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PACKAGING REEDS FOR MUSICAL INSTRUMENTS

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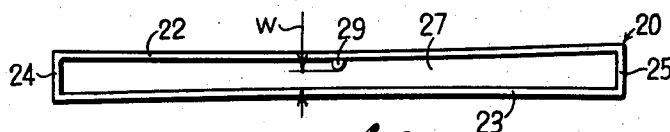


Fig. 1

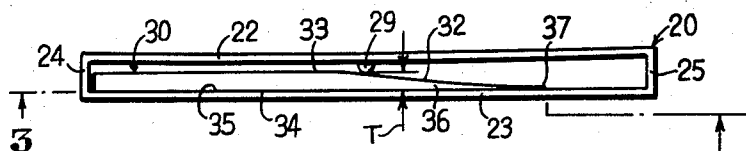


Fig. 2

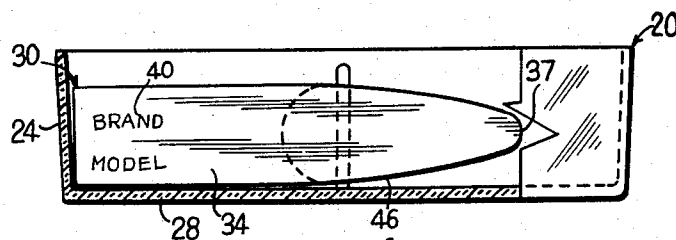


Fig. 3

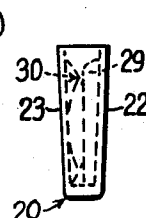


Fig. 4

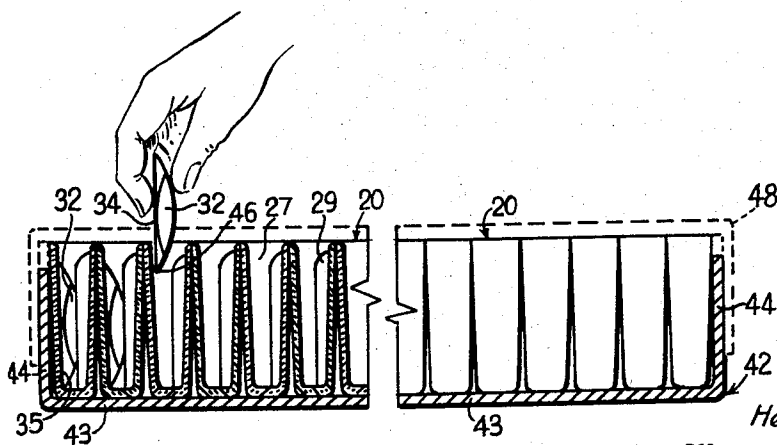


Fig. 5

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## PACKAGING REEDS FOR MUSICAL INSTRUMENTS

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3 Claims. (Cl. 206—16)

This invention relates to the packaging of reeds for musical instruments of the woodwind type and more particularly to novel method and construction for efficiently packaging such reeds at low cost.

In general, the present invention is utilized in connection with either natural reeds formed from cane or synthetic reeds manufactured of plastic such as are removably mounted in the mouthpieces of woodwinds such as saxophones, clarinets, and the like. Such reeds each include a side provided with a plane surface and an opposite curved side formed by the natural outer surface of the cane from which the reed is cut. Each reed also includes a tapered portion which forms a feathered edge on the end of the reed.

The quality of tone produced by a woodwind is well known to be a function of the quality of the finished reed and also a function of its condition. Hence it will be understood that if the plane surface of the reed becomes warped or if the feathered edge on the end of the reed becomes damaged the performance of the reed and hence the tone of the woodwind will be impaired.

In accordance with the present invention novel method and apparatus are provided whereby woodwind reeds can be safely and inexpensively packaged in a protective display case for card or counter sales. Moreover the containers for the reeds are adapted to be compactly stacked in the storage stack of a vending machine.

The reeds can thereby be individually dispensed by conventional coin operated mechanism. This type of merchandising is particularly advantageous to schools, auditoriums, and like locations where musicians congregate. The containers for the reeds are of a simple, novel construction which not only prevents warpage of the reed and damage to the feathered edge, but also is adapted to being efficiently loaded with a reed, at low cost, when the method of the present invention is employed.

