

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

An Improved Talking Machine.

We, NICOLAUS VADASZ and STEPHAN VADASZ, commonly known as Stephan Etienne Vadasz, both Hungarian citizens, both of rue Leon Delhomme, 9, Paris, France, late of rue Touroot, Paris, France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to talking machines and it has for its object a novel form of talking machine in the shape of a watch which, however, differs from the known "musical watches",—which can only repeat again and again the same piece of music,—by providing for the changing of the record thereby changing the music in accordance with the record in use.

The essential feature of the invention is that the parts of the machine, that is to say the revolving record carrying disc, the sound box, and the sound conducting parts, are arranged in a watch-like case of much smaller dimensions than those of the ordinary machines and which may approximate those of a watch the driving mechanism or movement being arranged in the dimensions of a normal watch movement, means being provided for regulating the speed of the record.

The record carrying disc and sound-box, as well as the devices for transmitting the sound from the record-carrying disc to the sound box, may be arranged in various ways.

In order that the invention may be the better understood drawings are appended showing various forms of construction of a machine according to this invention in which:—

Figs. 1 to 3 show a form of the invention in which the sound box or sound membrane is arranged above the move-

ment, while the record carrying disc is in the hinged watch-case cover or lid,

Figs. 4 and 5 show a form of the invention in which the record carrying disc is arranged above the movement and the sound box underneath the movement, and

Figs. 6 and 7 show a form of the invention in which the record-carrying disc is arranged above the wheel-work and the sound-box is hinged above the record carrying disc.

In the form shown in Figs. 1 to 3, 1 indicates the casing for the watch-shaped talking machine, with a hinged lid 2 in the usual manner in watch movements and a manipulation knob 3 in the manner of the usual winding knob of a keyless watch, said knob 3 serving for winding the movement in the casing, which in Figs. 1 to 3 is supposed to be underneath the diaphragm, though not shown in detail.

The hinged lid 2 carries the record carrying disc 5, borne on a pivot pin and which disc serves at the same time as a fly-wheel; being driven by a pinion 6 from the gearing 7 by means of the transmission shaft 8 which is mounted in the lid of the casing and which, together with the lid of the casing when the latter is opened, is so swung round that the transmission wheel 7¹ of the shaft 8 is made to mesh with the fixed wheel 7 of the movement.

To avoid any difficulties as regards bringing the wheels into gear with each other the wheels 7, 7¹, may be friction gears. Consequently the record carrying disc 5 is revolved from the gear at a rate of speed corresponding to the speed of revolution of the main gear.

The diaphragm m^1 is mounted in a box m freely mounted on the pivot-pin 10 above plate 9, carrying the driving mechanism its parallel motion being

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secured, for example, by arranging a support on the margin of the diaphragm for ball-bearings or the like.

Bearing upon the centre of the diaphragm is an arm 11 connected by means of the arm 12 and the style guide 13 to the groove of the record on the record carrying disc 5. By means of the arms 11 and 12, rigidly joined to each other, a gyration or deflection of the system consisting of the diaphragm and the rigid arms 11, 12, will therefore be caused when the needle in the style guide 12 engages into the sound groove, so that the style can freely follow the spiral sound-groove towards the centre of the record. At the same time the thrusts exerted on the style by the sound waves of the sound-groove are transmitted vertically to the diaphragm by reason of the fact that the lever system 11, 12, is mounted so that it can pivot on the axis *a*, so that the diaphragm will vibrate at the same rate as the sound waves,—which vibrations will freely issue to the outside as sound vibrations. To intensify the volume of the sound the gear casing 1 is at the same time developed in the form of a "sound-board" chamber, which is connected by sound-holes 14 to the exterior space outside the case.

The transmission of the sound vibrations from the arm system 11, 12, to the diaphragm may take place either on the "Berliner", or on the "Edison" recording system, care being taken, in the first named event, that the deflection of the lever system 11, 12, is transmitted to the centre of the disc under the influence of the sound waves of the sound-curve,—if necessary by means of an angle-lever.

