INTERLEAVED TRANSPARENT CELLULOSE PAPER WITH OPAQUE ADHESIVE

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ABSTRACT

A method for applying adhesive to highly transparent cellulose rolling paper for a smoking article is provided, comprising the steps of holding the cellulose sheet under tension, applying a cellulose-based adhesive to a selected edge of the cellulose sheet, and drying the cellulose-based adhesive onto the cellulose sheet. The cellulose adhesive is comprised of water, cellulose gum and optionally, flavoring. The step of drying can be performed by air drying or drying with a shielded heat source. In one embodiment, a plurality of the cellulose sheets are assembled into an interleaved stack and enclosed in a suitable package. Optionally, the package containing the papers includes a magnetic closure and a tamper-resistant seal.
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BACKGROUND OF THE INVENTION

[0001] I. Field of the Invention

[0002] The present invention relates generally to an interleaved cellulose paper of high transparency having a line of opaque adhesive along an edge to wrap smoking materials. Typically such papers or “leaves” absorb saliva or have an edge coated with adhesive for sealing the rolled smoking article. Another product utilizes highly transparent cellulose paper, which can be made from cellulose of wood, cotton, or hemp that is blended with glycerin or a glycerin alternative, and water. Such cellulose paper, hereinafter interchangeably used with term cellophane, is appealing because it has no taste or odor, is highly transparent, and it allows a slower combustion without changing the characteristics of the smoking materials. However, the transparent cellulose wrapping papers that are currently available do not adequately adhere to themselves when rolled for smoking purposes.

[0003] A further limitation is that cellophane is water-resistant and is not capable of absorbing liquids. Hence, it does not absorb saliva and will not stick even when moistened in such a manner. Furthermore, upon application the standard acacia gum commonly used with rolling materials simply runs off of the cellophane sheets, thus impairing the ability to impart a workable adhesive area to the rolling paper. The characteristic of being non-absorbent further limits the type of packaging that can be utilized for a plurality of interleaved sheets. Not only must the adhesive adhere to each sheet upon application, but the adhesive must also be retained on each sheet upon removal from the pack for use. In addition, another deficiency of the prior art is the inadequate closure of the package or box of papers. The prior art packages fail to remain closed and with routine use they become worn, remaining open even more easily. When carrying the pack of papers in a pocket or purse, the package tends to open allowing the papers to fall out and become damaged. Furthermore, an open package exposes the other leaves to the elements, or it causes the pack to become crushed or deformed if it is quickly inserted into one’s pocket. In other words, the cover can become deformed if the smoker does not purposefully hold the pack closed during its insertion into a pocket or case.

[0004] These limitations tend to frustrate the purpose of wrapping materials, that is, to permit the smoker to individually roll cigarettes and other smoking articles with a sheet that firmly adheres when rolled, and to provide the consumer with a convenient pack that allows each transparent sheet to be easily dispensed in a rollable condition. Hence, it would be desirable to provide a means for sealing the edge of a highly transparent cellulose rolling paper such that the smoking material can be easily rolled, adhered, and smoked. It would also be desirable to provide a means for assembling cellulose rolling paper into a convenient interleaved stack that permits retention of the adhesive on each sheet as it is removed. Furthermore, it would be desirable to provide a suitable package for rolling papers that provides a reliable and secure closure so that the leaves do not slip out, as well as including a tamper-resistant seal for ensuring a factory-fresh product.

[0005] The use of adhesive on reconstituted tobacco products is well-known in the art. Tobacco sheets for rolling tobacco products are disclosed in Garner, U.S. Pat. No. 5,762,074, which provides a reconstituted tobacco sheet with an adhesive applied along the edge to provide a firm adhesion between the inner and outer surfaces of the sheet. U.S. Pat. No. 6,571,803 issued to Bregard discloses a method for gumming a reconstituted tobacco leaf. Also, a machine for making paper booklets of interleaved cigarette paper is disclosed by Jones, U.S. Pat. No. 4,775,358. However, none of these references disclose a method for gumming a transparent cellophane wrapping paper or an adhesive suitable therefore.

