Sept. 8, 1942. S. KAPLAN 2,295,260

PACKAGING MUSICAL INSTRUMENT STRINGS

Filed April 27, 1940

Fig. 1

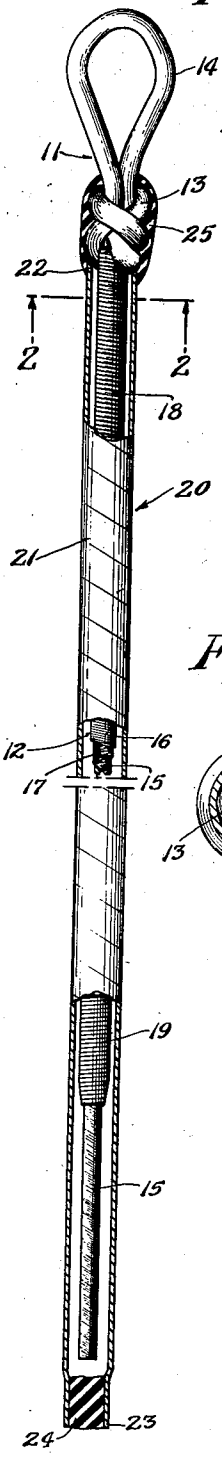


Fig. 2

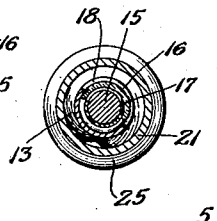


Fig. 3

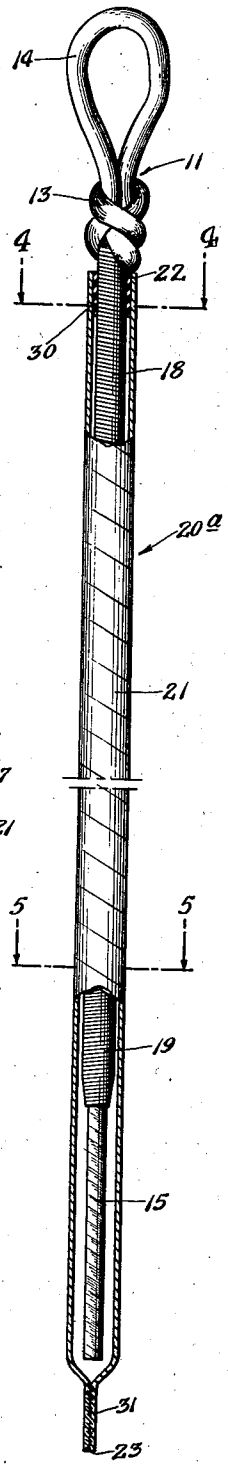


Fig. 4

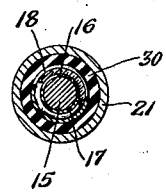
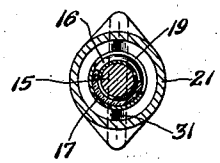


Fig. 5



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Patented Sept. 8, 1942

2,295,260

UNITED STATES PATENT OFFICE

2,295,260

PACKAGING MUSICAL INSTRUMENT STRINGS

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Application April 27, 1940, Serial No. 331,902

4 Claims. (Cl. 206—46)

This invention relates to musical instrument strings and more particularly to improvements in packaging the same.

As is well known, musical instrument strings, in general, are affected by moisture and, if permitted to remain in an unshielded and unprotected location, especially if conditions of humidity vary, have a tendency to become uneven and to vary in tonal characteristics, tarnish if of metal, and to become soiled.

The problems above enumerated are particularly acute to the manufacturer and also to the wholesaler or retailer of musical instrument strings, because even though the string when completed by the manufacturer be perfect in every detail, if the strings become imperfect or unsightly before being actually purchased by a musician for use, the marketability of the strings is impaired. For satisfactory performance on an instrument, strings must be perfect, as many times even slight imperfections will cause the tonal quality of the finest instrument to be seriously and adversely affected.

It is an object of the present invention to provide an improved packaging device and an improved method of packaging musical instrument strings, whereby the strings will be maintained in perfect condition from the time they are made by the manufacturer until the time when the musician desires to use the same on his instrument.