When closed the arm 12 is detached from arm 11 and may be sunk so that, when the lid is in the folded up position the arm 12 is not lying above the level of the diaphragm and consequently does not obstruct, (compare the position indicated in dotted lines in Fig. 3).

In the form of the invention shown in Figs. 4 and 5 the record carrying disc 5 is not arranged in the cover or lid of the wheel-work, but above space 15 occupied by the driving gear.

The stylus arm 12 is attached to a pin 12*a* freely revoluble in a bearing 12*b* in which it is secured against longitudinal movement by means of a screw 12*c* passing through said bearing and engaging a peripheral groove or channel on pin 12*a*.

The bearing 12*b* may conveniently be attached to the casing enclosing the space 15.

The sound arm 11 and sound box *m* are secured to the lower end of the pin 12*a* and thus are free to swing to permit the stylus to move across the record as the needle follows the groove therein.

In the third form of construction, Figs. 6 and 7, the record carrying disc is likewise mounted in the gear casing itself, and not in the gear cover or lid, substantially according to Figs. 4 and 5, but the sound box is not arranged pivotally underneath the driving gear and the record carrying disc, but above the same, being supported by a pin 17 engaging an eye 18.

The sound arm 11, which again is bearing on the centre of the diaphragm *m*¹ may, in this arrangement, carry the stylus guide 13 direct, so that the stylus can again freely follow the spiral groove of the sound curve, and nevertheless transmit the sound vibrations faultlessly, either on the "Berliner" or "Edison" recording system to the diaphragm, if thought necessary by means of an angle lever between the centre of the diaphragm and the point of attachment of the arm 11. In the position of rest the sound box *m* is lifted from the eye 18 and placed in the lower space of the casing 1 which is suitably arranged for this purpose.

It is essential, for the purpose of this invention, that the casing shall be arranged to accommodate supporting means for the driving mechanism, record carrying disc and sound box, as well as the sound transmission parts the arrangement being such that this casing is approximately kept within the dimensions of a watch, whilst at the same time the casing may expediently be made to reverberate the sound, by suitably curving or vaulting the same, and the volume of the sound may be intensified, for example, by super-imposing it on a glass base or some other system capable of vibration.

A brake is provided for the driving mechanism, or some other device, for regulating the speed of revolution, and further a space may be provided in the watch case for storing the needles and, if desired, a small number of records.

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

1. A talking machine embodying a record-carrying disc, driving mechanism, and sound-box, in a closed casing, characterised by the fact that the casing is in the shape of and of the approximate dimensions of a watch.

2. A talking machine as claimed under Claim 1, characterised by the fact that the sound box is so mounted that it can pivot on the casing, and the sound-arm transmitting the vibrations to the sound-box or diaphragm also carries the stylus-arm, so that the said arm can freely follow the spiral sound lines and at the same time transfer the sound waves to the membrane.

3. Talking machine as claimed under Claim 1 characterised by the fact that the record carrying disc is arranged in the lid of the case so that it can rotate, and is operated by a clockwork, by means of a transmission shaft.

4. A talking machine as claimed under Claim 1, characterised by the fact that the sound box or diaphragm is so arranged as to revolve concentrically in the watch case and can be coupled by a pivoting arm system which at the same time serves for the transmission of the sound, by means of the sound needle, with the sound curve of the record carrying disc or the record.

5. A talking machine as claimed under Claim 1 characterised by the fact that the record carrying disc is concentrically arranged in the watch-case so that it can revolve above the driving mechanism, the

sound-box being also so mounted that it can pivot, eccentrically to the record carrying disc, above or below the latter.

6. A talking machine as claimed under Claim 1 characterised by the fact that the record carrying disc is so mounted that it can revolve concentrically above the driving mechanism in the watch cover or lid, the sound box being mounted so that it can pivot on a lateral pin of the driving mechanism casing and connected, for sound transmission, parallel to the record carrying disc with an arm carrying the style guide arrangement which bears upon the centre of the membrane, while the sound box when at rest, can be lifted off its support and can be inserted in a suitable recess of the casing.

7. A talking machine as claimed under Claim 1 characterised by the fact that the casing for the driving mechanism is arranged by suitable vaulting to serve as a sounding-board, for intensifying the sound, having holes in the peripheral surface for free emission of the sound in all directions.

