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S. SPALLETTA

VOCALIZER MECHANISM

Original Filed April 14, 1922

Fig. 1

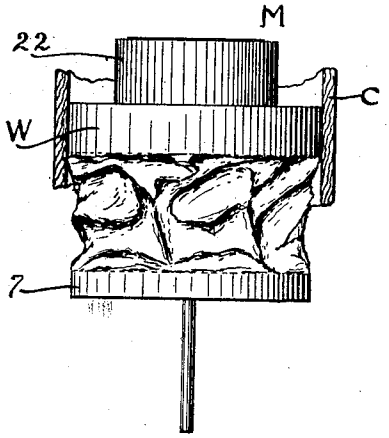


Fig. 2

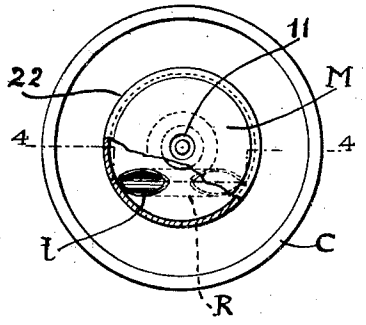
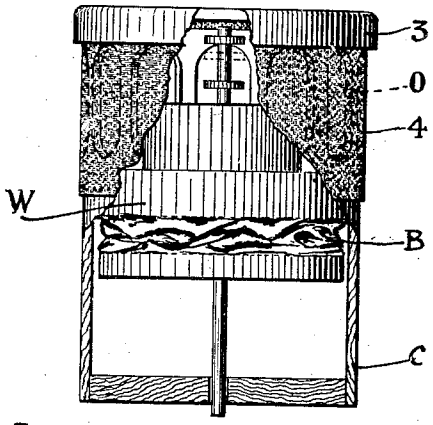


Fig. 3



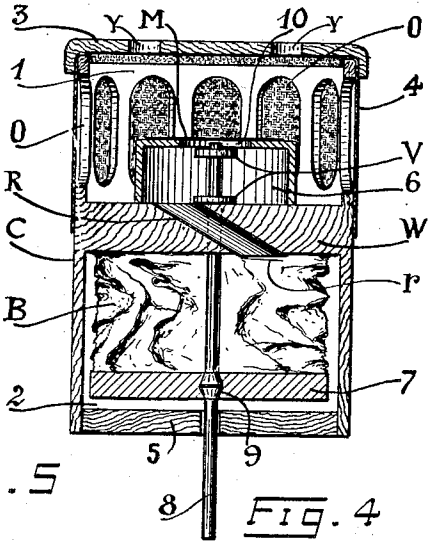
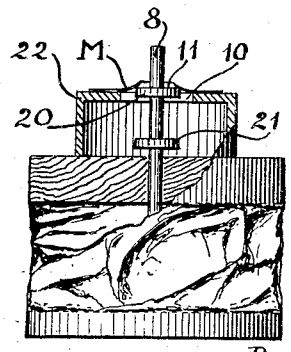


Fig. 5

Fig. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

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VOCALIZER MECHANISM.

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My present invention relates to an improvement in a vocalizing device of the type used in so-called "talking dolls," wherein either by pressure of the hand or by actuation of the device through weights or other means, or by the movement of the doll itself, such as shifting its position, etc., the device is caused to articulate a sound similar to "ma ma".

Another object of my device is to provide a straight line action so that the vocalizing means may be caused to pass through the apertures in alinement with the cooperating sound creating elements.

Another advantage of my device is that the syllables vocalized by my device may be adjustably varied so that each syllable may be short, or long drawn out.

It is further contemplated to provide spaced guide means for causing a straight line action of the vocalizing means

Still further it is aimed to provide a weighted member for cooperating with flexible bellows to actuate the sounding means.

It is still further aimed to provide a standard or spindle having at its free extremity adjustable vocalizing means for interrupting the continuous sounds caused by air passing through a reed or other sound producing means when the standard reciprocates relative to the sound producing means.