As a means of protecting musical instrument strings it heretofore has been proposed to ship and store the same in glass tubes which completely confine, in common practice, about three dozen strings. With this expedient, the strings are protected to a considerable extent. However, once the tube is opened moisture may be permitted to enter and to contact the strings even though the tube be promptly closed with a usual plug or stopper. Moreover, once a selected string is removed from the tube it is completely unprotected. Also, such relatively large glass tubes take up a considerable amount of room which is disadvantageous not only in storing but also in shipping.

It, therefore, is an object of the present invention to provide a means for packaging musical instrument strings, whereby the strings when packaged not only are protected from the time of their manufacture until the time of their actual use on an instrument, but also may be handled substantially as easily as unpackaged strings.

It is a further object of the invention to provide a musical instrument string packaging unit from which a string may be most easily removed for use, and which not only protects the string against soiling and moisture but which permits a ready inspection of the individual string without removing the same therefrom.

It is a further object of the invention to provide a most economical means and method for packaging musical instrument strings.

In the attainment of the above objects and other objects which will hereafter appear from a more complete comprehension of the invention, there is provided a packaging unit involving a small diameter tube of moistureproof and preferably transparent construction, such as may be provided by spirally wound Celluloid or other transparent cellulose strip material, in which a musical instrument string is relatively snugly fitted and substantially entirely confined except for a portion projecting outwardly from an initially open end thereof, and also involving a relatively small amount of cementing material which not only seals the initially open end of the tube, but also releasably secures the string relative to the tube.

Such a packaging unit not only protects the musical instrument string, but because of the manner in which the string and tube are associated at the initially open end of the latter, the seal may be broken and the string removed from the unit merely by the single operation of pulling on the projecting portion of the string. The projecting portion may be the usual eyed or looped end of the string so that its exposure to the atmosphere will result in no adverse effect on the main or working part of the string which is completely confined in the tube.

A further feature of the invention resides in the provision of a most simple and economical method by which the packaging unit is assembled and which merely involves the steps of placing a string longitudinally in a tube having an open end, with the main part of the string confined in the tube and with only a relatively small portion projecting beyond the open end, and then applying a small quantity of cementing material to the tube adjacent the open end thereof to seal the latter and to releasably secure the string thereto with the projecting portion extending therefrom and providing a grip by which string may be pulled to simultaneously break the seal and be removed from the tube.

Other objects, features and advantages will hereinafter appear.

In the drawing:

Figure 1 is an enlarged view, partially in sec-

tion, showing a musical string packaging unit provided by the present invention.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 1, but illustrating a slightly modified form of the invention.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 3.

Before describing the present improvements and mode of operation thereof in detail it should be understood that the invention is not limited to the details of construction and arrangement of parts shown in the accompanying drawing, which is merely illustrative of the present preferred embodiments, since the invention is capable of other embodiments, and the phraseology employed is for the purpose of description and not of limitation.

Referring more particularly to the drawing, and first to Figs. 1 and 2, there is shown for the purpose of illustration a musical instrument string 11 which as is conventional has a main or working portion 12 which constitutes substantially the entire length thereof with a usual knotted portion 13 and loop or eye 14 formed at one end. While as shown the string is of the type including a gut core 15 having a fine metal wire winding 16 thereon with an intermediate silk underlay 17, and if desired with usual short overwrappings 18 and 19 of silk adjacent opposite ends of the fine wire winding, it is to be understood that the string may be entirely of gut or may be of any other construction or material.

With a metal wound string, for example, there is a tendency for the surface of the string to become tarnished if exposed to the atmosphere. Also, with strings of this type, changes in humidity have a tendency to cause the gut core to expand and contract, thereby loosening the outer fine wire winding and resulting in the string producing an imperfect tone when placed on an instrument.

With regular gut strings, moisture has a tendency not only to make the surface of the strings adversely fuzzy and rough but also to materially affect the tonal quality of the strings.

