No. 641,484. Patented Jan. 16, 1900.

W. WOLFF.

APPARATUS FOR MEASURING VELOCITY OF SOUND WAVES.

(Application filed Nov. 26, 1898.)

(No Model.)

Fig. 1.

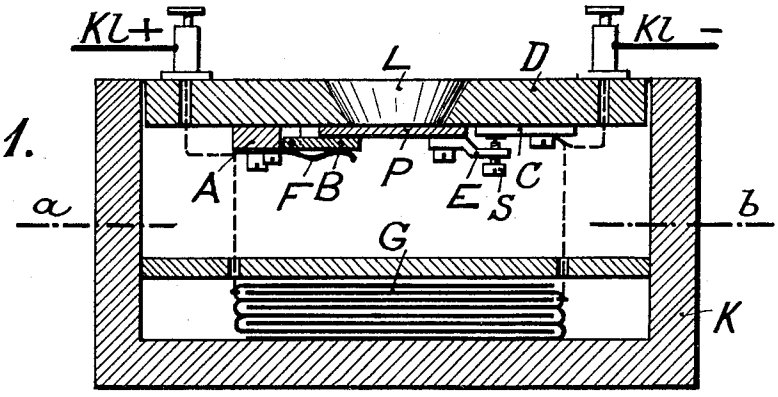
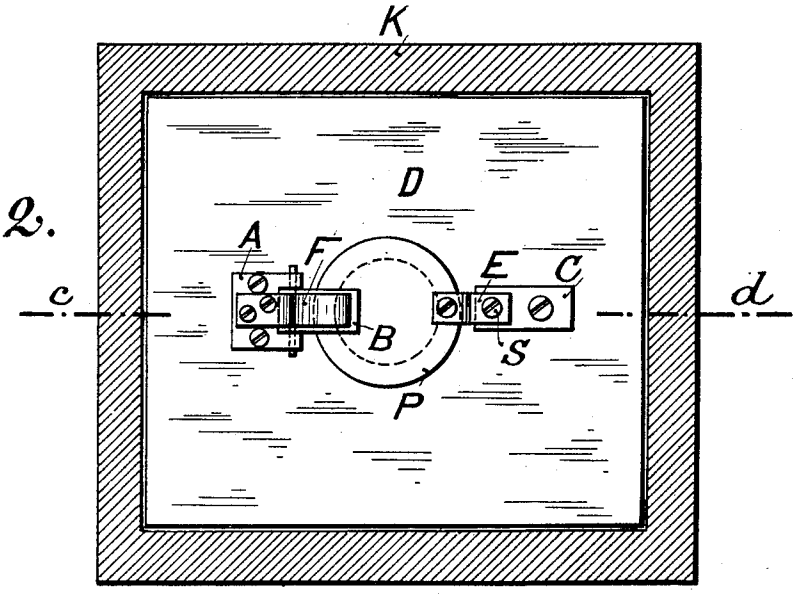


Fig. 2.



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APPARATUS FOR MEASURING VELOCITY OF SOUND-WAVES.

SPECIFICATION forming part of Letters Patent No. 641,484, dated January 16, 1900.

Application filed November 26, 1898. Serial No. 697,552. (No model.)

To all whom it may concern:

Be it known that I, WALTHER WOLFF, a subject of the German Emperor, residing at Charlottenburg, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Apparatus for Measuring the Velocity of Sound-Waves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an instrument for measuring the velocity of a sound-wave, more especially the velocity of propagation of a single shock or concussion of air, such as is caused by the report of a firearm or other explosions.

The invention consists in a hollow box or receptacle closed on all sides and provided with a hole in its cover or in one of its sides which is closed by a rigid lid held down by a spring and causing the interruption of an electrical current when it is slightly raised by the action of the sound-wave.

Of the accompanying drawings, Figure 1 is a vertical section through my improved apparatus on line *c d* of Fig. 2, and Fig. 2 is a horizontal section on line *a b* of Fig. 1.

The same letters of reference are used to indicate the same parts.

K is a box preferably made of wood and closed at the top by a cover D, which for the sake of investigating the interior can be hinged to the edge of said box and secured by a lock. In the middle of said lid or cover D a hole L is cut, by which the interior of the box K communicates with the atmosphere. This opening L, however, is closed from below by a lid P, provided with an arm B, rigidly fixed to it. By means of this arm B the lid P is hinged loosely to the metal block A, which in its turn is screwed or otherwise secured to the under side of the cover D. Thus the lid would have a tendency to open merely in consequence of the effect of gravity, and in order to prevent this a spring F is secured to the block A and presses with its free end onto the inner extremity of the arm B, thus holding the lid P closed under ordinary circumstances. The said lid P is so dimensioned as to slightly overlap the opening L on all sides.

Opposite the arm B a second arm E is firmly secured to the lid P, which carries a contact-screw S, provided with a platina tip, and opposite said arm E a second metal block C is secured to the cover of the box D and is provided with a corresponding platina contact-plate.

Two binding-posts K′ + and K′ — are electrically connected with the two metal blocks A and C, as indicated by dotted lines, and, besides, are supposed to be connected with any suitable source of electricity, which is not drawn.

At the bottom the box K is provided with a partition which incloses a condenser G of any suitable type, the terminals of which are likewise connected to the blocks A and C.

The use of the condenser G (shown in the drawings) is not absolutely essential; but it is well known that the application of a condenser will greatly diminish sparking at the point of interruption, and the consequence will be that the interruptions become much shorter, and thereby the measurements more exact.

Having now particularly described and ascertained the nature of my said invention and the manner in which the same is to be performed, I declare that what I claim is—

1. A contact-box comprising a box having an opening communicating with the atmosphere, a rigid lid hinged to the wall of the box at one side of the opening, an electrical contact carried directly by the lid at the opposite side of said rigid lid controlled thereby, a spring for holding the lid in position to keep the opening closed and suitable electrical connections to the lid and contact, substantially as described.

2. A contact-box comprising a box having an opening communicating with the atmosphere, a rigid lid hinged to the inner wall of the box and held over the opening, a contact controlled by the rigid lid, electrical connections leading to the lid and contact, a condenser and connections thereto whereby said lid and condenser are connected in the same circuit in parallel.

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

WALTHER WOLFF.

Witnesses:
E. L. GOLDSCHMIDT,
HENRY HASPER.