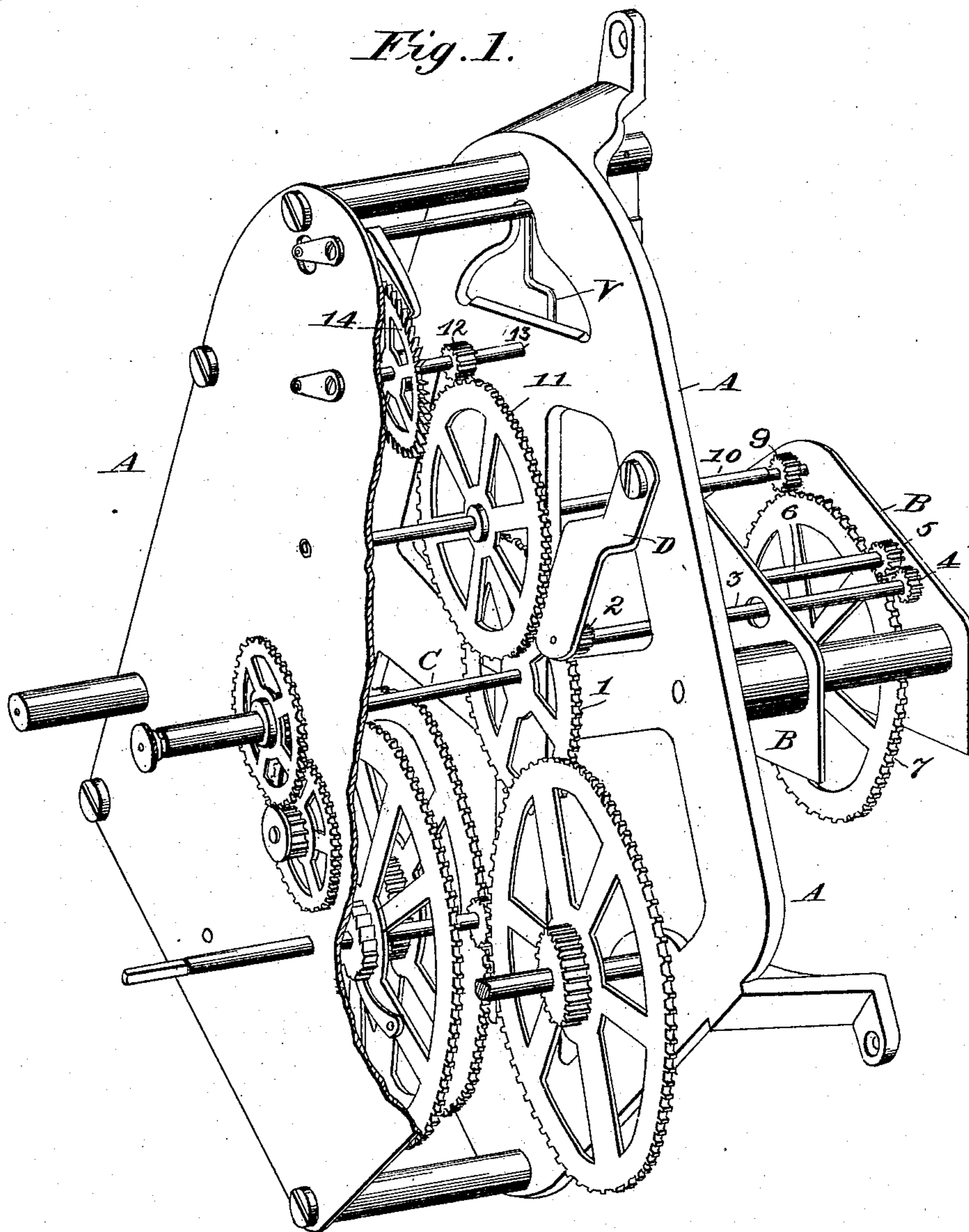


No. 794,380.

PATENTED JULY 11, 1905.

