

No. 820,794.

PATENTED MAY 15, 1906.

J. KLEIN.
BARREL CLICK SPRING FOR TIMEPIECES.
APPLICATION FILED AUG. 19, 1905.

2 SHEETS—SHEET 1.

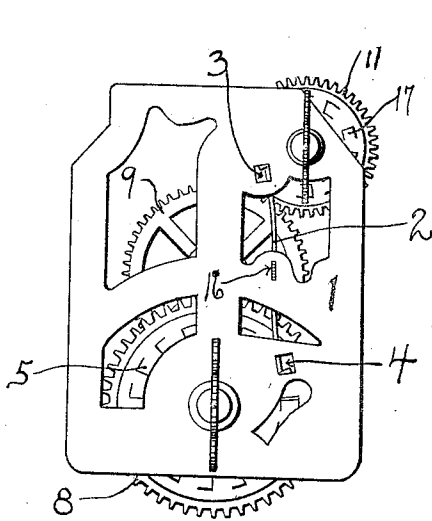


Fig. I.

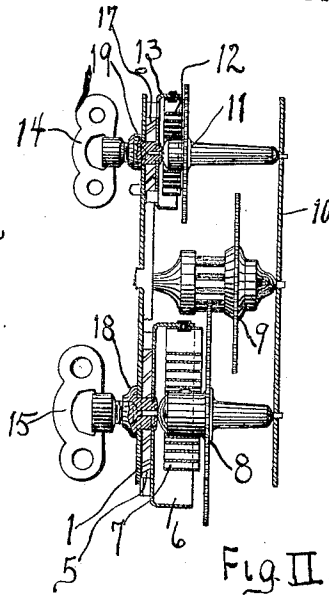


Fig. II.

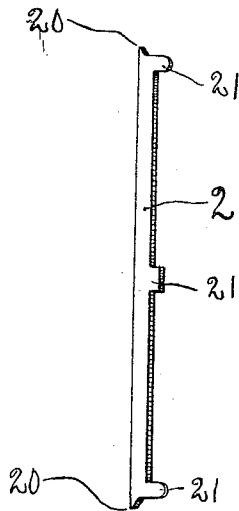


Fig. IV.

WITNESSES:

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Andrew J. Johnson

INVENTOR

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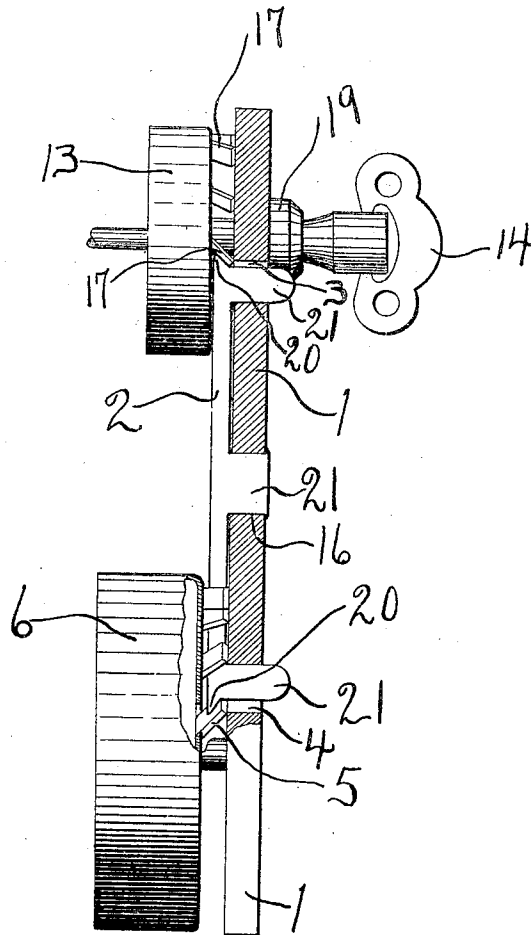


Fig. III.

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UNITED STATES PATENT OFFICE.

JOSEPH KLEIN, OF PERU, ILLINOIS, ASSIGNOR TO THE WESTERN CLOCK MANUFACTURING COMPANY, OF LA SALLE, ILLINOIS, A CORPORATION OF ILLINOIS.

BARREL CLICK-SPRING FOR TIMEPIECES.

No. 820,794.

Specification of Letters Patent.

Patented May 15, 1906.

Application filed August 19, 1905. Serial No. 274,940.

