

W. HART.
Clock Escapement.

No. 33,990.

Patented Dec. 24, 1861.

Fig. 1.

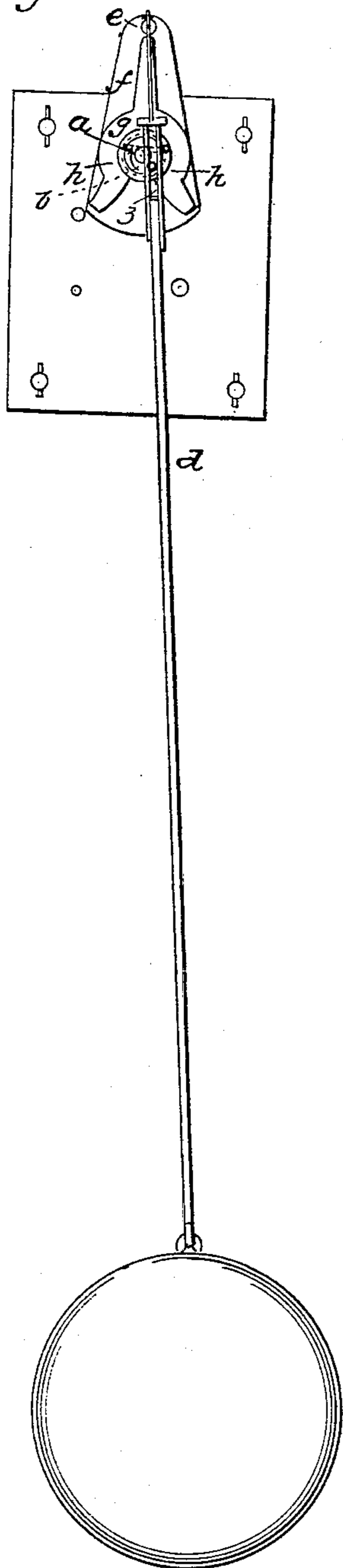
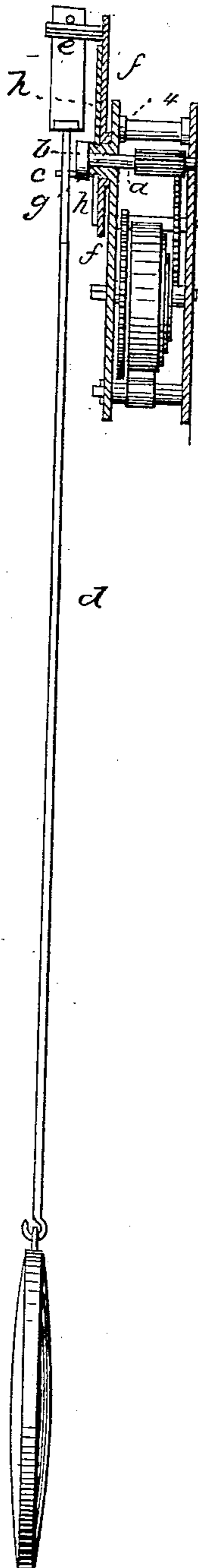


Fig. 2.



Witnesses
J. L. Coombs
J. W. Reed

Inventor
W. Hart
per Munn & Co
attorneys

UNITED STATES PATENT OFFICE.

WILLIAM HART, OF MAYVILLE, WISCONSIN.

IMPROVEMENT IN CLOCK-ESCAPEMENTS.

Specification forming part of Letters Patent No. 33,990, dated December 24, 1861.

To all whom it may concern:

Be it known that I, WILLIAM HART, of Mayville, in the county of Dodge and State of Wisconsin, have invented a new and Improved Pendulum-Escapement for Clocks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a back view of the escapement, and Fig. 2 a side view of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in an escapement composed of a simple crank or eccentric wrist-pin, which derives a revolving motion by its attachment to the ordinary escape-wheel spindle, or to any suitable rotating spindle geared with the clock-movement, and which works within a slot in the pendulum-rod, as hereinafter explained, such escapement dispensing with the escape-wheel and the verge and its appendages, and being cheaper, more durable, less likely to get out of order, and requiring less power to run it than the verge and wheel-escapement.

It also consists in so applying the stud from which the above-mentioned slotted pendulum is suspended, in combination with the crank-pin or eccentric-wrist, as to make the said stud self-adjusting, for the purpose of bringing the pendulum always in beat, thereby enabling the most inexperienced person to set up a pendulum clock without difficulty.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

a is the spindle which commonly carries the escape-wheel, deriving motion in the usual manner.

b is a disk secured fast upon the end of said spindle, for the purpose of carrying the crank-pin or eccentric-wrist *c*, which may be made of steel or of ruby, and is fast in the said disk at a distance from the axis of the spindle *a*.

d is the pendulum-rod, and 3 the slot in the said rod for the reception of the crank-pin *c*.

e is the stud from which the pendulum-rod is suspended in the usual manner. This stud is arranged above the spindle *a*, where it is

fast in the upper part of a plate *f*, which is fitted to oscillate upon a fixed hub *g*, which surrounds and is concentric with the spindle *a*, said hub being fast to the back plate *A* of the clock-frame.

h is a forked spring slipping into a groove in the hub *g* for the purpose of confining the plate *f* thereon, and holding the small hub 4, that is provided on the back of the said plate, against the plate *A*, and thereby producing sufficient friction on the said plate to prevent it from oscillating too easily, the said plate being only desired to move when the position of the clock is changed, and the stud *e* being intended to remain stationary while the clock is in operation.

The operation is as follows: The crank-pin, revolving with the spindle *a*, is brought into contact first with one and then with the other side of the slot 3 in the pendulum-rod, and detained until permitted to escape by the movement of the pendulum being reversed, giving impulse to the pendulum at each detention. In Fig. 1 the pendulum is represented as just completing its stroke to the right and having allowed the pin *c*, which revolves in the direction of the arrow shown upon the disk, to escape from the right side of the slot 3 and fall against the left side thereof, where it is detained until the pendulum commences to swing to the left, when its revolution proceeds slowly until the pendulum has moved far enough to permit it to escape and pass quickly over to the right side of the slot, where it is detained until the pendulum moves to the right again, when it moves slowly with the pendulum until allowed to escape and fall again against the left side of the slot. In case of the clock getting accidentally put out of level, the weight of the pendulum-rod brings the plate *f* to an upright position—that is to say, with the stud *e* vertically above the spindle *a*—and so makes the stud *e* self-adjusting. The arrangement of the stud in this plate allows the clock to be placed in any position in which the stud *e* and spindle *a* are nearly horizontal, for the weight of the pendulum, if the latter is started with sufficient force to move the stud, will always bring the stud to the proper position, and the pendulum will bring itself into per-

fect beat, and hence all necessity for the adjustment of the escapement after the clock is set up is obviated.

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

1. The escapement composed of a revolving crank-pin or eccentric-wrist *c*, working within a slot 3 in the pendulum-rod, substantially as herein specified.

2. Arranging the pendulum-stud *e* in a plate *f*, fitted to oscillate about the axis of the spindle which carries the crank-pin or eccentric-wrist *c*, substantially as and for the purpose herein set forth.

WM. HART.

Witnesses:

JAMES MCFARLIN,
C. E. GOODWIN.