

(No Model.)

S. B. JEROME.  
Suspension of Clock Pendulum.

No. 230,283.

Patented July 20, 1880.

fig. 1

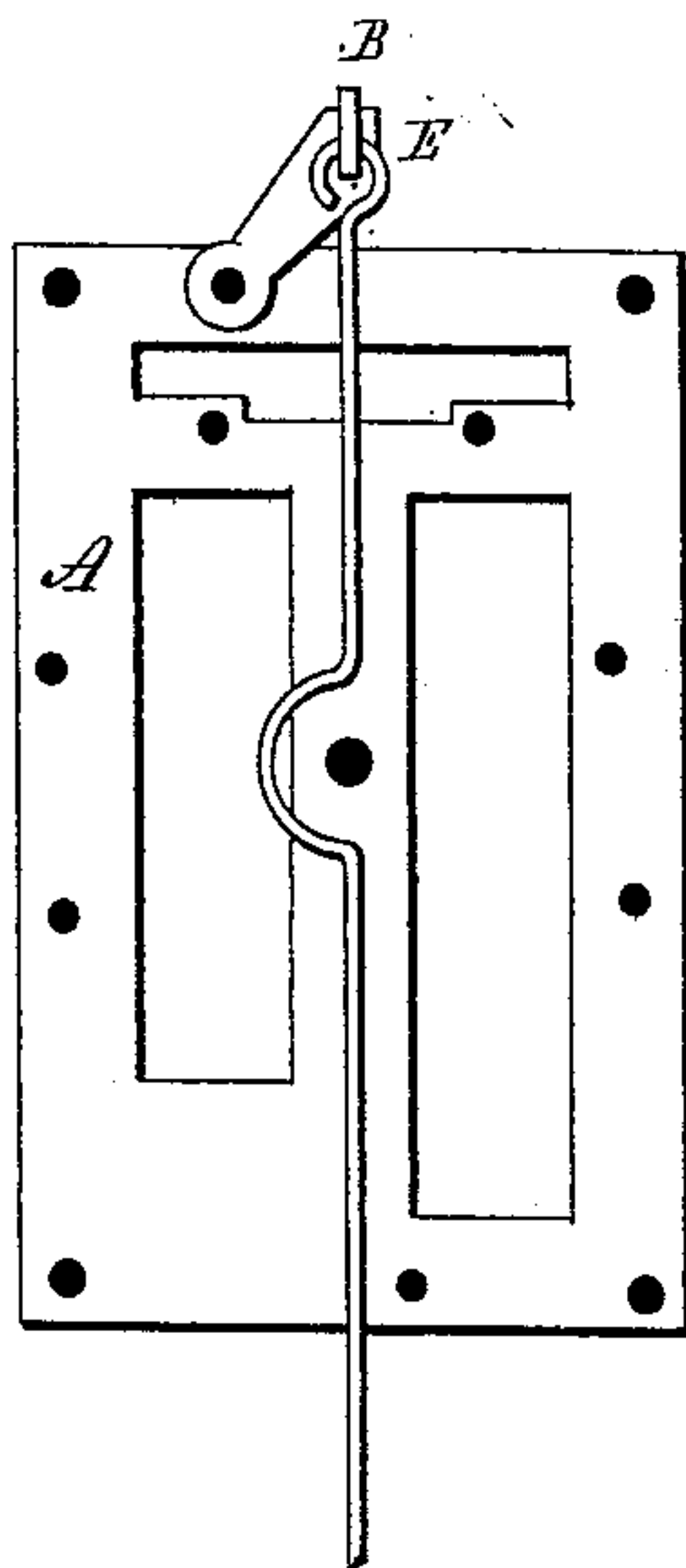


fig. 2

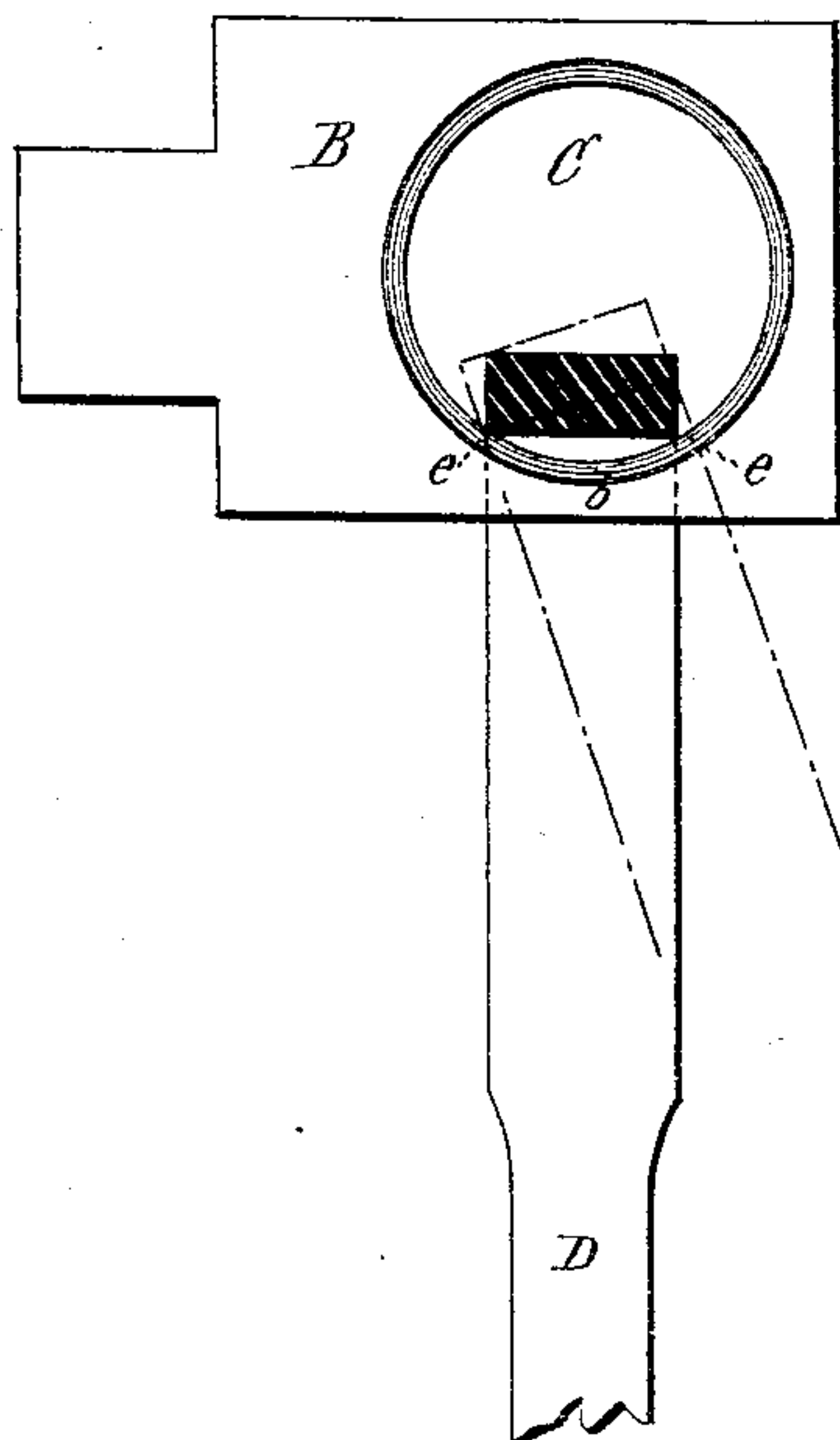


fig. 3

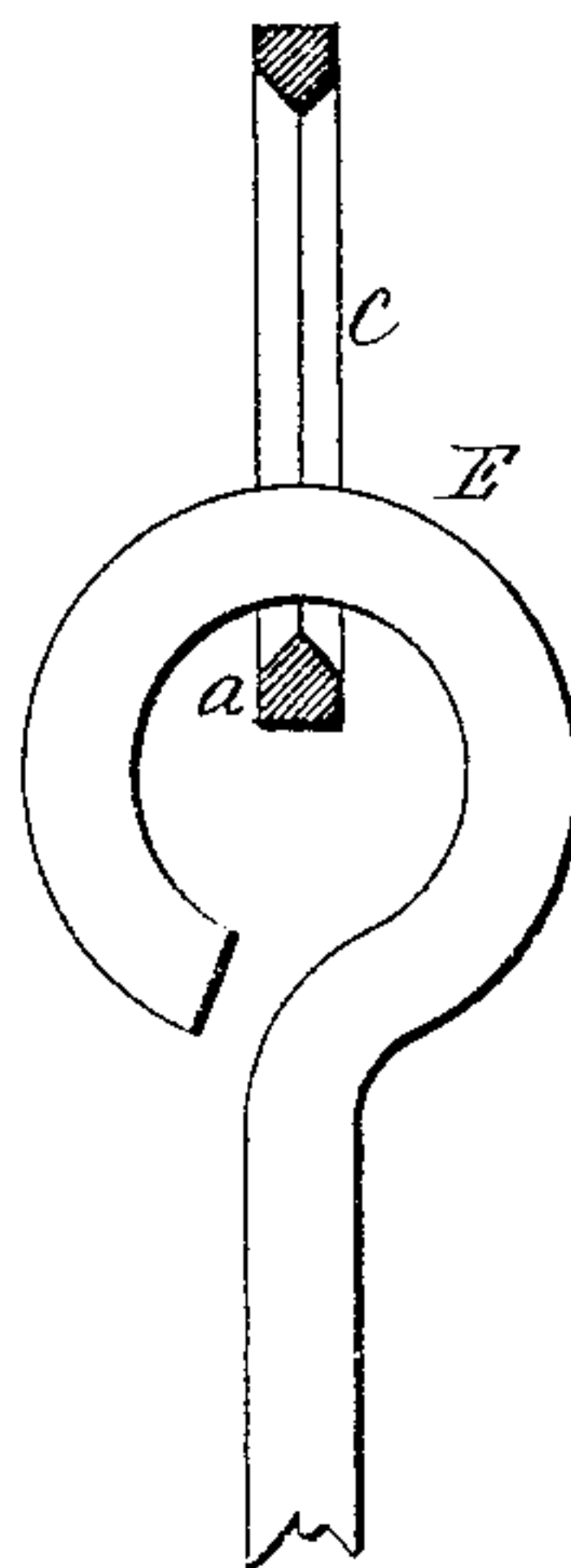


fig. 4



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## SUSPENSION OF CLOCK-PENDULUMS.

SPECIFICATION forming part of Letters Patent No. 230,283, dated July 20, 1880.

Application filed May 3, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL B. JEROME, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Clock-Movements; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, front view of the frame of the movement, showing the attachment of the pendulum-rod; Fig. 2, enlarged side view, showing the improvement; Fig. 3, vertical section; Fig. 4, modification.

This invention relates to an improvement in suspending pendulum-rods.

In the usual construction where a spring is applied to the rod, generally made by reducing the rod at the upper end, a serious difficulty arises, to overcome which numerous devices have been resorted to. This difficulty is what is known as "wabbling"—that is, the tendency of the pendulum-ball to turn out of its natural plane. This is occasioned because of the impossibility of preserving the flat spring at the top throughout its length at right angles to the path of the pendulum movement. This difficulty is very much increased by transportation and setting up of the clocks, because of the liability of the spring portion to become twisted. The wabbling of the pendulum-ball very greatly increases the friction between the pendulum-rod and the arm which connects it with the verge. Other kinds of springs have been applied, and in some cases a cord or other flexible material has been introduced, but without overcoming the difficulty referred to.

