P. CATUCCI.

TABLET SUPPORT FOR TALKING MACHINES.

APPLICATION FILED MAR. 13, 1917.

1,242,920.

Patented Oct. 16, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

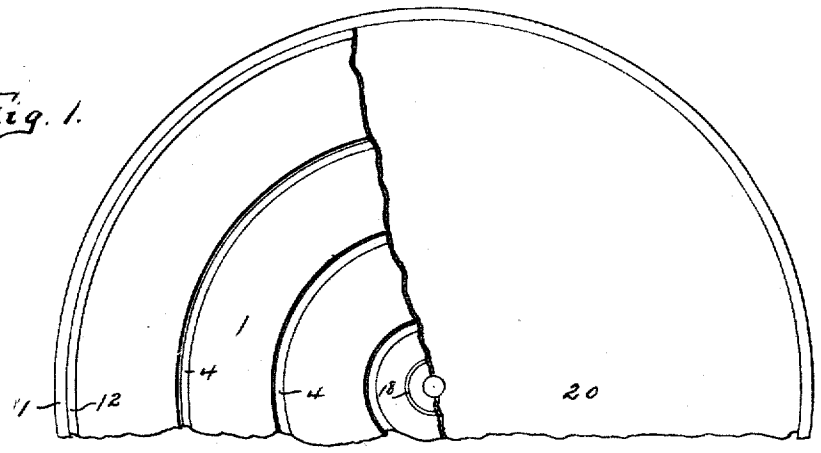


Fig. 2

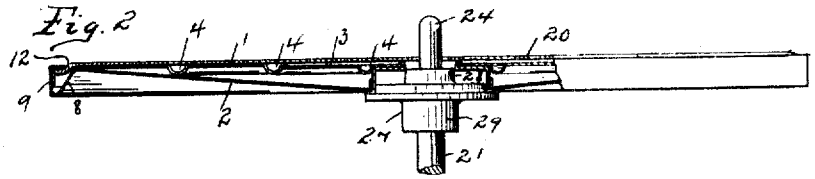


Fig. 3.

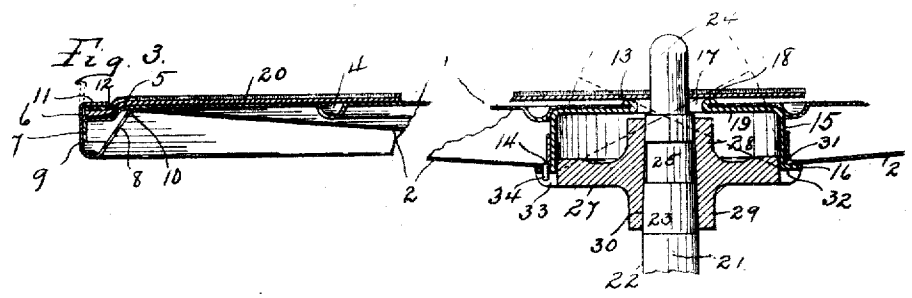
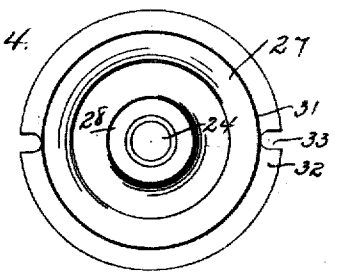


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5

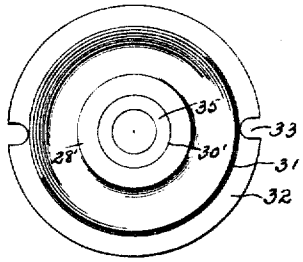


Fig. 4

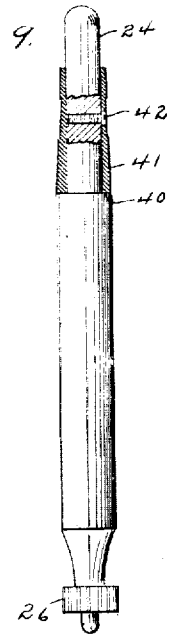


Fig. 6

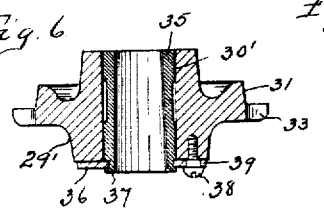


Fig. 7

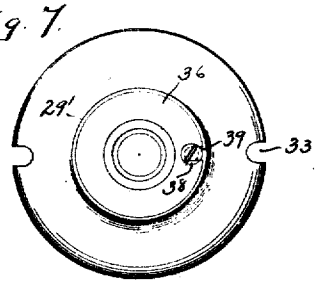
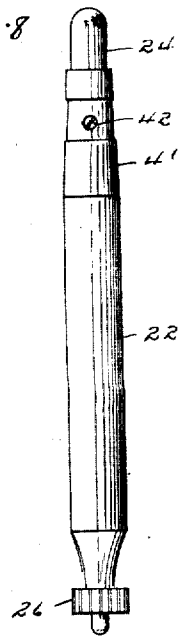


