

T. L. WILLSON.
BELL STRIKER.
APPLICATION FILED AUG. 13, 1908.

Patented Aug. 17, 1909.

931,172.

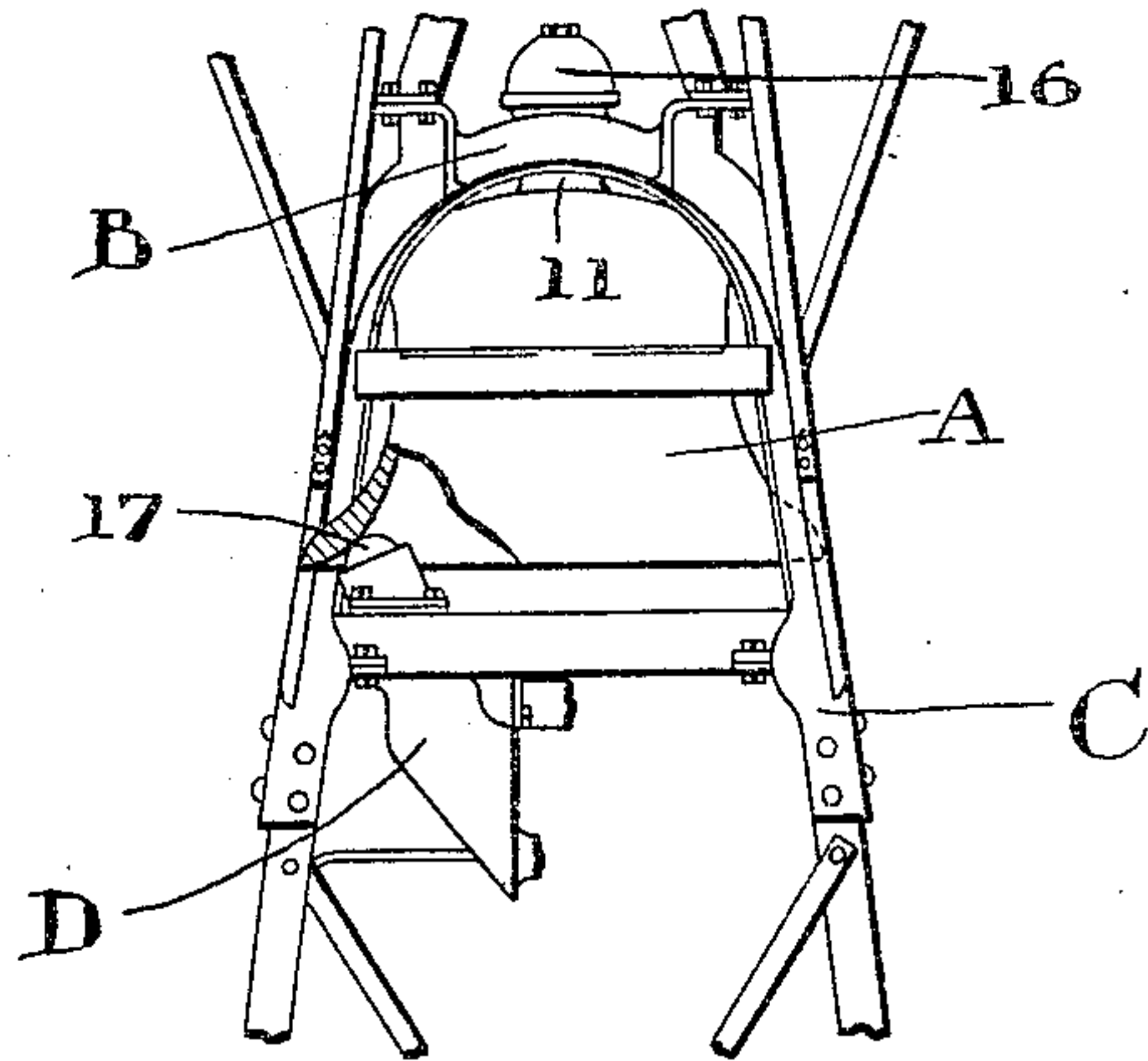


FIG. 1.