Moreover, with all strings, exposure to the atmosphere, especially if for any appreciable period of time, has a tendency to make the strings lose their initial clean and fine appearance and to render them less saleable.

The present invention provides a novel, economical and advantageous packaging unit 20 whereby a musical instrument string may be fully protected against the adverse effects of the atmosphere and which at the same time is susceptible of being handled as easily as an unprotected string.

This novel packaging unit 20, in addition to the musical instrument string 11, includes a packaging tube 21 which, of importance and as shown, is preferably so dimensioned and shaped relative to the string that when the latter is associated therewith it has a relatively snug fit therein. Apart from other substantial advantages which will be pointed out hereinafter, the employment of a small diameter tube 21 (in practice tubes with an inside diameter of about $\frac{1}{16}$'' have been used with success) has the advantage of enabling the packing and storing of nearly as many packaging units 20 in a given space as would be possible if unprotected strings were being handled.

Also of importance, the packaging tube is of transparent, moistureproof and dustproof construction. Spirally wound Celluloid strip material has been found particularly adaptable for the purpose of providing a small diameter tube having the desired qualities of transparency, protection against dust and moisture, and at the same time being sufficiently self sustaining to be easily handled. Other transparent cellulose material may also be used in the construction of the tube. The formation of the spirally wound tube itself, apart from the packaging unit, constitutes no part of the present invention and it may be made in any usual and now well known manner.

In assembling the packaging unit 20, it is merely necessary to insert a selected musical instrument string longitudinally in the tube 21 in such a way that the main portion 12 thereof is confined between opposite ends 22 and 23 of the tube, and the knotted portion 13 and eye or loop 14 project outwardly beyond the end 22 of the tube. The other end 23 of the tube may be sealed as by a cementing material 24, advantageously a suitable Celluloid cement if a Celluloid tube is used, prior to the insertion of the string. However, for the purposes of the present invention, the end 23 of the tube may be closed either before or after the insertion of the string.

After the musical instrument string has thus been inserted in the packaging tube 21 with the knotted portion 13 preferably fitted snugly in the open end 22 of the tube and with the eye or looped portion 14 of the string projecting outwardly therefrom, a small amount of coating or cementing material is applied to the knotted portion and also to the walls of the tube adjacent the open end 22 thereof. This coating or cementing material may be applied by merely permitting a small amount to drop on the knotted portion and on the walls adjacent the open end 22 of the tube. When this cementing material sets a relatively thin sealing film 25, as shown clearly in Fig. 1, is formed which not only effectively seals the open end of the tube, but also secures the string relative thereto. Because the coating or cementing material is applied in a relatively small quantity the seal effected thereby may be easily broken if acted upon in the particular manner described hereinafter. Moreover, if, as preferred, a Celluloid cement is used with a Celluloid packaging tube, while the bond between the cement and the tube will be particularly secure, the bond between the cement and the string will be less secure.

A packaging unit 20 assembled in the manner above described, it will be readily appreciated, affords complete protection for the main or working portion 12 of the musical instrument string. Moreover, because of its relatively small size it may be handled substantially as easily as an unprotected string, and because of its transparent nature the string may be readily examined without removing it from the packaging unit.

Thus, when purchasing a musical instrument string a musician will take a complete packaging unit and will not have to subject the string to the adverse effect of the atmosphere until he has occasion to apply it to his musical instrument. Hence, the musician is assured, when he removes the string and applies it to his instrument, that it is in the same perfect condition as at the time it was completed by the manufacturer.

Of particular importance and because of the particular manner in which the musical instrument string 11 and the packaging tube 21 are as-

sociated in the initially open end 22 of the latter, the string may be disassociated from the packaging unit by a very simple operation. Thus by the single operation of gripping and pulling on the projecting eye or looped portion 14 of the string the seal effected by the cement film may be broken and the string simultaneously removed from the packaging tube. When removed, the string without any further operations being performed thereon is then in condition to be applied directly to the musical instrument.

