F. CIRELLI.

TALKING MACHINE.

APPLICATION FILED AUG. 26, 1920.

1,412,841. Patented Apr. 18, 1922.

4 SHEETS—SHEET 1.

Fig. 2

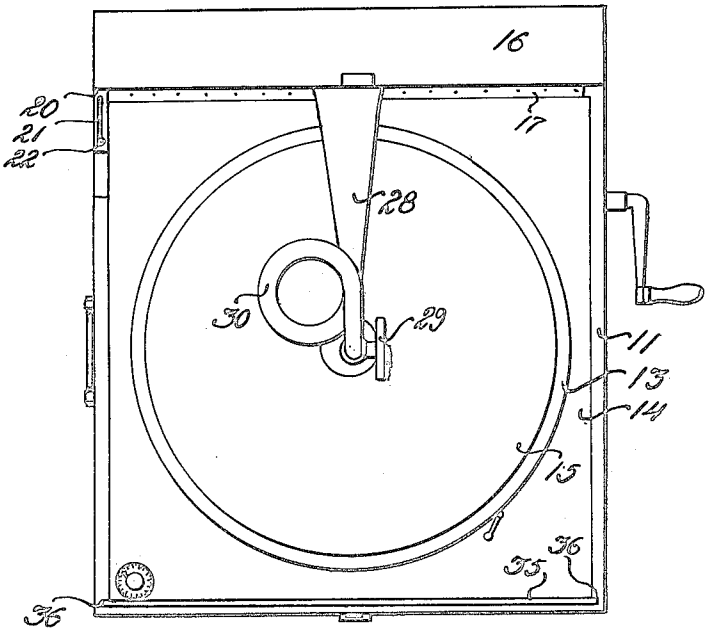
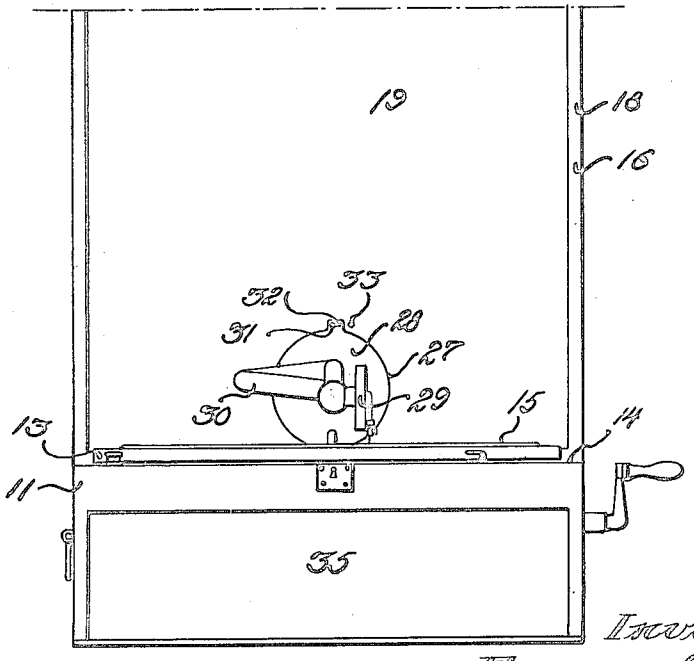


Fig. 1



Witnesses

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4 SHEETS—SHEET 2.