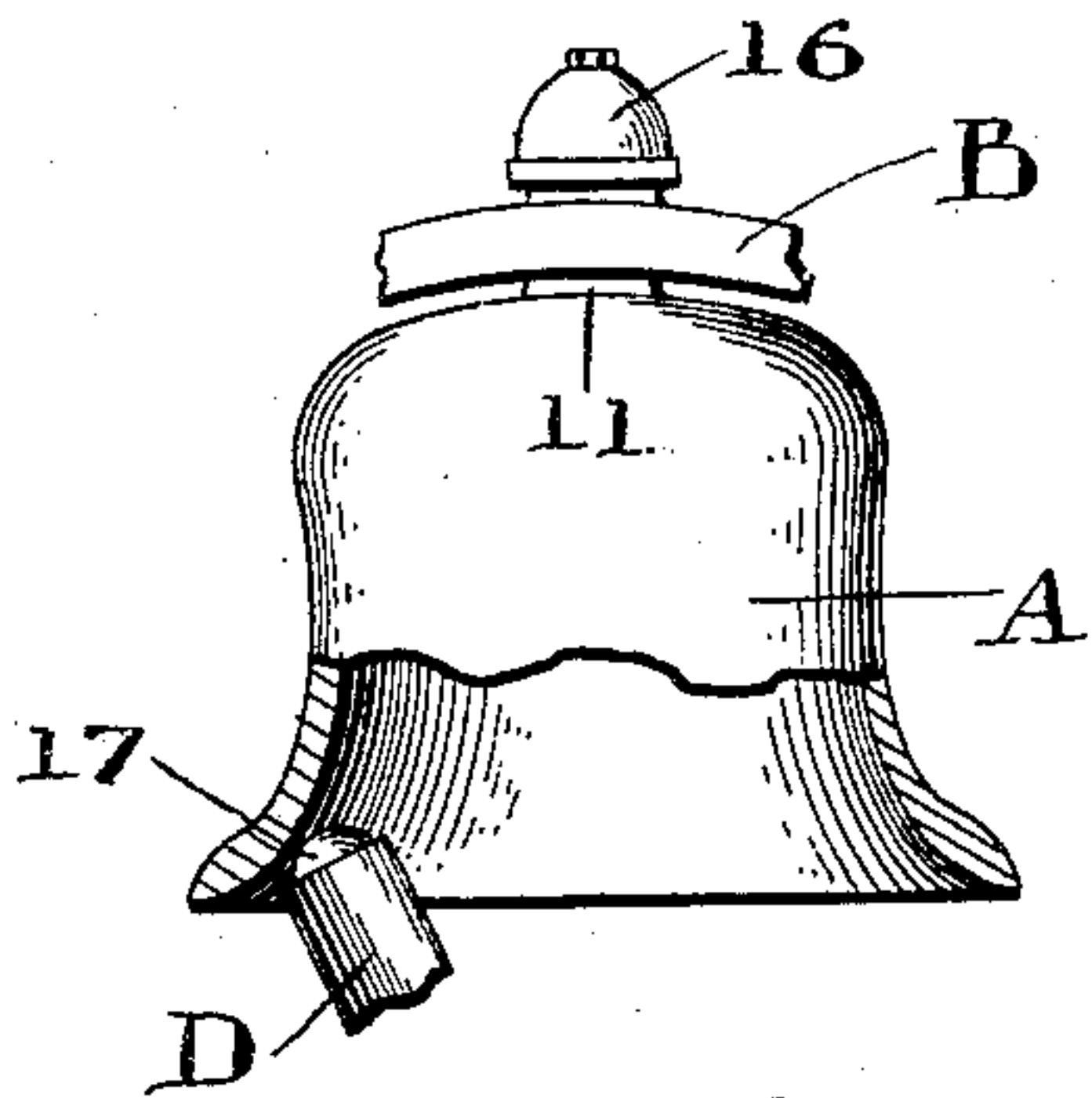


FIG. 2.

