

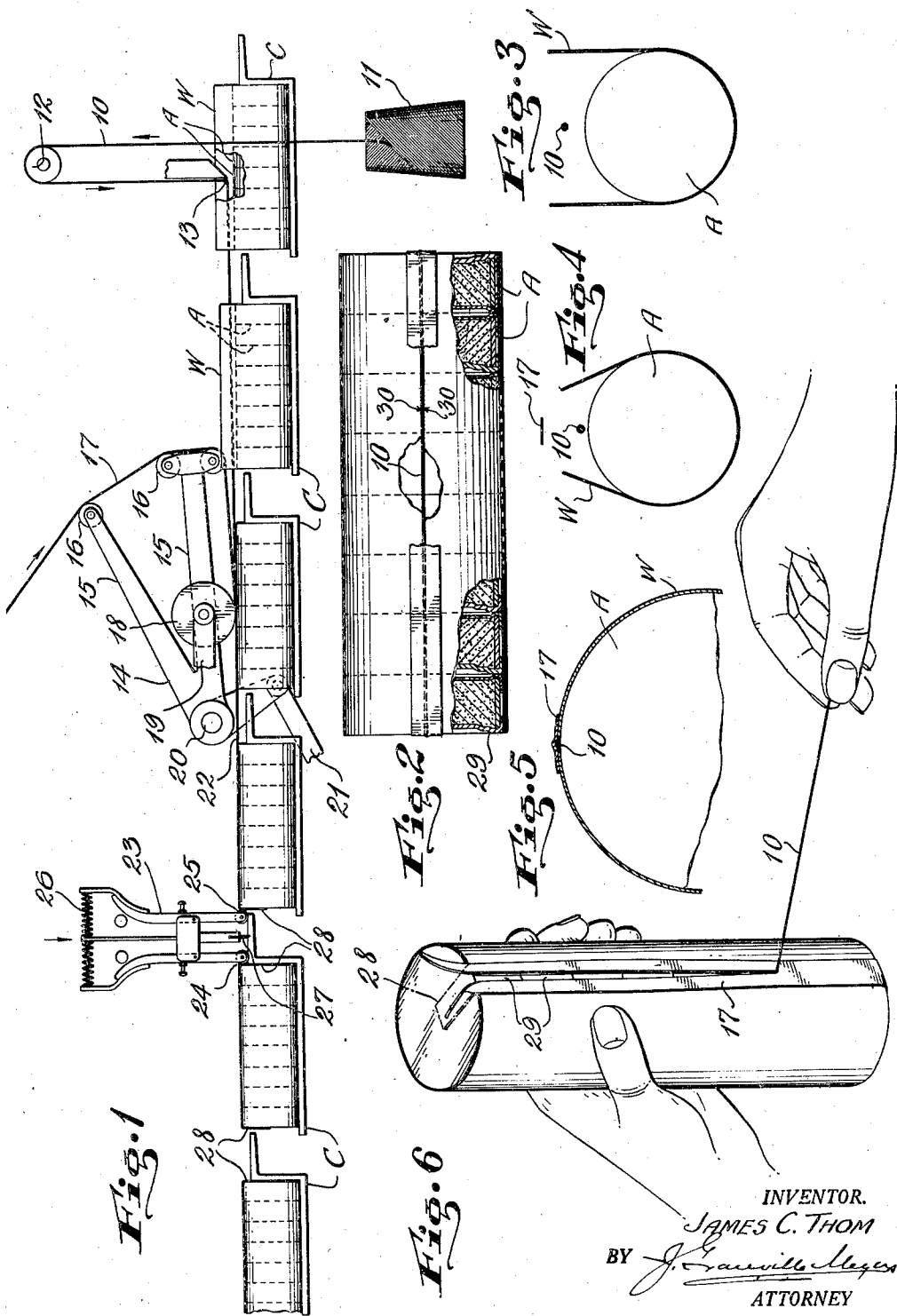
Oct. 23, 1934.

J. C. THOM

1,978,035

PACKAGE AND METHOD OF MAKING THE SAME

Filed Sept. 20, 1932



INVENTOR.
JAMES C. THOM
BY *J. Granville Meyer*
ATTORNEY

UNITED STATES PATENT OFFICE

1,978,035

PACKAGE AND METHOD OF MAKING
THE SAMEJames C. Thom, Chicago, Ill., assignor to United
States Tobacco Company, New York, N. Y., a
corporation of New Jersey

Application September 20, 1932, Serial No. 634,086

7 Claims. (Cl. 93—2)

My invention relates to packages and methods of making the same.

