S. B. TERRY.

Clock.

No. 84,517. Patented Dec. 1, 1868.

Fig: 1.

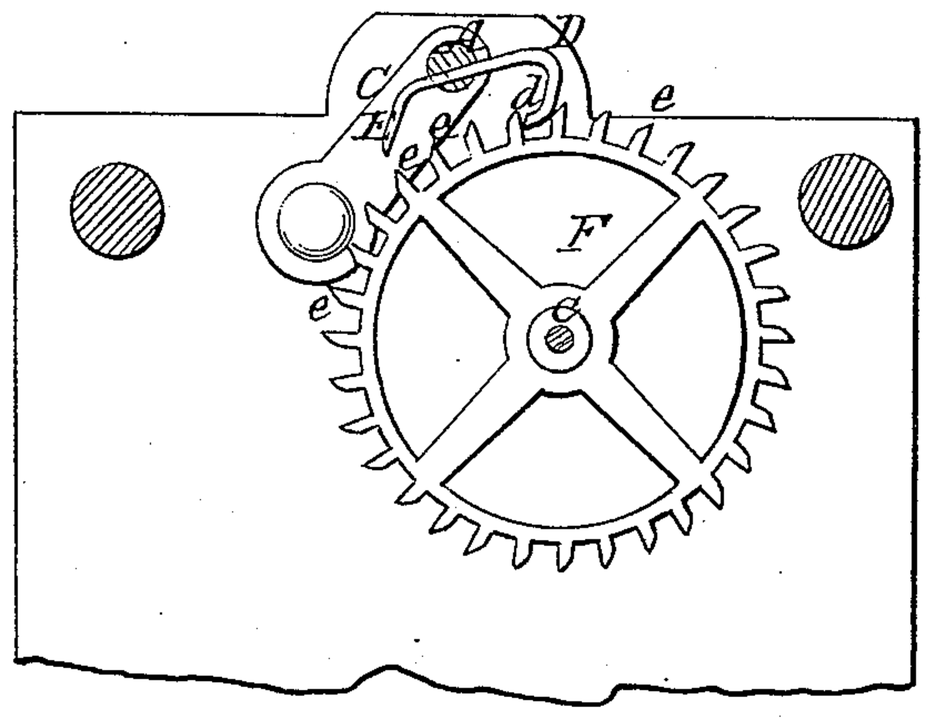


Fig. 2.

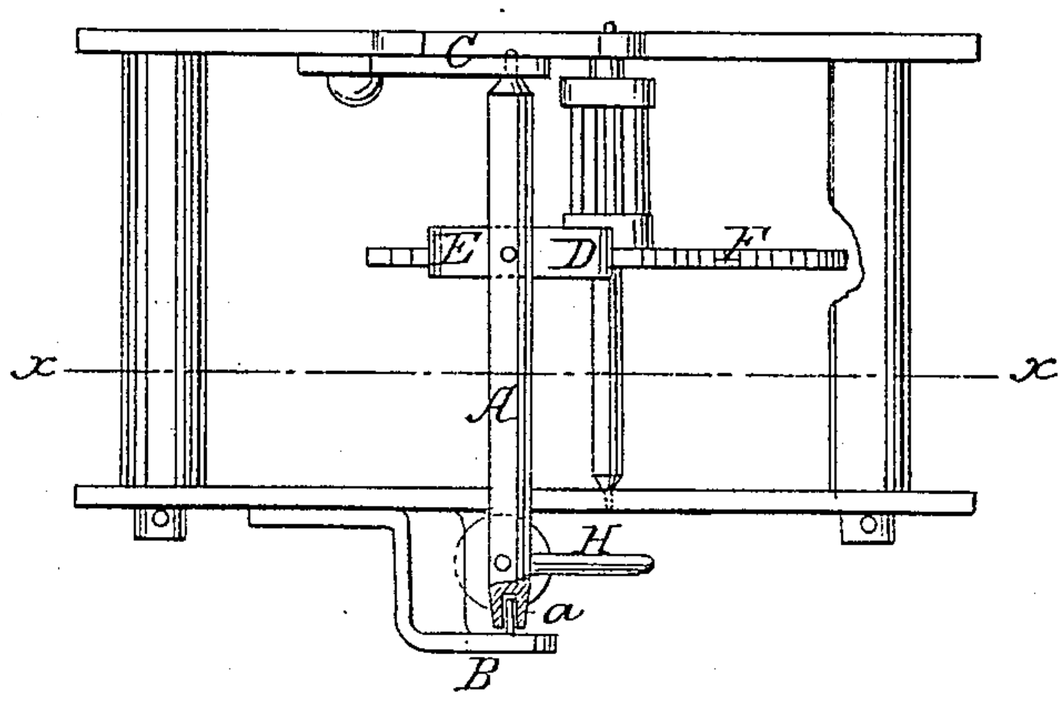
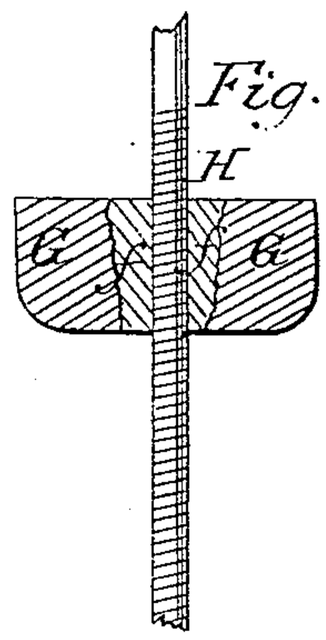