Dated this 5th day of March, 1924.

J. E. EVANS-JACKSON & Co.,
Agents for the Applicants.

Fig. 1.

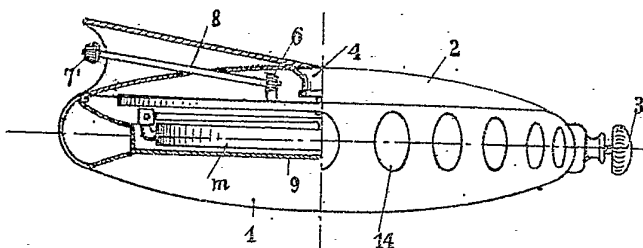


Fig. 2.

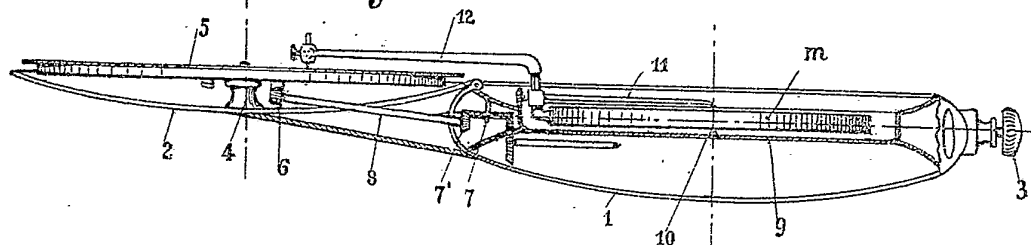
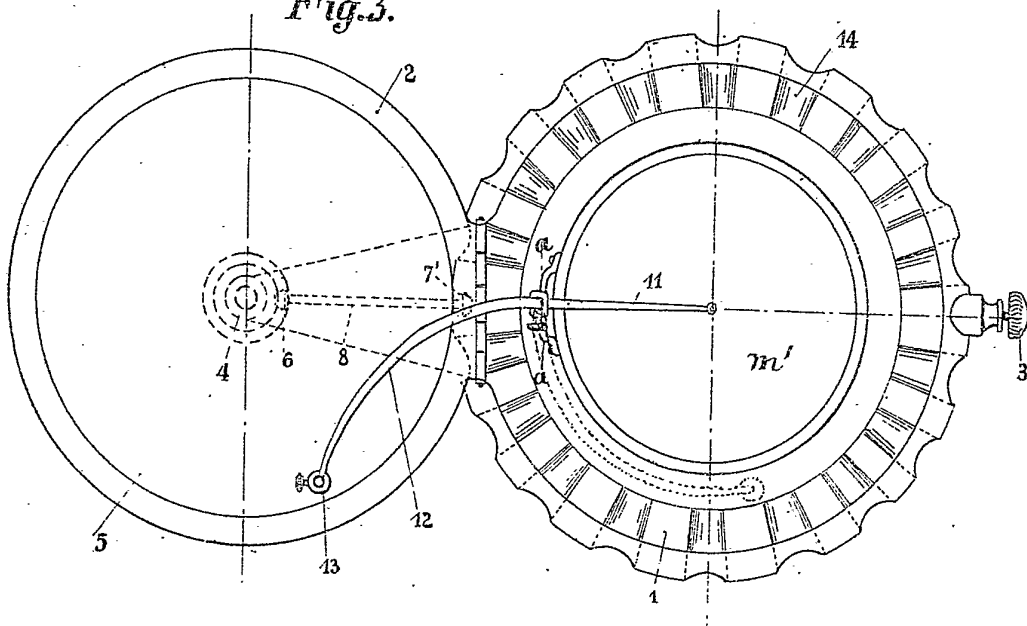