Fig. 8



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UNITED STATES PATENT OFFICE.

PLINY CATUCCI, OF NEWARK, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO OTTO HEINEMAN PHONOGRAPH SUPPLY CO., INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TABLET-SUPPORT FOR TALKING-MACHINES.

1,242,920. Specification of Letters Patent. Patented Oct. 16, 1917.

Application filed March 13, 1917. Serial No. 154,527.

To all whom it may concern:

Be it known that I, PLINY CATUCCI, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Tablet-Supports for Talking-Machines, of which the following is a specification.

In my prior Patent No. 1,128,756, dated Feb. 16, 1915, I have fully and clearly set forth the advantages of a tablet support constructed with a plain or flat disk, strengthened by a dished or flattened, cone-shape disk, the margin of which is rigidly secured to the flat disk. In practice it is the custom to place a circular sheet of felt upon the upper surface of such a tablet support, either permitting the same to rest loosely upon such support, or securing the same in place by the use of some adhesive. The use of felt for the purpose has become universal for the reason that when used in either of the ways just described, there is no tendency to ravel or fray at the margin of the sheet of felt. Should any other fabric be used for the purpose, it would be necessary either to hem the margin of the sheet or bind it with other material to prevent its fraying or raveling. The felt possesses the disadvantage of distortion upon the accumulation of moisture, either accidentally or from the moist condition of the atmosphere, so that it frequently happens that the felt sheet must be replaced.

It is well known that a pile fabric such as velvet or plush is more suitable for the purpose than felt; but hitherto, because of the tendency of velvet or plush to ravel and fray at the margin, it has not been used.

One of the objects therefore, of my present improvement is to provide means upon the tablet support for firmly securing the margin of a pile fabric sheet upon the upper surface of the support without the necessity of a marginal binding or hem.

It is also desirable in practice to provide means whereby the tablet support may be readily removed from the driving spindle or mandrel. In my prior patent referred to, I have described a central thimble which is rigidly secured to the disks forming the elements of the tablet support, such thimble being provided with a central aperture which nicely fits over the spindle. The difficulty with such a construction in practice is that because of the mandrel itself, being slightly tapered, such thimble frequently becomes fixed or set upon the mandrel, so as to require considerable effort to remove the same. I have found in practice that such a close fit between the mandrel to the tablet support is unnecessary, and what I term a floating fit is much more desirable for the reason that it permits the ready removal of the tablet support from the spindle and at the same time it avoids the liability of binding or distorting the spindle accidentally, through any undue weight or pressure to which the tablet support itself may be subjected. The tablet support is usually twelve inches in diameter, and if fitted firmly in place upon the spindle, any knock or jar at the circumference of the tablet support will necessarily subject the spindle to an enormous strain and consequent distortion so that, thereafter, the tablet support will not run true. A further object in my present invention is therefore to provide means for a floating fit between the tablet support and the spindle.

Other objects and advantages are fully set forth in the accompanying specification.

In carrying out the objects of my invention I make use of the structures described in the following specification and illustrated in the accompanying drawings, wherein—

Figure 1 is a top-plan view of my improved tablet support.

Fig. 2 is a side elevation, partly in section.

Fig. 3 is an enlarged sectional view showing the details of the construction.

Fig. 4 is a plan view of the center bearing and spindle with the tablet support removed.

Fig. 5 is a plan view of a modified form of center bearing.

Fig. 6 is a vertical section and

Fig. 7 is a bottom plan of said modification.

Fig. 8 is a side elevation of a spindle.

Fig. 9 is a similar view, partly in section, of said spindle.

Similar reference numerals refer to like parts throughout the specification and drawings.