H. S. PRENTISS.  
CLOCK MOVEMENT.  
APPLICATION FILED APR. 16, 1901.

2 SHEETS—SHEET 1.



Witnesses:  
Hesley R. Babcock  
Henry Hank

Inventor:  
Henry S. Prentiss

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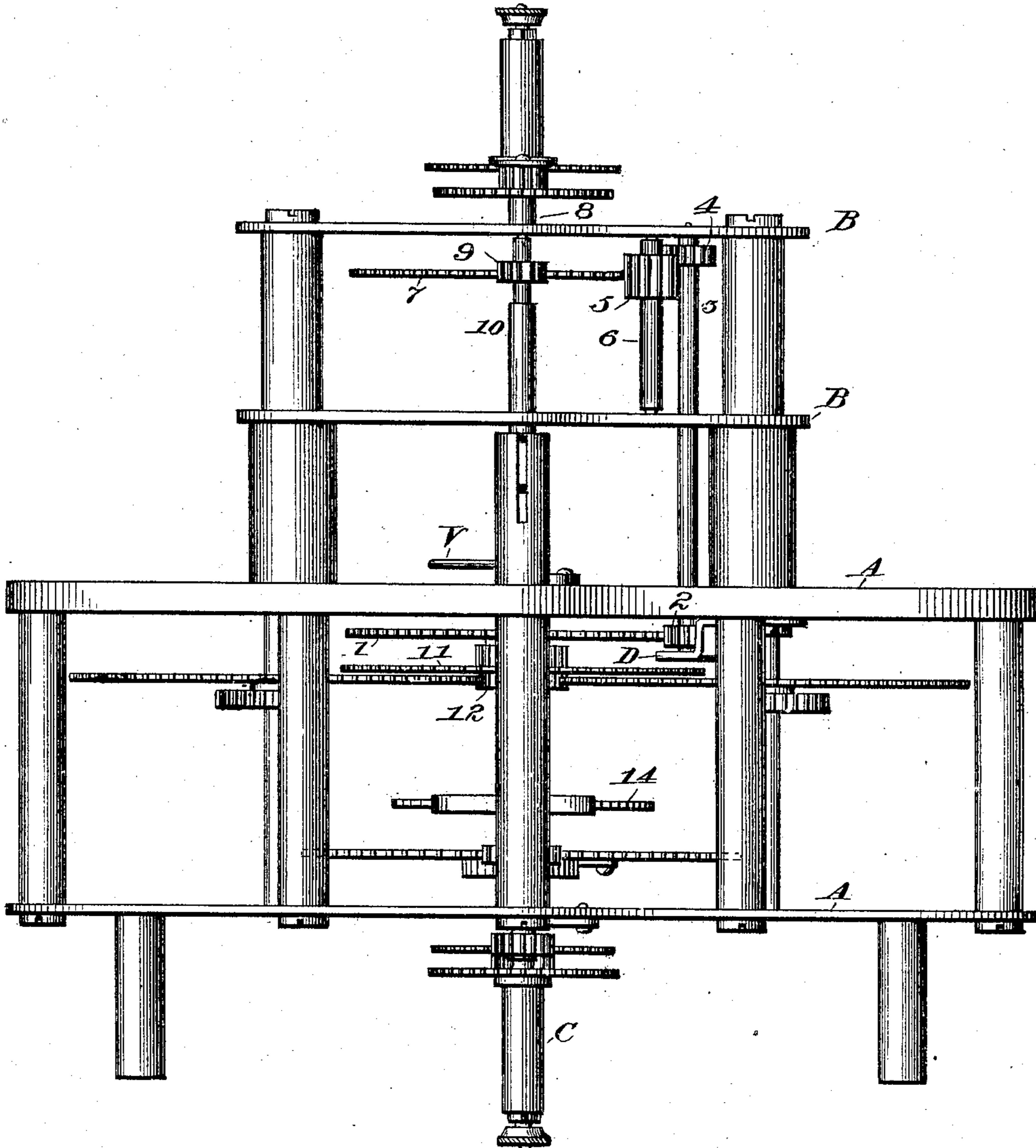
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2 SHEETS—SHEET 2.

*Fig. 2.*



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Wesley R. Babcock

Henry H. Hank

Inventor:

Henry S. Prentiss.

# UNITED STATES PATENT OFFICE.

HENRY S. PRENTISS, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE PRENTISS CLOCK IMPROVEMENT COMPANY, A CORPORATION OF NEW JERSEY.

## CLOCK-MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 794,380, dated July 11, 1905.

Application filed April 15, 1901. Serial No. 55,819.

*To all whom it may concern:*

Be it known that I, HENRY S. PRENTISS, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Double-Dial Clock-Movements, of which the following is a specification.

