E. BELIN.

MICROPHONE AND LIKE INSTRUMENT.

APPLICATION FILED JULY 31, 1913.

1,143,487. Patented June 15, 1915.

Fig. 1

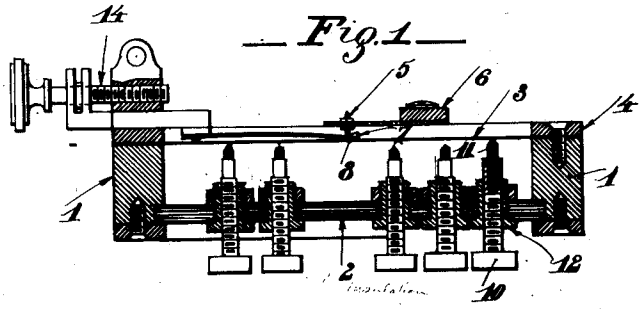


Fig. 2

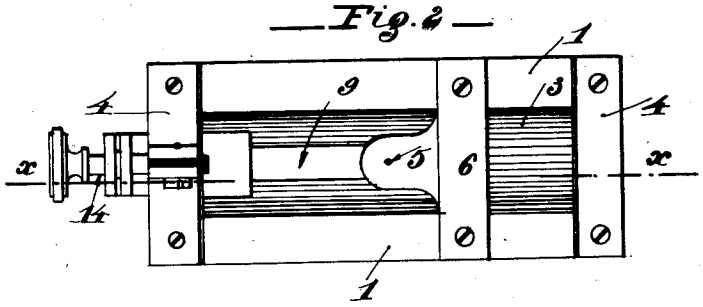
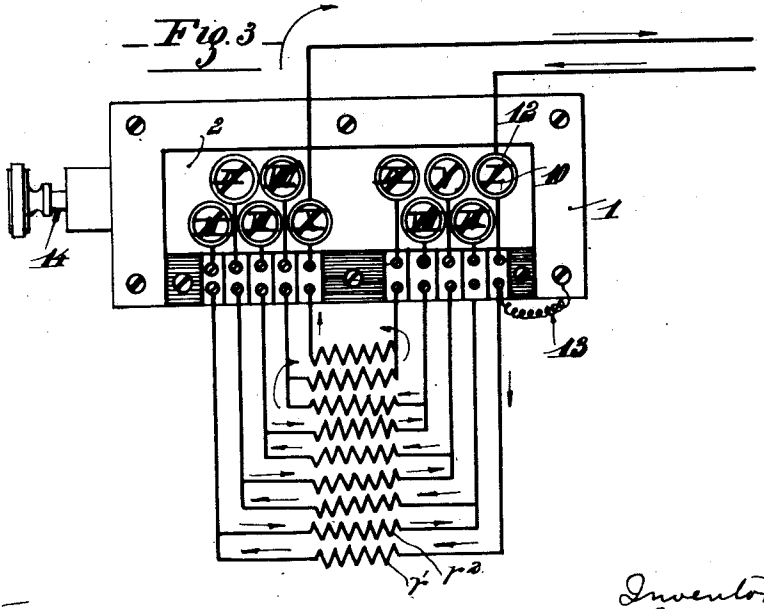


Fig. 3



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UNITED STATES PATENT OFFICE.

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MICROPHONE AND LIKE INSTRUMENT.

1,143,487. Specification of Letters Patent. Patented June 15, 1915.

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To all whom it may concern:

Be it known that I, EDOUARD BELIN, a citizen of the Republic of France, residing at Paris, in the Republic of France, have invented certain new and useful Improvements in and Relating to Microphones and like Instruments, of which the following is a specification.

The present invention relates to improvements in microphones and like instruments.

The apparatus of the present invention combines the properties of a microphone, that is to say, of microphonic contacts, with the properties of a rheostat to obtain variations of successive degree in the current of the circuit including the apparatus. The apparatus may be applied in any instance in which variations of this nature are desired that is variations which are not continuous between two limits, but variations which can be of any desired number between same limits; that is to say, a ladder is substituted for an inclined plane to bridge the same vertical space over any desired horizontal distance. This apparatus can be used to indicate variations in tension or pressure due to relieved parts or depressions. For example, it may be used with bas-relief stereotypes for long-distance transmission of pictures and the like.

The present invention is more particularly described with reference to the accompanying drawings, in which:

Figure 1 is a section on the line x—x of Fig. 2; Fig. 2 is a plan view of the apparatus; Fig. 3 is a view of the apparatus from beneath.

The apparatus consists of a frame 1 arranged in the manner of the sides of a box. One of the bottoms of this box is formed by a rigid insulating plate 2 possessing as small a degree of expansibility as possible for instance, it may consist of a sheet of glass. The other bottom is replaced by a flexible leaf 3 of conducting material such as carbon, steel, or other suitable material; it is stretched and gripped at its extremities between plates 4, screwed on to the frame 1. This leaf receives the tensions or pressures which are to be transmitted or transformed. In certain cases it is more desirable to apply these tensions or pressures at the geometric center by means of a pin 5 carried by the strip 6 fixed to the frame 1.

To regulate the source of the tensions or compressions a small inclined plane 7 is slid between the pins 5 and the leaf 3, which inclined plane serves to transmit the pressure of the stylus 5 to a globule on the leaf 3. The regulation is effected by displacing this inclined plane by means of the screw which acts on the strip 9 fixed on this inclined plane. Through the insulating plate 2 are passed a number of contact members consisting of a screw 10 at the end of which is secured a contact piece of carbon 11 the distance of which from the leaf 3 can be regulated by means of the screwed socket 12. The current enters the apparatus through the first of these contacts which is always in connection with the leaf (if desired by means of a wire 13 connecting it to the base or frame 1), and leaves the instrument through the wire attached to the last contact. Owing to the tensions or compressions exerted upon the leaf 3 this latter member is bent or deflected and touches successively (owing to a predetermined adjustment) the contacts; any desired resistances are inserted in a simple manner between consecutive contacts, as shown in Fig. 2.

Between I and II a coil r' is placed. Between II and III a coil r^2, and so on. Finally, in order to leave the instrument in the normal time current must pass through the series of resistances; the greater the degree of compression the greater will be the number of coils short-circuited by contact of the contact points with the leaf 3, from whence is obtained successive variations of intensity of current according to degrees or steps predetermined for the coils as also for the compression to be exerted in view of the successive contacts. This arrangement avoids all irregularity whatsoever. Owing to the use of microphonic contacts there is not a sharp short-circuiting or breaking of current between two contacts; in reality, the steps are only covered by a strong inclination of the angles and the greater the number of contacts the more will the straight line which represents the continuity of the variations be approached, which line is the limit to which one must incline. It is evident that when other shapes than the rectangular are used corresponding arrangements of contacts can be adopted with appropriate regulation.

Having thus described my invention, what I claim as new is:

In a combined rheostat and microphone,

adjustable contact pieces, resistances connecting said contact pieces, and a flexible leaf adapted to be deflected to come successively into contact with said contact pieces for bridging across the resistances without abrupt or sharp short circuiting.

In testimony whereof I have hereunto signed my name this 18th day of July 1913, in the presence of two subscribing witnesses.

EDOUARD BELIN.

Witnesses:
ZIPTONIN MONTEILHET,
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