Fig. 4

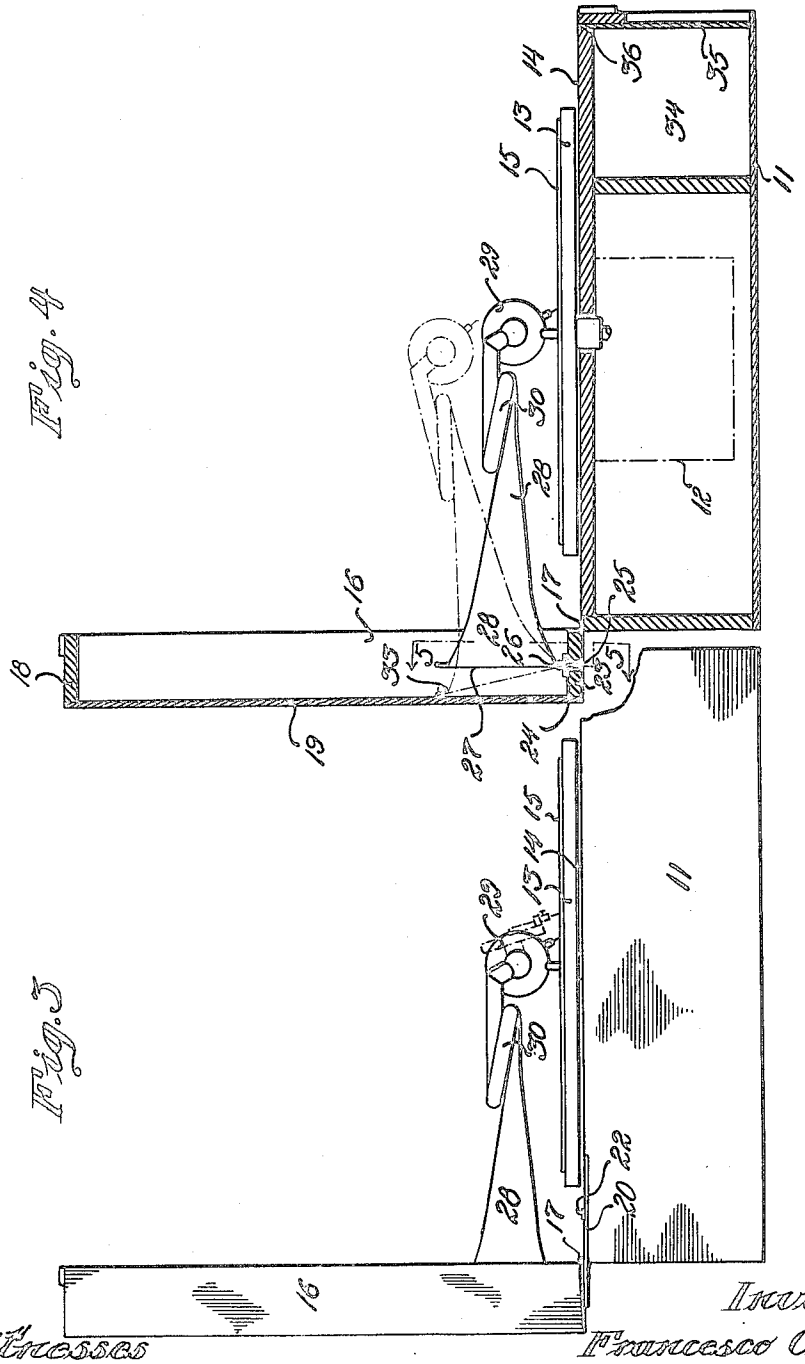


Fig. 5

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4 SHEETS—SHEET 3.