In general, the container of the present invention may be of one piece construction, and can be formed of a suitable commercially available plastic material by a conventional method of fabrication such as injection moulding. The dimensions of the container need be only slightly greater than those of the reed to be contained, and the container includes an opening through which the reed can be inserted. When the reed is in position in the container the plane surface of the reed rests against a plane inner wall surface of the container. The container further includes resilient means for urging the reed against said plane inner wall surface. Such construction provides a rigid plane backing that prevents the reed from warping and also prevents the reed from shifting about in the container whereby the feathered edge on the reed is protected from damage by impact with the walls of the container.

It is therefore an object of the present invention to provide a novel protective container for a reed of the type described which container is of a simple inexpensive construction adapted for efficient dispensing from a vending machine.

It is another object of the present invention to provide a novel container for a reed of the type described which container protects the reed from warpage and the feathered edge thereof from breakage.

5 It is another object of the present invention to provide novel method and construction for packaging reeds of the type described in a rapid and efficient manner.

10 It is still another object of the present invention to provide a novel container for a reed of the type described which supports the reed in a protective manner yet permits ready inspection of identification marks on the surface of the reed.

Other objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred form of embodiment of the invention is clearly shown.

In the drawing

Figure 1 is an elevational view of a protective container for a reed for a musical instrument, said view showing the container as it appears when empty;

Figure 2 is an elevational view corresponding to Figure 1 but showing the protective container after it has been loaded with a reed;

Figure 3 is a plan view, partially in section, of the container and reed of the preceding figures. The section is taken along line 3—3 of Figure 2;

Figure 4 is an end view of the container and reed of the preceding figures;

Figure 5 is an end view, partially in section, of a plurality of containers of the type illustrated in the preceding figures assembled in a box which also forms a support for such containers when they are being loaded by the novel method of loading of the present invention. The section is taken along a vertical plane passing through the box and some of the containers positioned therein.

Referring next to the drawing, a protective container for reeds constructed according to the present invention is indicated generally at 20. Container 20 includes spaced longitudinal walls 22 and 23 connected at the ends thereof by lateral walls 24 and 25. One longitudinally extending side forms an opening 27 and the other longitudinally extending side may be closed by a wall 28.

Figure 1 illustrates a preferred shape for container 20 wherein walls 22 and 23 are curved inwardly when the container is empty. It will be noted that with such preferred curved configuration the confronting central portions of walls 22 and 23 are spaced closer together than end portions thereof. It will further be noted that one of the walls 22 is provided with an inwardly disposed shoulder 29. When the container 20 has been loaded with a reed, indicated generally at 30, as seen in Figures 2, 3, and 4, the above mentioned shoulder 29 engages a longitudinally sloped surface 32 on reed 30 and forms a spacer between such tapered surface on the reed and the inner surface of wall 22. When the container is loaded the walls 22 and 23 are bowed outwardly to the plane configuration illustrated in Figure 2.

Reed 30 further includes a curved surface 33 formed by the natural outer surface of the cane and surface 34 which rests against a continuous inner surface 35 of wall 23. Sloped surface 32, which is cut into the natural cane surface 33, forms a tapered portion 36 decreasing in thickness in a longitudinal direction to a feathered edge end termination 37 best seen in Figure 2.

To provide resilient means for constantly urging plane surface 34 of the reed against continuous surface 35 of the container, such container may be formed of resilient material, such as a suitable plastic, whereby inwardly curved walls 22 and 23 will of course be outwardly yieldable from the configuration of Figure 1 to the configuration of Figure 2. With the normal distance W between

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confronting inner surfaces of walls 22 and 23 being less than the thickness T of the reed it will be understood that reed 30 must be pressed through opening 27 and that resilient walls 22 and 23 will yield outwardly to admit the reed between walls 22 and 23. Once the reed 30 is in the position of Figures 2 and 3 the resiliency of the outwardly sprung side walls will constantly urge plane surface 34 of the reed against inner wall surface 35 which will also be plane in the outwardly sprung configuration of Figures 2 and 3.

It will be understood that either or both of the walls 22 and 23 can be curved inwardly and made resilient, or such walls can be formed parallel when in a normal configuration so as to be bowed slightly outwardly when a reed is inserted, with these or other modifications being made without departing from the spirit of the present invention.

