June 26, 1962 W. B. CRANE 3,040,966

ARTICLE PACKAGING SLEEVE

Filed Sept. 28, 1959 2 Sheets-Sheet 1

Fig. 1

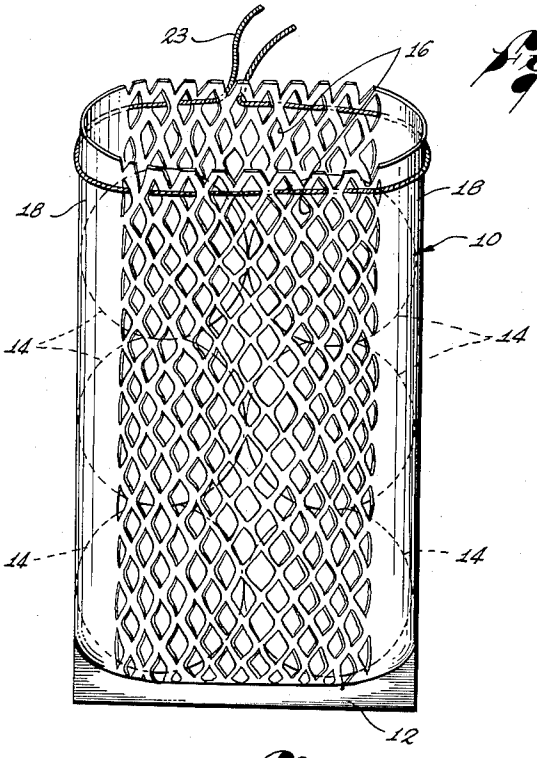


Fig. 2

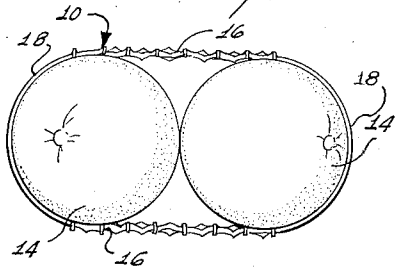


Fig. 3

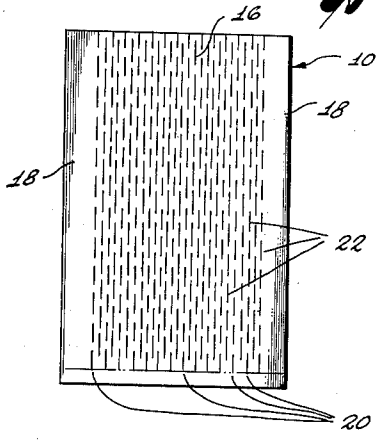


Fig. 4

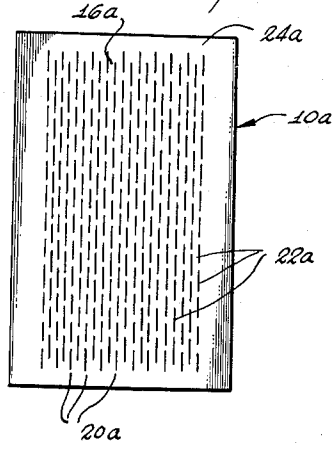
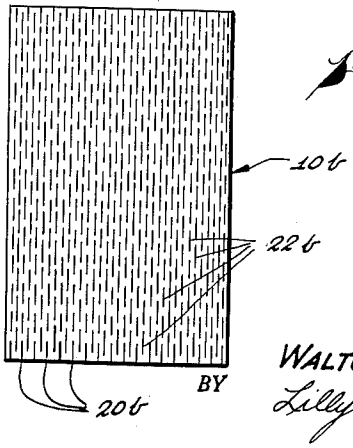


Fig. 5



INVENTOR.
WALTON B. CRANE
BY
Lilly & Nyhagen
Attorneys

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Filed Sept. 28, 1959 2 Sheets-Sheet 2