Fig. 5

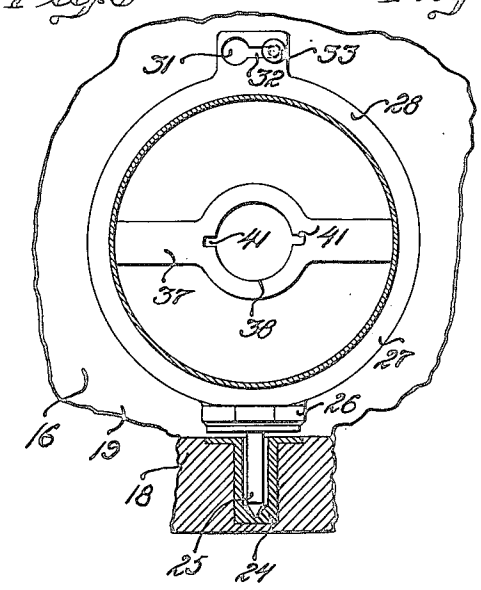


Fig. 6

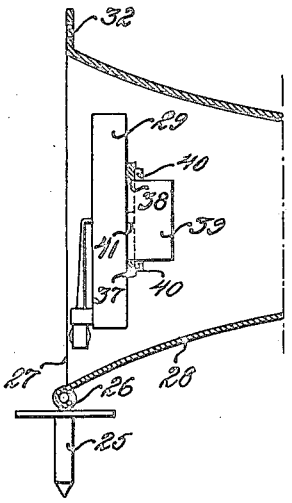


Fig. 7

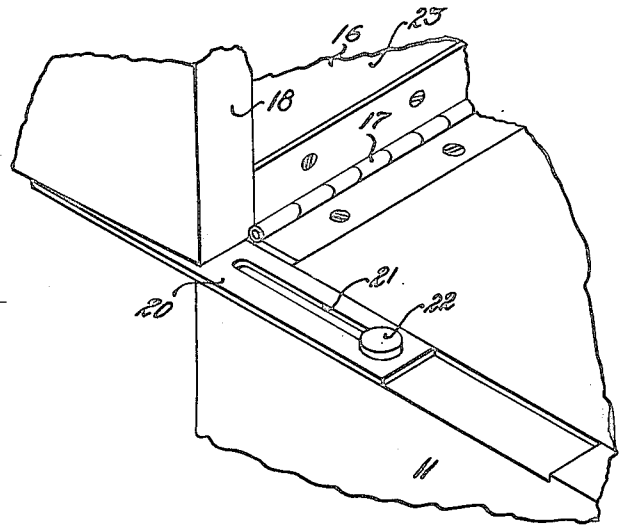
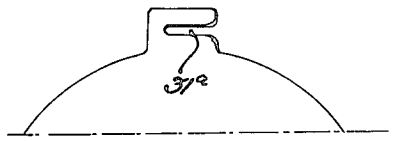


Fig. 10



Witnesses

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4 SHEETS—SHEET 4.