As exemplified at 40 in Figure 3, reeds of the type shown at 30 are generally provided with stamped markings which indicate the brand and model of the particular reed. To enable such markings to be readily read by the musician, without removing the reed from its protected position in the container, it is preferable to form at least wall 23 of a transparent material. In the preferred form illustrated all the portions of container 20 are integrally formed by moulding the container from resilient transparent plastic material. When automatic moulding techniques are employed, and multiple cavity dies incorporated in such techniques, it will be understood that containers 20 can be mass produced at high rates of production with a resulting low cost per unit.

Reference is next made to Figure 5 which illustrates an application of the novel method of loading the above described container construction. A plurality of the containers 20 are assembled in side by side relationship on a supporting means 42 which may be provided by a portion of the box in which the loaded containers are packaged for shipment. Supporting means or box portion 42 includes a base or bottom wall 43 and end walls 44.

As seen in Figure 5 the supported containers 20 can be rapidly loaded by inserting a tapered edge 46 of a reed 30 into an opening 27 in a container 20 with the longitudinally sloped surface 32 on the reed engaging shoulder 29 and plane surface 34 on the reed engaging the edge of wall 23 at the opening 27. Reed 30 is then pressed downwardly whereby shoulder 29 and surface 35 are moved apart to permit the insertion of reed 30 to a position whereat the reed is completely within its container 20. If a supporting means other than a box portion is employed, the containers are removed from the supporting means after they have been loaded and successive groups of empty containers can be assembled on the supporting means and loaded in the manner described. When the supporting means 42 is provided by the uncovered portion of a telescoping box, with the lid portion 48 removed, it is only necessary that the box cover be applied, in order to prepare the loaded containers for shipping, and the step of removing the containers from a supporting means is thereby eliminated.

After the packaged reeds reach their destination of sale, the containers can be stacked one against the other and placed in the vertical dispensing stack of a suitable coin operated vending machine. In view of the above it will be understood that the container construction of the present invention is uniquely adapted to protect each reed from damage under the roughest handling of the containers. Not only is the reed prevented from shifting in the container, whereby the feathered edge is protected, but the plane surface on the reed is protected

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against warpage by the resilient construction which urges such plane surface against a plane backing formed by an inner surface of the container.

With reference to Figures 3 and 4 of the drawing the thickness and length dimensions of container 20 increase slightly from the closed side to the open side to provide draft to facilitate removal of the container from the mould. A clear polystyrene has been found to be a satisfactory plastic material from which the containers 20 can be moulded. Other satisfactory materials can of course be substituted but such materials should be sanitary, non-toxic, rigid, and waterproof.

While the form of embodiment of the present invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

I claim:

1. The combination of a woodwind reed of the type that includes a plane side, and a second side having a curved portion and a tapered portion terminating at a feathered edge; and a protective container including a first side wall having a flat inner surface engaging said plane side of said reed, a second side wall covering said second side of said reed and including an inwardly facing protrusion engaging the tapered portion of said reed, an elongated opening for sidewise insertion of said reed between said side walls, and end wall means connecting said side walls, certain of said side walls being resilient for urging said protrusion against said tapered portion and plane side against said flat inner surface.

2. The combination of a woodwind reed of the type that includes a plane side, and a second side having a curved portion and a tapered portion terminating at a feathered edge; and a protective container including a first side wall having a flat inner surface engaging said plane side of said reed, a second side wall covering said second side of said reed and including an inwardly facing protrusion engaging said tapered portion to retain said plane side against said flat inner surface, an elongated opening for insertion of said reed between said side walls, and end wall means connecting said side walls.

3. The combination of a woodwind reed of the type that includes a plane side and a second side having a curved portion and a tapered portion terminating at a feathered edge; and a protective container including a first side wall having a flat inner surface engaging said plane side of said reed, a second side wall covering said second side of said reed and including a rib portion extending transversely of the longitudinal axis of said reed and in engagement with said tapered portion to retain said plane side against said flat inner surface and to prevent longitudinal shifting of said reed, an elongated opening for insertion of said reed between said side walls, and end wall means connecting said side walls the reed being positioned in the container with the longitudinal axis parallel to the plane of the opening.

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