[0006] Because the cellulose paper is nonabsorbent and the adhesive or standard acacia gum typically used with rolling papers has high water content, the standard adhesives run off of cellulose paper as soon as they are applied. Furthermore, applying such adhesive or gum causes the cellulose sheet to warp and the ends of the cellulose sheet to curl. A further problem posed by adhesives and acacia gums is that they are also transparent in appearance. As a result, the high transparency of the adhesive makes it difficult for the consumer to determine which edge of the transparent paper has adhesive applied and thus, which edge should be moistened to seal the roll of smoking materials.

[0007] Accordingly, the present invention provides a method for preparing rolling papers, formed generally of a highly transparent cellulose material with a suitable adhesive. One feature is that the addition of adhesive keeps the rolled sheet, with circumscribed smoking materials, from unrolling. Another feature is that the composition of the adhesive facilitates its application to the cellophane sheets. The adhesive is also slightly pigmented to give it an opaque appearance on an otherwise clear paper. Still another feature of the present invention is a secure closure for the packaging which contains the interleaved papers, as well as a tamper-resistant seal for keeping the papers secure until the package is opened by the smoker. The present invention also provides a method that prevents the cellulose paper from warping or curling when the adhesive is applied and throughout the drying process. Drying can comprise allowing the sheets to air dry or using a shielded heat source so as to avoid damaging the delicate cellulose paper. Another feature of the present invention is that the cellulose papers are interleaved for convenient removal from the pack. The adhesive utilized not only successfully adheres to the sheets but also allows each sheet to be removed from the booklet without damaging the adhesive, which can be effectively retained on the sheet. As will be described in further detail below, such adhesive is preferably cellulose-based, but may comprise other suitable adhesives which embody the aforementioned desirable qualities.

SUMMARY OF THE INVENTION

[0010] Therefore, one object of the present invention is to provide a means for sealing the edge of a highly transparent cellulose wrapping paper when it is rolled.

[0011] It is also an object of the present invention to provide a means for applying an adhesive to the cellophane and allowing it to dry without distorting the shape of the wrapping paper.

[0012] It is also an object of the present invention to provide a cellulose wrapping paper with an adhesive that can be readily detected by the consumer.
It is a further object of the present invention to provide an adhesive that remains on the nonabsorbent cellulose paper, facilitating the utilization of an interleaved stack.

Accordingly, a method for applying adhesive to transparent cellulose wrapping paper is provided comprising the steps of:

1. holding a cellulose sheet taut,
2. applying a cellulose adhesive to the cellulose sheet,
3. and drying the cellulose sheet with cellulose adhesive.

In order to prevent the adhesive from running off of the cellulose sheet, a cellulose-based adhesive is used. In one embodiment, the adhesive comprises water, cellulose gum, and flavoring. The step of drying is performed with a shielded heat source. In another embodiment, the step of drying is performed by allowing the sheets to air dry. The cellulose-based adhesive further facilitates the interleaving of the sheets so they can be placed in a suitable enclosure and conveniently removed individually.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a gummed cellulose paper.

FIG. 2 is a perspective view of a package containing interleaved rolling papers which are individually removable, and which package includes a magnetic closure.

FIG. 3 is a sectional elevation view of the package of FIG. 2 showing the interleaved papers.

FIG. 4 is a view of a rolled smoking article using the present invention.

FIG. 5 is a perspective view of a package of rolling papers having a tamper-resistant seal when closed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now to FIG. 1, a highly transparent cellulose paper 1 is shown. Each flat sheet of paper 1 is cut so that it has four edges 2–5. A strip of adhesive 6 is applied to a top edge 2, wherein the weight of the adhesive gumline is in the range of 20–110 grams per square meter (gsm). In the preferred embodiment, the adhesive 6 is cellulose-based, although other adhesives may also be used which satisfy the requirements of adhering to the cellulose paper 1, such as a non-standard formulation containing acacia gum, sugar gum, or animal gum. The cellulose-based adhesive is preferably comprised of ninety-seven percent water, two percent cellulose gum, and one percent flavoring. Optionally, a pigment or food coloring is also added to create an opacity when dry so that the adhesive line can be seen on the paper 1. The components are preferably food grade and the amounts may be adjusted accordingly if it is desired to eliminate the flavoring. The source of the cellulose gum in the cellulose-based adhesive is preferably sodium carboxymethylcellulose. In the preferred embodiment, the adhesive strip 6 is opaque so that the smoker can detect which edge of the highly transparent sheet 1 has adhesive and hence, which edge should be moistened to seal the smoking article.

