

May 8, 1928.

1,669,169

D. H. MOSS

SHIPPING BOX

Filed Dec. 31, 1924

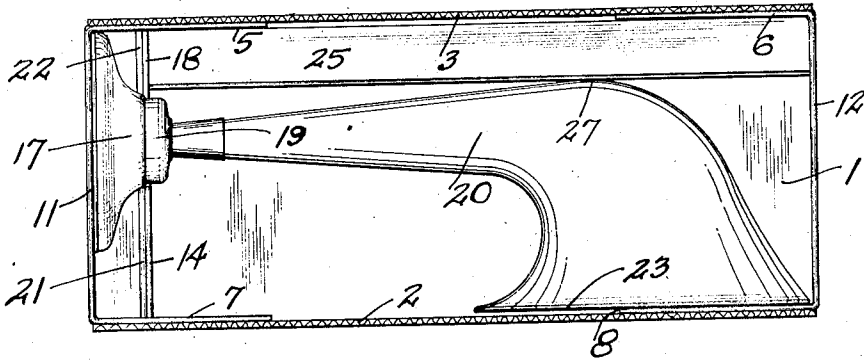


FIG. 1.

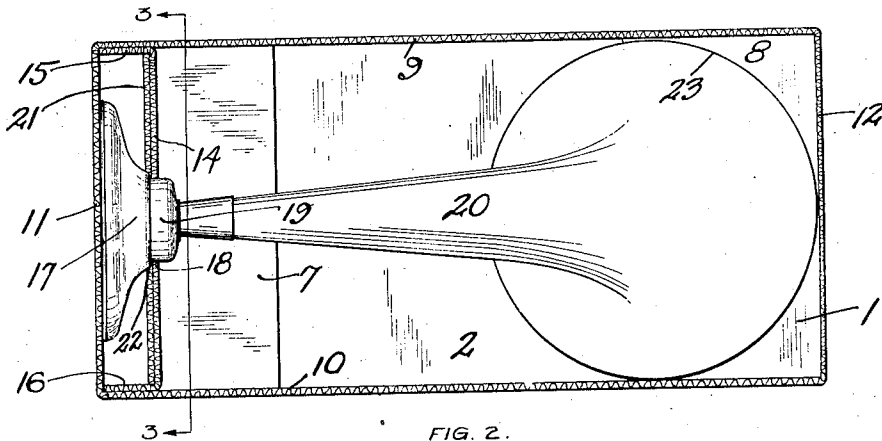


FIG. 2.

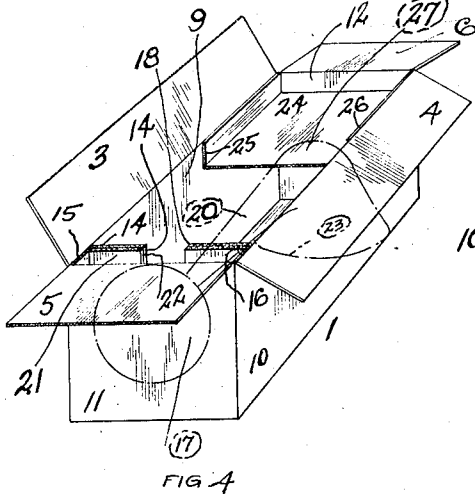


FIG. 4.

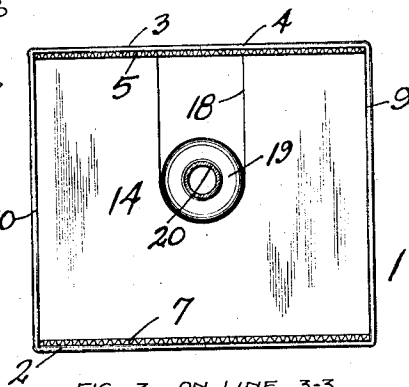


FIG. 3. ON LINE 3-3
OF FIG. 2.

DAVID H. MOSS. INVENTOR.

BY *John D. Brady*

ATTORNEY.

UNITED STATES PATENT OFFICE.

DAVID H. MOSS, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
BRANDES LABORATORIES, INC., OF NEWARK, NEW JERSEY, A CORPORATION OF
NEW JERSEY.

SHIPPING BOX.

Application filed December 31, 1924. Serial No. 759,114.

My invention relates broadly to receptacles and more particularly to a construction of paper receptacle designed particularly for insuring the safe shipment of electromagnetic sound reproducers and acoustic horns forming a part thereof.

One of the objects of my invention is to provide a paper receptacle having interior supporting walls and partitions formed to rigidly lock the acoustic horn and base of an electromagnetic sound reproducer in position in the process of packing the reproducer and protect the same against movement and destructive forces from the exterior of the package during shipment.

Another object of my invention is to provide a foldable package or crate for electromagnetic sound reproducers which may be manufactured and shipped in bulk in knockdown flat form with removable inserts forming interior strengthening members for the crate when the package is assembled to receive the electromagnetic sound reproducer.

Still another object of my invention is to provide a removable insert for a shipping package for electromagnetic sound reproducers in which the reinforcing insert for the box serves to remove destructive forces and pressure from the throat of the horn of the electromagnetic sound reproducer by supporting the device during shipment at a point adjacent the base directly from the cap of the reproducer thereby eliminating the crushing of the bell or throat of the horn.

Still another object of the invention is to provide a plurality of flat foldable inserts for a shipping crate which may be sealed within the crate in such manner that in order to remove the acoustic horn from the crate the seals must be positively broken thereby insuring the delivery to a customer of an electromagnetic sound reproducer which has passed all factory tests prior to its sealing, which reproducer is known to be of first quality when the seals remain intact.

