disk D, lever L′, and pin P′, of the lever L, the minute-hand arbor, and the pin P, substantially as and for the purposes specified.

3. The combination, with the hammer H, escapement E W, and disk D, of the lever L′, pin P′, lever L, the minute-hand arbor, and the pin P, all arranged and operating substantially as and for the purposes specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

OLAUS OLSEN LÖVAAS.

Witnesses:
HUGO H. HITZ,
H. SALSEN.