In Patent No. 1,449,073, granted to me on March 20, 1923, there is disclosed a form of package wherein a plurality of articles, such as small containers, are arranged in a row or group in alined abutting relation, whereby a sheet of flexible wrapping material, having sufficient strength to resist tension strains on the package, may be applied around the group of articles with the longitudinal edges of the wrapper overlapping, and with the ends of the wrapper beyond the outermost articles tucked or folded inwardly against the ends of the outermost articles.

The ends of the package, according to said patent, are closed by cup-shaped caps. A further feature of the said patent was the provision of a strip of adhesive material along and over the overlapping longitudinal edge of the wrapper with the optional arrangement of a tearing element transversely beneath the strip. This package dispenses with a separate ready made outer box or carton, which is the most usual way of packaging many articles, such as, foods, tobacco products, candies, and the like. Although the wrapper of the said patent possesses no appreciable rigidity, the complete form of package has very substantial strength and rigidity. This is particularly true where the articles or containers packaged in the manner specified are of a strong character as when enclosed in metallic or cardboard containers.

The general objects of the present invention are to simplify, improve, and cheapen the form of package disclosed in my said patent, and to greatly improve or facilitate the means for opening the package.

Generally stated as to method, the present invention comprises arranging and advancing the articles or containers in a succession of rows, columns, or groups, and substantially encircling the sides of the articles or containers so arranged with wrappers either of thin flexible sheet material sufficient to withstand tension strains on the package when the articles or containers are of a nature needing no external protection, or with a substantially stiff wrapper where the articles or containers are of a fragile or soft nature and an external protective covering is desired. The wrapper applied in accordance with my invention will have its longitudinal edges slightly spaced so that in completing the method a cord, wire, or other flexible tearing element is inserted between the longitudinal edges of the wrapper, and a sealing strip is applied over the

cord, longitudinal edges, and adjacent portions of the wrapper. Further as to method, the invention contemplates packaging articles in the above manner in a succession of rows or groups with a continuous length of string and tape which are cut at intervals between the ends of successive packages, whereby the ends of the sealing strip or tape may be folded down and held against the ends of the package.

Generally stated as to the article, the invention resides in the provision of a package having a group or column of containers or articles arranged in flatwise engagement and enclosed in a wrapper substantially encircling the articles with a slight space between the longitudinal edges of the wrapper within which space a tearing element is disposed longitudinally of the package and held in place by a sealing strip secured thereover and over the longitudinal edges of the wrapper. Where the containers or articles are of a strong character it is possible to utilize the ends of the outermost containers or articles as the end closures of the package with the string and sealing strip adhesively secured thereto. However, where the containers or articles are of a fragile nature and the heavy or protective wrapper encircles them, supplemental end pieces of the same cross-sectional shape and area as the containers or articles may be included in the group at the outermost ends of the package, so that they will be enclosed by the wrapper and held in place by the sealing strip.

So far as I am aware, I am the first person to have provided a package and method of making the same under such a simple arrangement with the inclusion of the tearing element in the manner specified. In this connection, I would point out incidentally, that the tearing element substantially fills the space between the longitudinal edges of the wrapper so that no adhesive will contact the containers or articles within the wrapper when the sealing strip is adhesively placed over the wrappers and tearing elements.

The foregoing objects and advantages of the invention will become apparent and will be hereinafter referred to during the course of the following detailed description of the accompanying drawing, which shows a representative embodiment of the improved package, also illustrating representative process steps for its production, and wherein

Fig. 1 shows a succession of grouped articles and associated wrappers progressing in relation to diagrammatically indicated instrumentalities for applying the tearing elements and seals, show-

ing the several steps in the method of forming the packages;

Fig. 2 is a side elevation of a package embodying the invention with parts broken away and partly in section;

Fig. 3 is an end diagrammatic view showing the relation or position of a row of articles, tearing element and wrapper at the initial stage shown in Fig. 1;

Fig. 4 is a view similar to Fig. 3 at another stage and showing the sealing strip about to be applied;

Fig. 5 is a view similar to Figs. 3 and 4 showing the final relation of the wrapper, tearing element and sealing strip; and

Fig. 6 is a perspective view of a completed package illustrating the manner of opening.

