

T. L. WILLSON.  
 APPARATUS FOR PRODUCING A SOUND SIGNAL.  
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906,979.

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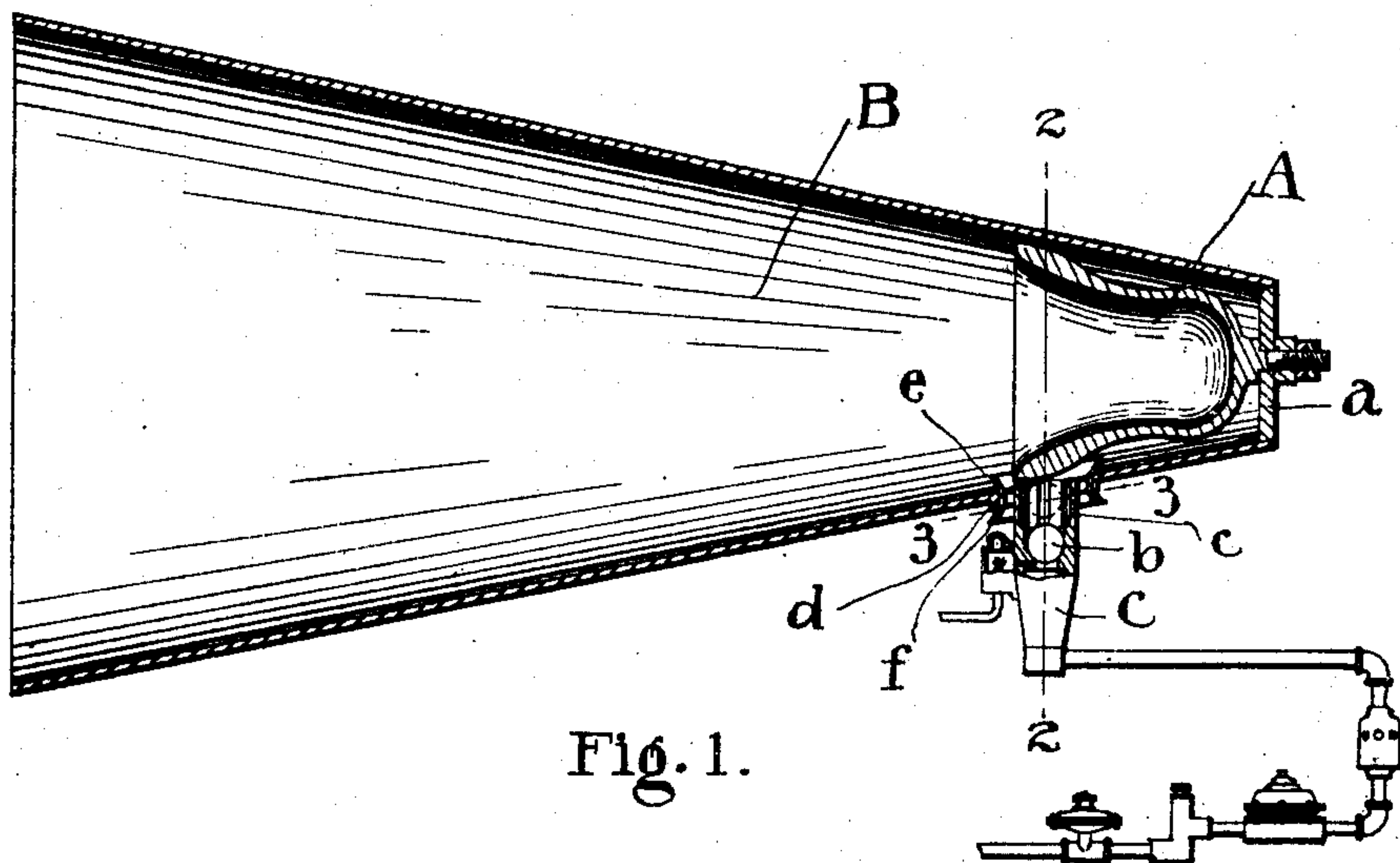


Fig. 1.

