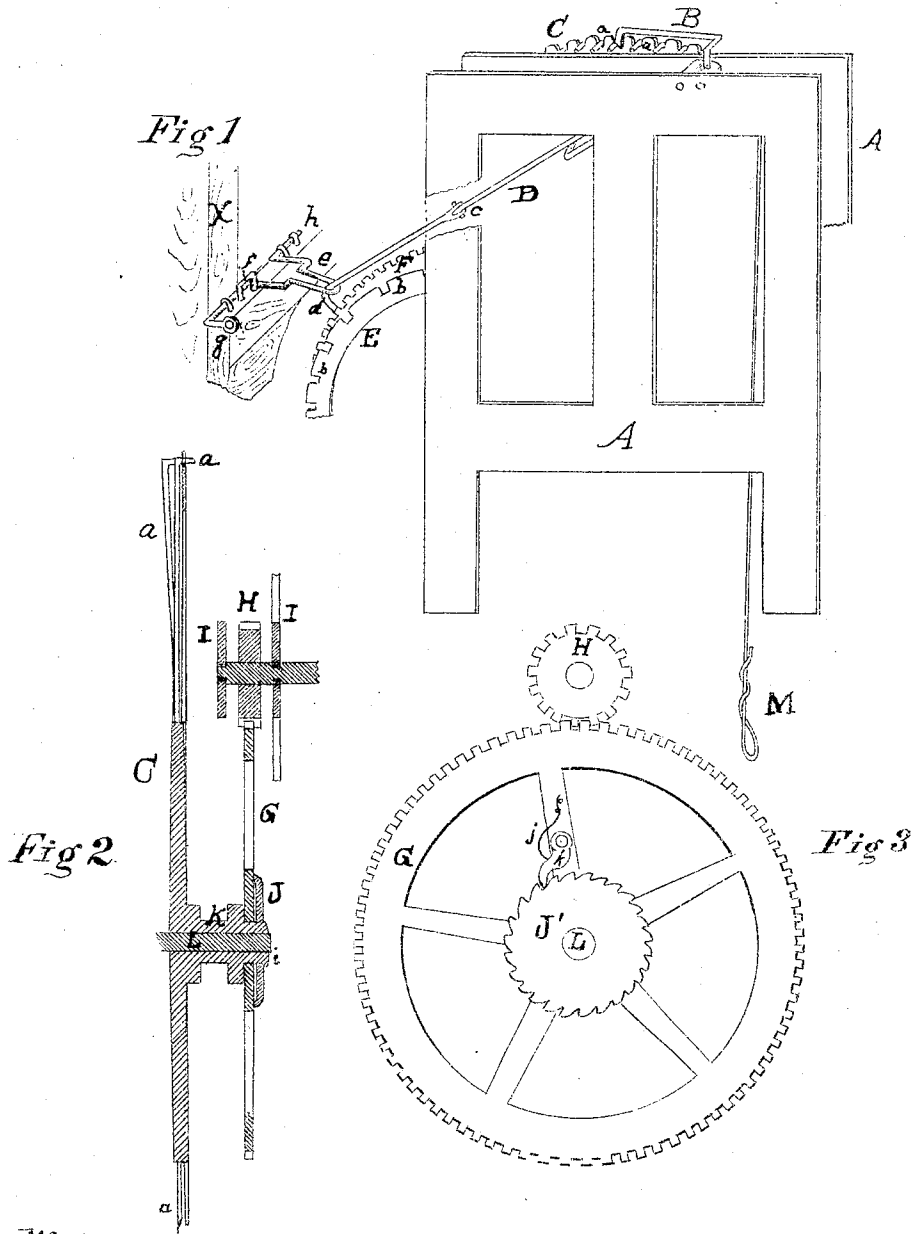


Samuel F. Estell
Improvement in Clocks.

No. 119,833.

Patented Oct. 10, 1871.



