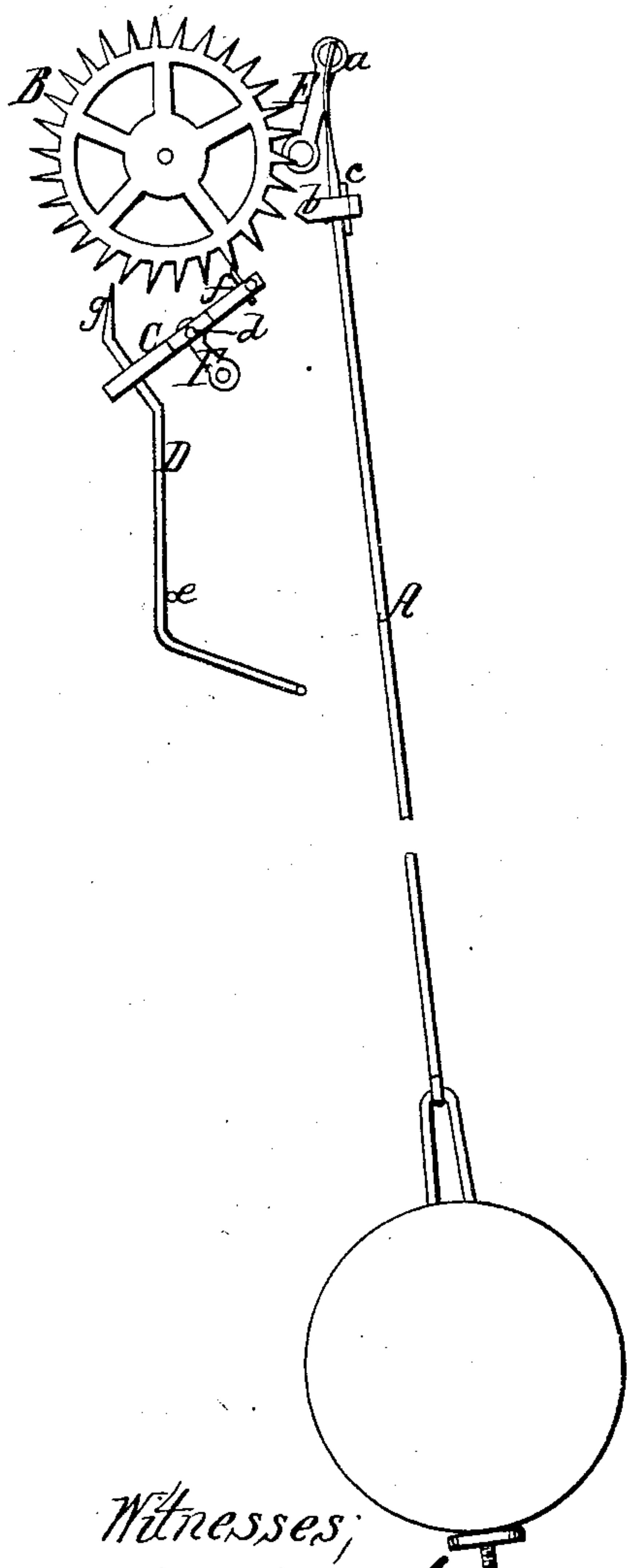


No. 39,395.

PATENTED AUG. 4, 1863.

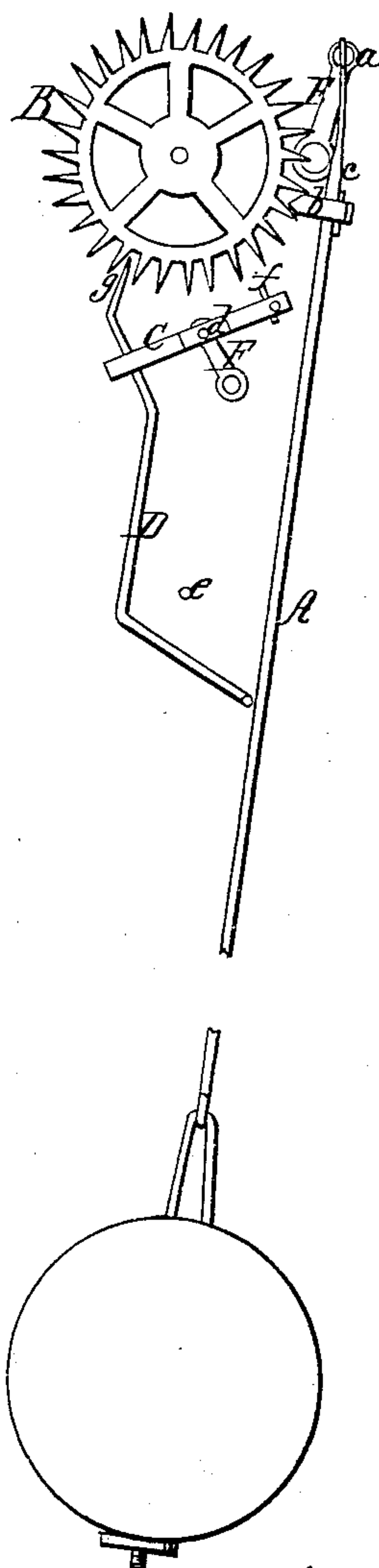
W. HART.
ESCAPEMENT.

