

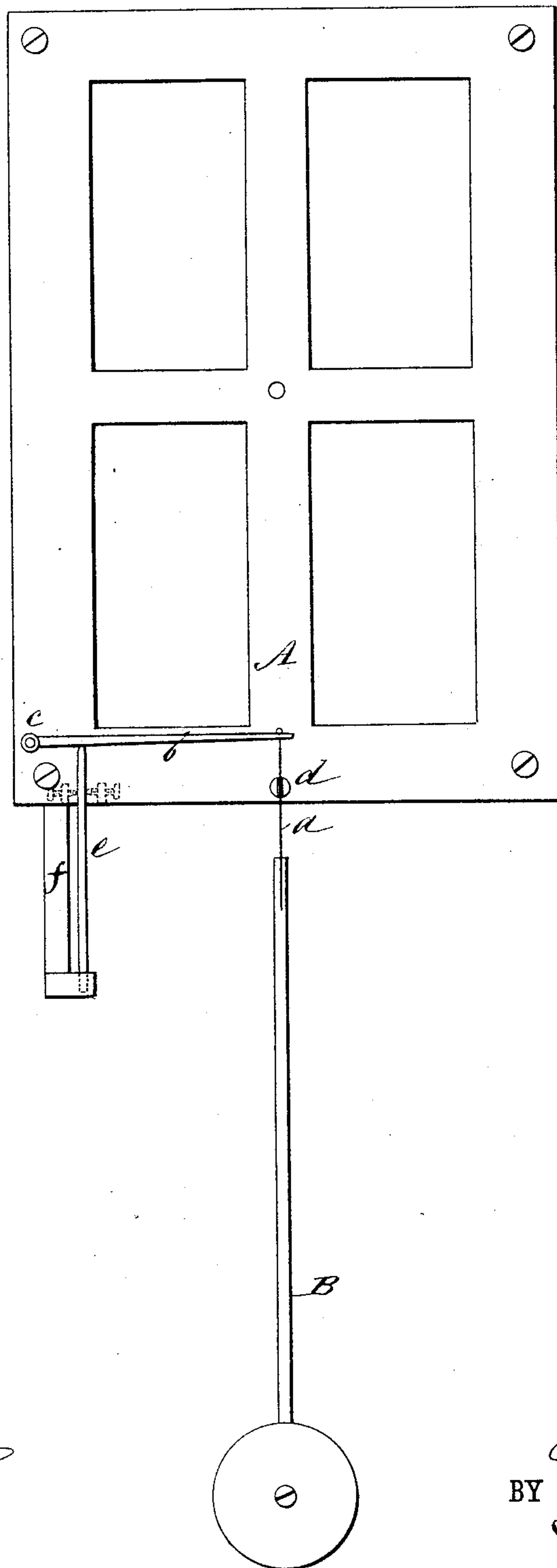
(No Model.)

J. ASHER.

COMPENSATING PENDULUM.

No. 255,909.

Patented Apr. 4, 1882.



WITNESSES:

C. Seaux
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

JAMES ASHER, OF FORT ERIE, ONTARIO, CANADA.

COMPENSATING PENDULUM.

SPECIFICATION forming part of Letters Patent No. 255,909, dated April 4, 1882.

Application filed January 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES ASHER, of Fort Erie, in the Province of Ontario and Dominion of Canada, have invented certain useful Improvements in Compensating Pendulums, of which the following is a full, clear, and exact description.

The object of my invention is to compensate for the expansion and contraction of clock-pendulums and their supporting parts, and thereby prevent irregularities in the clock-movement from the changes in the length of the pendulum.

To that end my invention consists in a compensation rod and lever, combined with a clock frame and pendulum, as hereinafter described and claimed.

Reference is to be had to the accompanying drawing, forming part of this specification, which is a face view of a clock frame and pendulum provided with the compensating device.

A is the front plate of a clock-frame, which, as usual, is of brass, but may be of other metal.

B is the pendulum, suspended by its flexible end strip, *a*, from the end of a lever, *b*, that is hung by a pin, *c*, at its opposite end on plate A.

d is the usual splitstud on the plate, through which the suspension-strap *a* of the pendulum passes, and which is the center on which the pendulum swings.

e is a rod sustained in a vertical position by a metallic support, *f*, on frame A, and taking at its upper end beneath the lever *b*, at a point near pivot *c*, so as to support the lever and pendulum. The lever *b* is of brass, or the same metal as the frame A, and the rod *e* is preferably of zinc or other metal, whose coefficient of expansion is greater than the metal used in its support *f*.

In operation, supposing the temperature to fall below the normal, the pendulum-rod and

the plate A contract. This, with the ordinary construction, would shorten the pendulum; but in this case the rod *e* also contracts and allows the lever *b* to drop, and the movement being multiplied on the outer end of the lever the distance between stud *d* and the outer end of the pendulum is lengthened. The shortening by contraction is thus compensated, and it is evident that a reverse effect takes place when the pendulum and plate expand.

I do not limit myself to the described relative arrangement of the compensation rod and lever, nor to any special metals, as it is evident that those details may be varied within the scope of my invention. For adjustment, there may be set-screws fitted at opposite sides of the rod *e*, as shown in dotted lines, so that the rod can be set back and forward, and the leverage thus varied.

This device is simple and inexpensive, and may be applied to the most common clocks as well as the finer ones with the same advantages.

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

1. A clock-pendulum suspended from a lever above the center on which it swings, the lever being sustained on a compensation-rod, substantially as shown and described.

2. The combination of rod *e*, lever *b*, split stud *d*, and pendulum B, substantially as shown and described, for the purposes specified.

3. The combination, with a pendulum, of a compensating-rod and a multiplying-lever connected for supporting the pendulum at a point above its center of oscillation, substantially as shown and described.

JAMES ASHER.

Witnesses:

WM. RAINSFORD,
N. FORSYTHE.