In order to accomplish the goal of maintaining flat cellulose paper 1 that is not warped and that does not have curled edges, the sheets 1 are preferably held under tension during the adhesive application and drying process. In an alternative embodiment, direct pressure is applied to the sheets. Regardless of whether the cellophane is held taught or placed under direct pressure, the adhesive 6 on the sheet 1 should preferably be dried with a shielded heat source; that is, dried with a convection non-blowing heat source known by those skilled in the art. Alternatively, the cellophane may be left to air dry.

FIG. 2 shows a plurality of cellulose papers 1 in a suitable package 7. In the preferred embodiment, the cellophane sheets 1 are interleaved 8, best shown in FIG. 3, so that the papers can be individually removed from the package 7 through an open slot 9. When not in use, package 7 includes a cover 10 which can be closed to protect the papers 1 contained therein.

FIG. 2 also shows the package 7 having a secure closure means comprising a magnet-based closure 11. A first magnet 12 is located on the inside cover 10 of the package 7. A second magnet 13 is located on the body 14 of package 7. The magnets 12, 13 are positioned to contact one another when the cover 10 is folded downwardly to create a secure closure. Although a single magnet pair 12, 13 is shown in the center of package 7, a plurality of magnets may also be employed, such as two pairs of magnets, with each pair at the corners of cover 10 and body 14. Alternate embodiments may include different fastening means to hold the package closed, such as a gummed or adhesive strip, a hook and loop fastener, or similar closure.

FIG. 4 depicts a cellulose sheet 1 wrapped around the desired smoking materials 15, e.g. loose tobacco. The cellulose sheet 1 is highly transparent so that the smoking materials 15 are visible through sheet 1. The strip of opaque adhesive 6 allows the smoker to effectively circumscribe the smoking materials in the wrapping paper and to seal the article for smoking.

FIG. 5 depicts a closed package 7 having a tamper-resistant adhesive seal 20 affixed across the cover 10 when the package 7 is closed. The seal 20 allows the smoker to know that the package 7 is "factory fresh", and it can be easily removed to access the papers 1. In a preferred embodiment, the seal 20 may be a foil-type sticker adhesively applied by the manufacturer.

As can be seen for the foregoing description of the preferred and alternate embodiments, the present invention is intended to provide a highly transparent cellophane wrapping paper with a suitable adhesive so that it can easily be dispensed and used to securely wrap smoking materials. Also, a novel means of securing the closure of the package is provided. Although exemplary embodiments of the present invention have been shown and described, many changes, modifications, and substitutions may be made by one having ordinary skill in the art without necessarily departing from the spirit and scope of the invention.

What is claimed is:

1. A method of applying adhesive to a cellophane paper for smoking articles, comprising the steps of:
   a. holding the cellulose sheet under tension;
   b. applying a cellulose-based adhesive to a selected edge of the cellulose sheet;
   c. and drying the cellulose-based adhesive onto the cellulose sheet.

2. The method of claim 1, wherein the cellulose adhesive is applied to a long edge of the cellulose sheet.

3. The method of claim 1, wherein the cellulose adhesive comprises water, cellulose gum, and flavoring.

4. The method of claim 1 wherein the cellulose adhesive comprises about ninety-seven percent water, two percent cellulose gum, and one percent flavoring.
5. The method of claim 4, wherein the cellulose gum comprises sodium carboxymethylcellulose.

6. The method of claim 1, wherein the drying is performed by air drying.

7. The method of claim 1, wherein the drying is performed using a convection non-blowing heat source.

8. The method of claim 1, further comprising the step of assembling a plurality of the cellulose sheets into an interleaved stack.

9. The method of claim 8, further comprising the step of placing the interleaved stack into a suitable enclosure.

10. A cellulose-based rolling paper produced in accordance with claim 1.

11. A recloseable package for containing smoking papers to be dispensed therefrom, the package comprising:
   a body for holding the smoking papers, the body having a cover which overlays the body of the package for closure, wherein the body includes a first magnet and wherein the cover includes a second magnet, the first and second magnets being positionally mounted to contact one another when the cover is folded downwardly over the body of the package for closure.

12. The package of claim 11, further including a tamper-resistant seal adhesively applied across said body and said cover.

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