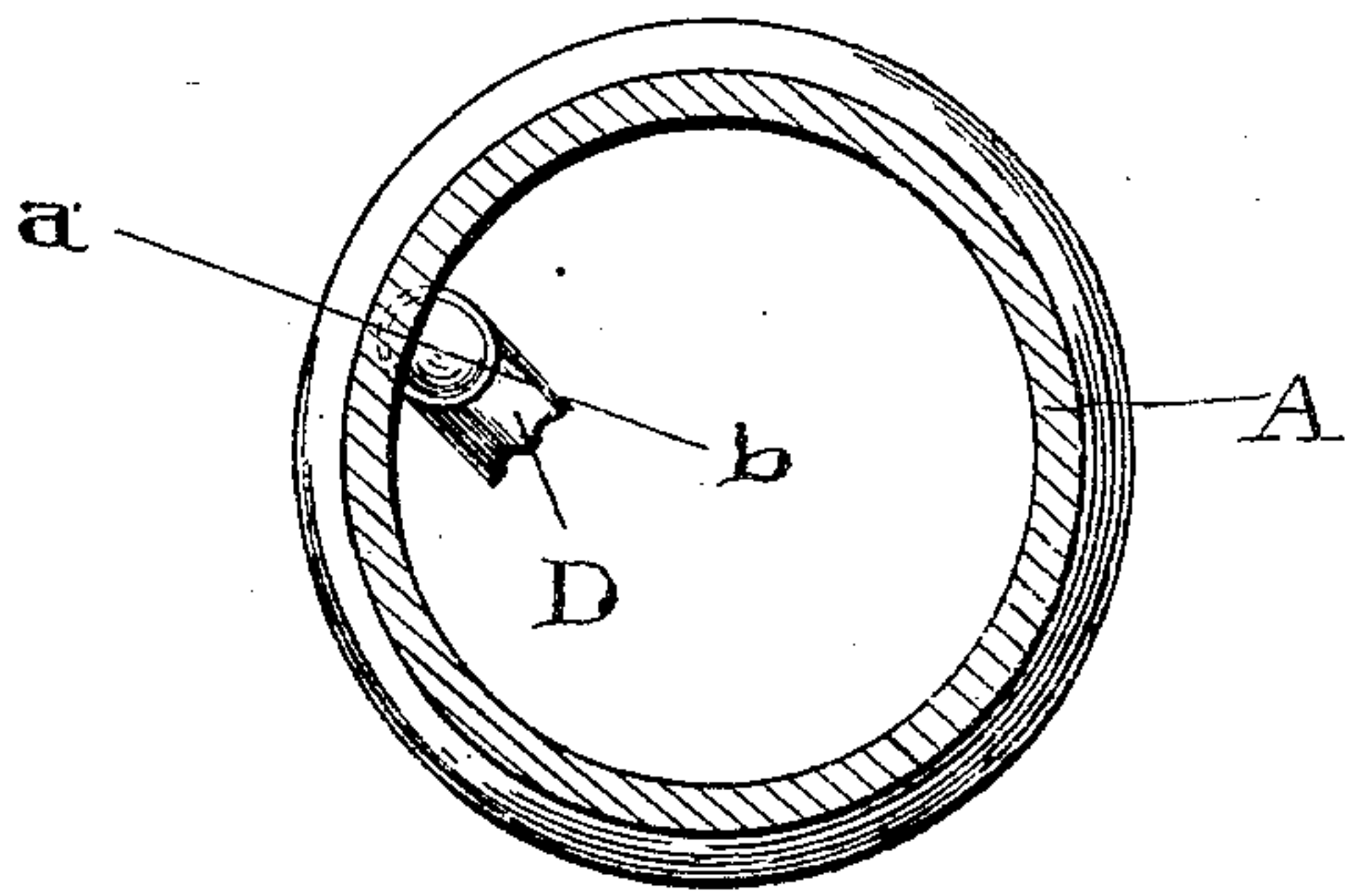


FIG. 3.

