No. 875,836. PATENTED JAN. 7, 1908.

L. H. McINNIS.

MECHANISM FOR RINGING BELLS.

APPLICATION FILED FEB. 21, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

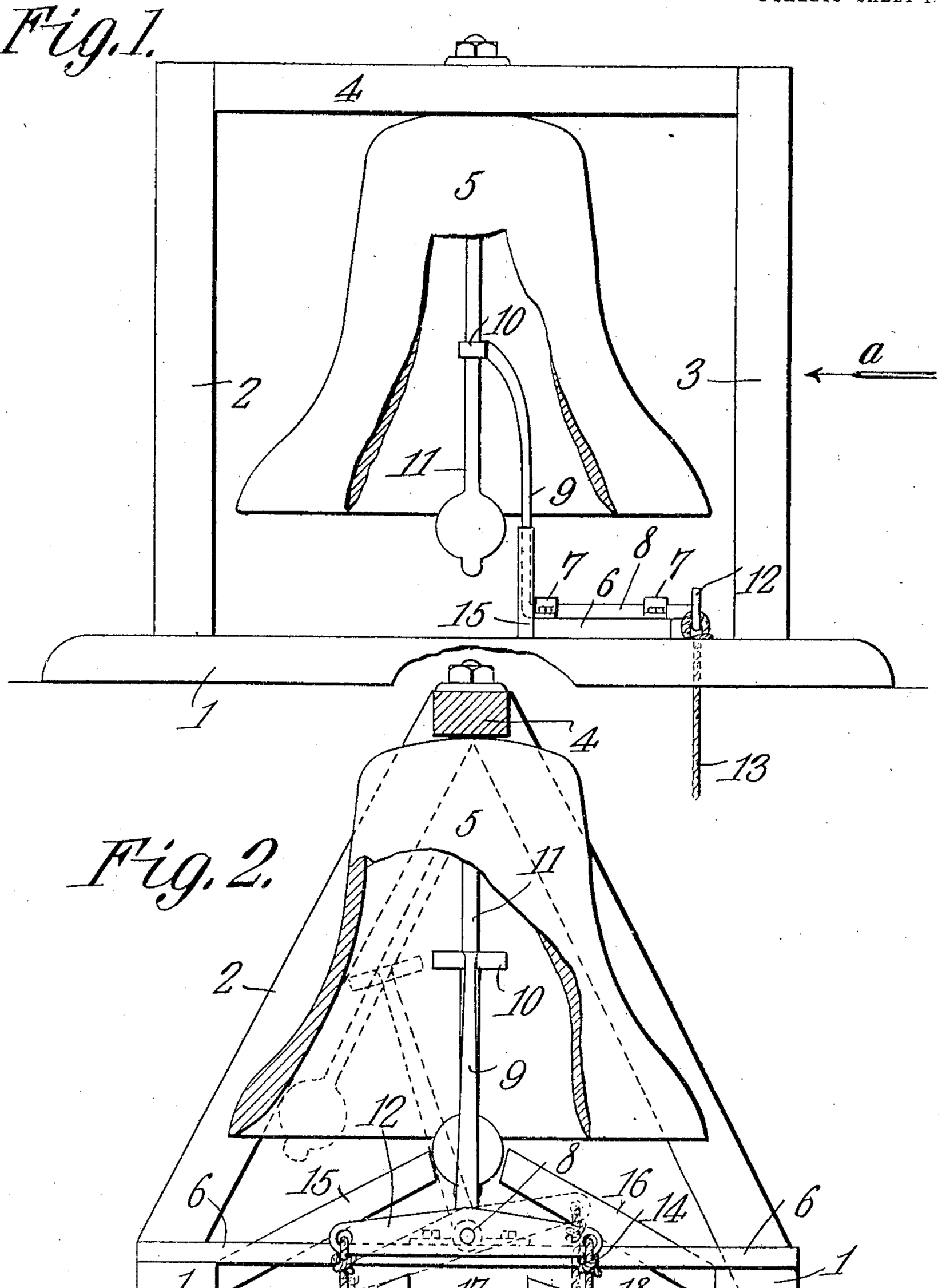

Fig. 2.