Fig. 6

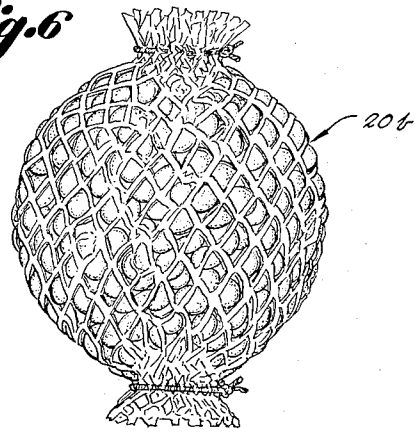


Fig. 7

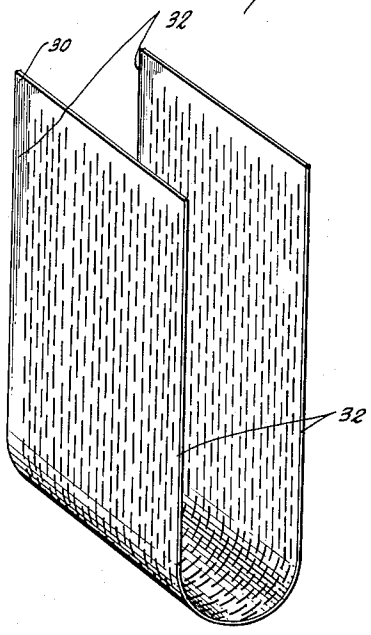
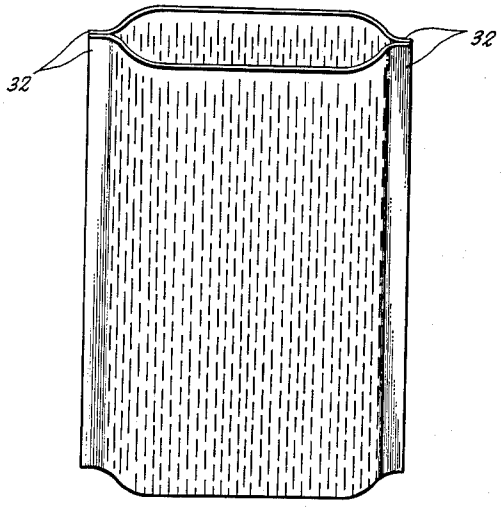


Fig. 8



INVENTOR.
WALTON B. CRANE
BY Lilly & Nyhagen
Attorneys

United States Patent Office

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ARTICLE PACKAGING SLEEVE

Walton B. Crane, South Pasadena, Calif., assignor to Allied Plastics Company, Los Angeles, Calif., a corporation of California

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3 Claims. (Cl. 229—53)

This invention deals generally with the packaging of articles for retail sale, and particularly with a unique article packaging means for this purpose.

The invention is intended especially for packaging articles of produce, such as oranges and grapes, for retail sale. For this reason, the invention will be described in connection with this use. It will become readily apparent as the descripiton proceeds, however, that the present packaging means may be used to package a wide variety of other articles. Accordingly, the invention should not be thought of as limited in use to packaging product, as disclosed herein for illustrative purposes.

Briefly stated, the present packaging means comprises a sleeve of thin pliable material, such as a transparent plastic sheet material. At the time of packaging, one end of this sleeve is sealed or otherwise closed to form a bag for receiving the articles to be packaged. The material of the sleeve is slit in a way which affords the latter with the ability to stretch or expand in the radial direction for accommodating the packaged articles. The slitting, however, does not affect the elasticity of the sleeve or bag in the longitudinal direction, so that the bag does not stretch appreciably under the weight of the articles therein. When the bag is filled, the slits widen to form ventilation openings through which air may freely flow. Such ventilation openings, of course, are highly important and necessary when packaging articles of produce.

A better understanding of the invention may be had from the following detailed description thereof taken in connection with the annexed drawings, wherein:

FIG. 1 is a view in perspective of one form of the present packaging sleeve sealed at one end to form a bag.

FIG. 2 is a view looking into the open mouth of the bag of FIG. 1 after it has been filled;

FIG. 3 is a view, on reduced scale, of one side of the bag of FIGS. 1 and 2;

FIG. 4 is a side veiw of a slightly modified form of the present packaging sleeve;

FIG. 5 illustrates a further modified form of packaging sleeve;

FIG. 6 illustrates the sleeve of FIG. 5 filled with produce and closed at its end to form a produce package; and

FIGS. 7 and 8 illustrate an alternative way of making the packaging sleeve or bag of the invention.

FIGS. 1 to 3 illustrate one form of the present invention which is especially designed for packaging relatively large, generally spherical articles of produce, such as oranges. This form of the invention comprises a sleeve **10** which is sealed at its lower end, as indicated at **12**, to form a bag. The upper end of the sleeve is left open to permit placing of the articles **14** in the bag.

Sleeve **10** has a pair of generally diametrically opposite slit panels or areas **16**. These slit areas are separated by relatively wide unslit portions **18** of the sleeve. Portions **18** form diametrically opposed bands which extend lengthwise of the sleeve.

The areas **16** of the sleeve are slit in the manner described in copending application Serial No. 809,391 filed April 28, 1959, entitled Wrapper for Packaged Produce and have longitudinally extending rows **20** of spaced slits **22**. The slits **22** in adjacent rows **20** are offset, in the

lengthwise direction of the rows, a distance approximately to one-half the slit length. The slits in alternate rows are approximately aligned in the transverse direction of the rows. This slitting arrangement provides the sleeve **10** with the ability to stretch or expand in the radial direction, as illustrated. It is obvious, however, that the slits **20** do not appreciably affect the elasticity or stretchability of the sleeve **10** in the longitudinal direction. The elasticity of the sleeve in this latter direction is dependent on the elasticity of the material from which the sleeve is made. This material may comprise any suitable thin pliable material, such as a thin transparent plastic material, for example.

In use, the articles of produce **14** are placed in the bag, as shown. The upper end of the bag is then closed in any suitable way. This may be simply accomplished by gathering and binding the upper end of the bag with a cord or band **23**.

When filling the bag of FIGS. 1–3, the articles **14** being packaged are arranged in two rows or columns, each located adjacent one of the unslit bands **18**. It will be observed in FIG. 2 that when the bag is filled in this way, it assumes a generally flat shape. The two slit areas or panels **16** form two sides and the unslit bands **18** form the remaining two sides of the filled bag. The slit panels **16** stretch to accommodate articles of different size while the unslit bands **18** tend to retain the articles **14** in position and to limit stretching of the bag in the transverse directions of the slit panels **16**.