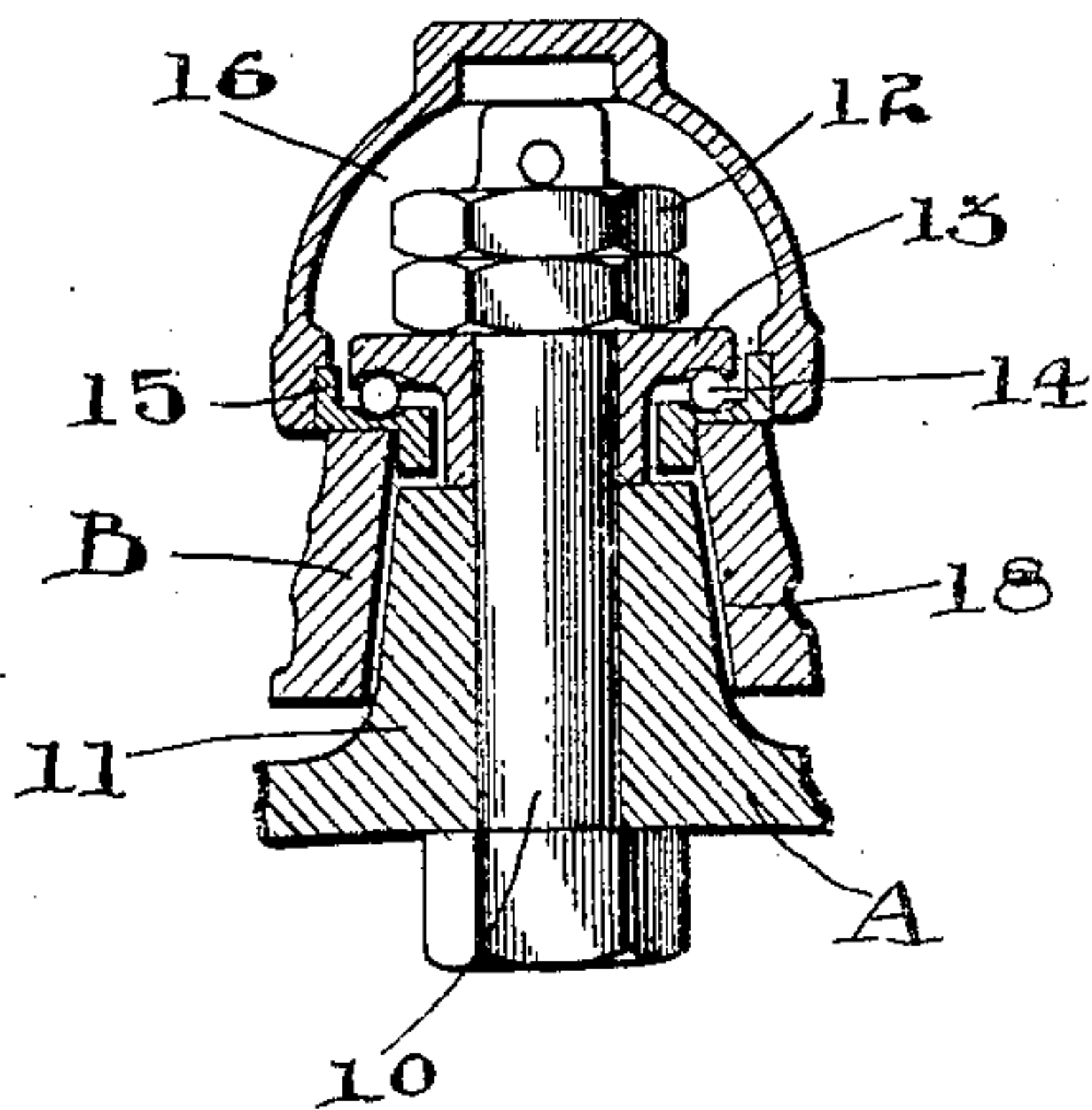


FIG. 4.

WITNESSES.

J. H. [Signature]
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UNITED STATES PATENT OFFICE.

THOMAS LEOPOLD WILLSON, OF OTTAWA, ONTARIO, CANADA.

BELL-STRIKER.

No. 931,172.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed August 13, 1908. Serial No. 448,447.

To all whom it may concern:

Be it known that I, THOMAS LEOPOLD WILLSON, of the city of Ottawa, in the county of Carleton, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Bell-Strikers, of which the following is a specification.

My invention relates to improvements in bell strikers, and the objects of my invention are to render uniform the wear on the bell around the periphery thereof and to prevent cracking of the same, which objects are accomplished by a construction in which the striker on each stroke causes a certain amount of relative rotary movement between the bell and the striker, all as hereinafter more fully set forth and described in the accompanying specifications and drawings.

