

D. B. Fells.

Watch.

No 22,174.

Patented Nov. 30. 1858.

Fig. 1.

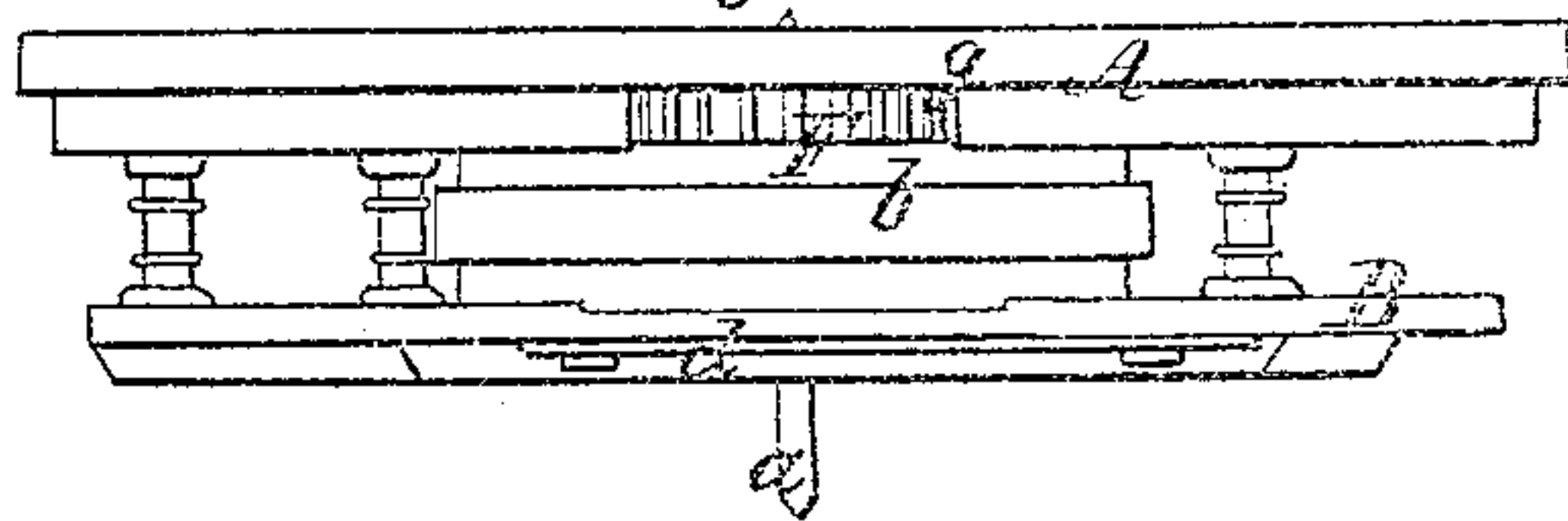


Fig. 2.