It may become desirable at times to change the spool-like articulation of the vocalizer wherein the two syllables uttered by the device may be shortened in tone or lengthened so that the articulation when shortened may sound like "ma ma" or when the vocalizing discs are readjusted, the tone may be increased to "ma a a a, ma a a." In other words, by adjusting the vocalizing discs, the tone after the "m" may be increased or decreased thereby altering the vocal expression and affording desirable variation of the accents.

Fig. 1 is an elevation of the actual vocalizer device fully extended; the outer casing only partly shown in section.

Fig. 2 is a plan view of Fig. 1;

Fig. 3 is a partly broken elevation of the device to show the vocalizer device in full compressed position;

Fig. 4 is a sectional elevational view of the device, on the line 4—4 of Fig. 2;

Fig. 5 is an elevation of the vocalizer device partly compressed and partly broken to show the action of the vocalizing membrane on compression of the device.

My device comprises an outer casing C, preferably made of fibre, in the form of a tube with a central head W midway between top and bottom ends, which divides the tube into the two chambers 1 and 2. The upper chamber 1 is provided with a removable cover 3, preferably made of card board, and with a plurality of side openings O externally covered by a cloth 4 which is glued onto the cylindrical casing C. The lower chamber 2, which is closed by a head or support 5 at the bottom thereof and composed of the same material as casing C, contains the floating bellows B of the vocalizer device V, located on the web or head W of the casing C.

Bellows B are made of light flexible tubular material, preferably of a very thin rubberized material, impermeable to air and glued to web or head W of the casing and to the bellows-compressing disc member 7, which is preferably made of a suitable weighty material such as lead of a sufficient weight to operate the bellows for the expulsion of air by turning the device bottom side up, or for resetting the device.

In the center of disc member 7 there is fixedly imbedded a spindle 8 by means of a thicker portion 9. Spindle 8 passes freely through the center of web or head W into the vocalizer chamber 6, yet without permitting the free passage or outflow of the air on compression of bellows B, the air being permitted to escape out of the bellows only through reed tube R, fixedly imbedded in the head W, with its upper opening located in vocalizer chamber 6, Figs. 3 and 4.

The vocalizer V consists of two discs 20 and 21, made preferably of fibre, frictionally mounted on a slidable spindle 8, and slidably movable on the spindle 8 for adjustment for shorter or longer vocalization. The vocalization chamber 6 comprises a cylindrical hollow, fibrous cap 22, glued or otherwise mounted on the web W, this cap having a central circular opening 10 covered by a flexible membrane M of skin thickness and preferably made of rubber, having a central hole 11, Fig. 5, of a diameter slightly less than that of the sound forming discs 20 and 21, the function of this membrane of skin thickness being to exert a clinging or tenacious frictional contact with the sound

forming discs for giving an expressive voice-like effect to the sounds produced thereby.

Reed R is of the same customary construction as all sound reeds, and consists of a tube *t* having an ordinary vibrating reed *r* fixedly attached to the lower, or bellows orifice of tube *t*, the said reed being mounted in the head W as shown in Fig. 4.

The head W as clearly illustrated in Fig. 4 is enlarged having a substantial depth or thickness, and the tubular opening *t* therethrough is elongated, in the present instance extending diagonally through the enlarged head, although the conformation or direction of the orifice *t* may assume a shape other than cylindrical and extend in a direction other than straight, without materially affecting the efficiency of the vocalizer.

It will also be seen that the head W cooperates with the bottom 5 spaced therefrom, to form suitable spaced guiding means for the spindle 8, which not only serves to guide the spindle 8, but also serve as stops for limiting the movement of the spindle 8 and of the weight 7.

