





## GRAMOPHONE TURNTABLES

In modern gramophones it is a common requirement that the turntable should have a diameter of approximately 11 or 12 inches and it is also frequently desirable that the turntable should be driven by means of a friction drive engaging the inside of a depending rim of the turntable. For various reasons including standardization and operating convenience it is usual for the size of this rim to be approximately 9 inches.

In an attempt to provide an inexpensive form of turntable of this character it has been proposed to construct the turntable from sheet metal by a series of forming and folding operations so that the turntable constitutes a single unitary part. This involves however the use of one or more sets of complicated and expensive tools.

It is an object of the present invention to provide an improved inexpensive turntable of the character specified. Another object is to provide a gramophone turntable of the kind having a drive rim for internal engagement by a friction wheel and a top surface extending beyond said rim, which can be manufactured from sheet metal by a method which includes the steps of forming as a single structure an inner portion of the turntable, a first substantially vertical wall portion extending from the outer edge of said inner portion to serve as a drive rim, a further substantially vertical wall portion extending from said first vertical wall portion, and a horizontal portion extending outwards from said further wall portion, separating the two wall portions to produce an inner portion and drive rim and an outer portion with a rim at the inner edge thereof, and assembling such an outer portion in an inverted position on to said inner portion with the two rims secured together.

In carrying out the original forming operation the two vertical portions are arranged to be of different diameters the second one being larger than the first, so that the inner diameter of the second portion fits closely on the outer diameter of the first portion when the final assembly is carried out. Preferably the fit is so tight that no additional securing is required. Alternatively, however, a somewhat looser fit may be employed, in which case the two portions can be secured together by other means such as spot welding.

In order that the invention may be readily understood, one form of turntable according to the invention and a method for its manufacture will be described with reference to the accompanying drawing in which FIGS. 1 to 4 show in section one half of a gramophone turntable in various stages, respectively, of formation and assembly.

Referring to the drawings, FIG. 1 shows a structure which is blanked and formed from a steel sheet and has a central aperture 1 for the attachment of a die-cast boss, shown chain-dotted at 7, which will form part of the center bearing of the turntable. The inner portion 2 has a flat surface 8, which will ultimately form the upper inner surface of turntable, and extending from the periphery of the portion 2 at the opposite side is an upstanding cylindrical rim formed by a vertical wall

portion 3. Connected to the vertical portion 3 by an integral transition portion 9 is a further vertical wall portion 4 slightly larger in diameter than the portion 3, and extending outwardly from this further vertical wall portion 4 is an annular further horizontal portion 5.

FIG. 2 of the drawing shows the same structure after a further operation. The inner portion 2 and the wall portions 3 and 4 are in the same form that they were in FIG. 1 but the annular portion 5 has had a further operation performed upon it by trimming it and forming its outer edge to create a depending lip or collar 6.

The two main parts of the turntable are then separated as shown in FIG. 3 by cutting the wall on a line between the portions 3 and 4 leaving part of the connecting portion 9 attached to the first wall portion 3. The part consisting of the further wall portion 4 and the annular portion 5 is then inverted and with its further wall portion 4 assembled on to the outer surface of the first wall portion 3 with an interference fit as shown in FIG. 4. The portions 2 and 5 are arranged to be in the same plane so as to form a smooth upper surface for a turntable and, as will be seen, the first wall portion 3 forms an inner rim suitable for driving the turntable by means of a conventional friction-wheel drive (not shown).

The invention enables a complete turntable of the kind described to be manufactured from a single sheet of metal so that waste material is kept down, and the assembly of the two parts after separation need not involve the use of additional fastenings to keep the two parts together. The result is a very inexpensive form of construction having great strength and rigidity.

I claim:

1. A gramophone turntable, which comprises a circular inner portion having a substantially flat top portion and a cylindrical first wall portion integral therewith and extending downwardly from the outer edge of the top portion to provide a skirt having an internal surface suitable for friction-drive engagement, and an annular outer portion surrounding said inner portion and having a substantially flat annular top portion and a cylindrical further wall portion integral with and extending downwardly from said annular top portion at the inner edge thereof, the cylindrical wall portion of the outer portion fitted over and secured to the cylindrical wall portion of the inner portion with the top surfaces of the respective flat portions of the inner and outer turntable portions in substantially a common plane to provide a turntable having an outside diameter substantially larger than the diameter of said skirt.

2. A gramophone turntable as claimed in claim 1, wherein said further wall portion extends over approximately half the height of said first wall portion.

3. A gramophone turntable as claimed in claim 1, wherein said inner portion and said outer portion are made of sheet metal of the same gauge and composition.

4. A gramophone turntable as claimed in claim 3, wherein the outer turntable portion has at its outer edge a downwardly extending integral collar portion.

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