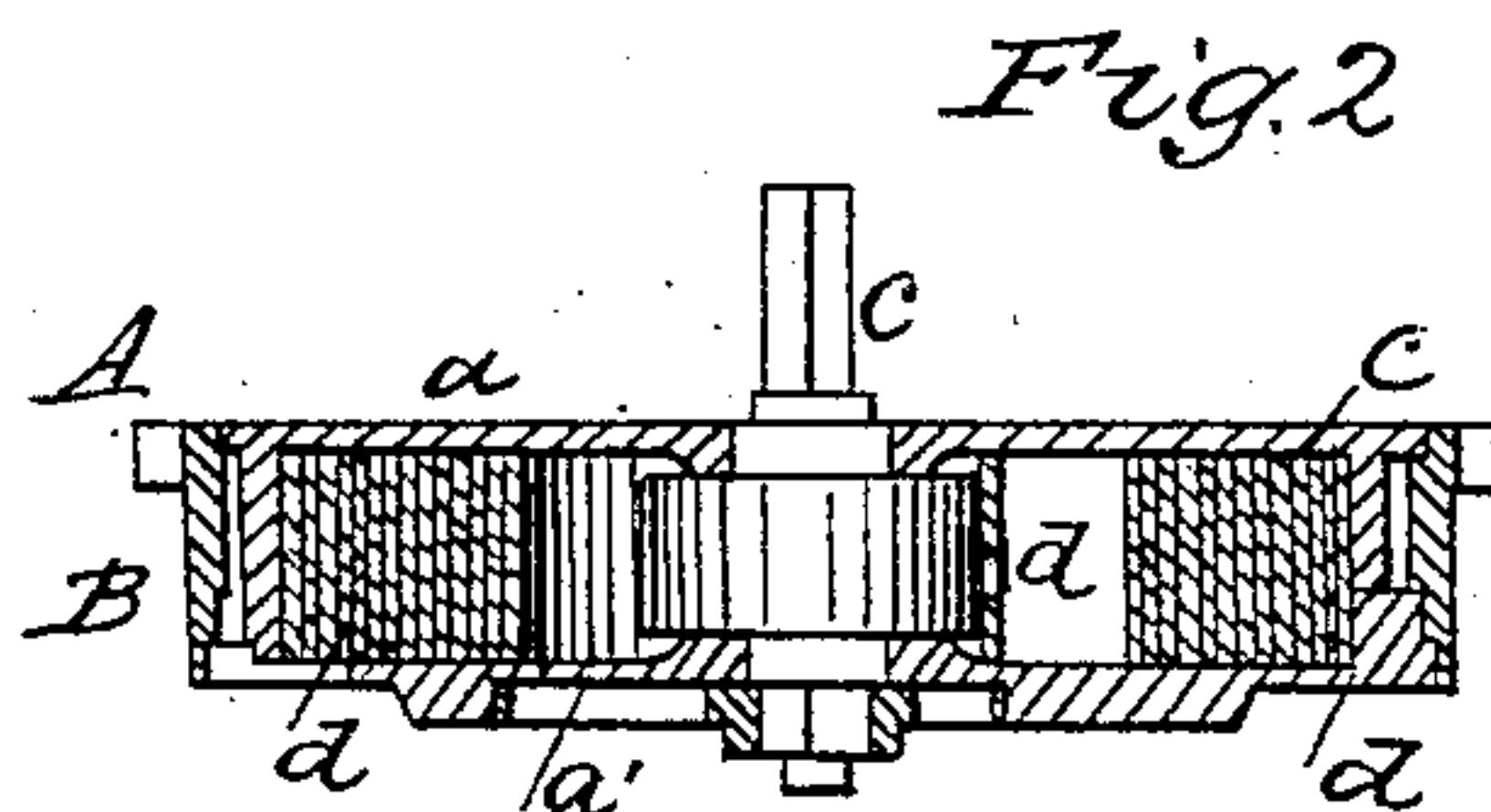
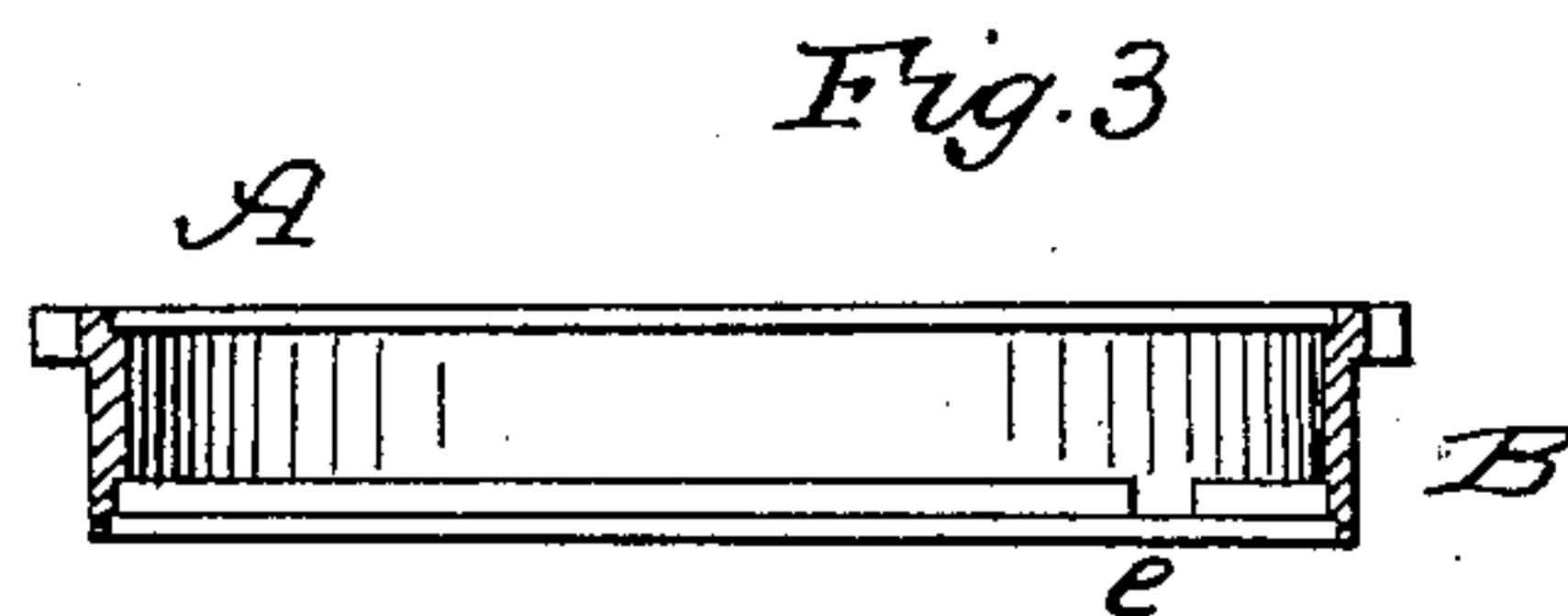
