D. L. KOONTZ.

PAPER PACKAGE.

APPLICATION FILED AUG. 16, 1915.

1,227,802. Patented May 29, 1917.

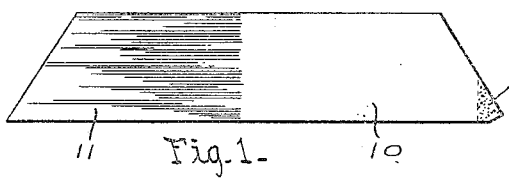


Fig. 1.

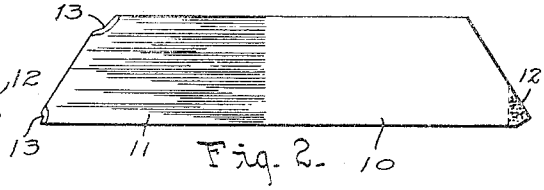


Fig. 2.

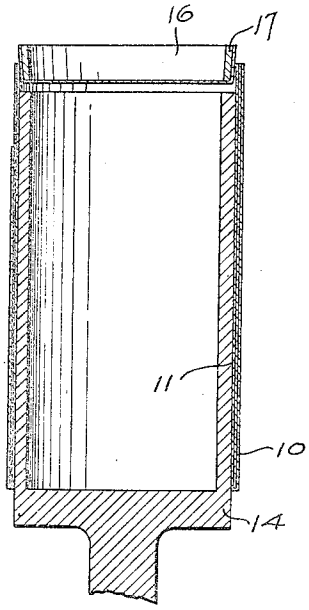


Fig. 3.

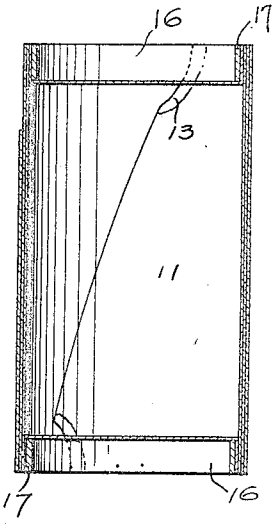


Fig. 4.

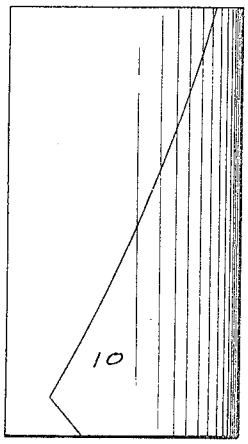


Fig. 5.

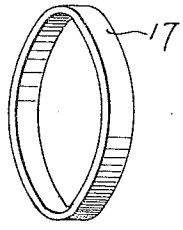


Fig. 6.

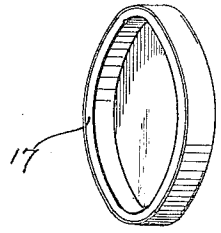


Fig. 7.

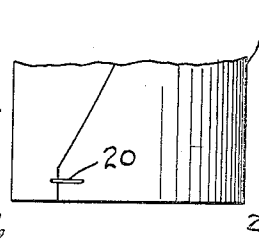


Fig. 8.

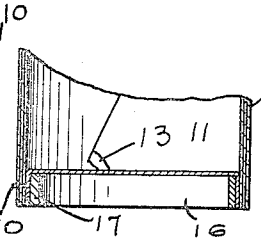


Fig. 9.

WITNESSES:

J. F. Brown

J. V. Wells

INVENTOR

Dennis L. Koontz.

BY

Lockwood & Lockwood

ATTORNEYS

UNITED STATES PATENT OFFICE.

DENNIS L. KOONTZ, OF FORT ATKINSON, WISCONSIN.

PAPER PACKAGE.

1,227,802. Specification of Letters Patent. Patented May 29, 1917.

Application filed August 16, 1915. Serial No. 45,722.