The device may be mounted on the back of a doll, or in the hollow of the chest in such a manner that when the doll is laid on its back or swung over the arm or shoulder of its holder, disc weight 7 will compress the bellows B thereby forcing the air to escape by reed R into the vocalizer chamber 6, at the same time causing the vocalizer V to emerge out of chamber 6, and compelling their passage through the perforate flexible membrane M, as per Fig. 5. Upon compression of the bellows, the reed is instantly put in vibration but, membrane M coming immediately in contact with disc 20 cuts off the air exhaust and the vibrations of the reed R, and cuts off the sound during the time required by disc 20 to emerge from the membrane. Then when the air is again free to escape, the reed vibrations become full again and thereby cause an exact reproduction of the word "ma ma".

The discs 20 and 21 are adjustably mounted on the standard or spindle 8 whereby depending upon the weight used, and the greater or less distance that the discs are spaced from one another, the "ma-ma" sound may be regulated, that is, the extent of movement of the weight 7 will thereby be defined, and the field of operation during which the sound is produced be regulated to determine the duration of the respective "ma" sounds of the resulting "ma-ma" effect.

Incidentally, the spindle 8, as illustrated, preferably extends axially to the head W, weight 7 and vocalizer housing 6, so that the path of movement of the weight 7 will be in a straight line and the movement of the discs 20 and 21 through the opening 11 positively controlled and predetermined in its cooperation with the membrane M, during the movement of the spindle 8 relative to the housing 6.

Having thus described my invention, I claim:

1. A vocalizing device comprising a casing providing an upper and a lower chamber, the upper chamber having a plurality of cloth covered side openings, a removable cap for the upper chamber, a web between said chambers, a bellows mounted on said web and located in the lower chamber, a vocalizing chamber in the upper chamber and having a central opening in its top, a reed cooperating between the bellows and vocalizing chamber, a slidably movable spindle passing through said casing, bellows and web into the vocalizing chamber, sound forming discs on said spindle normally located in the vocalizing chamber, and a membrane of skin thickness arranged over said opening of the vocalizing chamber having a central opening of somewhat less diameter than the diameter of said discs, the discs being projectable through the opening of said membrane for producing sound.

2. A vocalizing device of the class described, comprising bellows, an apertured vocalizing cylinder mounted upon said bellows, a reed mounted thereon, an apertured articulating membrane on said bellows, a spindle mounted upon said bellows for reciprocation through said apertured cylinder and membrane, a vocalizing element carried on said spindle, a capped housing having a cooperating spindle bearing thereon, and a casing enclosing the vocalizing element and having a plurality of side openings therein for the emission of sound.

3. A vocalizing device of the class described, comprising a casing, a bellows mounted therein, an apertured vocalizing cylinder mounted upon said bellows, a reed mounted thereon, an apertured articulating membrane on said bellows, a spindle mounted upon said bellows for reciprocation through said apertured cylinder and membrane, a vocalizing element carried on said spindle, a cap on said casing having a cooperating spindle bearing thereon, said casing having a plurality of side openings for the emission of sound, and a webbed covering over said side openings.

4. A vocalizing device of the class described, comprising a casing, a weighted bellows therein, an apertured vocalizing cylinder mounted upon said bellows, a reed mounted thereon, an apertured articulating membrane on said bellows, a fixed spindle mounted upon said weighted bellows for reciprocation through said apertured cylinder and membrane, a vocalizing element carried on said spindle, a cap on said casing having a cooperating spindle bearing thereon, said casing having a plurality of side openings

for the emission of sound, and a webbed covering over said side openings.

5. In a device of the character described, a head of substantial thickness, there being an elongated passage-way extending through said head, a vocalizer in said passage-way, a bellows for cooperating with said vocalizer to produce sounds, a sound interrupting device, a support, a spindle guided by said head and support for free reciprocation and actuating the sound interrupting device, and a weight fixed on the spindle and operating the bellows.

6. In a device of the character described, a head of substantial thickness, there being an opening extending diagonally through said head, cooperating with the thickness of said head to produce an elongated tubular opening, a vocalizer in said opening, a bellows for cooperating with said vocalizer to produce sounds, a sound interrupting device, a support, a spindle guided by said head and support for free reciprocation and actuating the sound interrupting device, and a weight fixed on the spindle and operating the bellows.

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