Referring to the drawing and particularly to Fig. 1, the letter C designates the carriers in which groups of cartons or packages A are arranged with a wrapper sheet W placed in the carrier and partly around the articles A. The wrappers W and articles A may be inserted in the carriers C by any suitable automatic apparatus, not shown, and forming no part of the invention, or they may be inserted by hand. The carriers C are arranged in a succession and are advanced to the left of the position shown in Fig. 1 by any suitable conveying mechanism, not shown. Still referring to Fig. 1, it will be noted that there is a strand of flexible material such as cord, wire, or the like, and designated by the numeral 10 which passes from the spool 11 up over a pulley 12 and down through an eye 13 slightly above the articles A in the carrier which passes beneath the eye 13, the eye being positioned centrally of the articles A with respect to their vertical diameters and between the ends of the wrapper W. To the left of the eye 13 and in the direction of movement of the carriers C, there is mounted a tape guide 14 having arms 15 with rollers 16 journaled in their outer ends and around which rollers a sealing strip such as gummed paper strip 17 passes from a roll not shown. A roller 18 is mounted on an arm 19 which reciprocates back and forth to move the roller 18 on the surface of the strip 17 to apply it to the wrappers as hereinafter explained.

Referring to Fig. 3, I have shown diametrically, an end view of the group of articles A, cord 10, and wrapper W in their relative positions at the time they are at the point or position first shown to the right in Fig. 1, and wherein the wrapper is partly around the articles A with the cord 10 slightly above the articles centrally between the ends of the wrapper and centrally of the articles A.

In Fig. 4, I have shown the relative positions of the articles A, cord 10, wrapper W, and sealing strip 17 at the position occupied by the second group from the right in Fig. 1, wherein the cord 10 has approached closer to the articles A, the strip 17 is thereabove, and the wrappers W are folding in.

At this time I would explain that in accordance with the present invention, that the wrappers are preferably of exactly or substantially the same length as the group of articles A and of a width slightly less than the peripheral dimensions of the articles A, so that when the wrapper is fully applied, its ends will not overlap but will be spaced with the cord 10 therebetween and preferably filling the space. This latter preferable

arrangement is had by using a cord 10 of thicker dimension than the wrapper W.

When each of the successive carriers C arrives at the roller 19, which contacts the sealing strip 17 and presses the same down against the cord and the longitudinal edges and adjacent portions of the wrapper W, the cord is completely covered by the sealing strip and lies between the longitudinal edges of the wrapper, the final relative arrangement being shown diametrically in Fig. 5, which is a view showing the arrangement after the carriers have moved the groups of articles and wrappers under the roller 19 and below the cord and sealing strip. The face of the sealing strip which comes into contact with the wrappers is gummed or moistened by any suitable means, and when the roller 18 has sealed a complete group from end to end of the wrapper in the manner specified, the member 14 is oscillated on the pivot 20 by the crank 21, connected to any suitable actuating mechanism, not shown, so that the arms 15 and roller 16 are raised to release the tension on the strip 17. It will be apparent that the movement of the carriers C effects feeding of the strip 17 and cord 10 to the successive packages because the strip, cord, and wrapper are adhesively united where contacted by the roller 18, so that further movement of the group or package in contact with the roller 18 will effect an equal pull on the strip 17 and cord 10. Now after each package has been sealed from end to end, that is, along the longitudinal edges of the wrapper, the carrier moves on to the left with a portion 22 of the sealing strip and cord spanning the space between successive packages. Continued movement to the left brings two of the packages with a portion 22 therebetween under the cutting and sealing device indicated generally by the numeral 23 and comprising a frame having rollers 24 and 25 mounted thereon and spaced apart a distance substantially equal to the distance between the ends of successive packages. The arms of the frame which carry the rollers 25 are under the tension of the spring 26. Between the rollers 24 and 25 there is centrally located a cutting blade 27. The frame 23 is reciprocated up and down by mechanism, not shown, at predetermined intervals when successive packages have reached the position with their confronting ends beneath the rollers 24 and 25 and with the cutting knife 27 located centrally of the spanning portion 22 between the successive packages. When the packages have reached such position the frame 23 descends, so that the edge of the knife 27 which is slightly below the rollers 24 and 25 severs the portion 22, whereby the rollers 24 and 25 upon continued downward movement will press the flaps 28, formed by severing the portion 22, down against the ends of the outermost articles or containers being wrapped.

It will be seen that the spring 26 which normally tends to pull the upper ends of the arms carrying rollers 24 and 25 toward each other will yield under the descending action of the frame 23 so that the rollers 24 and 25 will exert a pressure against the tabs 28 and the ends of opposite packages to seal the tabs against said ends and complete the package.

It should be obvious from the foregoing that the method of forming the package embodies the steps of successively advancing the groups of partly wrapped articles in spaced relation, while applying between the longitudinal edges of the wrapper a tearing element and applying over the

tearing elements, longitudinal edges and adjacent portions of the wrapper, a sealing strip, and subsequently severing the sealing strip and pressing its ends simultaneously against surfaces at the ends of confronting or successive groups to complete the package.

succession of such rows or groups and applying a tearing element thereto between said longitudinal edges of the wrapper, adhesively connecting a sealing strip over said longitudinal edges of the wrapper and adjacent portions thereof and tearing element and severing the strip and cord or wire between successive packages.