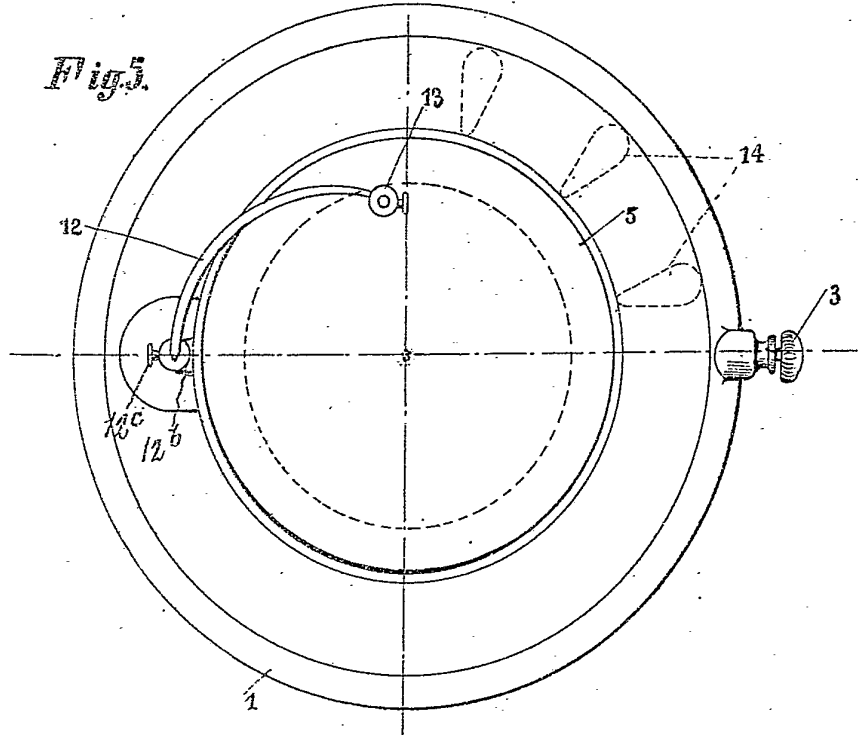
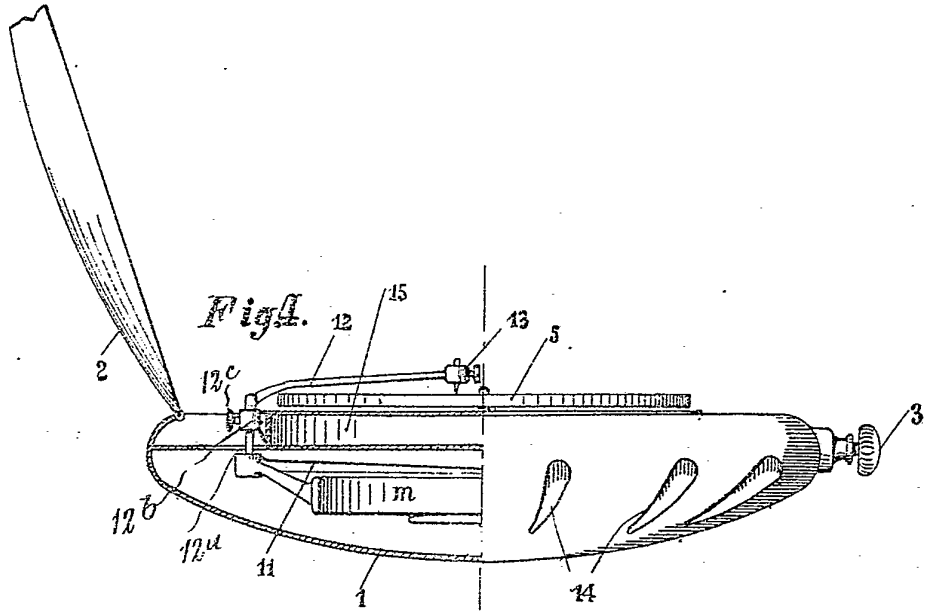
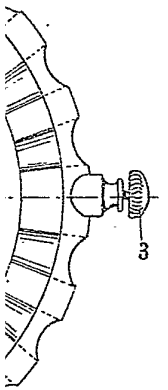
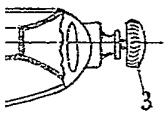
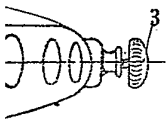