Witnesses

C. A. West
Oliver Bond

Samuel F. Estell
Inventor

UNITED STATES PATENT OFFICE.

SAMUEL F. ESTELL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN PROGRAMME-CLOCKS.

Specification forming part of Letters Patent No. 119,833, dated October 10, 1871.

To all whom it may concern:

Be it known that I, SAMUEL F. ESTELL, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Programme-Clocks, of which the following is a full description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a front view of the frame without the trains; Fig. 2, a transverse vertical section of the programme-wheel and its driving-pinions; and Fig. 3 is a detached view of the driving-wheel and pinion for operating the programme-wheel.

The nature of this invention consists in an arrangement for throwing the detent of the striking-train into and out of operation, so that when the programme-wheel is not in use the clock may be adjusted to perform its ordinary striking operations.

This improvement is designed to be used in clocks similar to those described in Patent No. 98,678, issued to me January 11, 1870.

To enable others skilled in the art to make and use my improvement, I will describe the construction and operation of the same.

The frame A is made in the usual manner, and is provided with the ordinary time and striking-trains, not shown, for the reason that my improvement can be used with any of the several varieties of trains and movements, as all or nearly all have the same detent and spacing-wheel, or measuring-rack, and pinion for regulating the strokes of the hammer upon the bell. In my improvement I take the detent D and at any convenient point, usually near the middle, make a joint, *c*, therein, as shown. This joint is so made that the outer end of the detent has a lateral movement without any vertical, except such as is ordinary in its operations upon or with the spacing-wheel E. Opposite to the end of this detent I attach to the outer case X, by staples or other suitable means, a shaft, *h*, which is usually made of wire, and is provided with a bent portion, *e*, which is placed under the detent, as shown. The outer end of this shaft passes through the dial or face-plate and is bent so as to form an arm or handle, *g*. A pin or staple, *f*, is driven into the case X to operate as a stop. The detent D is shown out of position, and the striking-train is prevented from running down by the usual pin or locking-wheel, which locks the train at each movement of B, and the hammer only strikes once.

When it is desired to change the clock from striking calls so that it will strike hours, the shaft *h* is turned far enough to lift D above the toothed portion of the spacing-wheel and then drawn forward so that the bent portion *e* will come over the stop *f*, and then be released. The stop *f* keeps the shaft *h* in position, and the bent portion of the shaft keeps the detent in place without interfering with its movements.

When the clock is to be used for striking hours instead of calls those springs, *a*, which are over the hours, indicated on the disk C, must be left in position, and the others must be raised and placed in the indentations to the left of them, shown in my former patent. The disk C, with its springs *a*, is fully described in the patent hereinbefore mentioned.

In order to make this wheel C—in causing the bell to ring—correspond with the movement of the hands, and to make the time of striking vary without adjusting the springs or points *a* for each change, it is advisable to make the wheel C movable upon the shaft L. To do this I attach a friction-plate, J, to the end of the shaft L and rivet or head it on, as shown at *i*. It is applied with sufficient pressure to cause the wheel C to move with the wheel G, but so that, by taking hold of C, it can be moved or slipped on its shaft.

Another mode of doing this is shown at Fig. 3, where the plate is made into a ratchet-wheel, J', and the wheels G and C held by the spring-pawl *j* *k*. By this mode the wheel C can be easily moved in one direction, and by either mode the striking, controlled by wheel C, can be made to correspond with the time indicated on the dial-plate, without that accuracy of construction which is necessary without some such provision, and so that my programme device can be applied to ordinary clocks.

It will be evident that the same effect can be produced in this respect by applying the adjusting devices to the pinion H.

Having thus fully described my improvement, what I claim as new, and desire to secure by Letters Patent, is—

The jointed detent D, in combination with the shaft *h*, or its equivalent, for throwing the detent into or out of operation, substantially as specified.

SAMUEL F. ESTELL.

Witnesses:

E. A. WEST,
O. W. BOND.

(36)