O. W. WADE & D. G. WHITE.

Pendulums.

No. 218,344. Patented Aug. 5, 1879.

Fig. 1.

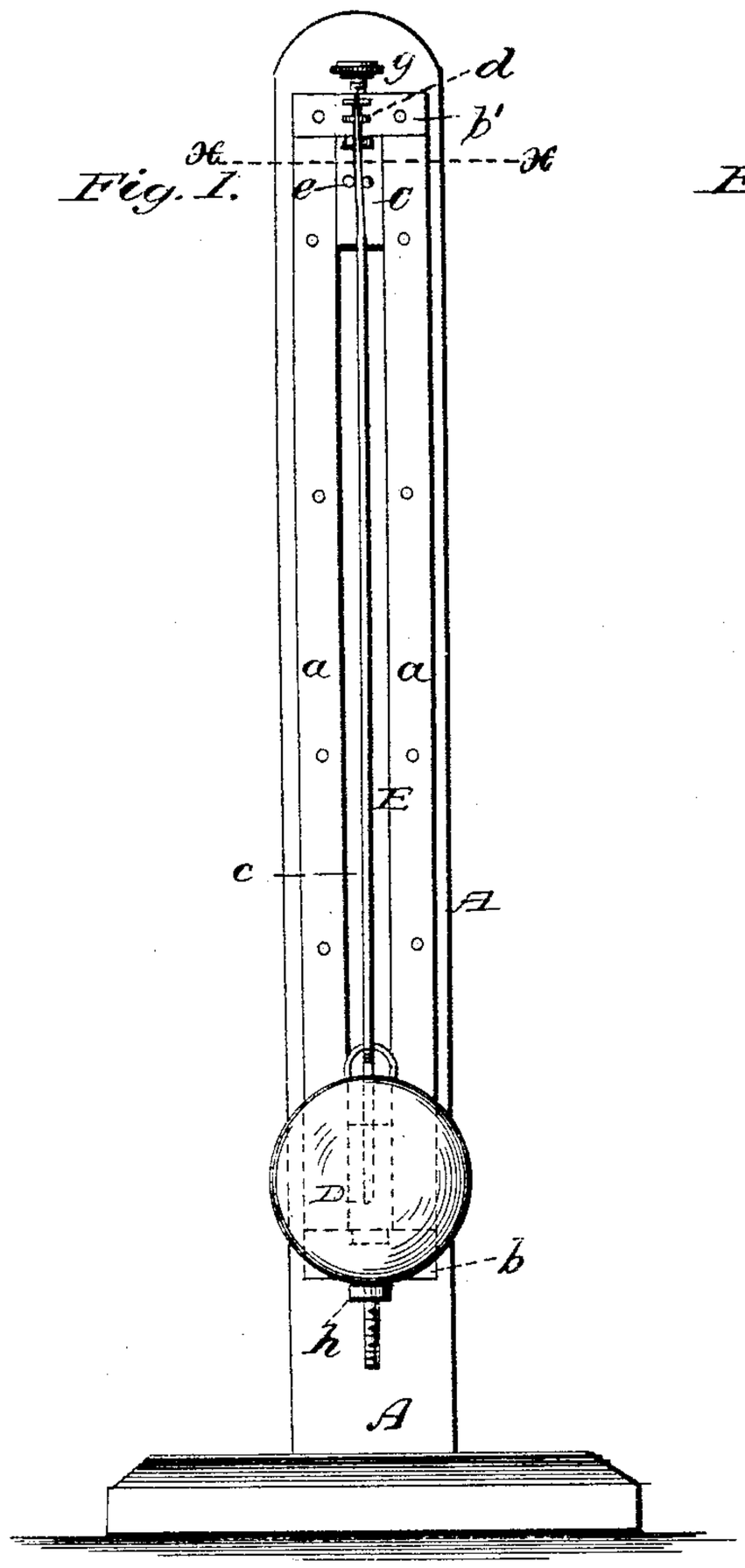


Fig. 2.

