E. W. BRETTELL.

Call-Bell.

No. 211,494. Patented Jan. 21, 1879.

Fig. 1.

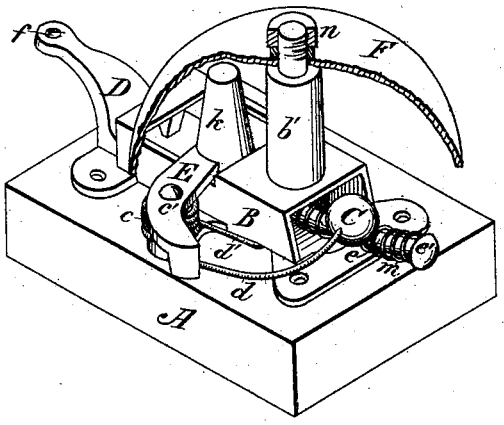


Fig. 4.

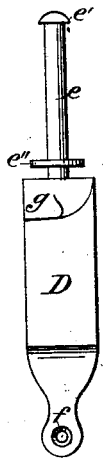


Fig. 5.

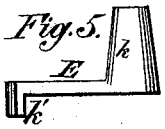


Fig. 2.

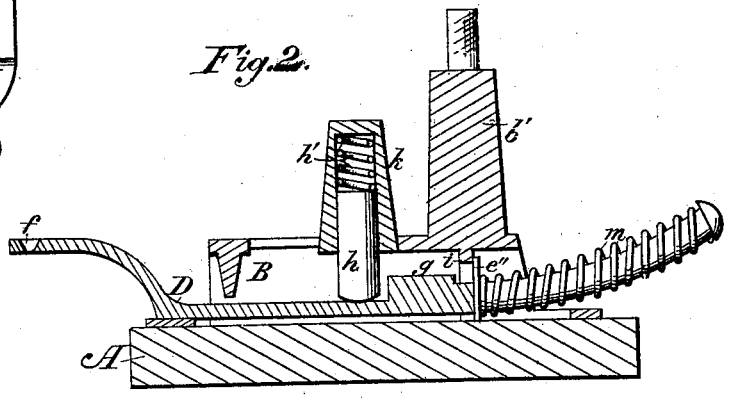
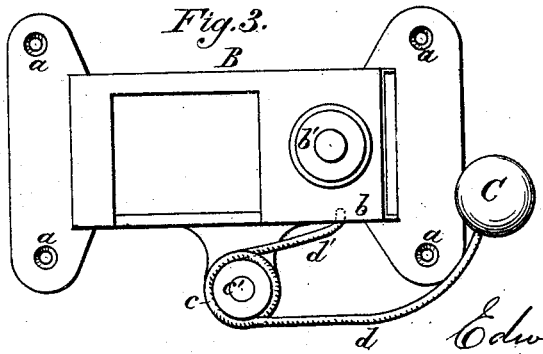


Fig. 3.



Attest:
H. H. Schott.
Fred. E. Tasker.

Inventor:
Edward W. Brettell
J. C. Tasker & Co
attys

UNITED STATES PATENT OFFICE.

EDWARD W. BRETTELL, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN CALL-BELLS.

Specification forming part of Letters Patent No. **211,494**, dated January 21, 1879; application filed June 8, 1878.

To all whom it may concern:

Be it known that I, EDWARD W. BRETTELL, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Gongs or Bells; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of gongs or bells used as signals upon steamboats, street and railway cars, in hotels, and many other places where it is desired to convey certain intelligence by separate and distinct strokes of the hammer upon a bell or gong, the object being to simplify the construction and thus lessen the cost of such apparatus, as well as increasing its durability and certainty of operation; and the invention consists in the peculiar construction of the hammer and devices by which it is operated, as will be hereinafter fully set forth, and then specifically pointed out in the claims.

Figure 1 of the drawings is a perspective view of the apparatus complete, a part of the bell being broken away to more clearly show the working parts. Fig. 2 is a vertical longitudinal section through the case, showing the relative position thereto of the operating-slide and vertically-sliding spring pawl or bolt which gives motion to the hammer. Fig. 3 is a plan of the case with the hammer attached, clearly exhibiting the connection and construction of both. Fig. 4 shows the operating-slide with its cam and spring-retaining washer. Fig. 5 is a side view of the actuating-lever which forces the hammer against the bell.