I have mentioned hereinbefore, and I believe it so obvious that no illustration is necessary, that when the articles or containers being wrapped are strong in character and need no external protection, it is possible to use a thin flexible sheet of wrapping material. In Fig. 2, I have shown the articles being wrapped to be boxes such as cardboard containers indicated by the numeral 29. Of course, these containers being of such a nature as to need no external protection, the thin flexible wrapping paper can be used and the ends of the containers utilized as the ends of the package. However, there may be instances where the containers or articles themselves would be soft and wrapped in a thin wrapper requiring external protection. In such case I may use wrappers of corrugated board or cardboard and insert discs at the outermost ends against the outermost packages and make the wrapper of a length corresponding to the groups of articles plus the end discs and then proceed to fold the wrapper around the discs and articles while applying the cord and sealing strip as above described.

In the complete packages shown in Figs. 2 and 6, the alined or grouped containers 29 are arranged in end to end or abutting relation with a wrapper applied therearound, the wrapper being of a width so that its longitudinal edges 30 are spaced apart with the cord 10 therebetween. Preferably the cord or tearing element fills the space between the edges 30 so that any adhesive from the strip 17 will not get on to the articles. This not only preserves the appearance of the articles but facilitates the opening in the manner about to be described, reference being had to Fig. 6, wherein the tab 27 and cord therebeneath have been pulled back from their original position indicated by the dotted lines so that the cord and strip may be grasped. Thereafter the cord is given a pull down, ripping the sealing strip so that when the string has been completely torn through the strip the wrapper will fall away and the package thus is opened quickly and without trouble.

I claim:

1. A method of packaging articles comprising arranging articles in alined relation in a group, placing a wrapper around the articles in said group with the longitudinal edges of the wrapper spaced apart, and the transverse edges of said wrapper terminating substantially flush with the ends of the outermost articles, applying a flexible strand along the articles between the said longitudinal edges of the wrapper and beyond said transverse edges, and applying a sealing strip of greater length than the wrapper over said strand, longitudinal edges of the wrapper and against a portion of the surfaces of said ends of said outermost articles to seal the package and to hold the articles therein.

2. In a method of packaging a row or group of similar articles, in which wrappers are placed about successive rows or groups with the longitudinal edges of the wrappers spaced and not overlapping, the steps consisting in advancing a

3. The method of packaging articles which comprises advancing groups of the articles successively in a common direction while applying a wrapper around the articles, applying a flexible strand longitudinally along successive groups between longitudinal edges of the wrapper, and applying a sealing strip over said strand, longitudinal edges and adjacent portions of the wrapper.

4. The method of packaging articles which comprises advancing successive groups of the articles along a definite path of movement while applying wrappers therearound, supporting a strand of flexible material along said successive groups, simultaneously applying an adhesive sealing strip over the flexible strand and longitudinal edges of the wrappers on each successive group whereby movement of the group to which the sealing strip is being applied feeds the strip and tearing element to the next succeeding group.

5. The method of packaging articles which comprises advancing successive groups of the articles along a definite path of movement while applying wrappers therearound, guiding a tearing element along said successive groups, applying an adhesive sealing strip over the tearing element and longitudinal edges of the wrappers on successive groups whereby movement of the group to which the sealing strip is being applied feeds the strip and tearing element to the next succeeding group severing the strip and tearing element between successive groups, and sealing the ends of the severed portions against the confronting ends of successive groups.

6. A package comprising a row of articles or containers arranged in a group, a wrapper of slightly less width than the peripheral dimensions of the articles applied around the articles with its longitudinal edges spaced apart, a flexible tearing element between said edges, and a strip of material longitudinally applied over said element, longitudinal edges, and adjacent portions of the wrapper, said tearing element and strip being of greater length than the wrapper and having their ends adhesively secured against the ends of the package.

7. A package comprising a roll of similar covered cartons arranged in a group with the end cartons in reversed position respectively to expose at the ends of the package similar surfaces, a wrapper of slightly less width than the peripheral dimensions of the containers applied around the containers with its longitudinal edges slightly spaced apart, a flexible tearing element arranged between said edges, and a strip of rupturable material longitudinally applied over said element, longitudinal edges and adjacent portions of the wrapper, said strip being adhesively secured to the wrapper and said tearing element and strip extending beyond the ends thereof, the ends of said strip being adhesively secured against the exposed surfaces of the end containers.

JAMES C. THOM.