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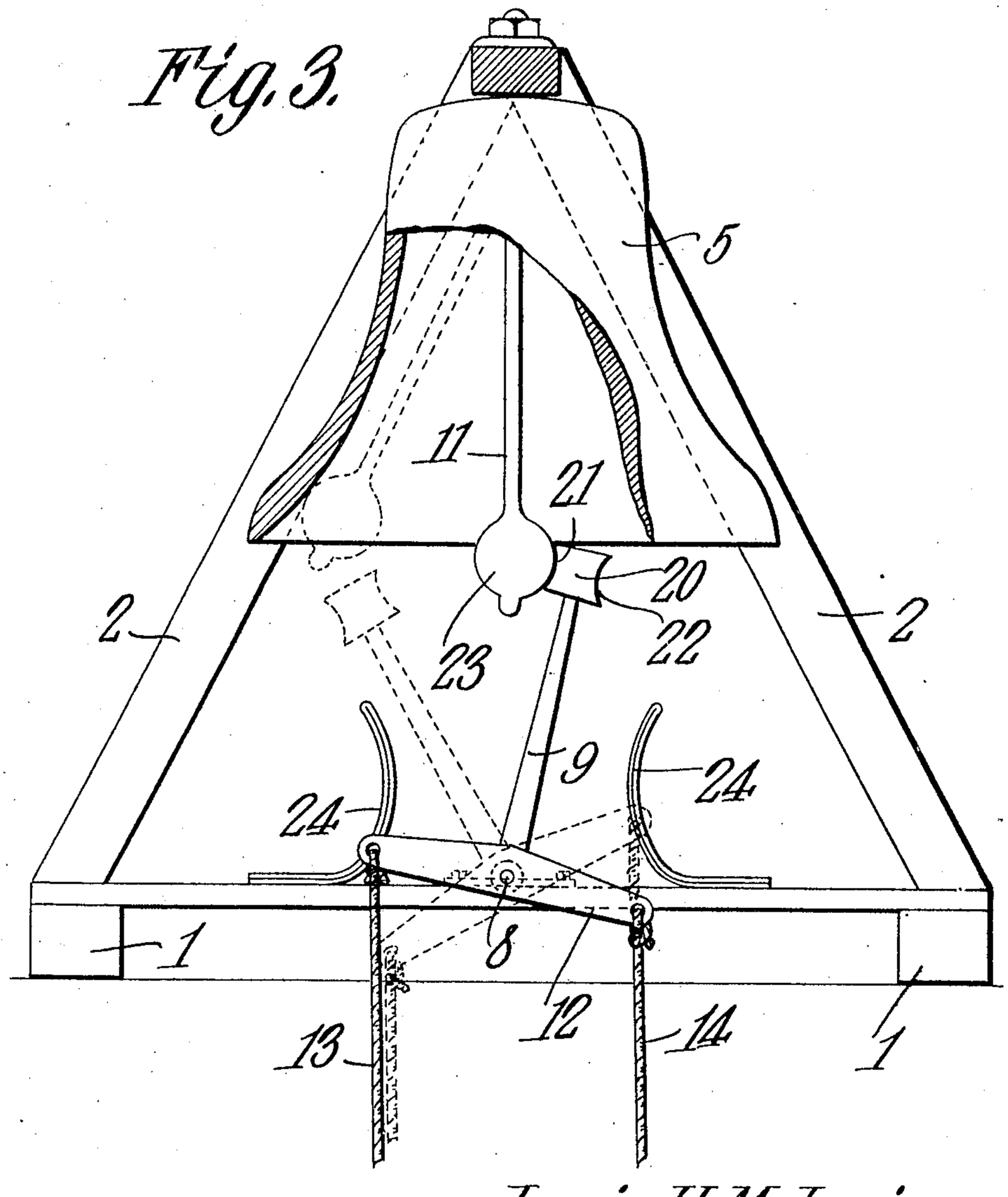
Fig. 3.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR RINGING BELLS.

No. 875,836. Specification of Letters Patent. Patented Jan. 7, 1908.

Application filed February 21, 1907. Serial No. 358,669.

To all whom it may concern:

Be it known that I, LOUIS H. McINNIS, a citizen of the United States, residing at Montrose, in the county of Jasper and State of Mississippi, have invented a new and useful Mechanism for Ringing Bells, of which the following is a specification.

This invention relates to mechanism for ringing bells of large size, such, for instance, as fire bells, church bells, chimes, and the like, and it consists in supporting the bells in fixed position and journaling thereunder the vibratory arm connected to the clapper of the bell in such manner that, as the arm is oscillated, the clapper will be swung against the opposite sides of the bell.

