W. D. DAVIES.

Back-Action for Striking Movement of Clocks.

No. 219,226. Patented Sept. 2, 1879.

Fig 1

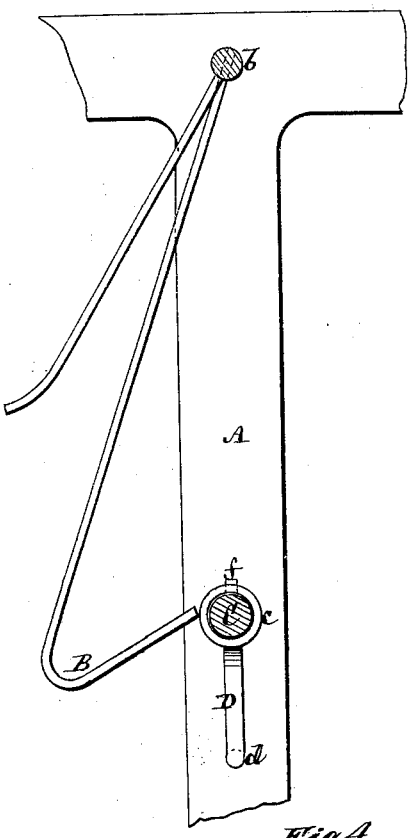

Fig 2.

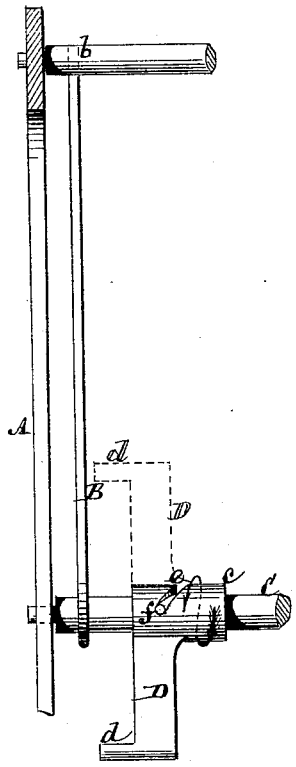

Fig 3.

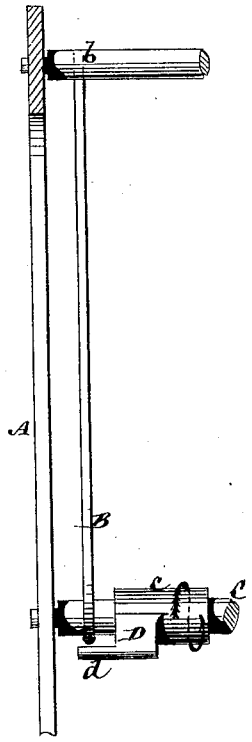

Fig 4.

Witnesses:

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WALTER D. DAVIES, OF ANSONIA, CONNECTICUT, ASSIGNOR TO HIMSELF AND HENRY J. DAVIES, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN BACK-ACTIONS FOR STRIKING-MOVEMENTS OF CLOCKS.

Specification forming part of Letters Patent No. **219,226**, dated September 2, 1879; application filed January 7, 1879.

To all whom it may concern:

Be it known that I, WALTER D. DAVIES, of Ansonia, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Back-Actions for the Striking-Movements of Clocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to means for operating the lifting hook or wire of striking-clocks, to permit of the hands of the clock being turned backward without interfering with the striking mechanism.

The invention has for its object the accomplishment of this result in a perfectly easy, free, and independent manner, without any spring resistance or strain upon the lifting hook or wire, and without any tendency to bending or permanently diverting by repeated actions the lifting hook or wire from assuming its normal position.

To these and other ends the invention consists in a back-action for the striking-movements of clocks, consisting of a circularly and longitudinally loose or pendent lifter on the center arbor of the clock, arranged in spiral gear or connection by a stud or pin with said arbor, in combination with the lifting hook or wire of the striking mechanism, whereby, when said arbor is turned in a forward direction, said pendent lifter operates upon one side of said hook or wire to work or lift it; but when said arbor is turned in a backward direction said pendent lifter falls away from the lifting-hook, and is automatically shifted longitudinally upon the center arbor out of the path of said lifting-hook, and will be so retained as long as the center arbor continues to turn backward, so that the striking mechanism opposes no resistance whatever to the setting back of the clock, and is subjected to no strain thereby.

In the accompanying drawings, Figure 1 represents a sectional view, in a transverse direction relatively to the center arbor of a clock, of a portion of the clock-frame with the center arbor, the pendent lifter applied to the latter, and the lifting hook or wire of the striking mechanism. Figs. 2 and 3 are views in planes at right angles to Fig. 1, showing the lifter in different longitudinal positions on the center arbor as affected by the movement of the latter in opposite directions; and Fig. 4, a longitudinal view of the center arbor in part detached, with the lifter in part thereon.

A is the clock-frame in part, and B the lifting hook or wire of the striking mechanism, arranged to work upon or by a pivot, *b*. C is the center arbor, and D the lifter of the hook or wire B. This lifter is hung loosely or freely pendent upon the arbor C, and capable not only of movement around the same, but also of longitudinal motion thereon. Said lifter is or may be formed of an arm arranged to project from a hub, *c*, through which the arbor C loosely or freely passes, and formed or provided on its outer end with a lateral projection or wrist, *d*, which acts upon the lifting hook or wire B.

The hub *c* is constructed with a spiral groove or slot, *e*, in it, with which a stud or pin, *f*, on the arbor C engages. This slot is so arranged that when the arbor C is moving in a forward direction, as represented by arrows in Fig. 3, the pin *f*, every time it comes round, operates, by its engagement with the spiral slot *e*, to move the pendent lifter D along the arbor to bring the wrist *d* in operating position beneath the lifting hook or wire B, and, by the contact of said pin with one end of the slot, to raise the pendent lifter and actuate the lifting hook or wire B, after which the pendent lifter falls back to its normal position. When, however, the center arbor, C, is moved backward for the purpose of setting the hands of the clock, as represented in Fig. 2, then the pin *f* acts upon the reverse end of the slot *e*, to lift or throw over in a reverse direction the pendent lifter D, and by the arrangement of said slot presses on the walls of the latter while the lifter is falling, to longitudinally move the lifter from acting contact with the lifting hook or wire.

Instead of the spiral groove or slot being in the hub of the pendent lifter, it may be in the center arbor, and the stud or pin which engages with said slot be in or on the hub of the pendent lifter.

I claim—

The combination, with the lifting-hook of a clock striking mechanism and the center arbor of a clock, of a hook-lifter attached to a loose spirally-slotted sleeve arranged upon said arbor, and adjustable longitudinally in opposite directions by means of a pin projecting from said arbor into the spiral slot of said sleeve, said sleeve having an independent circular movement within the limits of its slot, substantially as and for the purpose set forth.

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