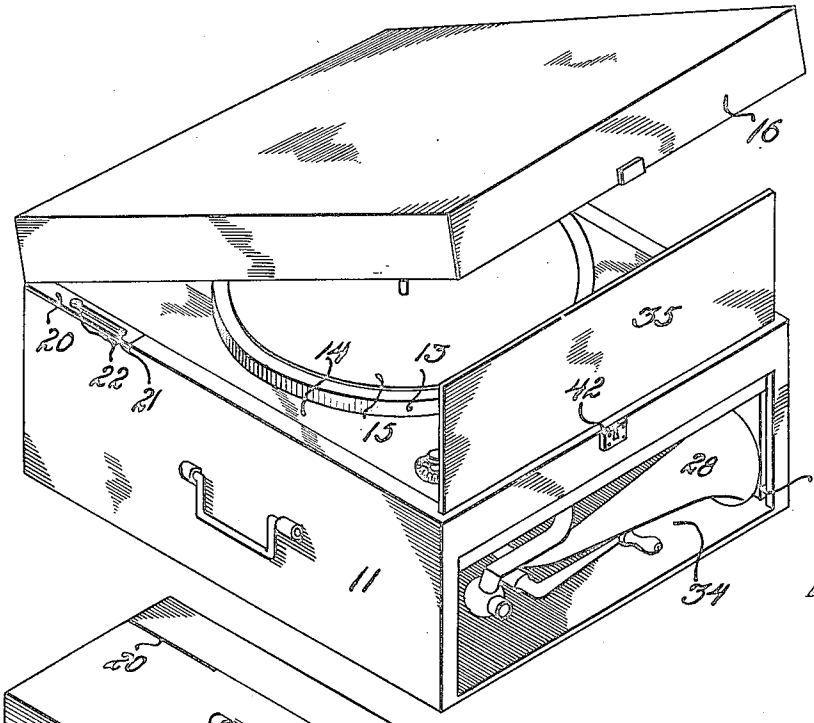


Fig. 8

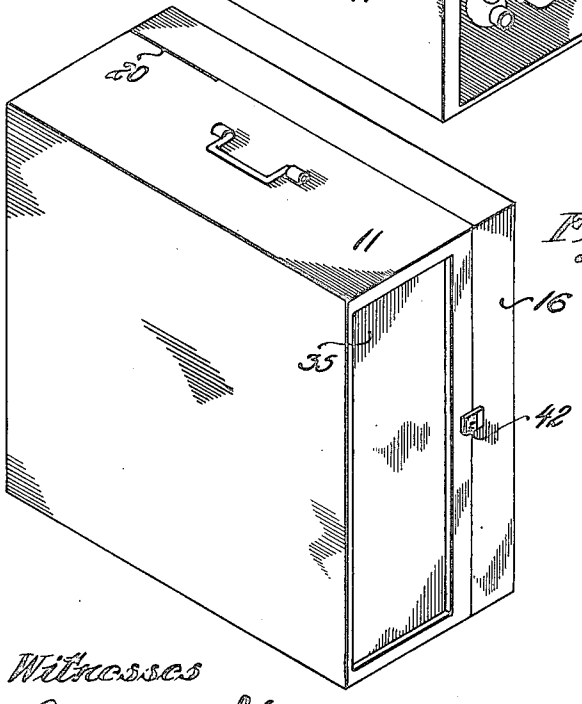


Fig. 9

Witnesses

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UNITED STATES PATENT OFFICE.

FRANCESCO CIRELLI, OF PHILADELPHIA, PENNSYLVANIA.

TALKING MACHINE.

1,412,841. Specification of Letters Patent. Patented Apr. 18, 1922.

Application filed August 26, 1920. Serial No. 406,137.

To all whom it may concern:

Be it known that I, FRANCESCO CIRELLI, a subject of the King of Italy, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Talking Machines, of which the following is a specification.

One object of my invention is to provide an improved talking machine of simple construction which can be made in a compact form and if desired can be used as a readily portable machine.

Another object is to provide an improved talking machine of the type including a hinged lid or cover and to so arrange the parts that the lid or cover serves as resounding means for the reproduced sounds in a manner far superior to any machine of like character made prior to my present invention.

A further object is to so construct and arrange the tone arm or sound conducting means to which the sound box is attached that it can be moved as a whole into a locked position with the sound box raised from the record a sufficient distance to permit a needle to be inserted and removed from the sound box by one hand; thus permitting a person who only has one hand to easily change the needles and operate the machine.

A still further object is to provide a resilient support for said lid or cover so that the lid or cover is permitted to move as a whole due to the vibrations effected by impact with the sound waves and thus produce tones of a superior quality which vary proportionately to the strength of the impacting sound waves. In other words, the lid or cover is normally supported upon means which permits it to swing or move as a whole due to the impact of the sound waves and the resilient means is operative to return the lid or cover to its normal position when permitted to do so by the variation of strength of said impacting sound waves.

Another object is to so construct certain of the parts that they may be stored in a comparatively small space; the tone arm being so constructed that it can be readily detached from its mounted position and will include a device which will permit the sound box to be quickly and securely positioned within the large end of the tone arm so as to prevent injury to the parts of said sound box.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which

Figure 1 is a front elevation of a readily portable talking machine constructed in accordance with my present invention.

Figure 2 is a top plan view of Figure 1,

Figure 3 is a side elevation of Figure 1,

Figure 4 is a sectional elevation with the parts in their operative playing position.

Figure 5 is a fragmentary view, partly in section; said section being taken on the line 5—5 of Figure 4 and showing the tone arm in its locked position in which the sound box has been raised from the record,

Figure 6 is a fragmentary elevation of a part of the tone arm construction showing how the tone arm serves to retain and protect the sound box when not desired for use,

Figure 7 is a fragmentary perspective view showing the resilient support for the resounding lid,

Figure 8 is a perspective view showing my improved machine in a position partly closed,

Figure 9 is a perspective view of the machine when entirely closed ready for carrying, and

Figure 10 is a fragmentary elevation showing a slight modification of a part of the locking means for the tone arm.