The tablet support, or as it is sometimes called, the turntable is constructed of the

upper and lower sheet metal disks, 1, and 2. The upper disk 1, is substantially flat but may be provided with a central depression as at 3. It may also be provided with a series of annular beads or single corrugations 4, if desired, to strengthen the disk, which is ordinarily made of a very thin sheet metal as steel or brass. Near the margin, the disk is curved downwardly as at 5, and then extends outwardly as at 6, and the extreme edge is turned downwardly at right angles to the plane of the disk, so as to form the marginal flange 7.

The lower disk 2, is dished or formed into a flattened inverted cone. Near the margin it is turned downwardly and outwardly as at 8, and then upwardly as at 9. In this condition the two disks 1, and 2, are fitted together with the flange 7, inside of the upturned part 9, and with curved part 10, bearing upon the under face of the disk 1. The extreme edge of the upturned edge 9, is then spun down as at 11, so as to form, with the annular part 5, of the disk 1, the annular recess 12.

The two disks 1, and 2, are centrally apertured as at 13, and 14, respectively, to receive the central inverted cup-shaped thimble 15, the marginal flange 16, of which bears upon the lower side of the disk 2. The thimble 15, is centrally apertured as at 17, with the margin of such aperture spun over the margin of the aperture 13, as at 18, with the broad flat bottom 19, of the thimble 15, in contact with the lower face of the upper disk 1. Thus the two disks 1, and 2, are firmly united together, and because of their peculiar construction and light weight, they form a tablet support more rigid than the usual single disk of heavier material.

A disk 20 of some pile fabric, as velvet or plush, of the same diameter as the tablet support may now be laid before the upper disk 1, and its margin may be readily inserted into the annular recess 12, where it will be protected from wear, and liability to fray or ravel. If desired, the fabric disk 20, may be more firmly fixed in place, by the application of some adhesive, as glue or cement to the upper disk 1, before placing the fabric disk 20, thereon. I may also connect the two disks 1, and 2, together with the thimble 15, before spinning down the margin 11. The fabric disk 20, may there be put in place and the margin 11, may be spun down so as to firmly clamp the margin of the disk 20, in place. I do not consider these various ways of fixing the fabric disk in place as modifications, but rather varying means to suit the wishes of the user.

The driving mandrel or spindle 21, may be of the usual type or of the preferred construction hereinafter described. In any case, it is of the standard external shape and contour as shown; the main body is cylindrical as at 22, with the slightly tapered portion 23, and the cylindrical end 24. In order to reduce the extent of its bearing surface with the center bearing the tapered portion 23, may be relieved as at 25. The lower end of the spindle is provided with a pinion 26, for engagement with a driving gear (not shown) by which the spindle is rotated.

The center bearing 27, consists of a small circular casting provided with the upper and lower bosses 28, and 29, through which extends the aperture 30, tapered to fit the tapered portion 23, of the spindle. Near the margin of the casting I provide the annular shoulder 31, of a diameter slightly less than the internal diameter of the thimble 15. This leaves a narrow supporting flange 32, upon the margin of the casting upon which the marginal flange 16, of the thimble may rest. I may provide the flange 32, with the open slots 33, to receive the pin 34, which projects downwardly from the flange 16, so as to insure proper rotation of the tablet support. Ordinarily this slot and pin connection is unnecessary, as the friction of the parts is sufficient to insure their rotation together. It will be noted that the shoulder 31, tapers slightly. In practice, it is made slightly conoidal, with the center of curvature at the base of the shoulder and diametrically opposite, as shown diagrammatically in Fig. 3. Thus constructed, there is never any danger of the tablet support becoming jammed or stuck upon the center bearing, while any abnormal pressure upon part of the tablet support will result only in tilting the tablet support and will not have any tendency to bend or distort the spindle. Moreover the construction described renders the removal of the tablet support only a matter of lifting it from the center bearing, with no parts to stick and bind. It might be thought that the weight of the sound box and tone arm when resting upon a record tablet near its circumference would be sufficient to tilt the tablet support, since it is so lightly supported upon the center bearing. This is not the case, however, for in practice, it is found that the tablet support and center-bearing will stay true, and "run truer," than the older forms where the tablet support is made of a single disk of pressed metal. I account for this by reason of the fact that such pressed metal tablet supports are subjected to varying internal strains, due to the method by which they are made, and varying temperatures. In the built up tablet support constructed as above described since the sheets or disks are so much lighter the internal strains are correspondingly lighter and the trussed form of the construction is such as to resist distortion from whatever cause.