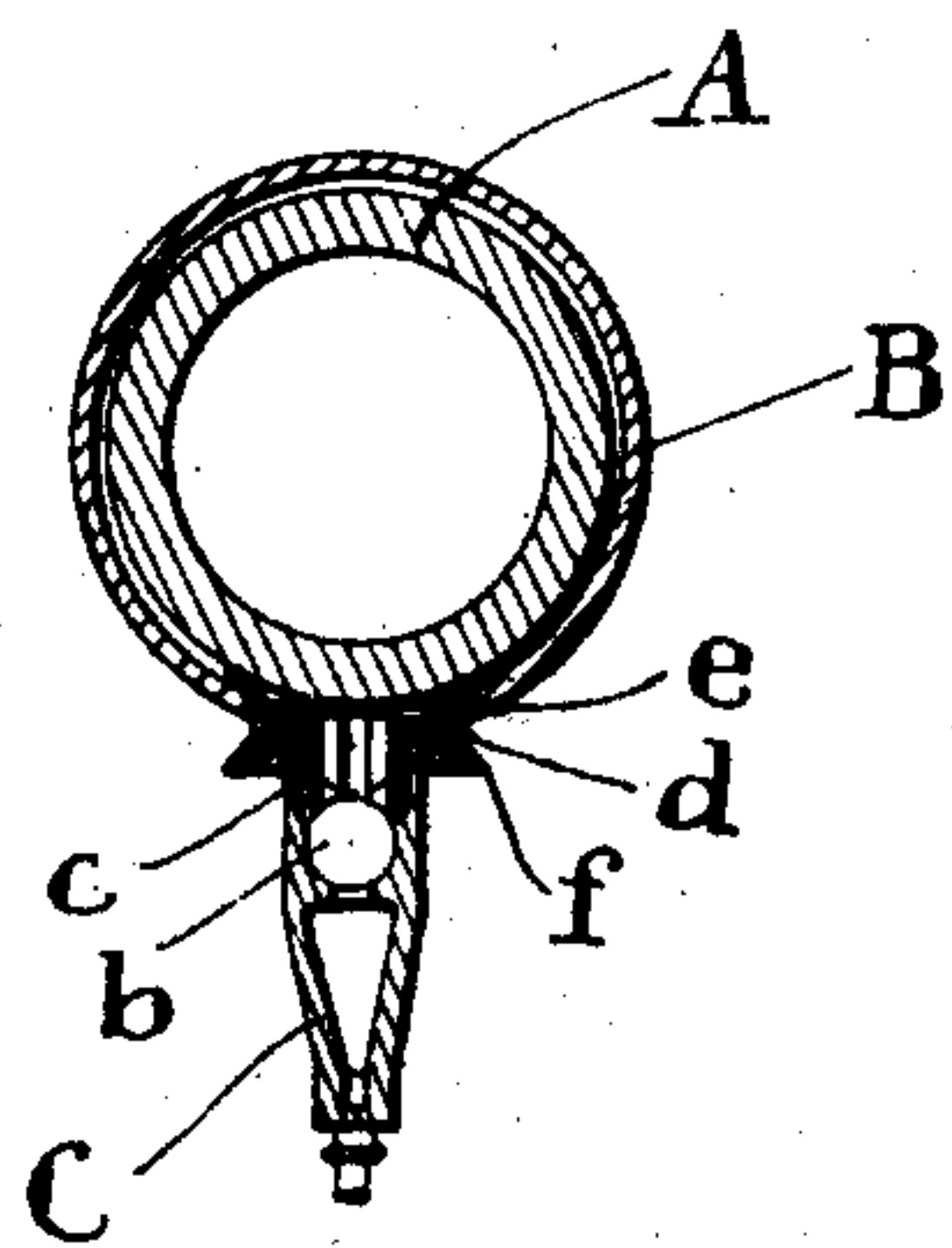


Fig. 2.

