

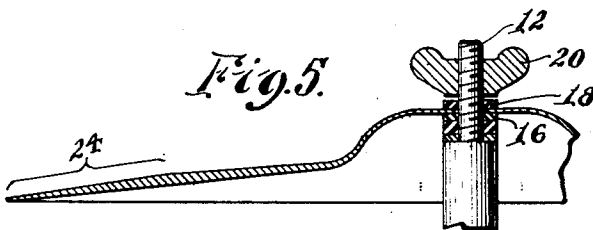
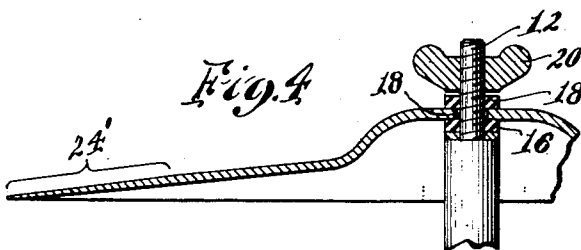
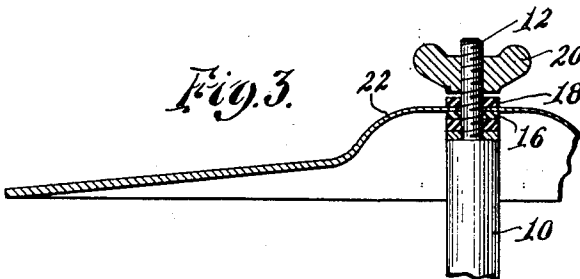
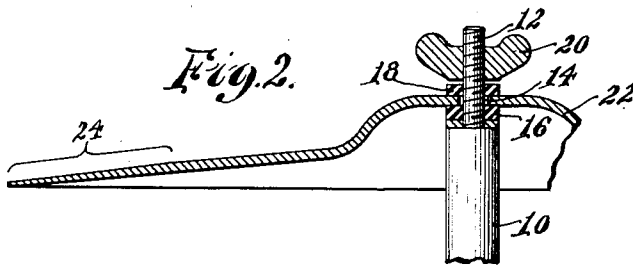
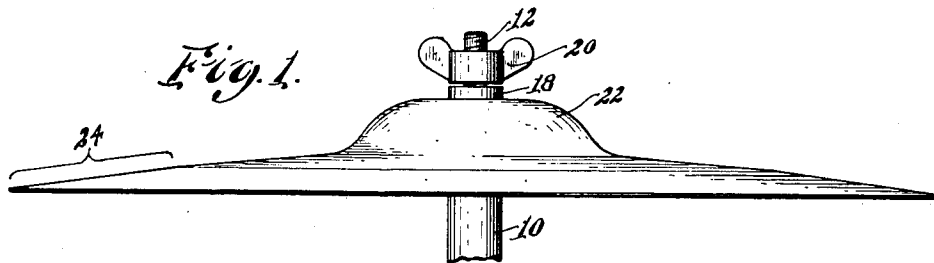
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CYMBAL

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CYMBAL

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This invention relates to improvements in cymbals of the general type employed to provide various sound effects in conjunction with orchestral renditions. More particularly it provides improved cymbal structures which combine certain sound characteristics of the relatively heavy cymbals of the type suitable for use by symphony orchestras, for example, with the characteristic crash sounds of conventional cymbals whose major areas have had paper-thinness for providing crash sounds in connection with orchestral renditions of dance music, especially the so-called jazz and swing music.

Cymbals of the general types customarily used in symphony orchestras and the like, are considerably heavier and thicker than the conventional dance orchestra cymbals. The heavier and thicker types of cymbals produce a distinct musical note having a clear tone and sustained volume whereas the paper-thin crash types of cymbals produce no musical note but only crash sounds having relatively little sustained volume.