Other and further objects of my invention will be understood from the specification hereinafter following by reference to the accompanying drawings, in which:

Figure 1 is a vertical cross sectional view taken through the shipping box showing the acoustic horn and electromagnetic sound reproducing device securely sealed therein;

Fig. 2 is a horizontal sectional view looking down upon the shipping crate and showing the arrangement of the acoustic horn therein; Fig. 3 is a cross sectional view taken through the shipping box and electromagnetic sound reproducer therein, showing the method of supporting the sound reproducer to eliminate the application of pressure upon the bell or throat of the horn; and Fig. 4 is a perspective view showing the arrangement of the inserts within the shipping box for protecting the electromagnetic sound reproducer during shipment.

With the increased popularity in the art of radio there has arisen a demand for a construction of shipping box which would protect the relatively fragile horn of the electromagnetic sound reproducer against destruction. Heretofore it has been the practice to pack the device in an ordinary box. The result of this in a great many instances has been the crushing of the horn due to rough although normal treatment in shipment. I have experimented with many different constructions of shipping crates and conducted comparative tests upon the durability and protective characteristics of the same by shipments made from New York to San Francisco, California, and return and the construction of crate described herein is the arrangement which I have finally arrived at as a conclusion of these researches. I provide a flat knockdown form of box which may be folded into a substantially rectangular form. I next provide a pair of vertical inserts adjacent one end of the box, each of which have a central U shaped aperture therein of a size corresponding to the diameter of the cap of the electromagnetic sound reproducer and terminating at such a distance from the bottom of the crate that the periphery of the bell of the horn rests in contact with the bottom of the crate at the opposite end thereof.

The sleeve of the horn and forward portion of the throat are substantially spaced away from the interior walls of the crate and the horn is so secured against movement that no direct forces are applied to the horn proper. A second insert member is next applied to the crate disposed in a plane substantially parallel with the top and bottom wall of the crate but spaced inter-

mediate said walls in such manner that the back of the throat of the horn contacts with the insert so that the horn is prevented from moving within the carton during shipment.

5 The construction of the shipping box will be more clearly understood by reference to the accompanying drawings in detail, wherein, reference character 1 designates the crate formed from corrugated cardboard.

10 The cardboard of the crate is normally flat to facilitate manufacture and shipment to the point where the electromagnetic sound reproducers are to be packed and cut to shape in such manner that the board may be folded to form the rectangular assembly as illustrated in Fig. 4. The bottom wall 2

15 of the box and the top walls 3 and 4 are corrugated in a direction transversely of the longer axis of the box while the end fold members 5 and 6 and 7 and 8 are corrugated in the direction of the length of the box. The sides of the box 9 and 10 and the end walls 11 and 12 are corrugated transversely

20 of the length of the carton. The combination of the transverse and longitudinal corrugations operates to increase the strength of the carton and eliminate deformation under pressure during shipment. I provide a substantially U shaped insert 14 having side

25 flanges 15 and 16 of a height substantially equal to the height of the base 17 of the electromagnetic sound reproducer. The insert 14 is provided with a central U shaped aperture 18 of a width corresponding to the diameter of the cap 19 so that the partition 14

30 serves to support substantially the entire weight of the electromagnetic sound reproducer and relieve strain from the acoustic horn 20. The insert 14 is strengthened by a second insert 21 apertured at 22 corresponding to the aperture 18 in partition 14. The insert 21 is placed immediately adjacent the insert 14 and the weight of the electromagnetic sound reproducer thereby divided between the inserts 14 and 21. The periphery

35 of the bell of the acoustic horn at 23 rests in contact with the bottom 2 of the shipping box forming a substantial support for the horn. An additional insert 24 is provided

40 extending between the end 12 of the box and the partition 14 with upwardly extending flanges 25 and 26 which engage the side walls 9 and 10 of the carton. The insert 24 extends parallel to the bottom 2 and top 3

45 and 4 of the carton and rests in contact with the back of the throat of the acoustic horn as shown at 27. It will therefore be seen that the partition 24 tends to rigidly main-

tain the acoustic horn in position within the crate. It will be observed that the electromagnetic sound reproducer cannot be removed from the carton without disengaging the insert 24 from the interior of the crate so that a positive indication may be given if the package is tampered with after the final inspection and packaging for shipment.

60 While I have described a preferred embodiment of the invention it will be understood that modifications in detail may be made and that I intend no limitations upon the invention other than are imposed by the scope of the appended claims.

70 Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is as follows:—

75 1. A shipping carton for an electromagnetic sound reproducer having a base, a cap and an acoustic horn, a pair of substantially U shaped inserts for said carton having their side portions arranged to engage opposite side walls of said carton, one of said inserts extending transversely within said carton at a distance from one end thereof corresponding to the height of the base of said electromagnetic sound reproducer and having means embracing the cap of said reproducer at a distance from the bottom of said carton whereby the periphery of the bell of said horn rests upon the bottom of said carton and the other of said inserts extending parallel with the bottom of said carton and contacting with said acoustic horn for rigidly securing said acoustic horn within said carton.

80 2. A shipping carton for an electromagnetic sound reproducer having a base, a cap and an acoustic horn, a pair of substantially U shaped inserts and a separate flat insert for reinforcing one of said inserts, said reinforcing insert being positioned adjacent said U shaped insert and transversely within said carton, said reinforcing insert and said U shaped insert being centrally apertured from one side to receive and support the electromagnetic sound reproducer at the cap thereof with the periphery of the bell of said acoustic horn resting against the bottom of said carton and the other of said inserts being positioned parallel with the bottom of said carton and extending between said first mentioned insert and the end of the carton in contact with said acoustic horn for securing and positioning said horn against movement within said carton.

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DAVID H. MOSS.