Fig. 3.



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SILAS B. TERRY, OF WATERBURY, CONNECTICUT.

Letters Patent No. 84,517, *dated December* 1, 1868.

IMPROVEMENT IN CLOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SILAS B. TERRY, of Waterbury, in the county of New Haven, and State of Connecticut, have invented a new and useful Improvement in Clocks; 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 part of this specification, in which—

Figure 1 represents a sectional elevation of my invention, taken on the plane of the line *x x*, fig. 2.

Figure 2 is a plan or top view, partly in section, of the same.

Figure 3 is a detail sectional view of the pendulum.

Similar letters of reference indicate corresponding parts.

This invention relates to a new manner of constructing the pallets of a clock-escapement, to a new manner of hanging the verge-shaft, and to a new manner of securing the pendulum-ball to its rod, and consists in a novel construction of the pallets of a combined recoil and dead-beat anchor-escapement, of which one is turned outward and the other inward, with a view of allowing the motive-power of the wheel to aid the weight of the pendulum to overcome its momentum.

In making short pendulum clocks with rapid vibrations, it is desirable and essential to make the pendulum-ball itself serve as a nut. When this is done in the ordinary way it is liable to get moved by jarring or accident, and various expedients have been resorted to to avoid this trouble, such as making the ball or nut in two parts, and screwing them together on the rod to tighten them, and also of using a jam-nut (so called,) but in use it is found impracticable, as those persons who regulate the clock do not understand the operation of them, and the necessity of their being tight to keep their place.

A, in the drawing, represents the verge-shaft of an ordinary or suitable clock-work. It is provided with one or two tubular ends.

The tubular end is actually only requisite on the bridge-bearing, as there the whole weight of the pendulum is suspended from the shaft.

a is a pin projecting from the bridge B into the tubular end of the verge-shaft, so that the shaft has its bearing on the pin, as shown.

The bore in the shaft-end should be a little larger than the diameter of the pin *a*, so that the shaft only rests on the upper surface of the pin.

A similar bearing may also be arranged in the verge-cam C of the frame.

The pin *a* rests with its end against the bottom of the hole in shaft A. Less friction is thus also produced at the end of the pin.

D E are the pallets of the anchor-escapement, which are attached to the verge-shaft in any suitable manner.

I prefer to have the whole escapement made of one piece of flattened steel, as shown.

The pallet D is bent almost radially to the centre, *c*, of the escapement-wheel F, and has a bend, in flange *d*, which has a rounded outer face, as shown, so as to allow the teeth of the wheel to easily act upon the pallet.

The other pallet, E, is bent outward, as shown, and the teeth of the wheel should be somewhat rounded or bevelled to act easy on the pallet E.

The operation of the escapement will easily be understood.

During the oscillations of the verge-shaft the pallets will alternately arrest the teeth of the wheel, so as to bring the same to a dead stop, the pallet E causing a recoil of the wheel. But at the moment when the momentum of the pendulum is being overcome by the weight of the same, the motive-power acting upon the same will materially aid the weight of the pendulum, as the teeth of the wheel can then easily act upon the inclined respective outer and inner faces of both pallets D and E.

It will be noticed that this is a combined recoil and dead-beat escapement, the pallet D arresting the motion of the wheel while the pallet E produces a recoil of the wheel by the vibration of the escapement. In this manner I have succeeded in obtaining a perfect regularity of motion, and a full control over an unevenly-operating spring.

G represents a pendulum-ball of suitable or ordinary construction, having a leather or other elastic filling, *f*, within its perforation. The leather is firmly secured in the pendulum-ball, and works around the screw-portion of the pendulum-rod H in the manner and for the purpose hereinbefore set forth.

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

The anchor-escapement, constructed as described, with one pallet D, having a flange, *d*, and the other pallet E bent out, whereby one pallet is made dead-beat and the other recoil, for the purpose of equalizing the vibrations of larger or smaller pendulums, produced by unequal motive-power, as herein shown and described.

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