

(No Model.)

W. D. DAVIES.
CLOCK.

No. 474,058.

Patented May 3, 1892.

Fig. 1.

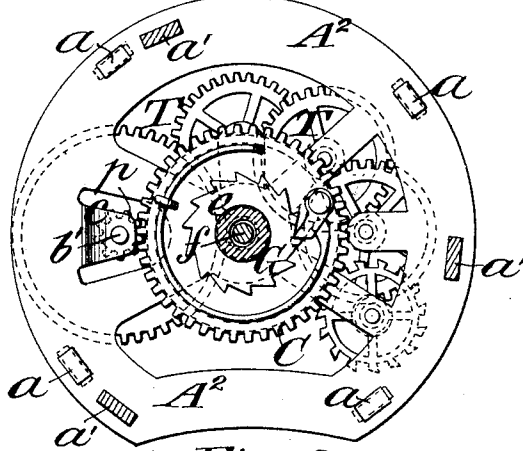


Fig. 2.

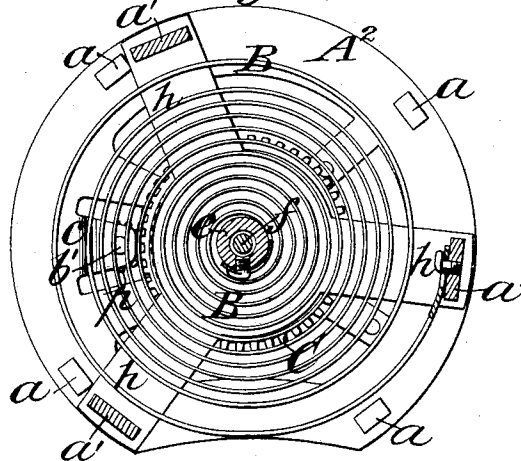
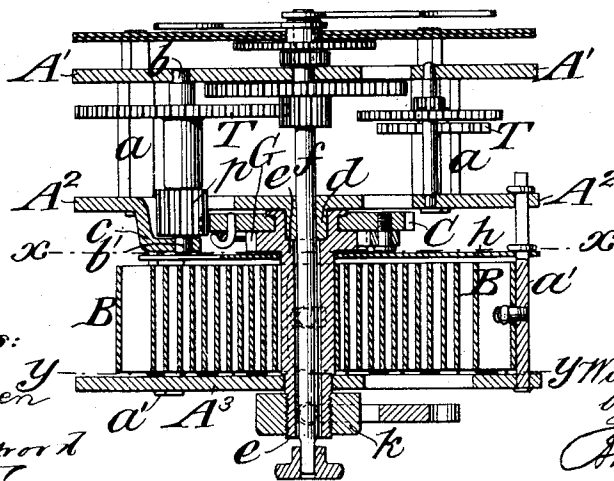


Fig. 3.



Witnesses:

O. Sundgren
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Inventor:

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UNITED STATES PATENT OFFICE.

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CLOCK.

SPECIFICATION forming part of Letters Patent No. 474,058, dated May 3, 1892.

Application filed January 2, 1892. Serial No. 416,787. (No model.)

To all whom it may concern:

Be it known that I, WALTER D. DAVIES, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Clocks, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to clocks with main wheel and winding-arbor concentric with the center of the clock and with the center spindle passing through the winding-arbor.

The object of the invention is to obtain separate bearings for the said arbor and spindle, in which each works independently of the other in such manner that the friction is reduced.

To enable others skilled in the art to carry out my invention, I will first describe it with reference to the drawings, and afterwards point out its novelty in a claim.

Figures 1, 2, and 3 represent sectional views of a clock-movement embodying my invention, Fig. 1 representing a vertical section in the line *xx* of Fig. 3; Fig. 2, a vertical section in the line *yy* of Fig. 3, and Fig. 3 a section.

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

In carrying out my invention I use three plates *A' A² A³*, which are connected together by pillars *a a'*, such as are commonly employed for the protection of the plates of clock-movements. I place the ordinary time-train *T T* between the first and second plates *A' A²* and place the main spring *B* and the main wheel *C* between the second and third plates *A² A³*, and arrange the intermediate pinion *p* to project through an opening in the second plate *A²* sufficiently for the main wheel to gear with it. The spindle of the intermediate pinion *p* has its front journal *b* in a bearing in the plate *A'*, and its rear journal *b'* in a projection *c*, which is made in the same piece with the plate *A²* by striking up a portion of the said plate. The second or middle plate *A²* has a central boss or hub *d* on its back to form an inside bearing for the front end of the hollow main-wheel arbor *e*. The rear end of the said arbor *e* is pivoted to work in an outside bearing in the third or rear plate *A³* and projects far enough through

the back of said plate to receive the key *k*. The front end of the central cavity of said arbor is enlarged to receive the hub or inside bearing *d*, provided for its support on the back of the middle plate *A²*. The center spindle has one of its bearings in the center of the front plate *A'* and the other in the center of the middle plate *A²*. By this mode of supporting the central main arbor and center spindle I provide separate and distinct bearings for each, for although each has a central bearing in the middle plate, the bearings for the two are separate and neither the arbor nor the spindle is subject to friction by the operation of the other.

In Figs. 2 and 3 I have represented in front of the main spring *B* and between the said spring and the main wheel *C* and its ratchet-wheel *G*, a guard-plate *h*, which is held against shoulders on the pillars *a a'*; but this plate has nothing whatever to do with supporting the movement. It is simply a guard to prevent the main spring overriding the main wheel and ratchet-wheel.

The outer end of the main spring *B* is secured to one of the pillars *a*, and the inner end to the central spindle *d* in the usual manner, and all the parts not particularly described are or may be the same as in well-known clocks.

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

The combination in a clock-movement, with a centrally-arranged main wheel and hollow winding-arbor and a center spindle passing through said arbor, of three united supporting-plates, the front one of said plates containing a bearing for the center spindle, the rear one of said plates containing a bearing for the rear part of the winding-arbor, and the middle one of said plates containing a fixed central bearing for the said spindle and having on its back a central hub or boss, the exterior of which forms a fixed bearing for the front end of the winding-arbor, substantially as herein set forth.

WALTER D. DAVIES.

Witnesses:

HERBERT C. SMITH,
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