A represents the base, to which the apparatus is fixed, and may be of any desired form, or a part of the structure upon which the gong or bell is to be used. B is the metal case, to which all of the operative parts are secured, and which is itself attached to the base by means of screws passing through the holes *a* at each of its corners. A bridge, *b*, connects its two sides and supports the standard *b'*, upon which the bell is secured. A projection, *c*, at one side of the case carries the stud *c'*, upon which the hammer-spring *d* is coiled. The end *d'* of this spring enters a recess formed in the lower edge of the case for its reception, and it is thus held firmly in place, while its opposite end is provided with the ball or hammer C, cast or otherwise secured upon it.

The shape of the case B is such that it may be readily cast in green-sand molds without the use of cores, thus reducing its cost to a minimum. The operating-slide D is also cast in the same manner and completed at one operation, the extension *e* being preferably of wrought-iron, and provided with the head *e'*. This extension is inserted in the mold, and the washer *e''* placed upon it before the metal forming the remainder of the slide is poured in, thus causing the washer to be in its appropriate place on the extension when the slide is removed from the mold. If it be desired to form the slide wholly of cast metal, the washer is covered with clay and placed in such a position in the mold that it shall encircle the extension-piece when the metal is poured in the clay, preventing the washer from adhering, and, when removed by the operation of cleaning the casting, allowing the washer to move freely along the extension.

The opposite end of the slide is provided with a hole, *f*, through which the operating-wire is passed in securing it to the slide. A cam, *g*, is also formed upon the slide, having a vertical face upon one side and an inclined surface upon the other, so that when the slide is drawn back the vertical face of the cam catches the bolt *h*, and carries it along until it is released by swinging to one side sufficiently to allow the cam to pass. This bolt *h* moves freely in the cylindrical opening formed for its reception in the end *k* of the actuating-lever E, which lever is provided at its outer end with a projection, *k'*, that acts upon the hammer-spring *d* whenever the lever is swung around upon the pivot or stud *c'*, to which it is attached. A spiral spring, *h'* is placed in the opening in the end *k* of the lever E, and serves to keep the bolt *h* always pressed down upon the slide D.

The extension *e* of the slide passes through a recess in the diaphragm *i*, which connects the two sides of the case B, the washer *e''* being upon the outside of the diaphragm.

A spiral spring, *m*, is then placed upon the extension between the washer and the enlargement *e'* upon its end by passing one turn of the spring over the enlargement, and then turning it around until the whole spring is in place upon the extension *e* between the washer and its end.

The bell F is secured upon the stud *b'* by means of a nut, *n*, the concave side of the bell being turned toward and partly covering the case B, the hammer, and other mechanism, care being taken, however, to have the edge of the bell a sufficient distance from the base to allow free egress to the sound.

The operation is as follows: Whenever a pull is given to the slide D the cam *g* catches the bolt *h*, which carries the end *k* of the lever E along with it, causing the opposite end *k'* of the lever to act upon the hammer-spring *d*, forcing the hammer away from the bell until by the swinging of the lever the bolt is suddenly released from the cam, when the reaction of the spring causes the hammer to strike the bell; but before the hammer can repeat its blow the spring is caught by the projection *k'* and its further vibration prevented. When the slide is let go it is drawn back by the spring *m* upon the extension *e*, and the inclined side of the cam *g* strikes the end of the bolt *h*, causing it to rise and pass over the cam, when the spring *h'* forces it back into position for another stroke.

It will be observed that this method of construction gives a perfectly-operating apparatus composed of the smallest possible number of pieces, thus reducing the cost of fitting up the bell to the smallest possible amount, it being necessary to drill but two holes—viz., that for the insertion of the spring *h'* in the lever E, and that for the pivot upon which the lever oscillates.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The case B, provided with the standard *b'*, stud *c'*, and diaphragm *i*, for the purpose of supporting the operating parts of a gong or bell, as described.

2. The lever E, having at one end the hollow case *k*, and at the other the projection *k'*, acting upon the spring *d*, in the manner and for the purpose specified.

3. The slide D, provided with cam *g*, the extension *e*, and head *e'*, in combination with the spring *m*, diaphragm *i*, and washer *e''*, as and for the purpose described.

4. The slide D, provided with the cam *g*, in combination with the spring-bolt *h* and lever E, as set forth.

5. The slide D and spring-bolt *h*, in combination with lever E, provided with projection *k'* and the hammer-spring *d*, substantially as and for the purpose specified.

6. The combination of the bell F, mounted upon standard *b'*, with case B, spring-slide D, provided with cam *g*, extension *e*, and spring *m*, lever E, spring-bolt *h*, and spring-hammer C, all arranged and operating substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

EDWARD W. BRETTELL.

Witnesses:
N. W. UNDUCH,
C. W. WATTS.