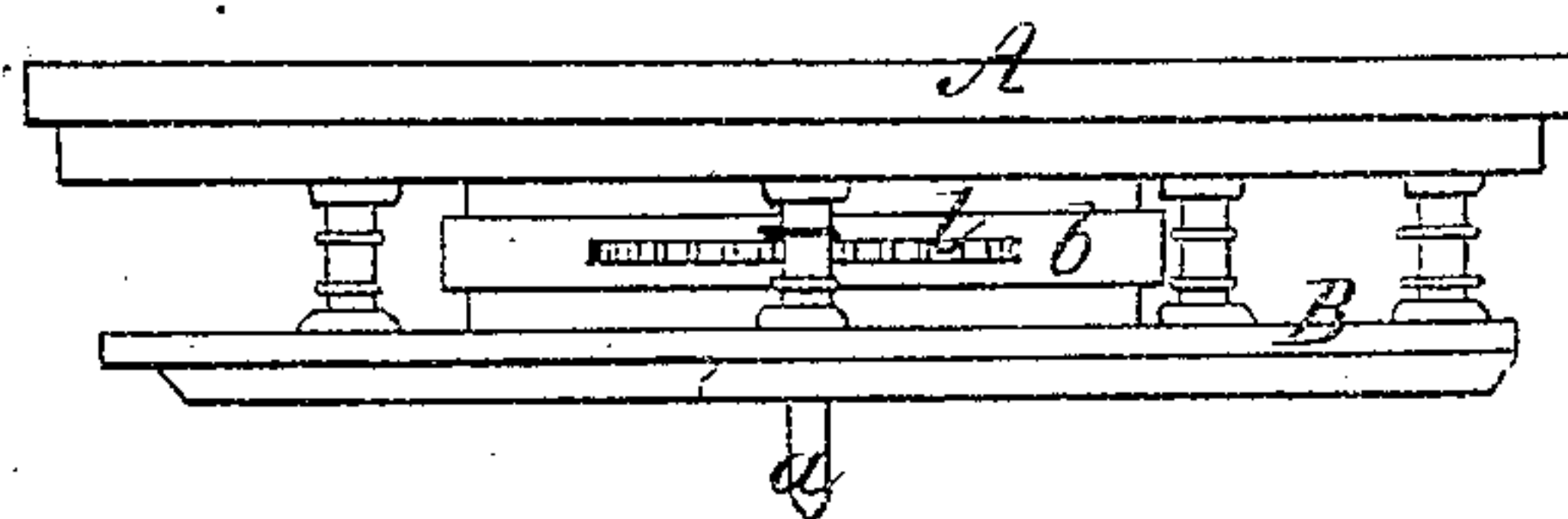


Fig. 3.

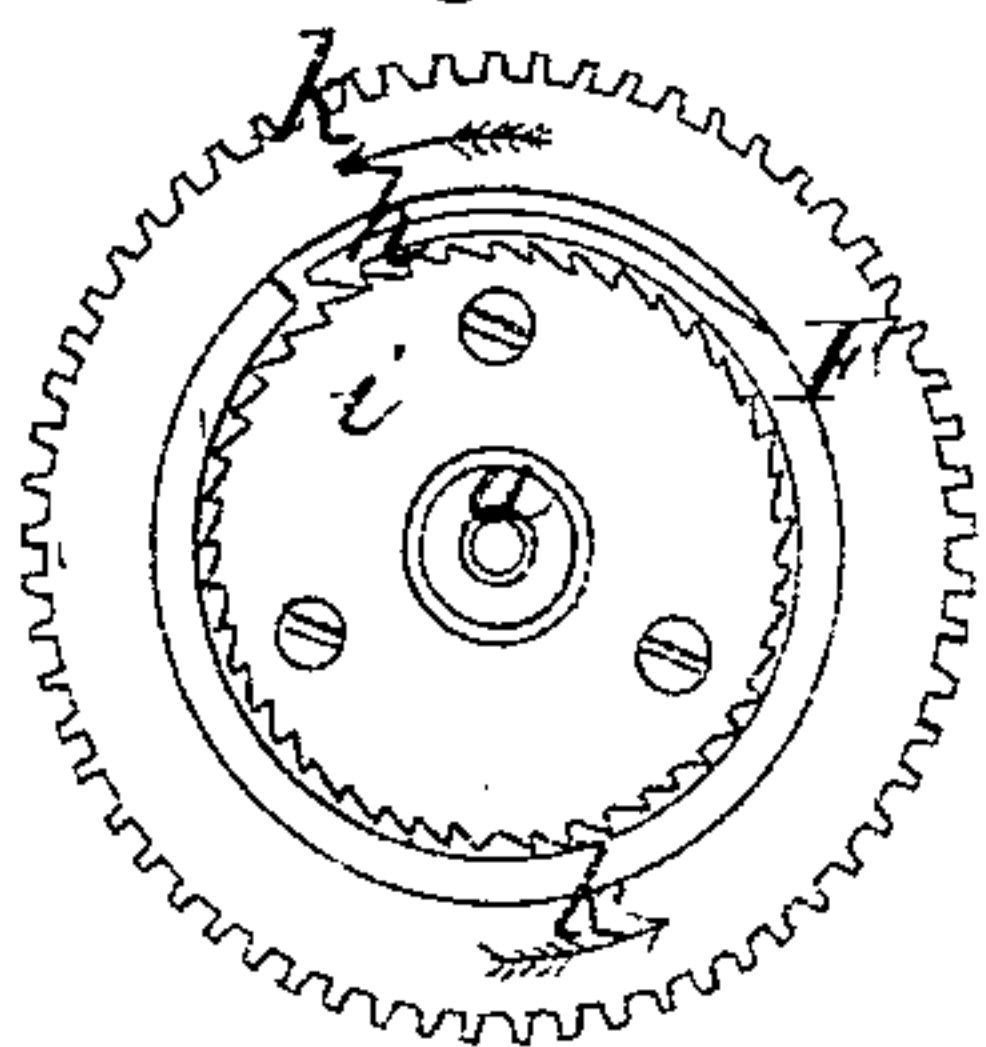


Fig. 4.