To all whom it may concern:

Be it known that I, DENNIS L. KOONTZ, a citizen of the United States, and a resident of Fort Atkinson, county of Jefferson, and State of Wisconsin, have invented a certain new and useful Paper Package; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

This invention relates to a simple paper package made so as to hold a liquid. It can be made of paper without any paraffin or other material on the paper to render it impervious to liquid and it will be water tight for a long time so as to make the package useful as a milk bottle or container for any other liquid or ice cream or the like.

The invention consists in a package made by coiling a sheet of paper more than one time, said sheet having inclined ends and the upper and lower corners of the inner end being torn off, beveled or otherwise rendered tapering, and end members formed of slightly greater external diameter than the internal diameter of said coiled paper so as to wedge tightly in the ends of the coiled paper and complete the package.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

In the drawings, Figure 1 is a plan view of a sheet of paper adapted to be coiled for forming the body of the package. Fig. 2 is the same with the upper and lower corners of the inner end torn away. Fig. 3 is a central vertical section through a portion of a former and with the sheet of paper coiled thereon and one end member being put in place. Fig. 4 is a central longitudinal section of the package. Fig. 5 is an elevation of the package. Fig. 6 is a perspective view of the ring in the end member. Fig. 7 is a perspective view of the end member. Fig. 8 is the same as the lower part of Fig. 5 modified. Fig. 9 is the same as the lower part of Fig. 4 modified.

In the first place a sheet of paper 10 is cut substantially in the form shown in Fig. 1 with the ends beveled or inclined. The left-hand end of said sheet may be considered the inner end and the right-hand end thereof the outer end, and if desired substantially the inner half of the sheet of paper may be coated with paraffin 11 or other coating calculated to make the paper more impervious to moisture. At the extreme right-hand end, some adhesive material 12 may be applied to the strip of paper.

After the sheet has been formed substantially as in Fig. 1, and whether it has paraffin or adhesive material on it or not, the next step in the process of making the package is to tear off the two corners 13 at the inner end. The object of tearing these corners is to bevel them. They could be treated by a knife so as to bevel them, but that would not be as cheap nor would it make the package as water proof as tearing off the corners. The beveling or tearing off of these two corners is absolutely necessary to make a package which will not leak and the corners must be torn for a greater distance than the width of the end members of the package, as shown in Fig. 4, and as will hereafter be explained.

After the corners have been torn off of the strip of paper, it is coiled tightly about the former 14, which is here shown as a tube, with one end open and the other end provided with a handle. After the sheet is coiled, the tip of the right-hand end where it is covered with adhesive material 12 is adhered to the outer surface of the preceding coil of paper so as to hold said outer end of said sheet of paper tightly in place. It is not necessary to paste the entire inclined outer end of the sheet of paper down on the body of the package. When it is inclined, as shown in Fig. 5, it will be held tightly against the body of the package by merely securing the tip end thereof to the body of the package and the inclination of the end is necessary in order to make the end hug tightly to the body of the package.

After the strip 10 is coiled around the former, as shown in Fig. 3, and before it is removed, one end piece 16 is forced into one end of the package. This is illustrated in Fig. 3. The end piece is formed of a cup-shaped sheet of paper flaring outwardly so that the outside will have a greater external diameter than the internal diameter of the package. Within this end piece 16 a stiff ring 17, made preferably of much thicker paper or board, is inserted or wedged into place in the end piece 16. This ring, which is shown in Fig. 6, has an external diameter substantially the same as or possibly slightly

greater than the internal diameter of the package so that when it is inserted in the part 16, said end will be quite flaring and will have to be wedged into the end of the body of the package with considerable force. The fact that this is usually done by turning the former upside down so that the end piece which has been partially inserted by hand, as shown in Fig. 3, will rest upon the table or bench, enables one to bear down with considerable force upon the former and at the same time hold the body of the package on the former. In this way the end will be wedged into the body of the package and the outer edges will be flush with each other, as shown in Fig. 4.