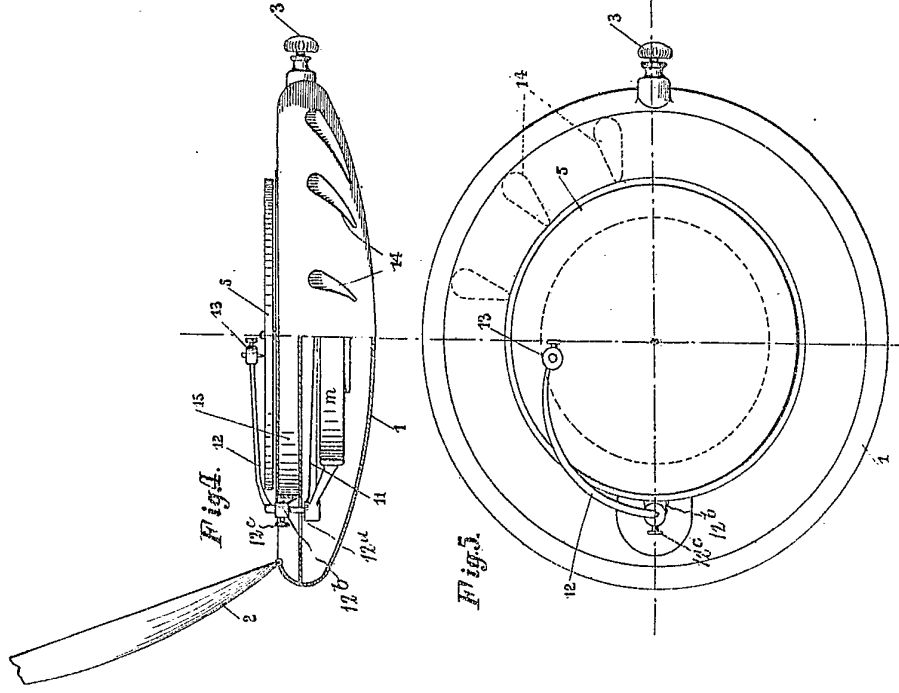
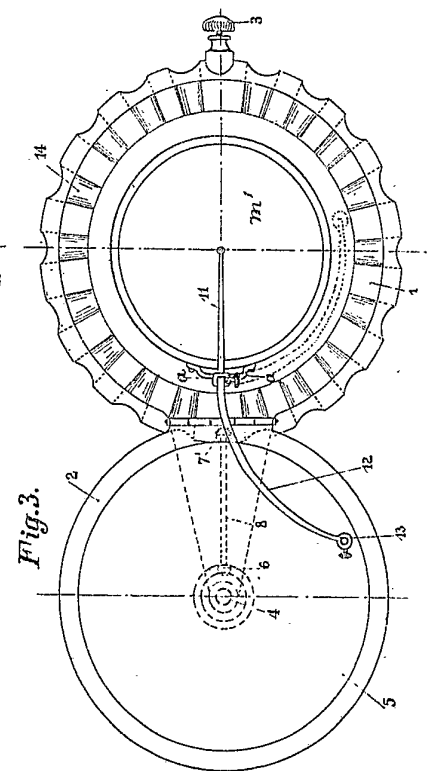
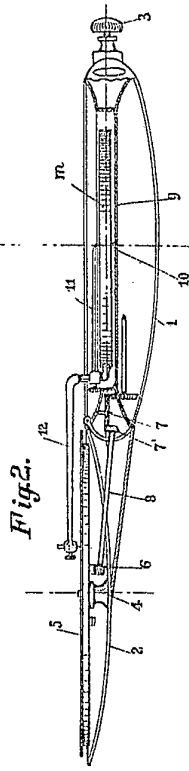
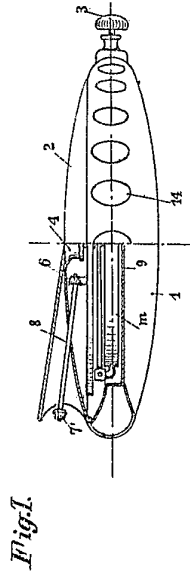


Fig. 3.



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