The principal object of the invention is to provide a mechanism for operating a bell clapper which shall be simple in construction, positive and sure in operation, and one that will require the expenditure of much less power in ringing bells of large size than is called for by the present system of swinging bells.

The invention further consists of certain combinations and arrangement of parts as will be described hereinafter and pointed out in the claims.

In the accompanying drawing, Figure 1 is a view in elevation of a bell hung immovably in a frame with the ringing mechanism in operative connection therewith, a portion of the bell being broken away. Fig. 2 is a similar view looking in the direction indicated by the arrow *a* in Fig. 1, a portion of the frame and bell being removed. Fig. 3 is a view of a modified form of clapper operating arm.

Similar numerals of reference indicate corresponding parts throughout the drawings.

Supported upon two base timbers 1 are two upright A-frames, 2, 3, connected at their upper ends by a cross brace 4 from the center of which a bell 5 is suspended, as shown, or by any suitable means which will prevent the bell from swinging. To a board 6 extending between the base timbers 1 is bolted two bearings 7 in which oscillates a horizontal shaft 8, the inner end of which is formed into or attached to an upstanding arm 9 terminating within the bell and midway of its height in a horizontal loop 10 through which passes the stem of the bell clapper 11. The outer end of the shaft 8 has firmly secured thereto a lever 12 having two arms which extend on opposite sides of said shaft 8 and at a right angle to the upstanding arm 9. To the end of the arms 8 are attached ropes 13, 14 which extend downwardly within reach of the person operating the bell or to suitable machinery provided for that purpose.

Bolted to each base timber 1 in the plane of the upstanding arm 9 are two stops 15, 16, which incline upwardly toward each other and afford abutments for the arm 9 to strike as it oscillates or vibrates to and fro, in this manner preventing the loop 10 on the upper end of said arm from striking the bell. If desired, in addition to the stops 15 and 16, other stops 17, 18 may be provided and so placed that the lever 12 will strike said stops as the shaft 8 is rocked in its bearing.

The upper end of the upstanding arm 9 is formed into a loop around the bell clapper 11 to insure a pure tone when the clapper strikes the bell. The impetus given the bell clapper when the arm is vibrated carries the ball of the clapper against the bell, striking it a sharp blow, when the arm is arrested by either stop 15 or 16, and immediately rebounds, resting against the edge of the loop 10 away from the bell and permitting the latter to vibrate unrestrained, without any muffling whatever.

A modified form of the clapper operating lever is illustrated in Fig. 3. In this case the upstanding arm 9 has secured to its upper end a head 20 having oppositely disposed concave faces 21, 22. When the rope 13 is pulled, the concave face 21 of the head 20 engages the ball 23 on the end of the clapper 11 and carries it toward one side of the bell 5. The arm 9 is of such length that it will swing past the ball 23 shortly before it strikes the sound blow of the bell. The momentum imparted to the clapper will cause it to strike the bell after the arm 9 has passed it, thereby permitting the clapper to return without regard to the position of the arm 9. With this form of clapper operating mechanism, a spring stop, such as 24 may be desirable for arresting the movement of the arm 9.

What is claimed is:—

1. In mechanism of the character described the combination with a bell and a clapper therein; of a vibrating arm having an elongated loop or eye at one end through which loosely hangs the bell clapper, means connected to said vibrating arm for rocking the same, and stops for limiting the movement of said arm.

2. The combination with a bell and an oscillatory clapper suspended therein; of an oscillatory arm, means thereon for loosely engaging the clapper, means for limiting the movement of the arm, and means for actuating the arm to propel the clapper against the bell, said clapper being disposed to rebound immediately subsequent to striking the bell.

3. In a device of the character described the combination with a bell and a clapper therein; of a vibrating arm having an elongated loop or eye at one end to loosely engage the clapper, a rock shaft having on one end the said arm and on the opposite end a two-armed lever for oscillating said shaft, and stops to limit the movement of said two-armed lever.

4. In a device of the character described the combination with a bell and a clapper therein; of a vibrating arm having an elongated loop or eye at one end to loosely engage the clapper, a rock shaft having on one end the said arm and on the opposite end a cross arm, means attached to each end of said cross arm to rock said shaft, stops to limit the movement of said vibrating arm, and other stops to arrest the movement of said cross arm.

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

LOUIS H. McINNIS.

Witnesses:
C. F. NEILL,
GEO. C. GREDELL.