ABSTRACT OF THE DISCLOSURE

A package formed of a thin layer of polyethylene material surrounding the bundle for rendering same waterproof and having one or more tie bands encircling the bundle for tying it together. Each tie band is formed by folding a portion of the polyethylene material over an adjoining portion of the polyethylene material. The folds of the tie band or bands are fused together at points along the longitudinal dimension thereof.

BACKGROUND OF THE INVENTION

This invention relates to packages for holding bundles of goods and materials. While not limited thereto, the present invention is particularly useful for packaging stacks of newspapers, magazines, printed materials and the like.

Considering for example the case of newspapers, it is customary for companies which publish daily newspapers to tie the newspapers up in bundles of twenty or thirty or more for purposes of shipment and distribution to the newsstands and door-to-door delivery boys. This tying has heretofore been done by utilizing metal wire which is looped around the desired stack of newspapers and then twisted together to form a tie band for holding the bundle together. A pair of these wire bands are frequently used.

One purpose of the present invention is to provide an improved method of tying up the bundles of newspapers, which method is cheaper and faster than the wire tying method. Not only does it do this but, at the same time, the method of the present invention provides the bundling of newspapers with a waterproof covering.

SUMMARY OF THE INVENTION

It is an object of the invention, therefore, to provide a new and improved package for a bundle of goods or materials which is cheaper than presently used packages and bundling devices and which, at the same time, provides a waterproof covering for the goods or materials.

It is another object of the invention to provide a new and improved method of packaging stacks of newspapers, magazines and other printed materials.

In accordance with the invention, a package for a bundle of goods or materials comprises a layer of flexible material surrounding the bundle for enclosing same. The package also includes at least one tie band encircling the bundle for tying it together, such tie band being formed by folding a portion of the flexible material over an adjoining portion of the flexible material.

For a better understanding of the present invention, together with other and further objects and features thereof, reference is had to the following description taken in connection with the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

Referring to the drawing:

FIG. 1 is a perspective view of a first embodiment of a package constructed in accordance with the present invention;

FIG. 2 is a cross-sectional view taken along section line 2—2 of FIG. 1;

FIG. 3 is a perspective view of another embodiment of a package in accordance with the present invention; and

FIG. 4 is a perspective view of a further embodiment of a package in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. 1, there is shown a package 10 for holding and tying together a bundle of goods or materials such as, for example, a stack of newspapers. The package 10 comprises a layer of flexible material 11 surrounding the bundle for enclosing same. In this embodiment, this layer 11 is formed of two parts, namely, an upper layer 11a for covering the upper half of the bundle and a lower layer 11b for covering the lower half of the bundle. The package 10 further includes a series of three tie bands 12, 13 and 14 each encircling the bundle for tying it together. In the present embodiment, each of these tie bands is formed by an upper band formed in the upper layer 11a and a lower band formed in the lower layer 11b. In particular, the complete tie band 12 is formed by an upper band 12a and a lower band 12b, while tie band 13 is formed of upper and lower bands 13a and 13b and tie band 14 is formed of upper and lower bands 14a and 14b. These three tie bands 12, 13 and 14 are spaced apart from one another and run parallel to one another around the body of the package 10. As is seen in FIG. 1, the upper and the lower layers 11a and 11b are fitted together so that the upper bands 12a, 13a and 14a lie above the corresponding ones of the lower bands 12b, 13b and 14b so that the corresponding ends of the upper and lower bands join up with one another.

The manner of making the tie bands 12, 13 and 14 is indicated in the cross-sectional view of FIG. 2, which shows a cross-section of the upper portion 13a of the tie band 13. As there indicated, each tie band is formed by folding a first portion 15 of the flexible material 11 over an adjoining portion 16 of the flexible material 11. Thus, the tie bands 12, 13 and 14 are actually an integral part of the flexible material forming the package.

The flexible material 11 is a thin layer or film of waterproof plastic material. The preferred material is a thermoplastic material such as polyethylene, polypropylene or polyurethane. A polyethylene film having a thickness in the range of 1.5 to 5.0 mils has been found to be highly satisfactory for this purpose.