I have discovered that certain of these characteristics of the heavier and the lighter cymbals may be effectively combined and modified in a cymbal having a substantial annular region whose thickness gradually changes from relatively thick to paper-thinness. By providing a said relatively thick region tapering radially to paper-thinness, for example, the clear tone with sustained volume, but without a distinct musical note may be produced by striking the thicker region, and a crash sound having sustained volume may be produced by striking the paper-thin region. Also, variations of the sounds may be produced by striking in-between regions of gradually changing thickness.

Hence, it is among the objects of my present invention to provide a cymbal having an annular region of greatest thinness and having a definite gradually increasing thickness thence radially of the cymbal throughout a substantial annular region of the cymbal.

Another object is to provide a cymbal having an annular region of substantial width wherein the thickness gradually increases in one radial direction, and having another annular region of substantial width wherein the thickness is approximately uniform.

A further object is, in cymbal manufacture, to predetermine and control the tonal qualities of a cymbal by gradually increasing its thickness in radial direction from an annular region of greatest thinness to another annular region of greatest thickness.

It is, moreover, my purpose and object generally to improve cymbal structures and particularly to provide structural characteristics for predetermining the character and quality of sounds to be produced by cymbals.

In the accompanying drawing:

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Fig. 1 is an edge elevation of a mounted cymbal embodying features of the invention;

Fig. 2 is a medial vertical cross-sectional view of a major portion of the mounted cymbal of Fig. 1, the thicknesses of the cymbal being exaggerated for clearness of showing; and

Figs. 3, 4 and 5 are views similar to Fig. 2 but showing modified forms of cymbal structures.

Referring to the drawing, all of the illustrated cymbals are shown supported on a post 10 whose upper end is reduced and threaded at 12 for loosely receiving a cymbal thereon. The cymbal has a central hole 14 through which the threaded portion 12 loosely extends, and a felt disk 16 or the like underlies the cymbal on the post and a felt disk 18 overlies the cymbal on the post, with a wing nut 20 or the like screwed on portion 12 to prevent escape of the cymbal from the post. Ordinarily the wing nut is free of clamping engagement with felt disk 18 so that the cymbal is free to tilt and vibrate on the post. However, the particular mounting means illustrated constitutes no part of the invention and any other suitable comparable means may be employed for loosely supporting the cymbals.

In the form of the invention illustrated in Figs. 1 and 2, the cymbal is formed of sheet metal and has a usual central dome 22 through which the said hole 14 extends, at the axis of the cymbal. The main body of the cymbal flares outwardly and slightly downwardly from the dome 22. According to the invention, however, the peripheral zone 24 has gradually increasing thickness from its peripheral edge of greatest thinness, and the balance of the cymbal has uniform thickness. In the drawing, the thicknesses are considerably exaggerated in order to show the varying thicknesses. Actually the peripheral edge of the cymbal of Fig. 2 may have thickness of only twenty thousandths of an inch, for example, and the peripheral zone 24 then may gradually increase in thickness to a maximum of eighty thousandths of an inch, for example, at the inner limit of zone 24, this latter thickness continuing uniform from said inner limit of zone 24 to the axial hole 14. Such a cymbal can produce crash sounds and effects of sustained volume when struck at its paper-thin periphery, and can produce a clear tone of sustained volume when struck at its uniformly thick inner region. My present structure of Figs. 1 and 2 provides a greater range for slight variations in the quality and pitch of sounds by selection as between various widths of the changing-thickness zone 24 which may if desired extend inward as far as the periphery of the dome 22, or the thickness may gradually increase from the peripheral edge of the cymbal all the way inward to the axial hole 14.

Fig. 3 illustrates a cymbal having gradually changing thickness throughout its radial extent 60 but, in the Fig. 3 form, the greatest thinness is

at the axial hole 14, with a gradual increasing thickness radially outward to a maximum thickness of eighty thousandths of an inch, for example, at the peripheral edge of the cymbal. Such a structure produces a clear tone when struck at its peripheral edge, and the pitch and volume of the tone may be varied by striking radially different regions inward from the peripheral edge. With this cymbal, crash-like sounds and effects are attained by striking the central region of greatest thinness.

