

A. H. KNAPP.
RAILWAY TORPEDO.
APPLICATION FILED SEPT. 23, 1907.

999,113.

Patented July 25, 1911.

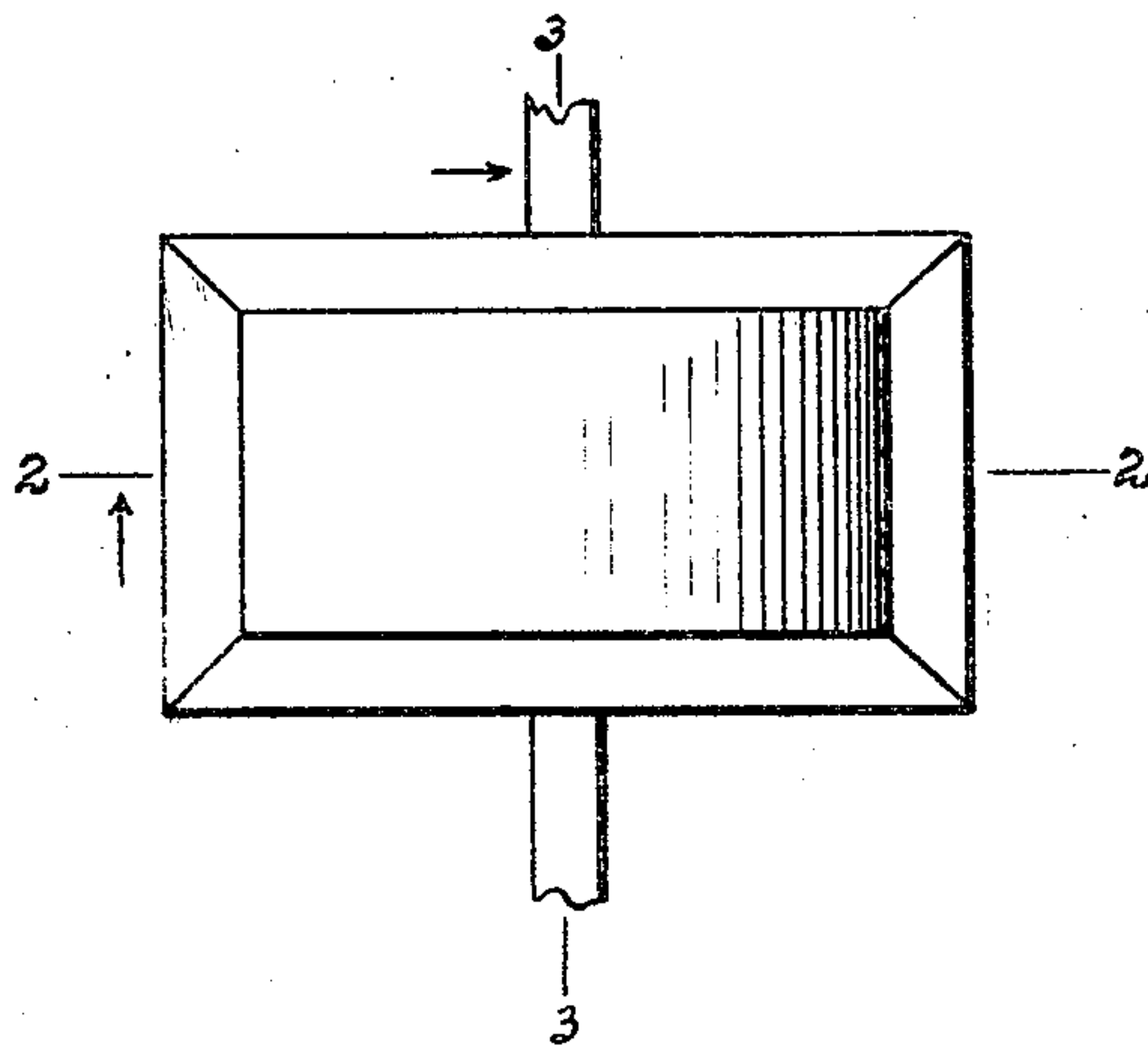


FIG. 1.