Referring to the drawings, 11 represents a cabinet in the form of a rectangular box which may include any form of motor for example as the motor 12 indicated in dot-and-dash lines in Figure 4. This motor is adapted to operate a turntable 13 which is mounted above the platform 14 of the cabinet; said turntable being operative to rotatably support a record 15 in the usual manner.

A lid or cover 16 is hinged at 17 to the rear top edge of the cabinet and said lid or cover includes a hollow frame 18 and a board 19. The lid 16 when in its closed position as shown in Figure 9 serves to inclose the turntable 13 and can be moved into a substantially upright position such for example as shown in Figures 1 to 4 inclusive so that it is positioned to the rear of the cabinet 11.

One of the important features of my invention is to resiliently support the lid 16 in said latter mentioned position for the purpose above described and I provide the following device for this purpose.

A flexible plate 20 is slidably mounted on the cabinet 11 adjacent the rear thereof at the top and this plate 20 is preferably made of a spring steel and includes a slot 21 through which projects a screw or pin 22; said screw or pin having a head larger than the width of the slot 21 so that the plate 20 can have one of its ends projected beyond the rear of the cabinet so as to support a portion of the lid 16 at a point to the rear of the hinge 17 as clearly shown in Figures 3 and 7. When the plate 20 is in said latter position a rearward swinging movement of the lid will cause the projected end of the plate 20 to be bent downward and due to the resilient characteristic of the plate 20, the latter will serve to return the lid or cover to its normal upright position as soon as the pressure which was applied to the lid is released. The lower portion 23 of the frame 18 of the lid 16 when the lid is in said upright position, occupies a substantially horizontal position and this portion 23 includes a metallic socket 24 which serves as a step bearing for a pivot pin 25; said pivot pin being hinged at 26 to the outlet end 27 of a tone arm 28. The hinge 26 is such as to permit the tone arm to swing in a substantially vertical plane and the pin 25 permits the tone arm to swing in a substantially horizontal plane. Thus a universal swinging movement is provided for the tone arm 28. The widely flared outlet end 27 of the tone arm 28 is operatively spaced from the board 19 of the lid 16 as clearly shown in Figure 4 and the opposite end of the tone arm is provided with a sound box 29 which is adapted to co-act with the record 15 for the purpose of reproducing said record and I preferably use the type of tone arm illustrated which includes a twist or convolution 30 for the purpose of lengthening the sound passage without materially lengthening the tone arm since by this structure I have found that the tones reproduced are of good musical quality. The arrangement is such that the outlet end 27 of the tone arm is operatively opposed to the board 19 so that the sound waves in passing out of the end 27 of the tone arm will strike or impact with the board 19 and the latter is preferably made thin and of vibratory character so as to provide a good resonator capable of deflecting the sounds in an amplified manner and in a forward direction. The vibrations set up or imposed upon the lid 16 cause the latter to swing on the hinge 17 as a pivot and against the resilient action of the projecting portion of the plate 20 and in actual use of the machine of the present invention I have found that the above described construction will produce sounds of exceptionally pure quality which are loud and distinctly audible and which represent a faithful and true reproduction of the record.

When it is desired to change the needle in the sound box or if it is desired to raise the sound box for any other purpose, the tone arm can be locked in its raised position due to the following construction. The end 27 of the tone arm has a slot similar to a pay hole which includes a large opening 31 and a comparatively narrow extension 32 of the opening. The board 19 of the lid 16 is provided with a headed pin 33 which can be projected through the large portion 31 of the opening and afterwards the tone arm can be slightly swung, due to the loose fit of the pin 25 in the socket 24, so that the pin 33 will move into the narrow extension 32 of the slot to the rear of the head of the pin 33 such for example as shown in Figure 5. The tone arm will then be locked in a raised position with the needle chuck a sufficient distance above the record to permit the needle to be changed and this action can be accomplished by one hand. To release the tone arm to permit the latter to swing downwardly into its operative playing position, it is merely necessary to shift the tone arm sidewise to cause the head of the pin 33 to register with the enlargement 31 of the slot in the tone arm and then the tone arm can be swung downwardly on the hinge 26.

