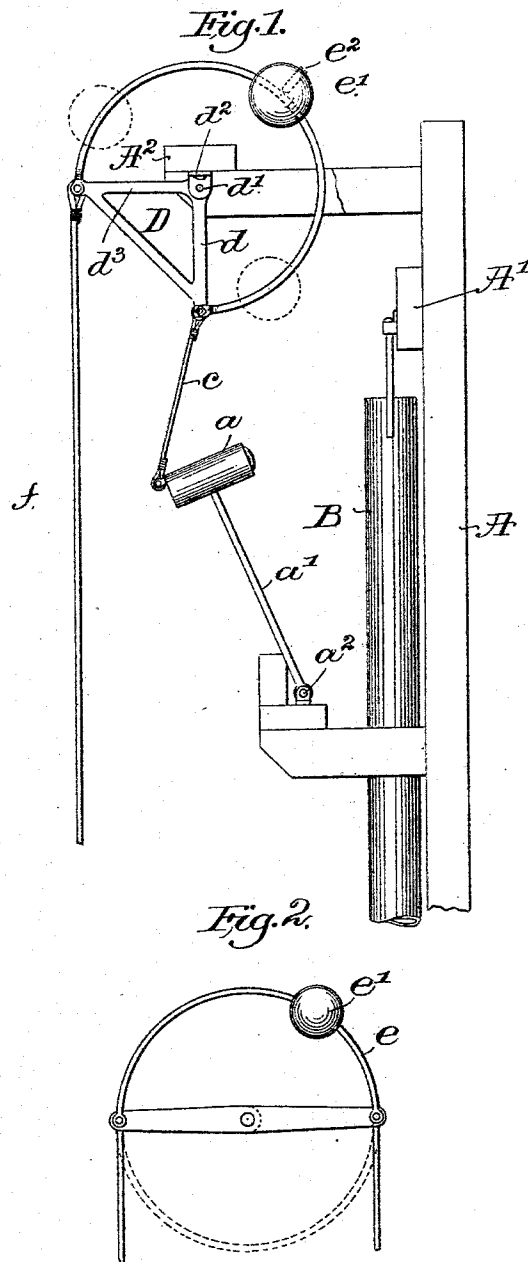


(No Model.)

W. H. DURFEE.
RINGING MECHANISM FOR BELLS.

No. 516,085.

Patented Mar. 6, 1894.



Witnesses:

Louis N. Howell
Heddenburgh

Inventor

Walter H. Durfee.
by Crosby & Longo attys.

UNITED STATES PATENT OFFICE.

WALTER H. DURFEE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE UNITED STATES TUBULAR BELL COMPANY, OF METHUEN, MASSACHUSETTS.

RINGING MECHANISM FOR BELLS.

SPECIFICATION forming part of Letters Patent No. 516,085, dated March 6, 1894.

Application filed August 1, 1892. Serial No. 441,816. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. DURFEE, of Providence, county of Providence, State of Rhode Island, have invented an Improvement in Ringing Mechanism for Bells, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has particular reference to ringing mechanisms for bells, although its use is not necessarily restricted to such mechanism for it may be employed in connection with a lever, in any desired mechanism.

The object of the invention is to provide means whereby the movements of the lever and connected parts may be more accurately counterbalanced and regulated and a correspondingly improved action and result attained.

Figure 1, represents in side elevation partially broken away, a mechanism, embodying this invention, and Fig. 2, a modification to be described.

To illustrate my invention I have selected a ringing mechanism for tubular bells, and referring to the drawings, the frame A is of suitable shape and construction to carry the tubular bells B, only one of which is shown, represented as suspended in usual manner from a cross bar A'. The hammers a, only one of which is shown, are arranged in front of the bells, and are carried upon the ends of arms a' pivoted at a² on a suitable frame or table carried by the frame. Each hammer a is connected by a cord c with one arm d of a bell crank lever D, pivoted at d' in suitable brackets d² on the bar A² of the frame, the arm d³ of the said bell crank lever having attached to it the ringing cord or actuator f, as shown.

In accordance with this invention, I provide a curved rod e, forked, as shown, to straddle, or otherwise suitably formed to be attached to the arms d, d³, of the bell crank lever D, said rod being given a true curve of uniform radius about the pivot of the lever D as a center. A weight e', is adjustably

mounted on this curved rod e, the weight being held in adjusted position on the rod by a suitable retaining device as the screw e². This weight may be moved along the rod e as indicated by dotted lines, into any position which will give to the bell crank lever and hammer the desired or necessary movement and as the rod extends through nearly a complete circle, the weight may be so placed as to be moved back and forth in a nearly horizontal line, or a vertical line, or it may be so placed as to start with a horizontal movement and terminate with a vertical movement and thus accelerate the movement of the lever toward its end or vice versa, start with a vertical movement and terminate with a horizontal movement to retard the movement of the lever toward its end, so that any desired effect may be secured to give to the hammer the necessary movement and blow. The weight also serves as a counterbalance for the ringing wire or rope herein termed the actuator, said weight or counterbalance by relieving the hammer from the weight of the actuator, enabling the hammer to return to its normal or rearmost position after each blow.

While this mechanism is particularly suitable for bell ringing mechanisms as described, it may be used in connection with any other mechanism in which it would prove advantageous.

Fig. 2, shows the rod e applied to a simple lever, in which the power is applied at one side of the fulcrum and the load at the opposite side of the fulcrum.

The dotted lines show a simple lever extending to one side of its fulcrum only in which case the rod e may describe a complete circle as shown in dotted lines.

I claim—

1. In a ringing mechanism for bells, the combination with a bell and a hammer therefor, of a pivoted lever connected with and to move said hammer, an actuator therefor, and a weight carrying rod connected with said lever and passed outside its fulcrum, and a weight on said rod to operate, substantially as described.

2. In a ringing mechanism for bells, a stationary support, a hammer pivoted thereto and normally in its retracted position removed from the bell, combined with an actuator furnishing means by which the said hammer is thrown toward and against said bell, and a counterbalance for said actuator, independent of and to relieve said hammer from the weight of said actuator, whereby said hammer is permitted to fully return to its normal

retracted position after each blow struck, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER H. DURFEE.

Witnesses:

FREDERICK L. EMERY,
LOUIS N. GOWELL.