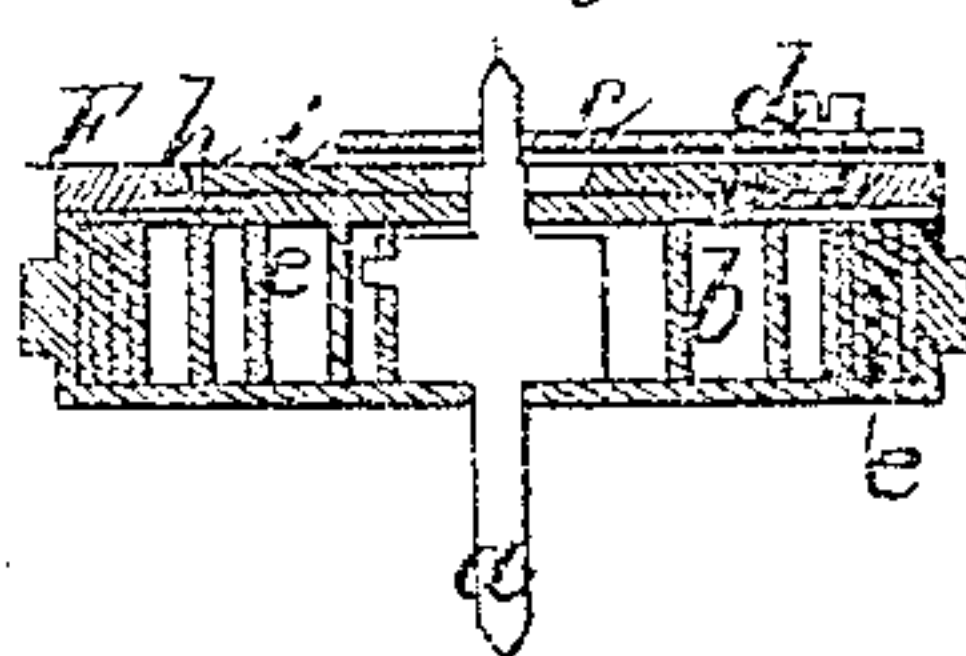


Fig. 5.

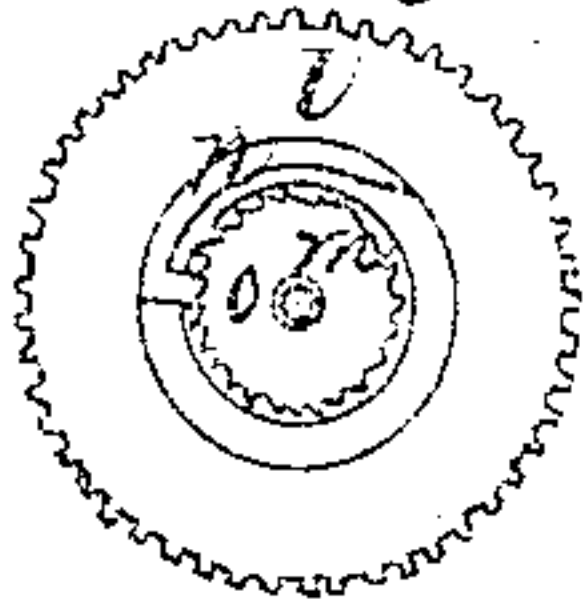
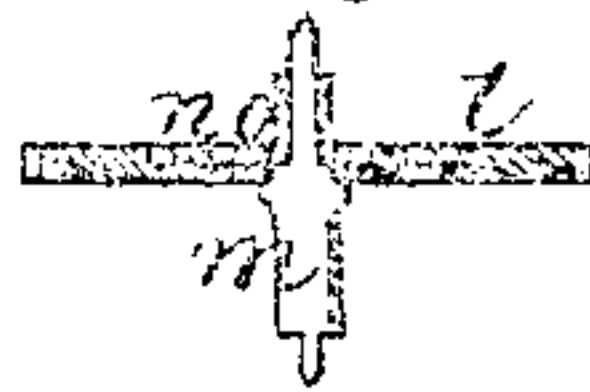


Fig. 6.



