A. F. CURPEN.

WATCH-BALANCE.

No. 182,358. Patented Sept. 19, 1876.

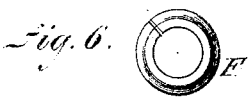

Fig. 6.

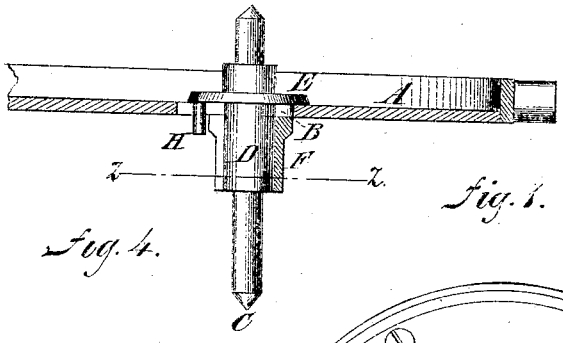

Fig. 4.

Fig. 1.

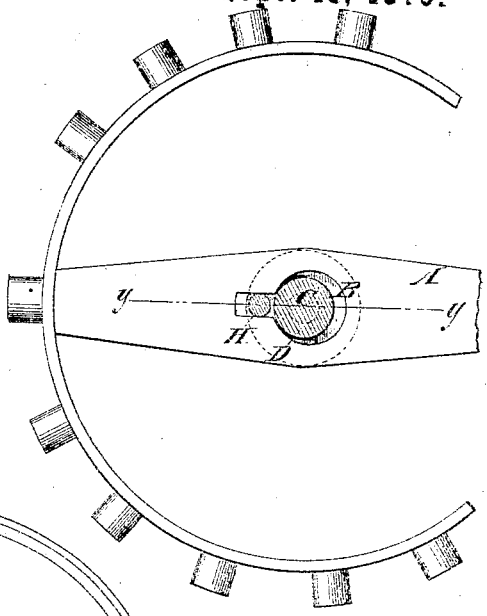

Fig. 5.

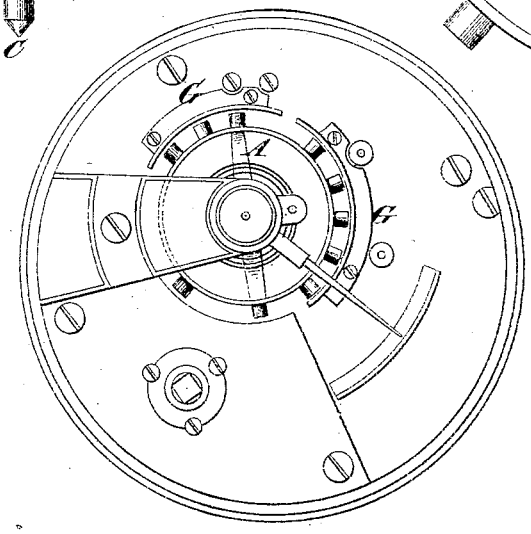

Fig. 2

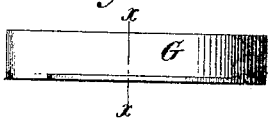

Fig. 3.

WITNESSES:

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AUGUST F. CURPEN, OF PLYMOUTH, OHIO.

IMPROVEMENT IN WATCH-BALANCES.

Specification forming part of Letters Patent No. **182,358**, dated September 19, 1876; application filed June 20, 1876.

To all whom it may concern:

Be it known that I, AUGUST FERDINAND CURPEN, of Plymouth, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Watches, of which the following is a specification:

The invention consists of a mode of connecting the balance-wheel to the staff, so that in case the watch falls the wheel will move on the staff by the shock, and be stopped by the plates of the watch, if the watch falls flat on its side, or by other plates provided for the purpose in case the watch falls on the edge, thus protecting the jewels from breaking, and saving considerable expense for repairs, as only the readjustment of the wheel on the staff will be necessary in this case; whereas, new jewels have to be put in generally when the watch falls.

Figure 1 is a plan view of the top of the watch with the case removed, in which the balance-wheel is contrived according to my invention. Fig. 2 is a side elevation, and Fig. 3 is a section, of one of the plates that I apply to arrest the wheel when the watch strikes on the edge. Fig. 4 is a section of the wheel on the line *y y*, Fig. 5. Fig. 5 is a horizontal section on the line *z z* of Fig. 4; and Fig. 6 is a top view of one of the collars employed for attaching the wheel to the staff.

Similar letters of reference indicate corresponding parts.

A is the cross-bar or arm of the balance-wheel, in which is a hole, B, larger than the staff C and the tube D of the collar E, which fits on the staff, and passes through the hole B of the arm, to receive the split-spring collar F, which pinches tube D of collar E on the staff, so as to hold its place on the staff by friction, and the collars F and D pinch the bar A, so as to hold the staff in the center by friction, so that a shock in any direction will allow the wheel to shift on the staff, and strike against something to break its force, and thus protect the staff and the jewels.

If the watch falls flat on one side, the balance-wheel will shift along to, and be arrested by, the top plate. If it strikes on the other side, the wheel will be stopped by the balance and barrel bridges; and, if it strikes on the edge, it will strike against one of the plates G, which I attach for that purpose.

The pin H of the collar E works in the slot of bar A, to prevent the inertia of the wheel from displacing it in its friction-collars.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The balance-wheel of a watch, having freedom in its hole for the staff, and being connected to it between friction-collars, which allow it to shift laterally by the shocks of the watch when it falls on its edge, substantially as specified.

2. The balance-wheel of a watch, connected to the staff by collars, which are attached by friction, to allow the wheel to shift along to, and be stopped by, the bridges or the top plate when the watch falls flat or sidewise, substantially as specified.

3. The combination of plates G with the balance-wheel of a watch, having freedom in its hole for the staff, and being connected to it between friction-collars, which allow it to shift laterally by the shocks of the watch when it falls on the edge, substantially as specified.

AUGUST FERDINAND CURPEN.

Witnesses:

GEORGE W. HOFMAN,

A. H. HUTCHISON.