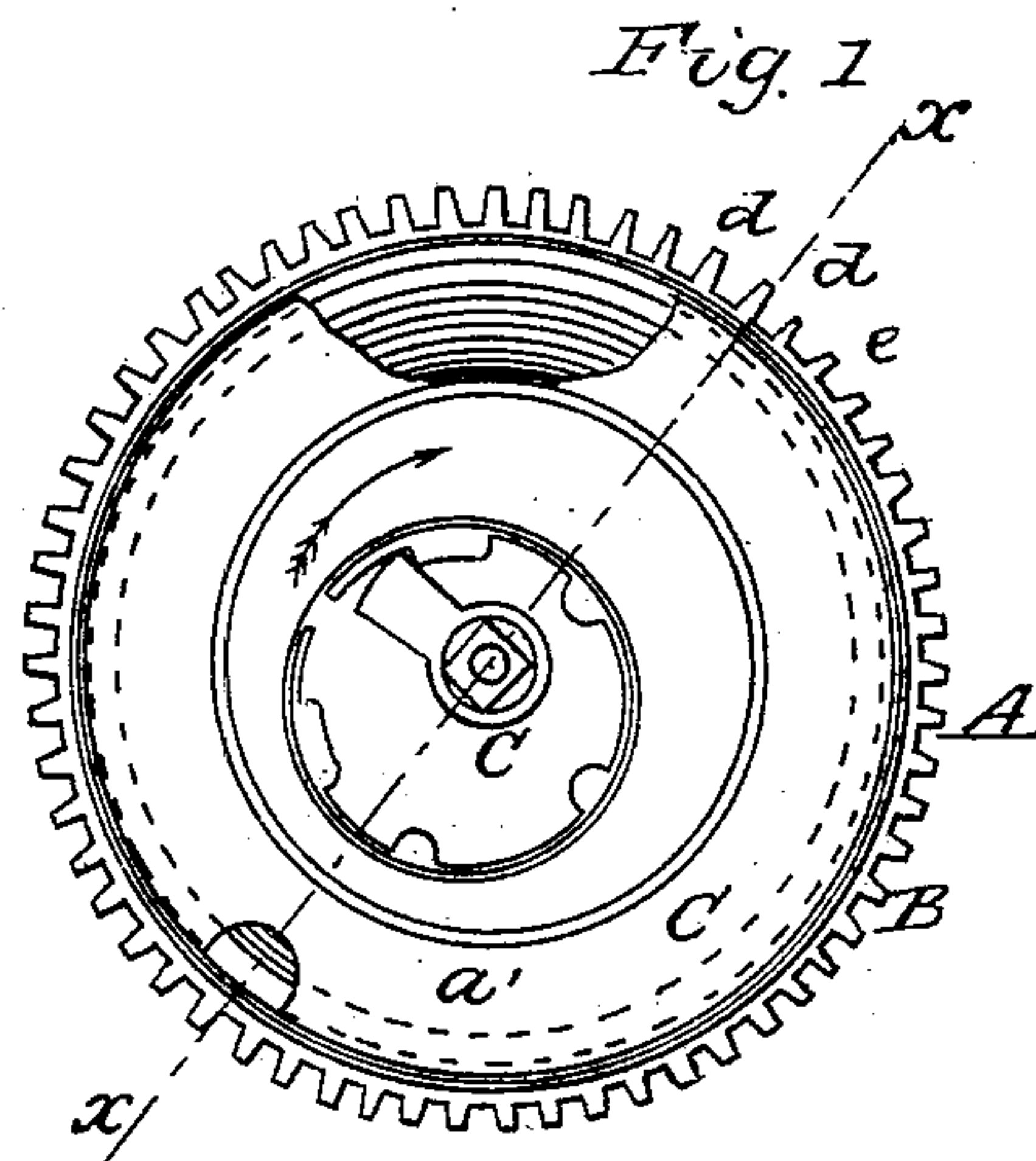