UNITED STATES PATENT OFFICE.

DAVID B. FITTS, OF HOLLISTON, MASSACHUSETTS.

DEVICE TO PREVENT INJURY FROM RUPTURE OF THE MAINSPRING OF WATCHES.

Specification of Letters Patent No. 22,174, dated November 30, 1858.

To all whom it may concern:

Be it known that I, DAVID B. FITTS, of Holliston, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Watches; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, of which—

10 Figures 1, and 2, denote views of opposite sides of the frame of the wheelwork of a watch, the same being made to exhibit the barrel, main wheel and third wheel of the mechanism as having my invention applied thereto. Fig. 3, is a view of the upper side of the main-wheel and shows the ratchet wheel and retaining pawl. Fig. 4, is a transverse section of the barrel, the main wheel and the apparatus connected therewith. Fig. 5, is a view of the under-
15 side of the third wheel and shows its ratchet and pawl. Fig. 6, is a transverse section of the said third wheel, its ratchet and pawl.

The object of my invention is to prevent
25 injury to the train or the usual bad effects which result from the sudden recoil of the mainspring in case of its rupture when wound or partially wound up, the nature of the invention consisting not only in the application of the main or other wheel of the
30 train to the barrel so as to be capable of being revolved independently thereof, but in the application to such wheel and its arbor or that of the barrel of a mechanism substantially as hereinafter described and
35 termed a "reverse motion."

In the drawings, A, denotes the upper or larger plate, and, B, the lower or smaller plate of a watch frame, the two being connected by pillars and screws in the usual
40 way.

a, is the main or winding arbor arranged concentrically within the barrel, b, and carrying a retaining ratchet, c, provided with a
45 retaining pawl, d, the ratchet being fastened to the arbor while the pawl is attached to the plate B. Within the barrel is the mainspring, e, the inner end of which may be supposed to be attached to the arbor while
50 the outer end is affixed to the inner surface

of the periphery of the spring chamber of the barrel. This barrel should be entirely separated from the main wheel, F, which in this case is a flat annulus provided with teeth upon its outer edge and placed in a
55 circular socket, g, formed in the lower surface or side of the plate, A, concentrically with the arbor, a. The annulus gear encircles a retaining pawl, h, and a ratchet, i, the former being fixed to the annulus gear
60 or main wheel while the latter is fastened to the barrel and has its teeth formed as shown in the drawings when the winding of the watch is in the direction described by the arrow, k.

My improvement may be applied to the third or any other gear of the train. The drawings show the said third gear at l. It turns freely on its arbor, m, and carries a retaining pawl, n, to work into a ratchet,
65 o, fixed to the arbor.

Should the mainspring be ruptured while in a state of tension, its recoil under ordinary circumstances, is often attended with
75 serious damages to the train, either breaking the cogs of the wheels or straining them or breaking some one or more of the arbors or producing some other derangement, but under my application of the barrel and gear
80 or their formation so that one can revolve in one direction or turn independently of the other and have a ratchet and pawl as a means, or part of the means of connection and as applied substantially in manner and to operate as described, such devices being
85 what may be termed a reverse motion, a rupture of the main spring would allow the barrel by recoil of the spring to be revolved without injury to the train. My improvement is also applicable to the separate bar-
90 rel and main wheel having the inner end of the main spring connected to the wheel while the outer end of such spring is attached to the barrel in which case, the barrel not only rotates in the process of winding up the
95 watch but remains stationary while the watch is running down.

I do not claim simply making the barrel separate from the main wheel or any other gear of the train of a watch, but

What I do claim as my invention or improvement consists—

Both in the separation of the barrel and the main or other gear wheel of the train
5 so that the two can revolve independently of each other as described, and the application thereto substantially as specified

of mechanism hereinbefore described and termed a reverse motion, the same being for the purpose as explained.

DAVID BUCKLIN FITTS.

Witnesses:

E. B. PLMPTON,
ALDEN LELAND.