J. H. NEWELL.

DEVICE FOR ADJUSTING THE BEAT OF PENDULUM CLOCKS.

(Application filed Sept. 12, 1899.)
To all whom it may concern:

Believing that I, JOHN H. NEWELL, a citizen of the United States, residing at Lyndon, in the county of Osage and State of Kansas, have invented a new and useful Device for Adjusting the Beat of Pendulum Clocks, of which the following is a specification.

My invention relates to devices for adjusting the beat of pendulum clocks; and the object in view is to provide means by which the beat of the time-keeping train may be adjusted automatically when the clock is placed on a shelf or mantel which is not level or is suspended in a position deflected a little to one side of the perpendicular.

A further object is to provide a beat regulator or adjuster which may be easily applied to ordinary clocks, either before or during the manufacture thereof, at a small cost owing to the simplicity in the construction and the ease of attachment of the device.

With these ends in view the invention consists in the combination with a pendulum and a verge-rod, of a beater-adjuster consisting of members confined slidably together by frictional engagement and connected, respectively, with the pendulum-rod and the verge-rod and devices for limiting the oscillation of the verge-rod to automatically adjust the members of the beater-adjuster relatively one to another.

The invention further consists in the novel construction and arrangement of parts, which will be hereinafter more fully described and claimed.

To enable others to understand the invention, I have illustrated a preferred construction thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation of part of an ordinary clock-movement with my improved beater-adjuster applied in operative relation to the pendulum-rod and the verge-rod. Fig. 2 is a detail perspective view of the beater-adjuster attachment removed from the clock-movement. Fig. 3 is a detail cross-section through the device represented by Fig. 2.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

In order that others skilled in the art may understand the mode of using my improved beater-adjuster, I have illustrated the same applied to the movement of an ordinary pendulum clock by Fig. 1, in which 10 designates the pendulum-weight 11 and is fastened to the post 12, the latter being supported in the movement-frame 13. The escapement-wheel 14 is carried by an arbor 15, which is in operative relation to the time-train (not shown) of the clock, and with this escapement engages the verge 16, which is carried by a shaft 17 and is equipped with the usual verge-rod 18. All these parts are ordinary in the art, and it is to be understood that no novelty for these elements is claimed in this application.

My invention is directed to an appliance (indicated generally by the numeral 20) by which the beat of the movement may be regulated automatically should the clock be placed intentionally or accidentally on a shelf which is not level or be suspended in a position out of perpendicular. This attachment consists of members 21 22, confined slidably by frictional engagement one with the other and adapted to be connected with the pendulum-rod and the verge-rod, respectively. The member 21 is shown by Fig. 2 as bent from a single piece of spring-wire to form the yieldable arms 23 and a loop or eye 24. In manipulating the wire to produce the member I first proceed to bend or double the wire, so as to make the elongated loop 24, after which the two ends of the wire are bent into parallel relation to produce the yieldable arm. The axis of the loop or eye is at right angles to the length of the arm in order that the attachment may be fitted on the pendulum-rod in a manner which will permit said rod of the pendulum to have a limited swinging oscillation in the direction of its post 12, which is sometimes necessary in clock-movements which employ pendulum-rod having a spring at the upper extremity thereof for attachment to the post. The width of the eye or loop, however, in the member of the beater-adjuster is not much greater than the diameter of the pendulum-rod, so as to cause said adjuster to play with the pendulum-rod in its oscillation, and in order to retain the member 21 in proper relation to the pendulum-rod, so that it will oscillate therewith, I prefer to bend one arm.
22 of the member inwardly toward the other arm, as at 25, thus forming a stop which prevents the pendulum-rod from entering the space between the arms 23. The other member 22 of the beat-adjuster is in the form of a block, preferably of metal and of a width to fit snugly between the arms 23 of the member 21, in order to slightly spread the arms and make the two members engage frictionally one with the other. This block-shaped member 22 is provided in its opposite faces with longitudinal grooves 26, and it is, furthermore, provided with a transverse perforation 27. The lower part of the verge-rod 18 is adapted to be fitted in the perforation 27 of the block-shaped member 22 in a manner to make said parts fast one with the other, such union between the member 22 and the verge-rod being effected in any suitable way— as, for example, by pinning or clamping the block 22 to the rod. The arms of the yieldable member are fitted in the grooves of the block member in order to support the yieldable member on the block member by engagement of the arms with the grooves and by frictional contact between the faces of the members, whereby the entire attachment is supported or carried by the verge-rod, as shown by Fig. 1.

In order to properly adjust the members of the beat-adjuster relatively one to the other when the clock is placed on the shelf and started in service, I employ the stop or curb pins 28, which are made fast with the movement-frame at points on the opposite sides of the arc of vibration of the verge-rod. These curb-pins may be forced friction tight into suitable openings of the frame, or said pins may be threaded and screwed into holes tapped in the frame, either of which expedients will suggest themselves to the skilled constructor.

In applying the beat-adjuster to an ordinary clock the block member is fastened to the verge-rod, the friction member has its eye or loop fitted over the pendulum-rod and its arms engaged with the grooved faces in the block member, and the curb-pins are attached to the movement-frame. Now if the clock is set or suspended out of its true position the pendulum will swing farther to the "low" side and push the verge-wire against one of the curb-pins, thereby adjusting the yieldable or spring member 21 endwise on the block-shaped member 22 until the escapement of the clockmovement beats perfectly even. The attachment is carried wholly by the verge-rod, and the members engage each other with sufficient frictional contact to prevent relative movement of one member on the other under normal conditions, so that the oscillation of the pendulum-rod will be communicated through the beat-adjuster to the verge-rod.

Changes may be made in the form and proportion of some of the parts while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

1. The combination with a verge-rod and a pendulum-rod of a clock-movement, of a beat-adjuster having two members frictionally engaging one with the other to travel together under normal conditions, and engaging with said pendulum and the verge-rod respectively, substantially as described.

2. The combination with a verge and a pendulum of a clock-movement, of a beat-adjuster consisting of members engaging frictionally one with the other to travel together under normal conditions and confined slidably together for automatic separation under an abnormal adjustment of the clock-movement, one member engaging with the pendulum and the other member engaging with the verge, and means to preliminarily adjust the slidable travel of said members one on the other, substantially as described.

3. The combination with a verge-rod and a pendulum of a clock-movement, of a beat-adjuster carried by said verge-rod and having a pendulum member confined frictionally thereon under sufficient tension to travel normally with the verge-rod and a pendulum, said member provided with a pendulum-receiving eye elongated in a plane at right angles to the plane of oscillation of the pendulum.

4. The combination with a verge-rod and a pendulum of a clock-movement, of a beat-adjuster comprising two members engaging slidably one with the other and one member formed as a spring arranged to frictionally embrace the other member with sufficient pressure to insure the travel of the two members simultaneously under normal conditions, one member being attached to the verge-rod and the other member engaging loosely with the pendulum-rod, and curb-pins in the path of the verge-rod to preliminarily adjust the members of the beat-adjuster relative one to the other, substantially as described.

5. A beat-adjusting attachment for clockmovements comprising a groove block-like member, a spring member having arms slidably engaging with the block member and also provided with an eye or loop, and curb-pins, the whole adapted for operation in the manner and for the purposes set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN II. NEWELL.

Witnesses:
J. W. KEENAN, W. Y. HOOVER.