In the drawings, Figure 1 is an elevation of a bell mounted on the framework of a buoy and embodying the present invention. Fig. 2 is an enlarged elevation of the bell partially in section. Fig. 3 is an enlarged horizontal section through the bell. Fig. 4 is an enlarged sectional detail of the supporting means for the bell.

In the drawings, like letters and figures of reference indicate corresponding parts in each figure.

In the practical use of the bell-striking mechanism described in my earlier United States Patent No. 882,039, dated March 17th, 1908, it was found that the excessive blow struck by the ball impelled by the products of the explosion limited very materially the life of the bell which would ultimately crack under the excessive strain to which it was subjected. The present invention overcomes this disadvantage by causing relative rotary movement between the bell and the striker, thereby subjecting all parts to the same strain.

In the drawings, A represents the bell, of any suitable material and form, and B the supporting bracket therefor, which in the embodiment illustrated, forms part of a frame work C which may be mounted on top of a buoy or in other suitable location. In the embodiment of the present invention herein illustrated, the bell is mounted with freedom to rotate about its longitudinal axis, this being accomplished by means of a bolt extending through a boss 11 on the top of the bell, which extends through an aperture 18 on the bracket B, the said bolt having nuts

12 on the top thereof which rest on a collar 13 supported by a plurality of bearing balls 14, which rest on a corresponding collar 15 supported from the bracket B, suitable raceways for the balls being provided in the contiguous surfaces of the collars. The outer surface of the boss 11 is made conical and fits fairly closely to the walls of the aperture 18 in the bracket B, whereby support will be given to the bell to resist the lateral blow of the striker. To protect the bearing walls from the weather, a cap 16 may be provided fitting over the collar 15.

The striking mechanism for the bell is arranged to give a glancing blow to the same, whereby a certain amount of rotary movement will be caused by each stroke. The striker preferably employed is that illustrated in my aforesaid patent No. 882,039, and when this is used, the end of the explosion chamber D, in which the striking ball 17 operates, is disposed at an angle of about twenty degrees to the vertical, as shown in the embodiment illustrated. The effect of this arrangement is that the glancing or oblique blow struck by the ball causes a slight rotary movement of the bell on its ball bearing, the amount of this movement being determined by the angle at which the striking ball strikes the bell, the angle illustrated being sufficient to cause complete rotation of the bell in about two hours.

It may here be observed that the expression "causing relative rotary movement between the bell and the striker" is intended to include a structure in which the striker is the rotating element as well as the one here illustrated in which the bell rotates. It is also evident that any other suitable form of striking mechanism might be employed in the combination.

I am aware that it is not broadly new to rotate a bell for the purpose of evening the wear thereon, but the only means hitherto employed have utilized more or less complicated mechanism operated by the reciprocative movement of the bell itself and not by the blow of the striker.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the spirit or scope thereof, it is intended that all matter contained in these specifications and drawings shall be interpreted as

illustrative and not in a limiting sense. It is also to be understood that the language of the following claims is intended to cover such generic and specific features of the invention herein described, which, as a matter of language might be said to be included thereby.

What I claim as my invention is:

1. In combination a bell, a striker adapted to strike the bell obliquely, one of said parts being supported to have rotary movement in relation to the other, and means for positively operating the striker, substantially as described.
2. The combination of a bell supported with freedom to rotate about its longitudinal axis and a striker adapted to strike the same obliquely to the radius thereof, and thereby cause rotary movement and positive means for operating the striker.
3. The combination of a bell supported by a suitable ball bearing and a striker adapted to strike the same obliquely to the radius

thereof and positive means for operating the striker.

4. The combination with a bell of a supporting bolt extending therethrough, a collar connected to the bolt, and a supporting collar, a series of bearing balls between the two collars, and a striker adapted to strike the bell obliquely to the radius thereof and positive means for operating the striker.

5. The combination with a bell having a boss thereon, of a bracket having a recess into which the boss is adapted to loosely fit, and supporting means extending from the bracket to the boss adapted to permit rotation of the latter, and a striker adapted to obliquely strike the bell.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

THOMAS LEOPOLD WILLSON.

Witnesses:

RUSSEL S. SMART,
WM. A. WYMANS.