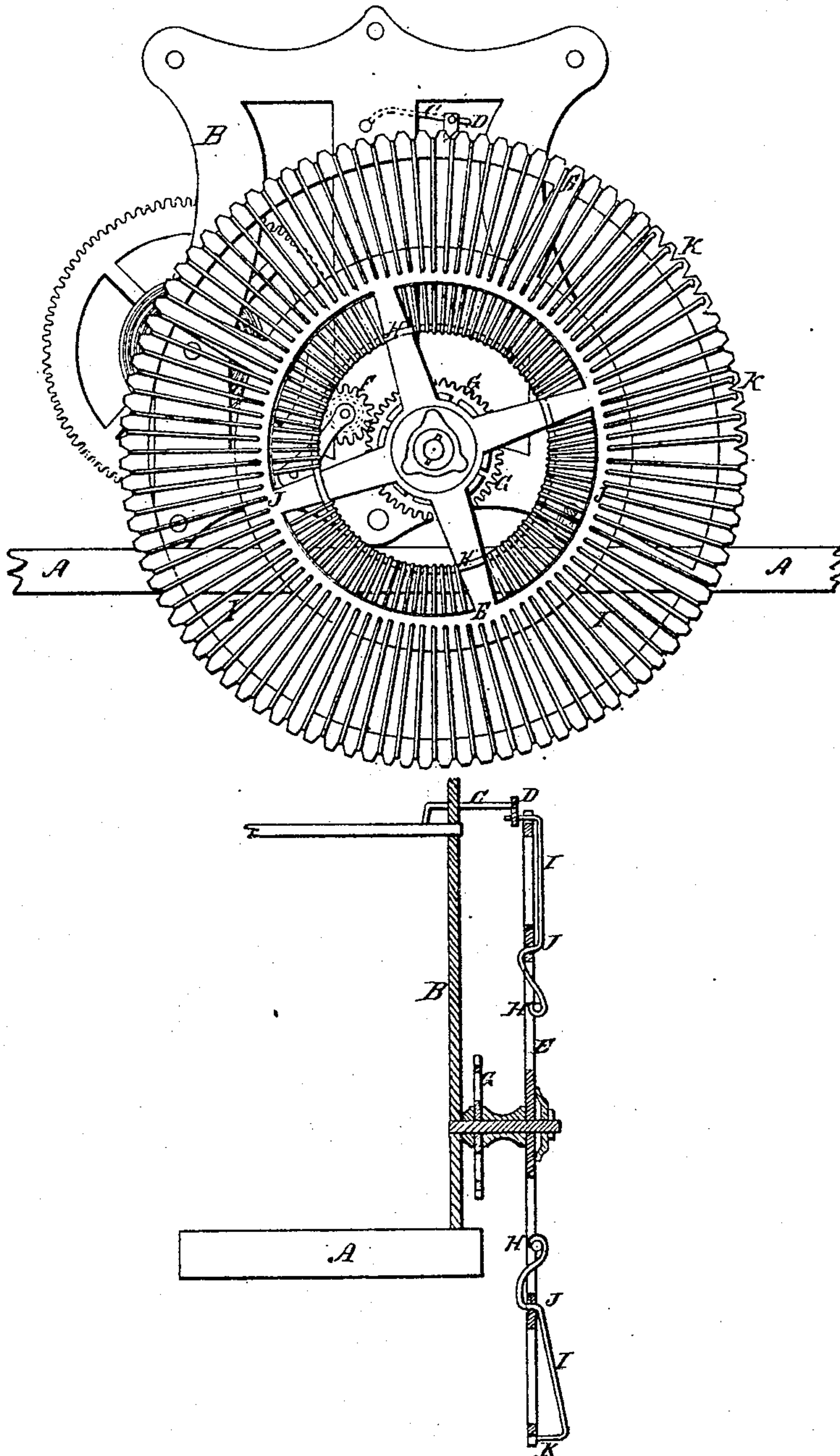


S. F. ESTELL.

Clock.

No. 98,678.

Patented Jan. 11, 1870.



Witnesses:

A. L. Study
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United States Patent Office.

SAMUEL F. ESTELL, OF RICHMOND, INDIANA.

Letters Patent No. 98,678, dated January 11, 1870.

IMPROVEMENT IN PROGRAMME-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, SAMUEL F. ESTELL, of Richmond, in the county of Wayne, and State of Indiana, have invented an Improved Programme-Clock, of which the following is a specification.

The object of my invention is to furnish a convenient and practical clock, that may be set to strike according to any required programme.

The first part of my invention relates to the combination, with the movement and striking-works of a clock, of a wheel bearing a set of adjustable springs, the latter being so arranged that they may be set to lift the drop-wire of the clock, and cause it to strike at intervals of five minutes, or longer, as desired.

Also, my invention further consists in attaching to the end of the drop-wire a small disk or piece of metal, having its lower side so inclined that it may be readily lifted by the adjustable spring before mentioned, and that may be more economically constructed, while it will be more easily adjusted and less liable to get out of repair than any similar device now in use.

Description of the Accompanying Drawings.

Figure 1 is an elevation of the back-plate of a clock-movement, with my improvements attached, and Figure 2 is a section of the same.

General Description.

A is the board that supports the movement in the clock-case.

B is the back-plate of a clock-movement, with the usual striking-attachments, except that the drop-wire is placed as shown in the drawings, at C, and is provided with a disk of metal, D, the lower side of which is inclined, as represented in fig. 1.

E is a wheel that is placed on a suitable post or journal on the plate B, and is moved by means of a pinion, F, on the arbor of the minute-wheel, and a cog-wheel, G, that is rigidly attached to the wheel E.

I I are adjustable springs that are attached to a ring, H, and pass through perforations in the wheel

E, as shown at J. These springs are bent at their outer ends, and project through V-shaped notches in the periphery of the wheel, the projecting ends of the springs serving to operate the drop-wire of the clock. This they accomplish by striking the inclined lower surface of the disk of metal D and gradually lifting it, thereby causing the clock to "alarm." Passing a little further, the disk falls and the hammer strikes once.

In this instance the wheel E makes a complete revolution once in eight hours, and is provided with ninety-six springs; consequently the clock will strike once in five minutes, and the given programme will be repeated three times in twenty-four hours.

By raising the ends of the springs out of the notches in the periphery of the wheel E, and placing them upon the surface of the wheel between the notches, as shown at K, they are prevented from coming in contact with the disk D. Hence it is only necessary, in order to set the clock to strike according to any given programme, to raise out all the springs except those that will pass the drop-wire at the times indicated by said programme.

For convenience in setting the springs to a given programme, the wheel E is figured, as shown in the drawings.

Having thus fully described my said invention,

What I claim, and desire to secure by Letters Patent, is—

In combination with the pinion F and cog-wheel G, the wheel E and adjustable springs I I, when constructed and arranged substantially in the manner and for the purpose herein set forth.

Also, in combination with the above, the disk D and drop-wire C, when constructed and arranged as herein shown and described.

S. F. ESTELL.

Witnesses:

A. L. STUDY,
W. P. ESTELL.