The object of this invention is to overcome this difficulty; and it consists in the construction, as hereinafter described, and particularly recited in the claim.

A represents the clock-frame or part of the movement to which the pendulum is suspended. At the point of suspension a flat or other conveniently shaped stud, B, is arranged, projecting from the movement sufficiently far for the

pendulum-rod to clear the movement, as in the usual construction. This stud B is preferably made from thin steel or other hard metal, with a perforation, C, transversely through it, countersunk from each side, so as to form a sharp edge, *a*, as seen in Fig. 3. The opening C is preferably round, or so as to form substantially a curve upon the lower edge, as seen at *b*, Fig. 2.

The pendulum-rod D is of the usual length and form, except at the upper end it is flattened and bent into hook shape, as at E, and hung within the opening C of the stud B, and so that the two edges *e e* of the inner flat side will rest upon the lower curved edge of the opening C, and without bearing between the two points *e e*. This completes the construction.

The result of this construction is, that bearing, as the pendulum-hook does, only upon the two outer edges or angles, it cannot sway from the plane in which it will be guided by those two points or bearings, because to do so the pendulum must be lifted.

For illustration, suppose the pendulum to turn outward, as indicated by broken lines, Fig. 2, which is, it will be understood, an exaggerated condition, it must turn upon the rear point of bearing, and accordingly rise in front. The weight, when the pendulum is in its proper position, takes its bearing at two points each side of a central line, as at *e e*, and at right angles to the path in which the pendulum swings, and thereby prevents its turning outward or inward from that path. It will retain those points of bearing notwithstanding the rod may be bent or twisted.

It is preferable to make the opening C circular in form, because it is cheaply done; but it may be of other shapes, the essential feature of this invention being the two points of bearing of the pendulum-rod on the support, distant from each other in a line at right angles to the path in which the pendulum swings. It may be done by making the bearing a straight knife-edge, with a pendulum-rod worked out upon its inside, so as to present the same two points of bearing, *e e*, as in Fig. 4.

This construction produces a bearing almost frictionless, because of the very slight contact between the pendulum and the bearing upon which it swings.

5 I claim—

The herein-described improvement in clock-movements, consisting in the pendulum-rod and its support constructed with two bearing-

points distant from each other in a line at right angles to the path in which the pendulum swings, substantially as described.

SAMUEL B. JEROME.

Witnesses:

JOS. C. EARLE,  
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