The cymbal of Fig. 4 is generally similar to that of Figs. 1 and 2, but the entire radial extent of the cymbal of Fig. 4 has gradually increasing thickness from the peripheral edge to the axial hole 14. However, it is a feature of the Fig. 4 structure that there is a relatively rapid increase of thickness in the peripheral zone 24' and a more gradual increase in thickness from said zone 24' inward to axial hole 14. This provides for greater variations of the sounds at different radial distances inward from the peripheral edge.

In the cymbal structure of Fig. 5, the peripheral zone 24 may be the same as zone 24 in the Figs. 1 and 2 form, but the other portions of the cymbal of Fig. 5 have gradually diminishing thickness from the zone 24 inward to the axial hole 14. This provides a region of greatest thickness at the inner limit of zone 24 with diminishing thickness on both sides of said limit.

It will be apparent from the foregoing that my improved cymbals may have gradually varying thickness throughout their radial extents or at selected portions of their radial extents, and the thickness may increase in directions toward or from or both toward and from the peripheral edge, as may be desired, to predetermine particular pitch and tonal qualities of the cymbals. Generally speaking, high pitch characteristics will accompany gradual decrease in thickness, and relatively low pitch characteristics will accompany gradual increase in thickness. But a wide variety of in-between modulated pitch and sound effects are attainable by increasing and decreasing the radial widths of zones having gradually changing thickness of cymbal stock. In other words, I have discovered a practical and effective procedure for imparting any of a variety of pitch and sound characteristics to cymbals by merely graduating the thickness in particular parts thereof or in all parts thereof.

I claim as my invention:

1. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having an annular peripheral region of substantial width wherein the material has gradually changing thickness from the peripheral edge of the cymbal inward throughout the said substantial width of the said peripheral region.

2. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having a central dome portion from which the greater area of the cymbal has generally straight flaring extent radially outwardly and slightly downwardly to the peripheral edge of the cymbal, at least a substantial width of said flaring portion, annularly around the cymbal, having gradually changing thickness in radial directions from the peripheral edge of the cymbal inward throughout the said substantial width of said flaring portion.

3. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having a central dome portion and a generally flat annular portion extending radially outward and

slightly downward from said dome portion, said body having gradually increasing thickness in one radial direction throughout the radial extent of said body.

4. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having a relatively small axial hole therethrough to facilitate mounting of the cymbal and having thickness at the walls of said hole within the range of sixty to eighty thousandths of an inch, the thickness gradually decreasing from said hole to the peripheral edge of the body, and the thickness at said peripheral edge being within the range of fifteen to twenty thousandths of an inch.

5. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having thickness at the peripheral edge of the body within the range of fifteen to twenty thousandths of an inch and having gradually increasing thickness from said peripheral edge radially inward to a region of maximum thickness which is within the range of sixty to eighty thousandths of an inch.

6. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having a central dome portion and a surrounding generally flat portion flaring outwardly and slightly downwardly from said dome portion to the peripheral edge of the body, said peripheral edge having thickness within the range of fifteen to twenty thousandths of an inch, and said body having gradually increasing thickness from said peripheral edge radially inward to an annular region which is substantially spaced radially outward of said dome portion and radially inward of said peripheral edge, and the thickness of said body at said annular region being within the range of sixty to eighty thousandths of an inch.

7. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having a relatively small axial hole therethrough to facilitate mounting of the cymbal and having uniform thickness throughout a portion of substantial radial width extending from said axial hole outward, and having a peripheral portion of substantial radial width extending from the peripheral edge inwardly wherein the thickness of the cymbal stock gradually increases from the peripheral edge inward throughout the said substantial radial width of said peripheral portion.

8. A cymbal comprising a generally disk-shaped body of relatively thin metallic material having a relatively small axial hole therethrough to facilitate mounting of the cymbal and having a peripheral portion of substantial radial width extending from the peripheral edge inward wherein the thickness of the cymbal stock gradually increases from the peripheral edge inward throughout said peripheral portion, and having a portion of substantial radial width inward of said peripheral portion wherein the thickness of the cymbal stock gradually decreases in direction toward the said axial hole.

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