Stretching of the panels **16** develops inwardly directed tension forces on the bands **18** which draw the latter inwardly about the articles to form a firm produce package of unique and extremely pleasing appearance. The width of the bands **18**, of course, will be determined to some extent by the size of the articles to be packaged. That is, the band width is preferably approximately one-half of the circumferential dimension of the packaged articles, as shown.

It will be observed that the rows of slits **20** extend completely to the upper end of the sleeve **10** which defines the mouth of the packaging bag. This allows the mouth of the bage to be appreciably stretched to facilitate placing of the articles in the bag. In some cases, however, stretching of the bag mouth may be undesirable. The modified bag **10***a* of FIG. 4 is identical in all respects to the bag just described, except that the rows **20***a* of slits **22***a* which are formed in the slit area **16***a* of the bag terminate in spaced relationship to the upper end of the bag sleeve. This leaves an unslit band **24***a* which encircles the mouth of the bag. The band is relatively unelastic so that the mouth of the bag cannot be appreciably widened by stretching as in the previous form of the invention.

FIGS. 5 and 6 illustrate a modified sleeve **10***b* which is especially designed for packaging articles of produce sold in bunches, such as grapes. Both ends of this modified packaging sleeve are initially open and closed by gathering and wrapping with a cord or band. The rows **20***b* of slits **22***b* extend entirely about the sleeve. As a result, when the sleeve **10***b* is filled with articles of produce, such as grapes, it tends to assume a generally spherical shape, as shown in FIG. 6. This spherical shape again provides a package of unique and highly pleasing appearance. The two ends of the sleeve may be closed by gathering and binding.

In order to promote its formation into a generally spherical shape when it is filled, the sleeve just described can be modified to the extent of providing an unslit band (not shown) about each of its ends in much the same manner as described with reference to FIG. 4.

It will be observed that when each of the described

sleeves is filled, the resultant stretching of its slit areas or panels widens the slits therein into ventilation openings through which air may freely flow. These ventilation openings are essential when packaging produce. As mentioned earlier, since the slits extend longitudinally of the sleeves, they do not appreciably affect the elasticity of the latter in the longitudinal direction. As a result, when the sleeves are filled, they will not stretch to an awkward or unpleasing length under the weight of their contents. While the slits are preferably straight, as illustrated, they may be arcuate or angular or may comprise slot openings rather than true slits.

The packaging means of this invention may be made in various ways. For example, a long sleeve of transparent plastic or other material may be extruded, slit, and then cut off at intervals to form individual packaging sleeves. In the form of the invention illustrated in FIGS. 5 and 6, the rows of slits may, obviously, extend the entire length of the long extruded sleeve. In the case of the bags illustrated in FIGS. 1–4, on the other hand, the rows of slits in the long extruded sleeve must be interrupted to provide the unslit bands at the ends of the finished bags.

FIGS. 7 and 8 illustrate how the sleeve or bag of the invention may be made in a way other than by such a sleeve extrusion technique. In this case, a rectangular sheet **30**, which is slit in much the same way as described earlier, is folded on itself as shown in FIG. 7. The opposing side edge portions **32** of the two folded halves of the sheet are then joined, as by heat sealing, to form the sleeve or bag of FIG. 8.

It will be obvious, therefore, that the packaging means hereinbefore described and illustrated are fully capable of obtaining the objects and advantages preliminarily set forth.

While certain preferred forms of the invention have been disclosed, they are intended to be purely illustrative, rather than limiting, in nature since various modifications are possible within the scope of the following claims.

What is claimed is:

1. An article packaging means comprising a sleeve of thin pliable material formed with circumferentially spaced, longitudinally extending rows of spaced slits, said rows terminating in spaced relation to one end of the sleeve, the unslit end of said sleeve being sealed to form a bag, the slits in adjacent rows being offset in the lengthwise direction of the rows and the slits in alternate rows being approximately aligned in the transverse direction of the rows.

2. An article packaging means comprising a sleeve of thin pliable material having a pair of generally diametrically opposite slit areas separated by diametrically opposite unslit bands extending lengthwise of the sleeve, said slit areas having rows of spaced slits, said rows extending lengthwise of and being circumferentially spaced about the sleeve, the slits in adjacent rows being offset in the lengthwise direction of the rows and the slits in alternate rows being approximately aligned in the transverse direction of the rows, said rows terminating short of one end of the sleeve, and said one end being sealed to form a bag.

3. An article packaging means comprising a sleeve of thin pliable material closed at one end to form a bag and having a pair of generally diametrically opposite slit areas separated by a pair of diametrically opposite unslit bands extending lenghtwise of the sleeve, said slit areas having rows of spaced slits, said rows extending lengthwise of and being circumferentially spaced about the sleeve, the slits in adjacent rows being offset in the lengthwise direction of the rows and the slits in alternate rows being approximately aligned in the transverse direction of the rows.

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