E. H. ANGIER.

BINDER TAPE.

APPLICATION FILED JAN. 27, 1914.

1,167,466. Patented Jan. 11, 1916.

Fig. 1.

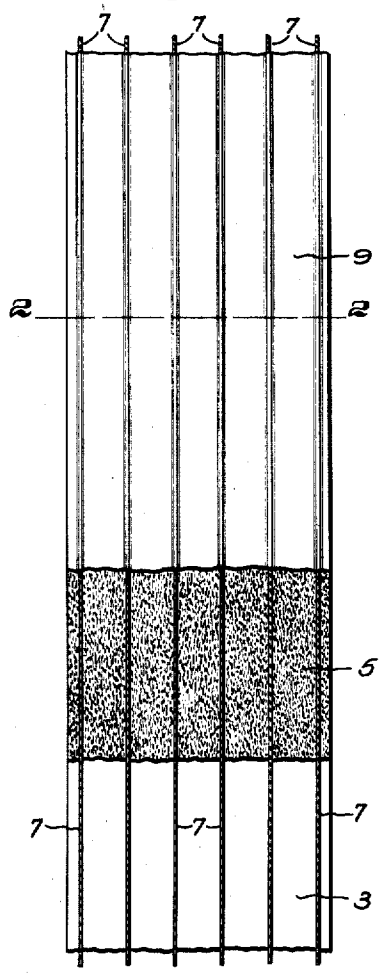
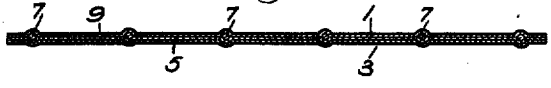


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD H. ANGIER, OF FRAMINGHAM, MASSACHUSETTS.

BINDER-TAPE.

1,167,466. Specification of Letters Patent. Patented Jan. 11, 1916.

Application filed January 27, 1914. Serial No. 814,832.

To all whom it may concern:

Be it known that I, EDWARD H. ANGIER, a citizen of the United States, and a resident of Framingham, Massachusetts, have invented an Improvement in Binder-Tapes, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to a binder tape or composite sheet material employed for packaging purposes.

The character of the invention may be best understood by reference to the following description of one illustrative embodiment thereof shown in the accompanying drawing, wherein:

Figure 1 discloses an illustrative binder tape with parts broken away to disclose the structure thereof; and Fig. 2 on an enlarged scale is a transverse section taken on line 2—2 of Fig. 1.

Referring to the drawing, the illustrative tape or composite sheet material shown therein as embodying the invention comprises outer layers 1 and 3 of strong Manila paper or other equivalent material with a water-proof adhesive layer 5 of black asphaltum or other equivalent material interposed between said paper layers and uniting the same securely together. To strengthen the material and to render the same strong and effective as a binder, threads 7 may be embedded in the water-proof layer. Preferably these threads are straight and extend longitudinally of the material with a spacing substantially as shown. The paper layers may be subjected to pressure to uniformly and securely unite the adhesive layer thereto. This will cause the threads to bulge the paper somewhat and present a series of ribs extending longitudinally of the strip. This assists in preventing displacement of the threads and adds to the attractiveness of the appearance of the material. It also tends to protect the material since the ribs project above the portions of the paper between them and present wear-receiving and resisting members which will tend to prevent contact of articles with said portions.

To enable the tape or material to be readily applied for packing purposes the exterior surface 9 of one of the paper layers is coated with a suitable gum which will normally be dry and non-adhesive, but when subjected to moisture will readily become adhesive and effectively unite the material to the package or other article.

The composite material composed of the layers described presents a very advantageous construction. The two paper layers united by the water-proof adhesive with the tension threads constitute a material which in tape form has a large field of utility as a strong binder for packaging purposes and is a convenient substitute for cord since it does not require any knotting and adheres throughout its length to the article embraced thereby. Packages on which this binding material is used are liable to be exposed to the weather and moisture. Paper when subjected to moisture is of course likely to be weakened. If the moisture penetrates to the gummed surface of the material its adhesive engagement with the article is apt to be destroyed. The water-proof layer has an important advantage in effectively preventing the penetration of moisture through the sheets to the gum coating. As a result there is no possibility of the gum coating becoming ineffective to secure the tape to the article. If an excess amount of moisture should be applied to the gum coating in rendering the same adhesive it might penetrate through the material and weaken the paper, but the presence of the water-proof layer effectively prevents any possibility of this occurring.

While the binding threads are shown herein as interposed between two sheets of paper, in some instances they may be contained within a single sheet. This might be effected in the course of the manufacture of the sheet of paper.

When the material is used in the form of a binder tape or strip it may be of any width desired and may be merchandized as rolls or in any other convenient strip serving form.

Having described one illustrative embodiment of the invention without limiting the same thereto, what I claim as new and desire to secure by Letters Patent is:

1. A composite material comprising outer sheets of paper, a gum coating on the exterior surface of one of said sheets, a water-proof, adhesive layer between and uniting said sheets and preventing the ingress of moisture through the material to said gum

coating, and a series of tension threads having substantial spaces between them and embedded in said waterproof layer.

2. A composite strip comprising outer paper sheets, a gum coating on the exterior surface of one of said sheets, a waterproof, adhesive layer between and uniting said sheets, and a series of tension threads having substantial spaces between them embedded in said waterproof layer and extending longitudinally of said strip.

3. A composite material comprising outer paper sheets, a gum coating on the exterior surface of one of said sheets, a waterproof adhesive layer between and uniting said sheets, and a series of tension threads having substantial spaces between them embedded in said waterproof layer and producing wear-resisting ribs projecting from the outer surfaces of the material.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

EDWARD H. ANGIER.

Witnesses:
HENRY T. WILLIAMS,
JOHN R. MOULTON.

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HENRY T. WILLIAMS,
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Correction in Letters Patent No. 1,167,466.

It is hereby certified that in Letters Patent No. 1,167,466, granted January 11, 1916, upon the application of Edward H. Angier, of Framingham, Massachusetts, for an improvement in "Binder-Tapes," an error appears in the printed specification requiring correction as follows: Page 1, line 52, for the word "packing" read *packaging;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of February, A. D., 1916.

[SEAL.]

J. T. NEWTON,
Acting Commissioner of Patents.

Cl. 154–50

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