In Figs. 5, 6 and 7, I have shown a slightly modified form of center bearing. It is substantially the same in every respect as that shown in Figs. 2, 3 and 4, with the exception that the central aperture 30′ is cylindrical and in it is inserted a bushing 35, having a tapering central bore to fit the tapered part of the mandrel. This bushing is held in place by means of a collar, 36, which is held in a groove 37, in the lower end of the bushing 35, so as to permit free rotation of the bushing within the collar. The collar itself is secured to the lower boss 29′, by means of a screw 38. By removing screw 38, the collar 36, and the bushing 35, may be readily removed from the center bearing, and when worn out may be replaced by a new one. The external features of the center bearing are otherwise substantially the same as described in connection with the center bearing illustrated in Figs. 2, 3 and 4.

In Figs. 8, and 9, I have shown an improved mandrel or spindle. Such mandrels have been standardized as to size and shape so that in external contour they are substantially alike, the form being illustrated in Fig. 8. In practice however, the mandrel may be materially cheapened by using a lower grade of metal for the main body 22, and its spindle extension 24, which, as shown in Fig. 9, is merely a reduced diameter leaving a shoulder 40, upon cylindrical part of the mandrel. Secured to the spindle 24, is the sleeve 41, such sleeve being so made as to slip down to the shoulder 40, with a comparatively loose fit. The sleeve 41, may then be readily secured in place by means of the set screw 42, screwed diametrically through an enlarged hole in one wall of the sleeve and the body of the spindle end 24. This sleeve 41 is made of a higher grade of metal, usually hardened steel, and with it in place as shown in Fig. 9, the entire structure is exactly the same form and contour as the usual mandrel, being provided with the driving pinion 26, at the lower end and the center bearing supported at the upper end.

From the above description it will be noted that my improvements are directed to the means for supporting a record tablet upon a talking machine, and that such means are directed to the cheapening of manufacturing processes, while at the same time the general dimensions and forms of the parts are preserved in the table support. It is the practice among talking machine builders to plate the various exposed parts of the mechanism either with nickel, silver and very frequently with gold. The exposed parts of the tablet support will be the lower disk 2 with its flange members 8, 9 and 11. When this lower disk is made of thin brass it may be plated with gold much more readily and with better effect than if it were made of the usual low grade cheap steel. It will also take a high finish when plated with silver or nickel.

From structure as described, and upon reference to Figs. 2 and 3, of the drawings, it will be noted that the upper face or surface of the fabric disk 20, is in a plane slighty above the plane of the marginal flange 11, so that when a record tablet rests upon fabric disk 20, its margin will never contact with the metal flange 11. The downward off-set of the recess 12, formed between the margin of the two disks 1 and 2, permits of this slight-elevation of the upper surface of the fabric disk 20.

The entire structure of the tablet support possesses the required strength and stability, while the method of securing the margins of the upper and lower disks so as to provide the annular recess 12, makes it possible to use the most desirable pile fabric for the upper surface of the support without the liability of such fabric to fray or ravel. The spinning down of the flange 11, from the margin of the disk 1, in effect produces an annular recess 12, upon the margin of the disk 1, in such a way that the entire margin of the fabric disk 20, may be inserted into such recess and thereby protect the same.

The entire mechanism is a simple and rigid construction and not liable to distortion in practice. The lightness of the material used and the consequent reduction in weight of the entire structure more than compensates for the extra cost of labor when manufactured in large numbers.

The provision of the loose sleeve 41, upon the spindle overcomes the uneven and irregular rotation of the tablet support which is due to the minute inaccuracies in the train of driving gears in the motor; the loose fit of said sleeve and the enlarged hole therein for the head of the set screw 42, permits a correspondingly slight relative movement of said sleeve upon the spindle.

I claim:

1. In a tablet support for talking machines, the combination of a flat, circular disk having a downwardly and outwardly extended margin, with a dished or cone shaped disk having its outer margin extending upwardly over the margin of said flat disk to form an annular recess in the margin of the tablet support.

2. In a tablet support for talking machines the combination of a flat circular disk, having a downwardly and outwardly extended margin and a dished or cone shaped disk secured to the under face of said flat disk, and having its margin spun down over the margin of said flat disk to form therewith an annular marginal recess.

3. In a tablet support for talking machines the combination of a circular disk,

and a dished or cone shaped disk secured to the under face of said flat disk, and having the margin of said cone shaped disk turned over the margin of said flat disk to form therewith an annular marginal recess.