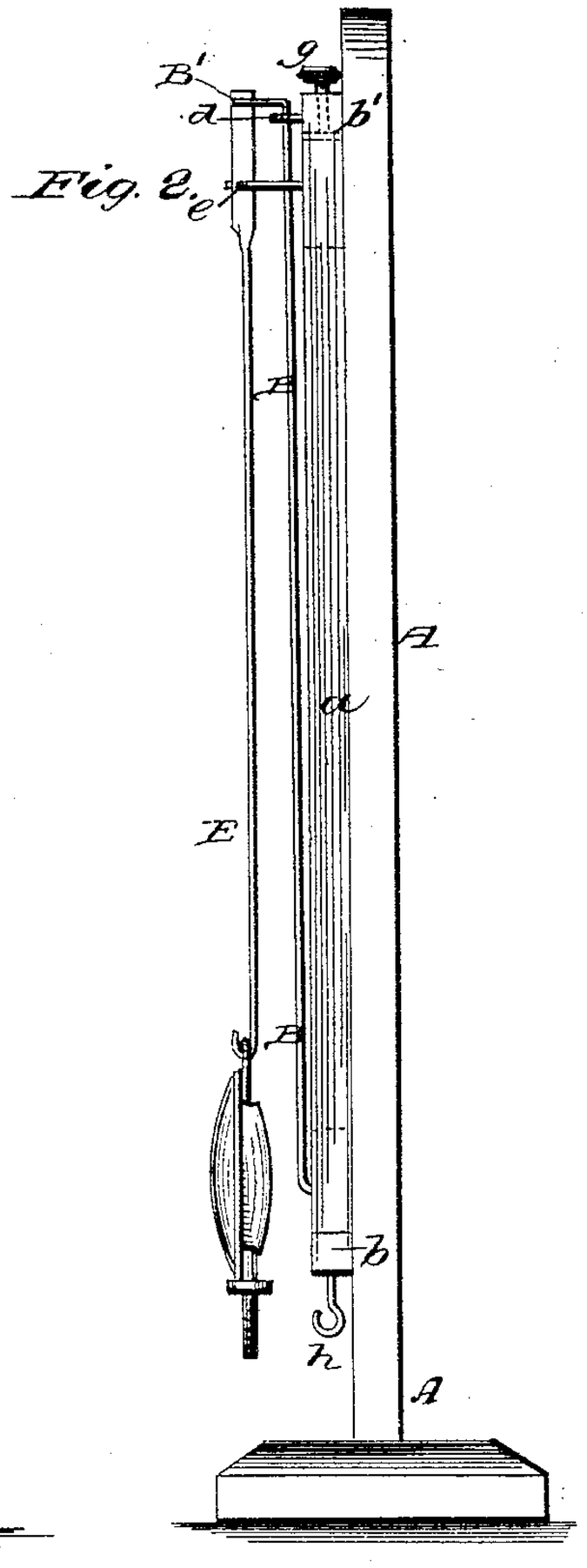
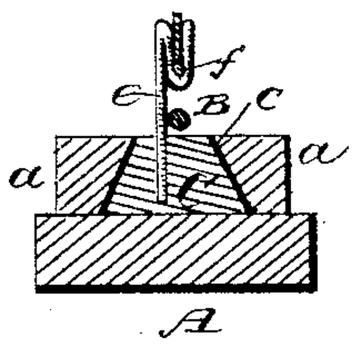


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ORON W. WADE AND DAVID G. WHITE, OF OSKALOOSA, IOWA.

IMPROVEMENT IN PENDULUMS.

Specification forming part of Letters Patent No. **218,344**, dated August 5, 1879; application filed April 5, 1879.

To all whom it may concern:

Be it known that we, ORON W. WADE and DAVID G. WHITE, both of Oskaloosa, in the county of Mahaska and State of Iowa, have invented certain new and useful Improvements in Pendulums; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front elevation. Fig. 2 is a side view, and Fig. 3 is a cross-section, taken on the line indicated by *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

Our invention relates to compensation-pendulums, or that class of pendulums which are provided with isochronous means of adjustment to compensate the effects of heat and cold; and it consists in the combination, with the pendulum, of a vertical supporting-rod, made of the same metal as the pendulum-rod, and provided with means of adjustment, substantially in the manner and the purpose hereinafter more fully described.

In the drawings, A represents the standard or support, which may be the frame-work of a clock or form a part thereof. Secured vertically upon frame A are two parallel guide-pieces, *a a*, united by cross-pieces *b' b* at the top and bottom, their inner sides being beveled so as to form a vertical dovetailed slot or recess, *c*, upon frame A. Into this recess are inserted two blocks, C D, secured in the lower one of which, D, is a rod, B, the upper end of which is inserted through a keeper or staple, *d*, in the upper cross-piece, *b'*, and bent outward to form a projecting arm, B'. The upper sliding block, C, is also provided with a projecting arm, *e*, bent or shaped so as to form a narrow slit or slot, *f*, vertically below a corresponding slit in the arm B' of rod B.

The blocks C D are both vertically adjustable by means of set-screws *g h;* and it follows that, by turning the screw *h*, rod B may be raised or lowered, while, by turning the upper screw, *g*, block C may be similarly adjusted.

The upper part of rod B may be flattened to correspond to the flattened part of the pendulum-rod E, which is suspended from the arm B' and inserted through the slit *f* in arm *e*.

From the foregoing description, taken in connection with the drawings, the operation of our invention will be readily understood.

The pendulum may be raised or lowered to adjust the radius of its stroke or the number of its vibrations by adjusting either of the set-screws *h* or *g*, according to which one of the two is most convenient for use.

The relative position of rods B and E will always remain the same, and these being of equal length and thickness, and made of the same metal, it is obvious that their expansion and contraction will be alike, but in opposite directions, so that the expansion or contraction of the suspension-rod B will compensate for that of the pendulum-rod E.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. The combination of the vertically-adjustable block D and rod B, having bent arm B', adjustable block C, having slotted arm or bracket *e*, and pendulum-rod E, substantially as and for the purpose herein shown and specified.

2. In combination the support or frame A, having parallel guide-pieces *a a* and cross-pieces *b b'*, provided, respectively, with the set-screws *h g*, adjustable block or slide C, having projecting arm or keeper *e*, adjustable block D, supporting the suspension-rod B, and pendulum E, all constructed and combined to operate substantially as and for the purpose herein shown and described.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

ORON W. WADE.
DAVID G. WHITE.

Witnesses:
JOHN SHANE,
ROBT. KISSICK.