As is seen in FIG. 1, the upper and lower layers 11a and 11b are provided with excess edge portions 17 and 18 which overlap one another and which are bonded together to seal the package and to render same water-tight. Assuming that the material 11 is a thermoplastic material, then this bonding is accomplished by heating and fusing together the edge excess portions 17 and 18. The line of fusion or line of heat seal is indicated by broken line 19. This line of heat seal also fuses together the neighboring ends of the upper and lower portions of the tie bands 12, 13 and 14 so as to form in each case a complete tie band which encircles the bundle and acts as a banding member for tying the bundle together.

In order to increase the ruggedness of the tie bands 12, 13 and 14, it is preferred that the tie bands be bonded or fused together at points along the longitudinal dimension or length thereof. Among other things, this prevents the folded portions from being pulled apart. Assuming that the material being used is a thermoplastic material such as polyethylene, this fusing is accomplished by providing a heat seal running down the middle of the tie band the entire length thereof. This heat seal is indicated at 20 for the middle tie band 13. As indicated in FIG. 2, this heat seal 20 fuses together the folds of the tie band.
One method of forming the package 10 comprises the steps of first forming the bands in the layers of flexible material and then wrapping the layers of flexible material around the goods to be bundled. An alternative method would be to use a reverse sequence; namely, to first wrap the flexible material around the goods and then to form the bands in the flexible material. In either case, after the folded flexible material is in place about the goods, the free ends of the material as well as the free ends of the bands formed therein are bonded together to provide the complete package. Where the flexible material is a thin film of polyethylene, this bonding is accomplished by heat sealing the overlapping portions of the free ends. This heat sealing technique is also used for bonding together the folds of the tie bands 12, 13 and 14.

Referring to FIG. 3, there is shown a package 30 having a somewhat different form of construction. In particular, package 30 is provided with tie bands 31, 32 and 33 which encircle the longer girth of the rectangular bundle. In other words, these tie bands 31, 32 and 33 run longitudinally instead of laterally with respect to the top surface of the bundle. Also, the heat seals 34 for bonding together the folds of the tie bands are of an intermittent character such that intermediate regions 35 along the tie bands are not bonded together.

Referring to FIG. 4, there is shown a package 40 for use with a non-compensated stack or bundle of newspapers. By non-compensated is meant that the newspapers are stacked such that the folds are all on the same side of the stack. As a consequence, one side of the stack is higher than the other side. This is indicated in FIG. 4 by the fact that the back side 41 of the package 40 is taller or higher than the front side 42. The package 40 is formed in general the same manner as before, the flexible nature of the thermoplastic material enabling such material to be fitted fairly snugly and neatly about the bundle. The tie bands for the package 40, indicated at 43 and 44, run in the longitudinal direction relative to the longer dimension of the upper surface of the bundle. Spot type heat seals, indicated at 45, are provided for fusing together the folds of the tie bands 43 and 44 at spaced points along the longitudinal dimensions thereof.

While there has been described what at present considered to be preferred embodiments of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention, and it is, therefore, intended to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A package for a bundle of goods or materials comprising:
   an upper layer of flexible, waterproof material having a thickness of about 1.5 to 5 mils covering the upper half of the bundle;
   a plurality of spaced bands formed in the upper layer and running from one side to the opposite side thereof, such bands being formed by folding a portion of the flexible material over an adjoining portion of the flexible material and fusing the folds of each band continuously along the longitudinal dimension thereof;
   a lower layer of flexible material covering the lower half of the bundle;
   a plurality of spaced bands formed in the lower layer and running from one side to the opposite side thereof, such bands being formed by folding a portion of the flexible material over an adjoining portion of the flexible material and fusing the folds of each band continuously along the longitudinal dimension thereof;
   the upper and lower layers being fitted together so that the spaced bands in the upper layer are above the spaced bands in the lower layer and the ends of the upper and lower bands join up with one another;
   and the neighboring ends of the upper and lower bands being bonded together forming a complete tie band encircling the bundle for tying it together.

References Cited

UNITED STATES PATENTS
1,296,765 3/1919 Christensen ______ 229—87(M)
2,053,116 9/1936 Sperry ________ 229—37(UX)
2,707,553 5/1955 Yount ____________ 206—65
2,764,283 9/1956 Stanton ________ 229—87(M)
2,798,655 7/1957 Buttery et al. _____ 229—37(R)
2,834,686 5/1958 Reuman ______ 250—46(FOOD)
2,992,119 7/1961 Gapisinski ________ 229—87(F)

FOREIGN PATENTS
428,564 5/1935 Great Britain ________ 229—37(R)

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