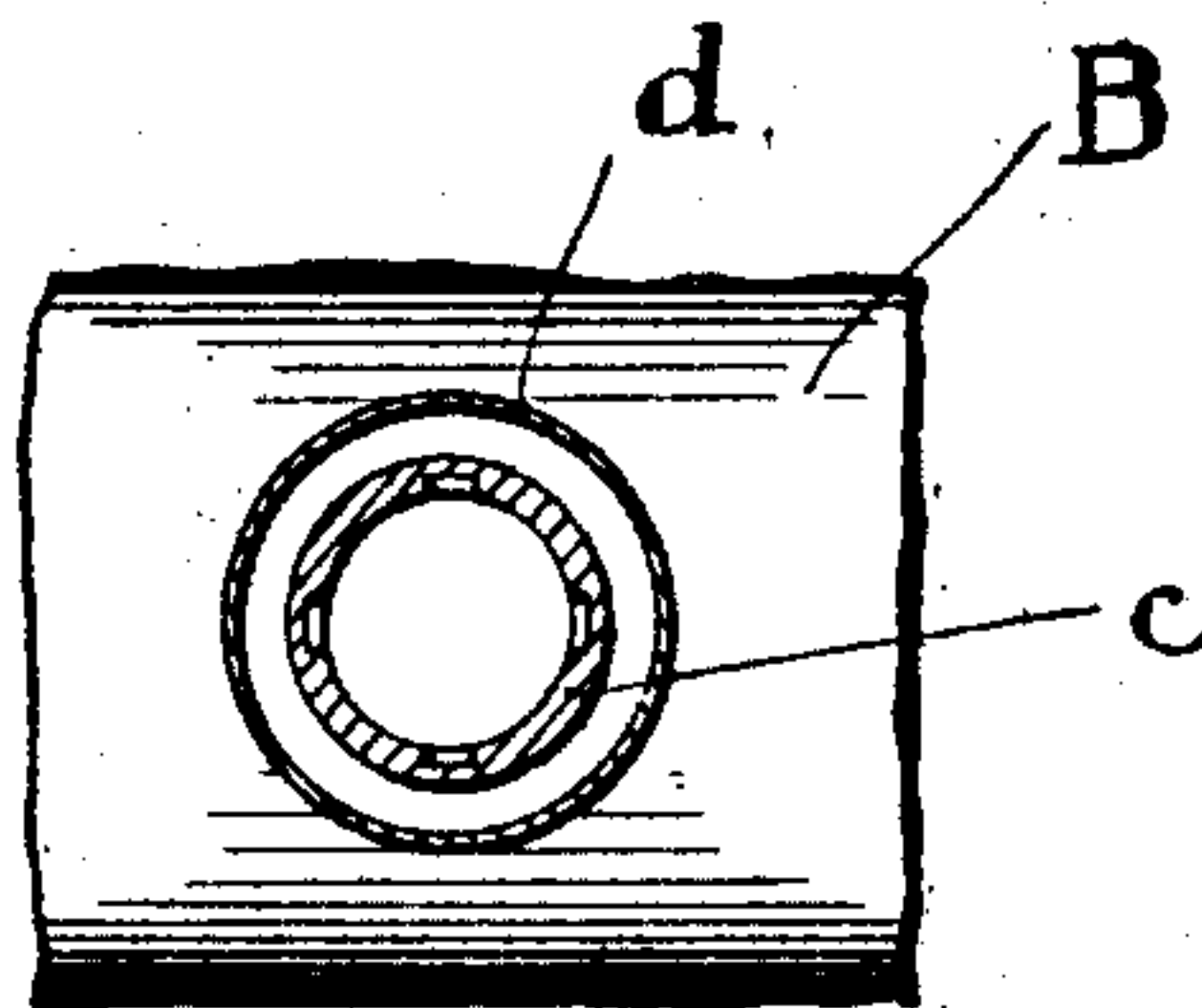


Fig. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR PRODUCING A SOUND-SIGNAL.

No. 906,979.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed June 12, 1907. Serial No. 378,600.

