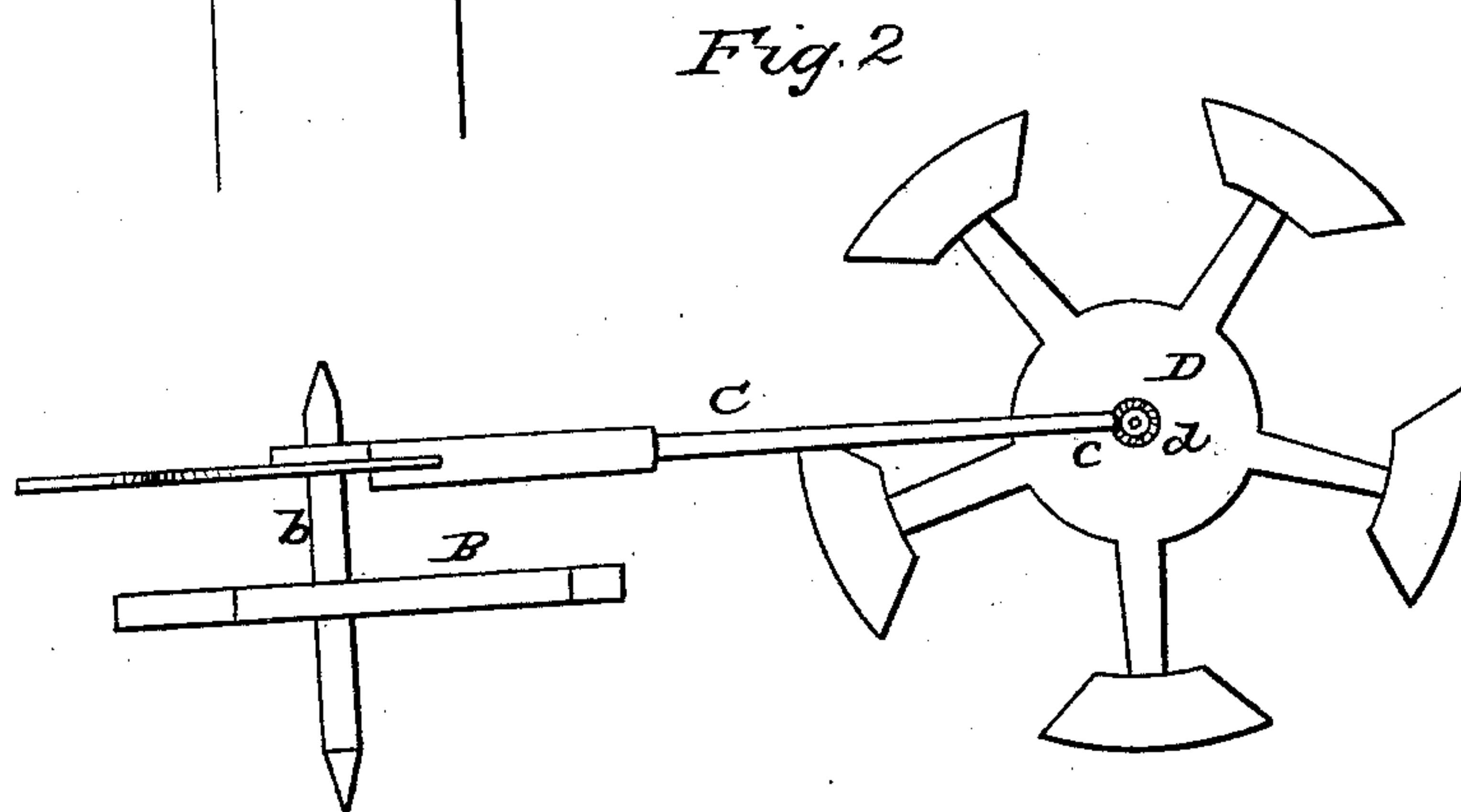
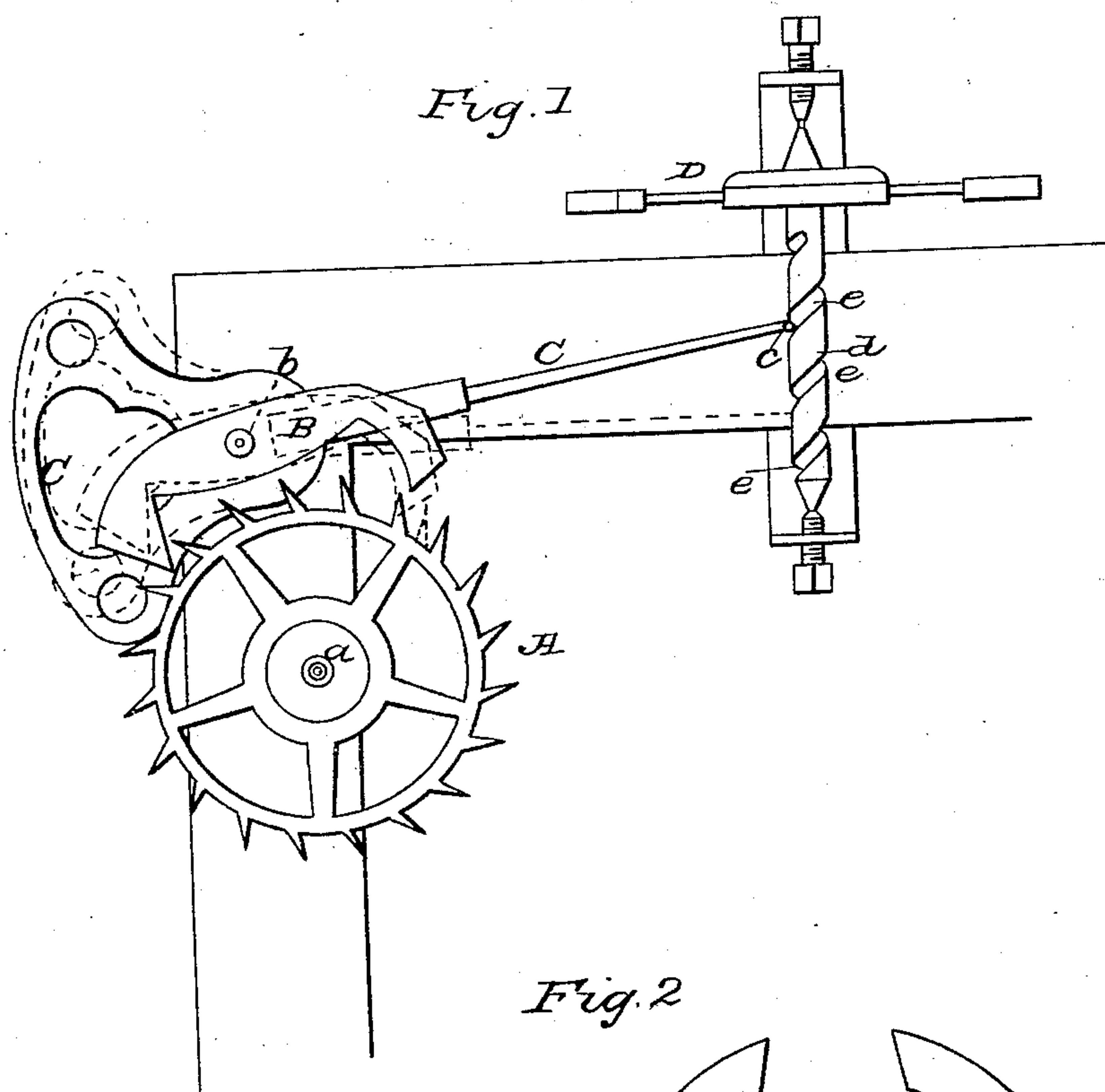