Fig. 1.



Witnesses;
J. W. Coombs,
G. W. Reed

Fig. 2.



Inventor;
Wm. Hart
per Munroe & Co.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM HART, OF MAYVILLE, WISCONSIN.

IMPROVEMENT IN CLOCK-ESCAPEMENTS.

Specification forming part of Letters Patent No. 39,395, dated August 4, 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—

Figures 1 and 2 are front views of my escapement, showing the position of the parts at the end of each stroke of the pendulum.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a certain novel arrangement of an impulse pallet and detent, in combination with a pendulum, whereby the pendulum has the power applied to it directly from the crown-wheel, and many other advantages are obtained.

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

A is the pendulum, arranged to swing from the stationary support *a* in the same plane, or as nearly so as practicable, with the escape-wheel B, and having the impulse-pallet *b* so fitted to it and secured by a wedge, *c*, that it can be adjusted higher or lower to enable it to receive the impulse from the wheel in a proper manner. The escape-wheel is of ordinary construction.

f is the detent, secured in one arm of a lever, C, which is arranged to vibrate in the same plane with the escape-wheel and pendulum-rod on a stationary pin, *d*, arranged below the said wheel. The other arm of the said lever, which is farther from the pendulum-rod, has secured in it a bent wire, D, the upper end of which is flattened to form a guard, *g*, to prevent damage through carelessness or accident by stopping the wheel, and the lower part of which is acted upon by the pendulum-rod to withdraw the detent from contact with the wheel.

e is a stationary pin, against which the wire D is brought by its own weight and that of the lever C, when the pendulum-rod is out of

contact with it, and which serves to stop the detent at a proper depth in the wheel.

In the movement of the pendulum-rod to the left, the said rod comes in contact with the lower part of the wire D, and by that means causes the said rod and the lever C to move in such manner (illustrated in Fig. 2) as to withdraw the detent *f* from the wheel B, and the same movement brings the impulse-pallet *b* between two of the teeth of the said wheel, so that on the escape of the said wheel it only moves a distance equal to half of one of the spaces between its teeth before it is arrested by the said pallet, which then receives the impulse and transmits it to the pendulum, producing the movement of the latter to the right. In the latter movement of the pendulum the impulse-pallet passes out of the wheel and leaves the latter free to move the same distance as before mentioned, when it is arrested, as shown in Fig. 1, by the detent, which, owing to the retirement of the pendulum from the wire D, is brought by the weight of the said wire and of the lever C within the circle circumscribing the points of the teeth of the wheel.

The guard *g*, though it enters between two teeth of the wheel at every movement of the pendulum to the left, never touches the teeth except from any accidental cause the wheel is freed both from the impulse-pallet and detent.

To facilitate the adjustment of the escapement the pendulum-support *a* is secured to a movable arm, E, and the pin *d*, upon which the lever C works, is secured to a movable arm, F.

The depth to which the detent enters the wheel may be regulated by bending the wire D above the pin *e*.

The advantages obtained by my escapement, besides the direct application of the power to the pendulum, which greatly reduces the friction, are manifold; but I will only mention a few of the most important ones—viz., greater accuracy of time, greater durability, less liability to get out of order, and consequent saving in repairs, cheaper construction, facility of adjustment, and capability of working with less power.

The escapement may be easily applied to

old clocks, and can be with especial advantage to those which are useless for want of sufficient motive power.

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

1. The arrangement of the impulse-pallet *b*, detent *f*, lever *C*, wire *D*, or its equivalent, and stop-pin *e*, in combination with each other

and with the pendulum-rod and escape-wheel, to operate substantially as herein specified.

2. The guard *g*, applied in combination with the detent-lever *C*, to operate substantially as and for the purpose herein specified.

Witnesses: WILLIAM HART.

D. NABER, Jr.,

CHAS. L. CLASON.