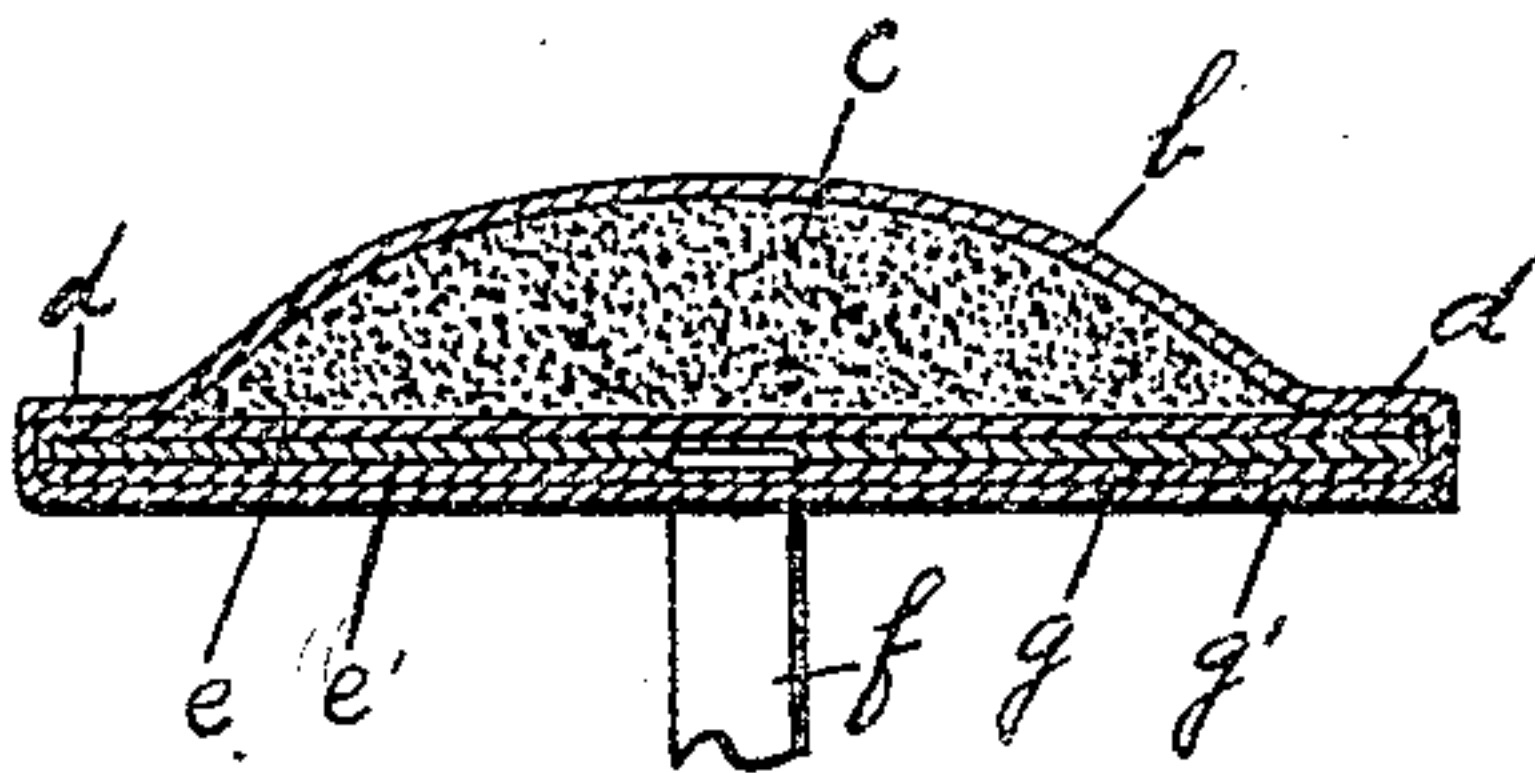


FIG. 2.

