F. BERTON.

CONSTRUCTION OF WARNING HORNS.

APPLICATION FILED APR. 1, 1907.

993,336. Patented May 30, 1911.

Fig. 1.

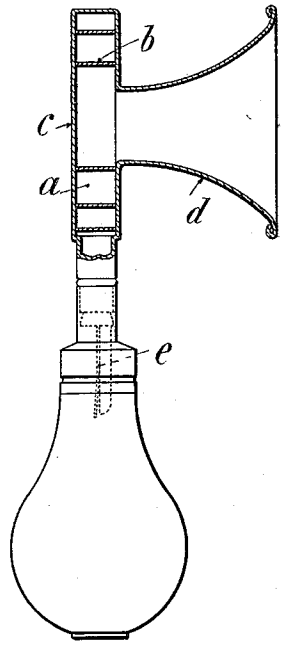


Fig. 2.

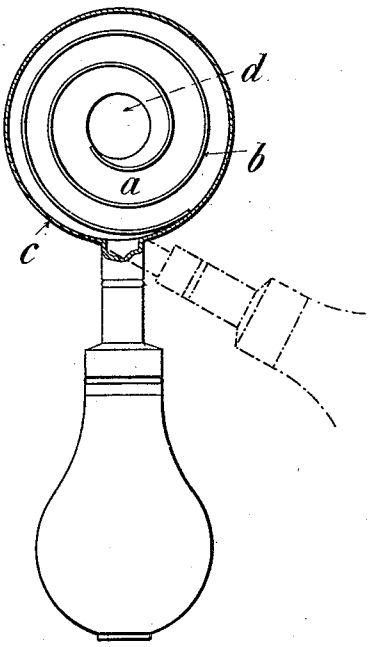


Fig. 3.

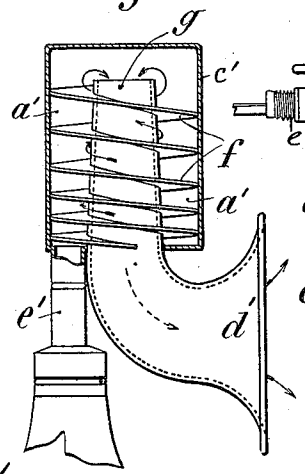


Fig. 4.

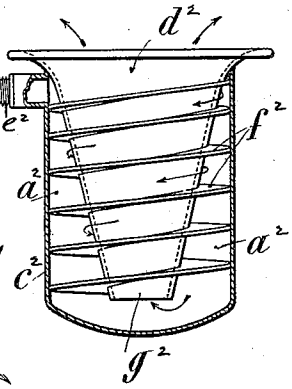
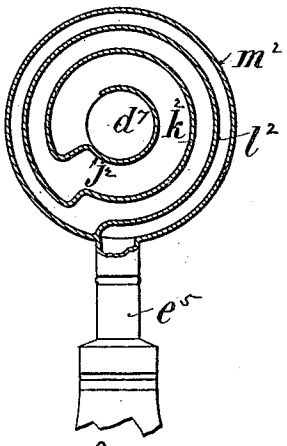


Fig. 5.



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UNITED STATES PATENT OFFICE.

FÉLICIEN BERTON, OF PARIS, FRANCE.

CONSTRUCTION OF WARNING-HORNS.

993,336. Specification of Letters Patent. Patented May 30, 1911.

Application filed April 1, 1907. Serial No. 365,689.

To all whom it may concern:

Be it known that I, FÉLICIEN BERTON, a citizen of the French Republic, residing at Paris, in France, have invented a certain new and useful Construction of Warning-Horn, of which the following is a specification.

This invention relates to a warning horn in which the amplifying conduit connecting the vibrating reed to the bell mouth or trumpet, is constituted by a partition arranged between the walls of the body of the horn in which the said conduit is thus concealed. This arrangement has the advantage that the horn so constructed has no twists or loops which are difficult to clean, and occupies a minimum of space, while having a sonorous conduit of a great length.

Several constructions of horn according to this invention are illustrated, merely by way of example, in the accompanying drawing.

In the said drawing:—Figure 1 is a vertical section through the longitudinal axis of a horn the walls of the sonorous conduit of which are constituted by a spiral. Fig. 2 is a rear view of the same horn, with the corresponding wall removed. Fig. 3 is a partial section of a horn in which the sonorous conduit is constituted by helicoidal walls or winding. Fig. 4 is a modified construction of the horn shown in Fig. 3. Fig. 5 is a longitudinal section of a further modified construction.

In the construction shown in Figs. 1 and 2, the partitioning of the sonorous conduit a is constituted by a continuous wall b in the shape of a spiral extending between the two covers of a box c, one of which is provided in the center with the small base of a bell mouth or trumpet d. In that construction, a sonorous conduit of gradually increasing section is obtained by bringing closer together the spires nearer the circumference of the box, the said spires being gradually widened in order to terminate at the mouth of the trumpet d with a cross section practically corresponding to that of the said mouth. In the same construction the reed is arranged at the beginning of the conduit a, that is to say secured either at a right angle as shown in full in Fig. 2, or at a tangent as shown in Fig. 2 dotted, to the periphery of the box c, at the point of the latter from which the said conduit a starts.

The gradual increase of the cross section of the conduit a could also be produced by means of a spiral arranged in the reverse manner to that shown in Figs. 1 and 2, that is to say, by arranging the reduced portion of the conduit provided with the reed e in the center of the box c, and its widened portion terminating at the bell mouth d at the circumference of the said box.

Fig. 3 shows a modified construction of horn in which the sonorous conduit a' is produced by a continuous wall f having the shape of a screw, the spires of which lie nearer together at one of the ends than at the other. This screw surrounds a tubular part g of cylindrical or conical shape constituting the end of the mouth of the trumpet d' and is itself surrounded at its outer edge by the wall of a box c' between the bottom of which and the said mouth a sufficient space is left. The annular cover of the said box c', corresponding to that of the beginning of the conduit a', comprises the reed e' which can be secured either parallel to the part g as shown, or in the radial direction or tangentially to the circumference of the said cover.

In Fig. 4 the formation of the sonorous conduit a^2 is effected by means of a screw f^2 with equidistant spires surrounding a conical core g^2 which constitutes the bell mouth or trumpet d^2 itself, the said screw being surrounded outside by the cylindrical wall of a box c^2.

The above arrangement could be reversed, that is to say, the screw f^2 could extend around a cylindrical core and be surrounded by a conical wall, the essential point being that the conduit produced should be of a cross section gradually increasing from the reed e^2 to the mouth of the trumpet d^2.

Fig. 5 shows a modified construction of a horn with a spiral partition resembling that shown in Figs. 1 and 2, and consisting in the partition being constituted by a series of concentric tubes j^2 k^2 l^2 m^2 in which are made openings, one of the edges of which is raised, so as to engage the corresponding edge of the adjoining tube; the openings thus arranged establish communication between the intervals and the tubes with each other, so as to constitute a continuous amplifying conduit.

The arrangement shown can be reversed, that is to say, the reed e^5 could be arranged

in the center and the bell mouth *d* at the circumference.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A warning horn comprising a cylindrical box, a trumpet protruding from said box, a reed and partition within said box forming a sonorous conduit of gradually increasing section between said reed and said trumpet.

2. A warning horn comprising a cylindrical box, a trumpet protruding from said box, a reed and a spirally wound partition within said box forming a sonorous conduit of gradually increasing section between said reed and said trumpet.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FÉLICIEN BERTON.

Witnesses:
DEAN B. MASON,
GEORGES BONNEIN.