G. C. MARTEN.  
Winding Watches.

No. 47,116.

Patented April 4, 1865.



Witnesses  
Wm. Deurn  
Theo. Deusch

Inventor  
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# UNITED STATES PATENT OFFICE.

G. C. MARTEN, OF CLEVELAND, OHIO.

## IMPROVEMENT IN WATCHES.

Specification forming part of Letters Patent No. 47,116, dated April 4, 1865.

*To all whom it may concern:*

Be it known that I, G. C. MARTEN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Winding up Watches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan or top view of the main spring-barrel of a watch constructed according to this invention. Fig. 2 is a vertical central section of the same, the line *x x*, Fig. 1, indicating the plane of section. Fig. 3 is a similar section of the outer barrel detached.

Similar letters of reference indicate like parts.

This invention consists of a mainspring-barrel composed of two barrels, one inside the other, the outer barrel being rigidly connected with the main gear-wheel and the inner barrel carrying the winding-arbor, the mainspring, and the maintaining ratchet, or its equivalent, in combination with two stops or dogs, one applied to the inner and one to the outer barrel in such a manner that when the spring is wound up the inner barrel turns independent of the outer barrel until the two stops are in contact, and when the mainspring breaks the inner barrel flies back and completes a full revolution, or nearly so, before its stop strikes the dog of the outer barrel, and thus the force of the spring is spent and injury to the mechanism of the watch is prevented.

A represents the main gear-wheel, which is rigidly connected to or made solid with the outer barrel, B. This barrel is open at both ends, and it is bored or turned out to fit nicely over the inner barrel, C. This barrel is provided with two heads, *a a'*, one fixed and the other movable, which form the bearings for the winding-arbor *e*, and it incloses the mainspring *d*, one end of which is secured to the arbor and the other end to the interior of the barrel, as clearly shown in Fig. 2 of the drawings. The winding arbor turns loosely in the heads and it extends through both. One of

its ends forms the square to take the key and the other carries a dog or other equivalent device, which, in combination with a suitable ratchet-wheel or its equivalent, forms the maintaining power.

The barrel C turns freely within the barrel B in either direction until a stop, *d*, which projects from the outer surface of the inner barrel, or any portion of the same, comes in contact with a stop, *e*, projecting from the inner surface of the outer barrel. In the drawings, the stop *d* is attached to the head *a'* of the barrel C, as shown in Fig. 2, and the position of the stop *e* is shown in Fig. 3.

When the mainspring is wound, the stop *d* of the inner barrel bears against the stop *e* of the outer barrel, and both turn together in the direction of the arrow marked thereon in Fig. 1, and the power of the spring is transmitted to the mechanism of the watch in the ordinary manner; but if the mainspring breaks, it unwinds itself with all its force, which creates a reaction, causing the inner barrel to turn back in the direction opposite the arrow marked thereon in Fig. 1, until the stop *d* strikes the stop *e* on the opposite side. During this retrograde motion of the barrel C the force of the spring spends itself and the barrel B remains perfectly stationary, and no part of the mechanism of the watch is liable to sustain any injury, whereas in the common solid barrel the force of the spring in unwinding would either bend or break the teeth of the barrel or the leaves of the pinion of the center-wheel and perhaps the pivot or jewel of the next following wheel.

It is obvious that the stops *d e*, instead of being applied to the two barrels in the manner shown in the drawings, might be applied in various different ways—for instance, a groove might be turned in the outer surface of the inner barrel large enough to receive a projection secured to the inner surface of the outer barrel, and said groove might be filled up at one place by inserting a pin. I do not wish to confine myself, therefore, to any particular position of the stops, and reserve the right to apply the same in any desirable manner.

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

A mainspring-barrel constructed of an outer barrel, B, and an inner barrel, C, which are provided with stops *d e*, and combined with the mainspring, winding-arbor, and retaining

power, in the manner and for the purpose substantially as herein set forth.

G. C. MARTEN.

Witnesses:

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