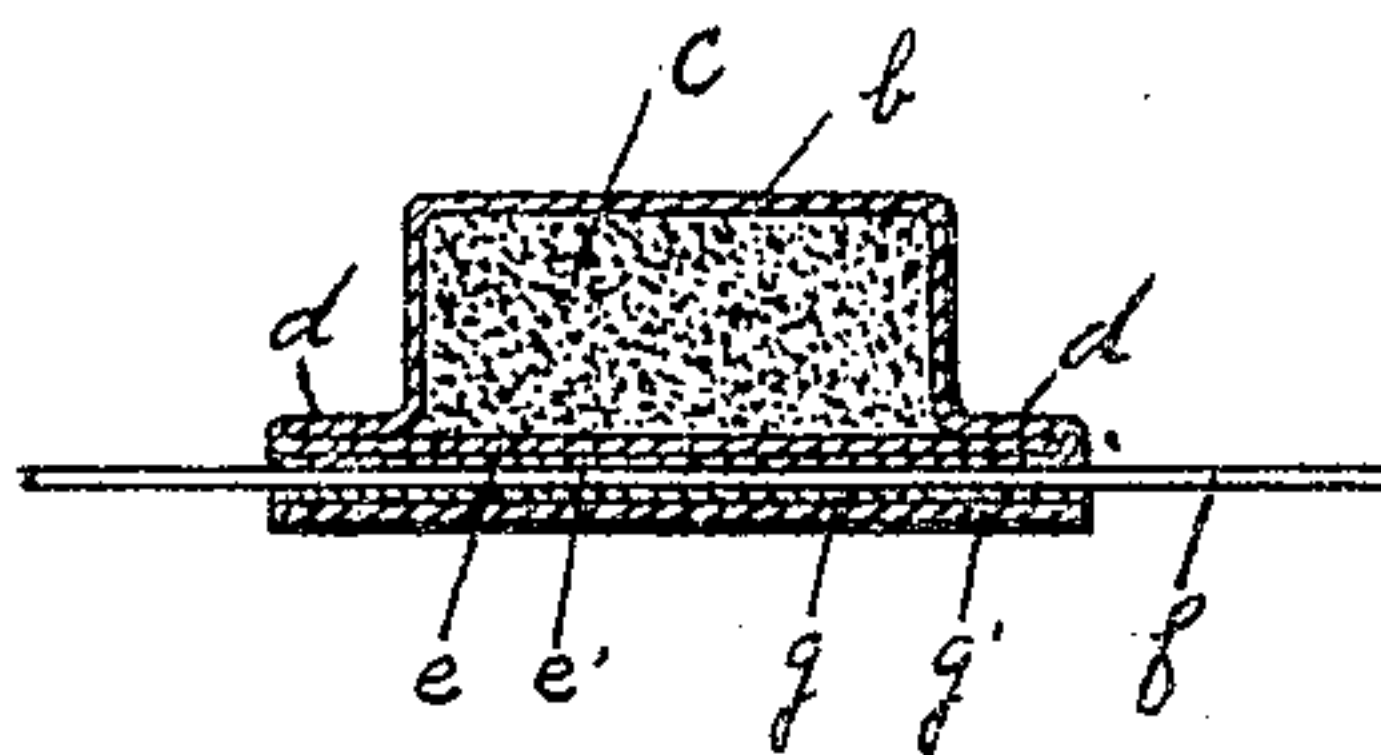


FIG. 3.