E. K. REYNOLDS.

Clock Escapement.

No. 13,623.

Patented Oct. 2, 1855.



# UNITED STATES PATENT OFFICE.

E. K. REYNOLDS, OF NEW YORK, N. Y.

## CLOCK-ESCAPEMENT.

Specification of Letters Patent No. 13,623, dated October 2, 1855.

*To all whom it may concern:*

Be it known that I, E. K. REYNOLDS, of the city, county, and State of New York, have invented an Improved Escapement for  
5 Clocks and other Time-Keepers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in  
10 which—

Figure 1, is a front view of my improved escapement. Fig. 2, is a plan of the same.

Similar letters of reference indicate corresponding parts in both figures.

15 This escapement is more particularly designed for clocks and other time keepers which are intended to run a long time without winding and on account of its slow movement it is particularly suited to year  
20 clocks. It consists in a lever whose point works in a spiral groove or screw thread in or upon the staff of the balance which is arranged perpendicularly to the arbors of the lever and escapement wheel.

25 A, is the escapement wheel and B, is a crutch of the usual kind having its pallets operated upon by the escapement wheel in the usual way. To the arbor *b*, of the crutch is secured the lever C.

30 D, is the balance whose staff *d*, is so arranged perpendicularly to the arbor *b*, of the lever and crutch and the arbor *a*, of the escapement wheel, that the point or extremity *c*, of the lever C, may vibrate in a plane  
35 passing through its axis, and work in the spiral groove *e*. This groove *e*, in the balance staff *d*, should have such a pitch or inclination that the point of the lever C, may, by the power imparted to it by the action of  
40 the escapement wheel on the one and the

other of the pallets alternately, give the balance D, reciprocating circular movement on its axis. The lever acting upon the balance in this way may be made to give it as rapid  
45 a movement on its axis as is necessary to insure perfect regulation, and yet preserve a long interval between the escapes, as if necessary it may make one, two or more complete revolutions for every vibration of  
50 the lever.

In making this escapement it will be well to make the lever as long as practicable in order that the versed sine of the arc described by its point *c*, may be very short  
55 and that the point may consequently not require to enter very deep into the groove *e*, in the balance staff. By a long lever a slower escapement may also be obtained. The point *c*, of the lever may have a small friction roller applied to work in the groove  
60 if necessary. The pallets may be secured directly to or form part of the lever instead of being on a separate crutch.

This escapement may be employed with or without a hair spring applied to the balance; but I am led by experiment to believe  
65 that the balance spring will generally be unnecessary.

What I claim as my invention and desire to secure by Letters Patent, is—  
70

Constructing the staff *d*, of the balance with a spiral groove *e*, and so arranging the balance that the point of the lever C, will work in the said groove and give the requisite motion to the balance substantially as  
75 herein described.

E. K. REYNOLDS.

Witnesses:

JOS. GEO. MASON,  
WILLIAM TUSCH.