*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, Canada, have invented certain new and useful Improvements in Apparatus for Producing a Sound-Signal, of which the following is a specification.

My invention relates to improvements in apparatus for producing sound signals of the type in which a megaphone or other sound-intensifying device is employed in conjunction with sound-producing means operating therein, and the objects of my invention are to provide an improved sound producing means of maximum efficiency and to increase the intensifying powers of the megaphone.

In the embodiment of the invention illustrated, the sound-producing means I employ is a bell located within the megaphone, all the sound vibrations produced by which are deflected and intensified in a given direction by the megaphone, and the operation of the latter is assisted by a current of air passed through the megaphone, during the ringing of the bell.

In the drawings, Figure 1 is a vertical sectional view of an embodiment of my invention. Fig. 2 is a sectional view on the line 2—2, Fig. 1. Fig. 3 is a sectional view on the line 3—3, Fig. 1.

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

A represents a bell of any suitable type located in a megaphone B, which will be supported in operative position by any suitable means. In the particular form illustrated, the bell is co-axial with the megaphone and is secured to a plate *a* forming the small end thereof.

Means are provided for ringing the bell, that illustrated being a form which I have invented and described in my Patent No. 882,039, dated March 17th, 1908. In this form, a ball *b* is periodically discharged against the side of the bell, through the medium of an explosion created in the chamber C, which discharges the products of the explosion through the tube *c* extending through the side of the megaphone and causing the ball *b* therein to be projected with great force against the bell. Any other suitable form of bell ringing means, might, however, be employed.

To increase the effectiveness of the mega-

phone, I provide means for automatically passing a current of air, or like gas, through the megaphone during the ringing of the bell. With the particular form of bell ringing mechanism illustrated this may be very readily accomplished by inclosing the tube *c* with a second or larger tube *d* having flared ends *e* and *f*, through which air will be drawn and discharged by the discharge of the gases produced by explosion passing through the tube *c*, after the well known operation of an air injector. This air will create a current and thus materially increase the clearness and loudness of the sound produced.

In operation, each time the bell is rung, the sound vibrations are produced all around the periphery thereof at an angle to the axial line. These strike the interior surface of the megaphone and are deflected a number of times intensifying the sound in a well known manner and directing it in a direction substantially coincident with the axial line of the megaphone.

While the invention has been described herein with great particularity of detail, yet it will be readily understood that, in carrying out the construction of the same, changes may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What I claim as my invention is:—

1. A signaling apparatus including in combination, a bell, a megaphone extending about the same, an explosion chamber discharging into the megaphone, bell ringing means operated by an explosion within the chamber and means surrounding the explosion chamber adapted to permit the induction of air or gas by the discharge of the products of explosion into the megaphone.

2. A signaling apparatus including in combination, a bell, a megaphone extending about the same, an explosion chamber discharging into the megaphone, bell ringing means operated by an explosion within the chamber and a tube surrounding the explosion chamber communicating at one end with the interior of the megaphone and at the other with the open air.

3. A signaling apparatus including in combination, a bell, a megaphone co-axial therewith extending about the same, a tube extending through the side of the megaphone adjacent to the bell, an explosion chamber therein, having an open end adjacent to the bell, a ball closing said open end,

adapted to be raised by the explosion and discharge against the bell, the said explosion chamber being of less diameter than the tube extending about the same, whereby air may  
5 be inducted in the space between by the action of the explosion.

4. A signaling apparatus including in combination, a bell, a megaphone co-axial therewith, and inclosing the same, a tube  
10 extending through the side of the megaphone adjacent to the bell, an explosion chamber therein, having an open end, a ball

seated on said open end, adapted to be raised by an explosion within the chamber, a tubular extension extending from the open  
15 end to near the bell and adapted to guide the ball.

Signed at the city of Ottawa, in the Province of Ontario, Canada, this 7th day of June, 1907.

THOMAS LEOPOLD WILLSON.

Witnesses:

RUSSEL S. SMART,  
WM. A. WYMAN.