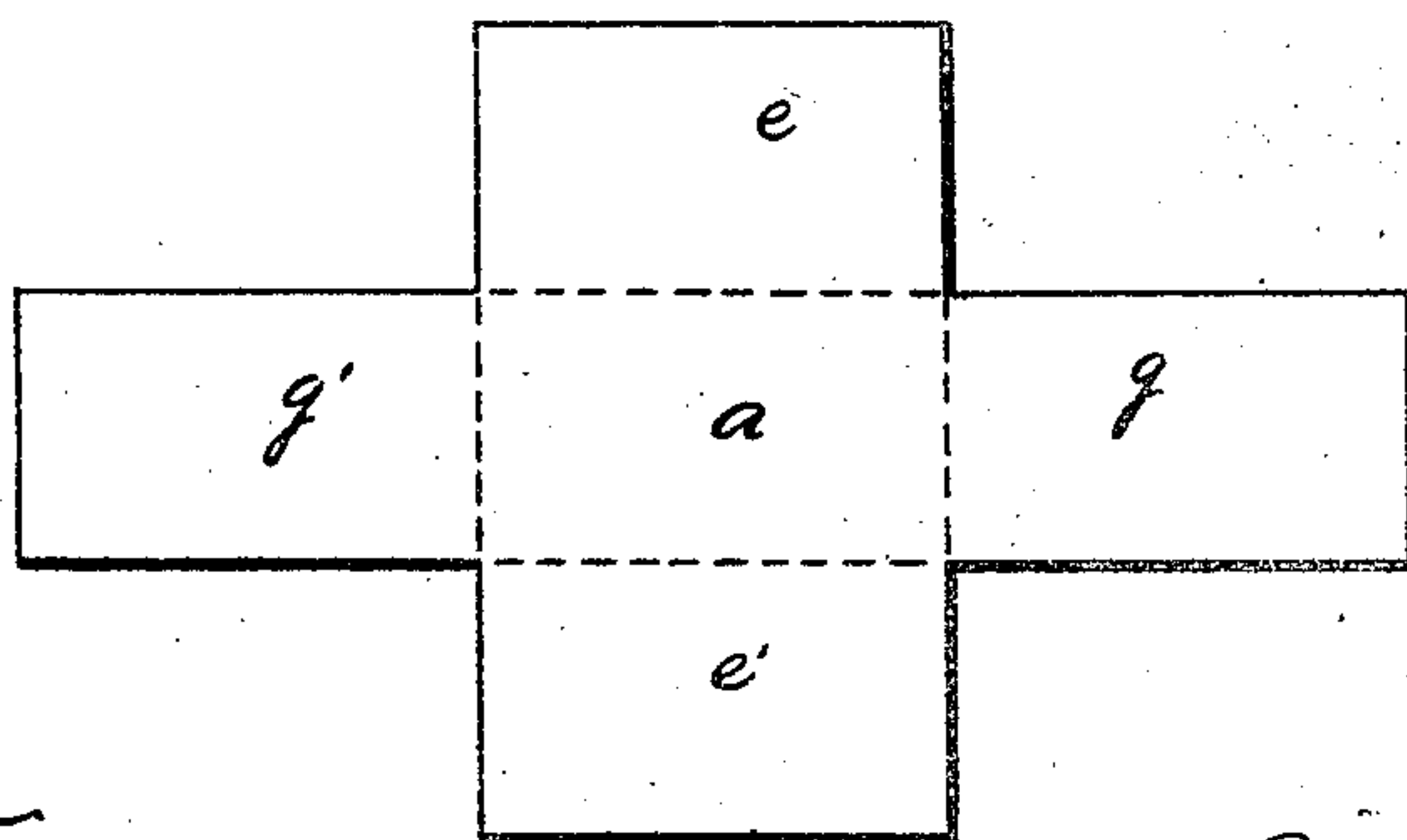


FIG. 4.

Witnesses:
H. V. Gibson
J. C. Keene

Inventor:
By Alfred H. Knapp.
W. V. Lott, Atty.

UNITED STATES PATENT OFFICE.

ALFRED H. KNAPP, OF EAST PEORIA, ILLINOIS, ASSIGNOR TO AMERICAN FOG SIGNAL COMPANY, OF PITTSBURG, PENNSYLVANIA.

RAILWAY-TORPEDO.

999,113.

Specification of Letters Patent.

Patented July 25, 1911.

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To all whom it may concern:

Be it known that I, ALFRED H. KNAPP, a citizen of the United States, residing at East Peoria, in the county of Tazewell and State of Illinois, have invented certain new and useful Improvements in Railway-Torpedoes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates more particularly to improvements in railway torpedoes and is intended to employ in its construction non-flying substances, such as paper, felt, cloth or other such materials that do not contain solid or metallic parts, that might be projected in the explosion of the torpedo.

My invention relates especially to the forming of a torpedo by the use of a single integral piece to form the inclosing case for the explosive compound, whereby the cost of production is very materially lessened.

In the accompanying drawings, which illustrate my invention, Figure 1 is a top view of a railway torpedo constructed in accordance with my invention; Fig. 2 is a sectional view on the line 2—2 of Fig. 1; Fig. 3 a sectional view on the line 3—3 of Fig. 1; Fig. 4 is a diagrammatic view of the wrapper which I use to form the case for containing the explosive matter.

The explosive container is made up of a single piece of waterproof material (preferably rubberoid) which is first cut out in the form shown in Fig. 4, which, as shown, is provided with lateral extensions from the central body, those on the sides being of sufficient width to fold over the bottom portion of the central body extending across its entire width. The end extensions also are of sufficient length to adapt them to fold over the entire length of the central body portion. The central portion *a* of the integral piece of material is adapted to be depressed from the normal plane of the material into the shape desired, as for instance that shown in drawing as *b*, adapted to receive the explosive material *c*, leaving the edges *d* around the pocket thus formed. The explosive compound is then placed in the pocket, then one of the lateral extensions *e* is adapted to be folded over the opening in the pocket and cemented to the edges *d* thereby closing the pocket, then the

lateral extension *e'* is adapted to be folded over upon the lateral extension *e* and to be cemented thereto. The metal strap *f* is then placed across the base of the torpedo as shown, then the end extensions *g* and *g'* are folded over, first one and then the other upon the base of the torpedo and adapted to be cemented thereon in the same manner. The torpedo may then be dipped in shellac or other suitable material and may be likewise sanded, if desired, thereby producing a thoroughly waterproof torpedo.