The next step in the process is to slip the package off of the former and this completes the package until it is filled with milk or any other liquid or ice cream or the like and after it is filled, the other end piece, similar to that just described, is inserted or wedged into place. That will leave the package in its completely closed condition, as shown in Figs. 4 and 5.

This makes a very strong package, due to the cylindrical form of the body and the wedging of the ends, but the chief feature of the package is that it is water tight and is so without the use of any paraffin, the paraffin being used only when it is desired for the package to contain a liquid several days. Without any paraffin or like coating, this paper package will hold water for more than twenty-four hours without the paper being affected by the liquid sufficient to reduce the strength of the package or cause a leakage if handled. Hence, for milk, cream, ice cream and the like, no paraffin is required, as packages containing such materials would be emptied in less than twenty-four hours.

The chief feature of the invention contributing to the water tight character of this package is the inclined cut of the inner end of the sheet of paper making up the body of the package with its upper and lower corners beveled to a distance greater than the thickness of the end pieces 16. As seen in Fig. 2, the torn portions 13 extend inward beyond the end pieces 16 and their tapered edges hug the surrounding wall of the package very tightly and likewise the untorn edge or end of the sheet of paper, when inclined, hugs the wall of the package tightly. This prevents water or other liquid from entering between the inner end of the sheet of paper forming the body of the package and the surrounding layer. If the upper and lower corners of the inner end of the sheet of paper are not beveled or torn off, as shown, the package is liable to leak in spite of the tight fit of the end pieces. And if the inner end is not inclined it will not hug tightly the surrounding layer, as the inclined end coupled with the bending of the layers of paper into convex form in transverse section makes the inner end of the sheet of paper hug the surrounding wall too tightly for leakage.

In the modified form shown in Figs. 8 and 9, the point or extreme end portion of the layer 10 is secured in place by a staple 20 instead of by adhesive material, as in the previously described forms. This staple is placed near the end of the package and transversely thereof, after the cylindrical wall of the package has been formed and before the end piece 16 is inserted, so that said end piece when inserted will cover the inner ends of the staple and keep the contents of the package from ever coming in contact with the staple.

The invention claimed is:

1. A paper package including a body portion formed of a coiled sheet of paper with the inner end of said sheet of paper inclined transversely of the sheet of paper, the outer end of the sheet of paper being secured to prevent the sheet of paper from uncoiling, and end members wedging tightly in the ends of the coiled body portion of the package, the corners of the inner end of the coiled sheet of paper being beveled so as to be tapering and said beveled corners extending to points within the package beyond said end members.

2. A paper package including a body portion formed of a coiled sheet of paper with the inner end of said sheet of paper inclined transversely of the sheet of paper, the outer end of the sheet of paper being secured to prevent the sheet of paper from uncoiling, and end members wedging tightly in the ends of the coiled body portion of the package, the corners of the inner end of the coiled sheet of paper being torn away so as to be tapering and said torn away corners extending to points within the chamber beyond said end members.

3. A paper package including a body portion formed of a coiled sheet of paper with the inner end of said sheet of paper inclined transversely of the sheet of paper, the outer end of the sheet of paper being secured to prevent the sheet of paper from uncoiling, end members formed of cup-shaped paper, and a tapering reinforcing ring inserted in said cup-shaped paper having an external diameter substantially the same as the internal diameter of the chamber so that said end member will flare outwardly to a greater external diameter than the internal diameter of the package and will make a tight joint when wedged in the package.

4. A paper package including a body portion formed of a coiled sheet of paper with both the inner and outer ends of said sheet inclined transversely of the sheet, a staple

for securing the outer end to said body portion after it is formed, said staples being located near the end of said body portion, and an end piece insertible in the end of the body portion so as to cover the inner ends of said staple and protect the contents of the package from the staple.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

DENNIS L. KOONTZ.

Witnesses:
J. H. WELLS,
R. G. LOCKWOOD.