The connection between the sound box 29 and the tone arm is such that the sound box can be swung, for example from the position shown in full lines in Figure 3, to the position shown in dotted lines so that a record of a different type can be played if desired such for example as the well known "Pathé" record.

The forward portion of the cabinet 11 is provided with a compartment 34 which may be closed by a panel 35 which is slidable upwardly in grooves 36. The compartment 34 can be used for storing the tone arm as illustrated in Figure 8 and the winding crank may also be stored in this compartment. As a means of protecting the sound box I provide the interior of the end of the tone arm with a transverse bar 37 which has a central hole 38 of a diameter substantially equal to the outer diameter of the connecting nipple 39 of the sound box 29. The nipple 39 is preferably provided with projecting pins 40 which are adapted to be projected through notches 41 leading laterally from the hole 38 to secure the sound box in the tone arm as shown in Figure 6. The nipple 39 is projected through the hole 38 so that the pins 40 pass through the notches 41. After this operation the sound box can be slightly rotated to move the pins 40 out of register with the notches 41 such for example as

shown in Figure 6 and the sound box will then be locked in the tone arm and will be projected as is clearly obvious from the showing in the drawings. The pivot pin 25 may be freely inserted within or removed from the socket 24 and if desired the pivot pin can be swung upwardly into alignment with the opening in the end of the tone arm so that the tone arm can be readily stored in the compartment 34.

In Figure 10 I have illustrated a slight modification of the slot in the tone arm for connection with a pin similar to the pin 33 and in this instance the slot which is indicated at 31ª is in the form of a notch leading inwardly from the side and it is merely necessary to move the portion including the notch sidewise to the rear of the head of the locking pin. It will be noted that by providing the panel 35, when the lid is closed, it is impossible for the panel to move out of its position and in this manner by the mere locking of the lid to the cabinet such for example as by any suitable lock such as illustrated at 42, the panel will also be locked in its closed position to retain the parts within the compartment 34.

While I have described my invention as taking a particular form, it will be understood that the various parts of my invention may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A talking machine including a lid; a resilient support for the lid; and means for directing reproduced sounds so as to impact with said lid; substantially as described.

2. A talking machine including a lid having a board and a frame projecting from the board; a tone arm having its delivery end pivotally mounted on the frame of the lid; the outlet opening of said tone arm being opposed to said board; and means having parts on said delivery end of the tone arm and said lid whereby the opposite end of the tone arm can be swung and held in a raised position projecting out of said lid; substantially as described.

3. A talking machine including a lid; a tone arm having an outlet end opposed to said lid; a hinge support for said tone arm adjacent the bottom of said end, said end of the tone arm having a slot therein above the hinge support, said slot having an enlarged portion and a comparatively narrow portion; and a headed pin on said lid adapted to project through the enlarged portion of said slot when the tone arm is raised, said tone arm being adapted to be moved on its hinge support whereby the narrow portion of the pin will enter the narrow portion of the slot so that the head of the pin will support the tone arm in its raised position; substantially as described.

4. A talking machine tone arm having a bar therein provided with a hole and an offset notch; a sound box having a nipple; and a projecting pin, said nipple being adapted to be inserted through said hole and the pin through said notch whereby after the sound box has been relatively rotated, the pin will be moved out of register with said notch and the sound box will be locked within the tone arm; substantially as described.

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

FRANCESCO CIRELLI.

Witnesses:
THOMAS TOGANI,
CHAS. E. POTTS,