The metal clip for fastening the torpedo to the rail may be of lead, steel, tin or any other suitable material that will serve the purpose and may be secured to the explosive container or envelop in any desired manner without departing from the spirit of my invention. Likewise, spring clips may be employed in connection with the torpedo, also one of the lateral extensions *e* and *e'* may be omitted or one or both of the end extensions *g* and *g'* may be left off without departing from my invention, as the number of folds over the bottom of the torpedo which the lateral and end extensions are intended to provide need only be sufficient in number to form a substantial base, the main idea of my invention being to provide a shell composed of a single piece as distinguished from torpedoes now being used in which a plurality of separate parts are employed to make up the article.

In the manufacture of these torpedoes I have found that rubberoid is the most desired material out of which to make the shell as it is both waterproof and pliable, and the parts when folded together readily adhere to each other by using a proper cement between the parts, but it is obvious that any suitable pliable material may be used that is not waterproof *per se* but may be made impervious to water by providing same with waterproof material, as by dipping in shellac.

My present invention is intended as an improvement over my invention as disclosed in Letters Patent to me, numbered 838,548, granted December 18, 1906. In the manufacture of both forms of torpedo, it has been found that the present form is very much cheaper to manufacture, requiring less labor and less machinery, and also that a torpedo made up of the single piece wherein the extensions fold over nearly or entirely the

whole base of the torpedo, can be made into a firmer container case, rendering same less liable to disintegrate or to come apart from handling and rendering it less liable to be effected by exposure to the atmosphere or water.

What I claim is:

1. In a torpedo of the class described, an explosive compound container composed of a single piece of pliable material, a portion thereof depressed to receive an explosive compound, an integral portion thereof adapted to fold over the opening in the depression, suitable sealing material for cementing the parts together, suitable explosive material within the shell, and suitable means for fastening the torpedo to a rail.

2. In a torpedo of the class described, the combination with an inclosing case for an explosive compound, composed of a dome shaped container provided with integral extension adapted to fold over the base of the dome shaped part, an explosive compound within the shell, suitable sealing material to cement the integral extension to the base of the dome shaped part and suitable fastening means adapted to secure the torpedo to a rail.

3. In a torpedo of the class described, the combination with a dome shaped part provided with flat edges around its base and with integral extension from the edges adapted to fold over the base of the dome shaped part and to be sealed thereon, of an explosive compound within the shell and a suitable fastener to secure the torpedo to a rail.

4. In a torpedo of the class described, the combination with a shell adapted to receive an explosive compound formed of a single piece having a dome shaped part having lateral extensions from the edges thereof adapted to fold over the base of the dome shaped part and to be sealed thereto, of an explosive compound within the shell, and a suitable fastener to secure the torpedo to a rail.

5. In a torpedo of the class described, a shell composed of a single piece, comprising a dome shaped part having a flat edge around its base, integral extensions from the edges thereof adapted to be folded over the base and to be sealed thereto, in combination with an explosive compound within the shell and a suitable strap for fastening the torpedo to a rail.

6. In a torpedo of the character described, the combination with a shell composed of a single piece having a dome-shaped central portion surrounded by a flat edge, integral extensions from the flat edges and adapted to fold over the base and to be cemented thereto and to each other, an explosive compound in said shell and a suitable strap for fastening the torpedo to a rail.

7. In a torpedo of the character described, the combination with a rectangular shell composed of a single piece and having a dome-shaped central portion surrounded by a flat edge, integral extensions from all four sides of the flat edges and folded over the base and sealed thereto and sealed together and a clip passing between the integral extensions whereby it is secured to the shell.

8. In a torpedo of the class described, the combination with an inclosing case for an explosive compound, composed of a dome-shaped container provided with a flat edge entirely surrounding the same, integral flaps carried by the flat edge on all four sides and each flap being of a size to completely close the dome-shaped container and to be seated on the flat edge and on each other, and a clip for securing the torpedo to the rail and said means passing between two of said flaps.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ALFRED H. KNAPP.

Witnesses:

MARY E. COMEGYS,
W. V. TEFIT.