If desired, and as shown in Fig. 3, a slightly modified packaging unit 20a may be employed. This modified packaging unit is substantially like the packaging unit 20 first described. It differs therefrom primarily only in the utilization of a slightly different seal between the initially open end 22 of the packaging tube 21 and the musical instrument string 11. Thus, in the modified packaging unit 20a cementing material is not applied to the knotted portion of the string, but is applied so as to form a relatively thin annular sealing ring 30 intermediate the inner walls of the tube and the adjacent portion of the string.

A simple manner of effecting the annular sealing ring 30 is to merely drop a small quantity of coating or cementing material on the initially open end 22 of the tube and permit the same to run down between the inner walls thereof and the musical instrument string. The cementing material which, as in the form of the invention first described, may advantageously be a suitable Celluloid cement, then will, when set, provide an effective moistureproof and dustproof seal.

Breaking of the seal and removal of the musical instrument string from the packaging tube 21 may be effected in the same simple manner as in the packaging unit first described, by gripping and pulling on the projecting eye or looped portion 14 of the string.

If desired, and as also shown in Fig. 3, the opposite end 23 of the tube may be closed by pressing the walls of the tube together to provide a flat tablike portion 31. Any suitable cementing material, as a Celluloid cement may be used for securing the flattened walls together. Alternatively, if the tube is of a preferred Celluloid construction the flattened walls of the tube may be secured together by the application of heat and pressure. The flat tablike portion 31 of the tube may with advantage be used for applying suitable indicia, indicating, for example, the designation of the string.

While in describing the packaging units 20 and 20a, Celluloid cement has been given as a preferred means for sealing the packaging tubes, it will be appreciated that other suitable cementing, adhesive or coating materials having suitable sealing and securing characteristics, may be substituted therefor.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

Having thus described the invention, what is claimed as new is:

1. A musical instrument string packaging unit, comprising a packaging tube having an open and a closed end; a musical instrument string having a main portion substantially entirely confined in said tube between said open and closed ends, having a shouldered portion and an end projecting outwardly from said open end of the tube, said tube and said string being of such comparative cross-sectional shape and size that there is a relatively snug fit between the latter and the walls of the tube; and cementing material substantially covering said shouldered portion and clear of said main portion, sealing said open end and releasably securing said string relative to said tube, whereby the seal may be broken and the string removed from the tube by the single operation of pulling said projecting end.

2. A musical instrument string packaging unit, comprising a packaging tube having an open and a closed end; a musical instrument string substantially entirely confined in said tube between said open and closed ends, having a knotted portion resting on said open end of the tube and with an end portion projecting outwardly therebeyond, said tube and said string being of such comparative cross-sectional shape and size that there is a relatively snug fit between the latter and the side walls of the tube; and sealing material covering said knotted portion, sealing said open end and releasably securing said string relative to said tube, whereby the seal may be broken and the string removed from the tube by the single operation of pulling said projecting end portion.

3. A musical instrument string packaging unit, comprising a packaging tube having an open and a closed end; a musical instrument string having a main portion substantially entirely confined longitudinally in said tube between said open and closed ends, having a knotted portion and an end projecting outwardly from the open end of the tube, said tube and said main portion being of such comparative cross-sectional shape and size that there is a relatively snug fit between the latter and the walls of said tube; and sealing means on said knotted portion and extending over the outside of the tube adjacent its open end, sealing said open end of the tube and releasably securing said string relative to said tube, whereby the seal may be broken and the string removed by pulling said projecting end.

4. A musical instrument string packaging unit, comprising a packaging tube having an open end and a closed end; a musical instrument string having a main portion substantially entirely confined longitudinally in said tube between said open and closed ends, having an enlarged portion of greater lateral extent than said main portion and projecting outwardly beyond said open end, said open end being of lesser lateral extent than said enlarged portion, said enlarged portion fitting against and substantially closing said open end, and said tube and said main portion being of such comparative cross-sectional shape and size that there is a relatively snug fit between the latter and the side walls of the tube; and sealing means on said enlarged portion and extending over the outside of the tube adjacent its open end, sealing the open end of the tube and releasably securing the latter to said string, whereby the string while sealed in the tube may easily be removed therefrom by pulling the part projecting outwardly beyond said open end.

STANLEY KAPLAN.