My invention has reference to clocks with two or more dials, the object aimed at being to secure an actual indication of the true time on all the dials and to avoid the destructive and objectionable backlash commonly found in double-dial clock-movements of the usual construction.

These improvements are fully pointed out in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 represents an elevation of a double-dial movement constructed according to my invention. Fig. 2 is a top view of the same.

In the drawings the letter A designates the frame of the clock-movement, and B a supplementary frame for carrying the necessary gearing of the second dial. The frame A carries an ordinary clock-train consisting of mainsprings S, center shaft C, and escapement P and 14, with the usual connecting-gearing. Instead of a continuous train throughout, however, there is a break between the center arbor C and the next shaft 10 above, the latter being driven by the former, not directly, as is usual, but indirectly through a supplementary train of gears contained in the frame B. Thus gear 1, carried by center shaft C, meshes with a pinion 2 on shaft 3, one end of the latter being journaled in bridge D and the other in the outside supplementary frame B.

The outside end of shaft 3 carries pinion 4, which in turn meshes with pinion 5, mounted on arbor 6. Pinion 5 also drives gear 7, which is carried by arbor 8, the center arbor of the supplementary train, and which carries the minute-hand of the second dial. It will be seen that by making the pinions 2, 4, and 5 of the same size and using the same-sized

gears for 1 and 7 the center arbor 8 will make the same number of turns as center C, but in the opposite direction. The gear 7 meshes with pinion 9. The shaft 10, which carries the pinion 9, runs clear through both frames, being journaled in the outside frame A and outside frame B. The part passing through A carries the gear 11, which in turn meshes with pinion 12 on shaft 13, which is the escape-shaft, and carries escape-wheel 14. It will be noticed that all the gears, pinions, and shafts mentioned are "in the train"—that is, power is transmitted through all the gearing named and there are no "idle" gears. This does away entirely with the destructive and objectionable backlash usually found in double-dial movements, for as both center shafts are used to transmit power to the escapement they will always retain any forward motion which may have been given them and can be relied upon to indicate fractions of an hour with absolute certainty. As the shaft 10 would interfere with the swing of the pendulum and verge-rod V, the latter has a loop formed in it, as shown, and the pendulum is provided with a hole or slot to enable it to straddle said shaft.

While the drawings show a double-dial movement only, I do not wish to confine myself to a clock with but two dials, as it is evident that the same principle is applicable to clock-movements showing three, four, or more dials; nor do I wish to confine myself to a multiple-dial clock having all their center arbors in the same plane, as a different arrangement might be advisable and would not affect the principle involved. It is also evident that instead of dials and hands or pointers moving disks or printing-wheels may be substituted without departing from the idea of the invention.

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

1. In a double-dial clock-movement the combination, with the usual clock-frame and train of gearing, of a supplementary frame and supplementary gears, said supplementary train carrying a second center, or minute shaft, in line with the first but revolving in the oppo-

site direction, both of said minute-shafts being "in the train" and used to transmit power to the escapement substantially as described.

2. In a double-dial clock-movement the combination with the usual center or minute shaft of a second, or double-center arbor, said second arbor being in line with the first and geared to revolve in the opposite direction from the first both shafts being used to transmit power to the escapement, substantially as described.

3. In a double-dial clock-movement the combination of an escapement or timekeeping member with two distinct center or minute arbors projecting from opposite sides of the movement, said minute-arbors being geared to revolve in opposite directions power being transmitted to said escapement through both of said center arbors substantially as and for the purpose described.

4. In a clock-movement the combination of a single movement with two minute-shafts both of said shafts being so arranged as to transmit power to the escapement and so become a part of the train substantially as described.

5. In a clock-movement the combination of

one or more than one shaft and a common source of power for causing them to revolve, with a common escapement, or releasing, or timing device for regulating their speed, all of said shafts being used to transmit said power to said escapement or timing device substantially as described.

6. In a clock-movement the combination of one or more than one shaft and a common releasing or retarding device power for propelling purposes being transmitted to said retarding mechanism through all of said shafts, substantially as described.

7. In a clock or timing movement, the combination, with one or more than one timing arbor or center of a common escapement, power for actuating said escapement being transmitted through all of said timing-arbors, substantially as described.

Signed at New York, in the county of New York and State of New York, this 30th day of November, A. D. 1900.

HENRY S. PRENTISS.

Witnesses:

WESLEY R. BABCOCK,  
ADELE KNOWLTON.