4. In a tablet support for talking machines the combination of a flat circular disk, and a dished or cone shaped disk, and a sheet metal cup shaped thimble having its bottom secured to the center of said flat disk and its open edge secured to the center of said cone shaped disk.

5. In a tablet support for talking machines the combination of a flat circular disk and a flattened cone-shaped disk, means for securing the margins of said disks together to form an annular marginal recess upon the upper face of said flat disk.

6. In a tablet support for talking machines, the combination of a flat circular disk having a downwardly and outwardly extended margin, with a dished or cone shaped disk having its outer margin extending upwardly over the margin of said flat disk to form an annular recess in the margin of the tablet support, and a pile fabric disk upon the upper face of said flat disk with the margin thereof inserted into said annular recess.

7. In a tablet support for talking machines the combination of a flat circular disk, having a downwardly and outwardly extended margin and a dished or cone shaped disk secured to the under face of said flat disk, and having its margin spun down over the margin of said flat disk to form therewith an annular marginal recess, and a pile fabric disk upon the upper face of said flat disk with the margin thereof inserted into said annular recess.

8. In a tablet support for talking machines the combination of a circular disk, and a dished or cone shaped disk secured to the under face of said flat disk, and having the margin of said cone shaped disk turned over the margin of said disk to form therewith an annular marginal recess, and a pile fabric disk upon the upper face of said flat disk with the margin thereof inserted into said annular recess.

9. In a tablet support for talking machines the combination of a flat circular disk and a flattened cone-shaped disk, means for securing the margins of said disks together to form an annular marginal recess upon the upper face of said flat disk, and a pile fabric disk upon the upper face of said flat disk with the margin thereof inserted into said annular recess.

10. In a tablet support for talking machines, the combination of a flat circular disk having an offset down turned circumferential flange thereon, and a dished or cone shaped disk having a marginal upturned flange in engagement with said down turned flange with the margin of said upturned flange spun over and inwardly to form an anular recess at the outer circumference of said flat disk.

11. In a tablet support for talking machines, the combination of a flat circular disk having an offset down turned circumferential flange thereon, and a dished or cone shaped disk having a marginal upturned flange in engagement with said down-turned flange with the margin of said upturned flange spun over and inwardly to form an annular recess at the outer circumference of said flat disk, and a pile fabric disk upon the upper face of said flat disk with the margin.

12. In a tablet support for talking machines the combination of a circular disk having a central aperture therein, with an inverted cup-shaped thimble having a central aperture in the bottom thereof, means for securing said disk and thimble together with their apertures in registry, and a center bearing provided with a conoidal shoulder and supporting flange fitted to said thimble for supporting said tablet support.

13. In a tablet support for talking machines the combination of a flat tablet supporting disk having an enlarged cup shaped thimble secured to the under surface thereof with a center bearing loosely fitted to said thimble and provided with an annular supporting flange upon which the edge or margin of said thimble may rest.

14. In a tablet support for talking machines the combination of a flat tablet supporting disk having an enlarged cup shaped thimble secured to the under surface thereof with a center bearing loosely fitted to said thimble and provided with an annular supporting flange upon which the edge or margin of said thimble may rest, and a slot and pin connection between said thimble and said flange to insure their rotation in unison.

15. In a tablet support for talking machines the combination of a flat tablet supporting disk, a cup shaped thimble centrally secured to the under face of said disk, a marginal flange upon the lower edge of said thimble, a center bearing provided with a removable central sleeve bushing, and a shouldered marginal flange upon which the flange of said thimble may rest and be held against lateral displacement, and a driving mandrel fitted into said sleeve bushing.

16. In a tablet support for talking machines, the combination of a flat, circular disk, provided with an annular off-set marginal flange, a flattened-cone shaped disk, having a marginal upturned flange, spun over the off-set flange of said flat disk, to form therewith an annular recess, and a pile fabric disk upon said flat disk and having its margin inserted into said annular recess, an inverted cup-shaped thimble cen-

trally secured to said disks respectively to rigidly unite them and a central bearing and driving mandrel upon which said thimble is adapted to be supported to rotate therewith.

17. In a tablet support for talking machines the combination of a disk, with an inverted cup-shaped thimble secured to the center thereof, a center bearing upon which said thimble is detachably supported, a driving mandrel having a loose sleeve bearing thereon for engagement with said center bearing, whereby said disk and center bearing may have a slight rotation movement relative to said mandrel.

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