To all whom it may concern:

Be it known that I, JOSEPH KLEIN, a citizen of the United States, residing at Peru, in the county of Lasalle and State of Illinois, have invented a certain new and useful Improvement in Barrel Click-Springs for Timepieces, of which the following is a specification.

My invention relates to click-springs for timepieces in which the time and alarm springs are each contained in a barrel which is fastened to a suitable winding-arbor and has teeth pressed out of its end near the periphery; and my invention has for its object the making of a simple, light, and durable click-spring which engages either the time or alarm barrel separately or both together and which forms at once a substantial click and a means for letting the springs down while in the movement.

It is illustrated in the accompanying drawings, wherein—

Figure I is a view looking at the winding side of a time and alarm clock movement.

Fig. II is a side view of Fig. I with the alarm-barrel in section, showing the alarm-spring in position and the plate removed before the click-spring. Fig. III is an enlarged view of a section of the rear plate, taken in the plane of the click-spring, showing how the click-spring end projections engage with the teeth of the winding-barrels and the side projections passing through the apertures of said rear plate. Fig. IV is an enlarged view of the click-spring.

Like parts are indicated by the same figure in all the drawings.

In the drawings, 1 is the rear plate, and 10 the front plate, in which are formed the bearings for the time-train, of which wheels 8 and 9 are shown, and the alarm-train, of which the main wheel 11 is shown, of an ordinary time and alarm movement.

8 is the time main wheel with its attendant spring 7 inside barrel 6, one end of spring 7 being attached to the shaft of wheel 8 and the other end being attached to the said barrel 6, both in the usual manner. Barrel 6 is staked to the winding-arbor 18, which is free to rotate in an aperture of the rear plate and has an aperture which forms the bearing for the time main-wheel shaft in the usual manner.

15 is the winding-key for the time-spring.

Similarly for the alarm-winding mechanism 11 is the alarm main wheel, 12 is alarm-mainspring, 13 is the barrel fastened to the winding-arbor 19 and the alarm-spring-winding key 14. The barrels 6 and 13 have teeth 5 and 17 formed on their closed ends. The click-spring 2 engages these teeth on the barrels and consists of a long narrow thin strip of metal having three projections 21 on one side, one at each end and one at the center, and a projection 20 on each of the extreme ends and opposite the side projections at the ends. It is fastened by means of the central projection 21 to the plate at 16. The end side projections pass through rectangular openings 3 and 4, immediately behind the barrel-teeth, and are free to move from end to end in these apertures when sufficient force is applied to overcome the force due to the elasticity of the metal. On the extreme ends of the strip and opposite to the projections just mentioned is a slight projection or point 20, which fits under the barrel-teeth and gives a greater bearing-surface than if the said corner is square.

It is evident that when the barrel is rotated forward the end of the click-spring will be raised by the barrel-teeth themselves and drop back into position when the tooth passes it. If, however, we attempt to rotate the barrel backward, the barrel-tooth immediately is engaged by the end projections on the click and the click-spring is forced backward until the side projection comes into contact with the side of the aperture in the plate, when it cannot move farther without shearing the click side projections or the plate, thus avoiding any great strain on the spring part of click.

It is evident from the above that my click-spring can be made of very thin metal, just thick enough to have sufficient spring to fall into position when the barrel-tooth passes. The side projections passing through the rectangular apertures in the plate serve as a handle by which to disengage the click from the barrel-teeth, as by simply raising it from the teeth the movement can be "let down," which is a valuable feature when it is necessary to repair the movement.

It is evident that this device can be employed in other mechanisms than clocks, and

I do not want to limit myself alone to timepieces, but to any and all the mechanisms that use a click or ratchet device—such as spring-driven motors, &c.—and can be employed when only one barrel is used, in which case it is only necessary to use a click-spring about one-half as long.

Having now described my invention, I claim—

10 1. In a click-spring for timepieces, a movement-plate; two winding-barrels journaled in said plate; a metal strip fastened to said plate by means of its central side projection; two side projections from said strip, each passing
15 through an aperture in said plate and two

end projections each of which engages the teeth of one of the barrels.

2. In a timepiece, a movement-plate; two winding-barrels journaled in said plate; a click-spring, fastened by means of its central side projection to said plate, with two side projections each passing through apertures in said plate, and with two end projections each of which engages with the teeth of one of the winding-barrels.

JOSEPH KLEIN.

Witnesses:

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