

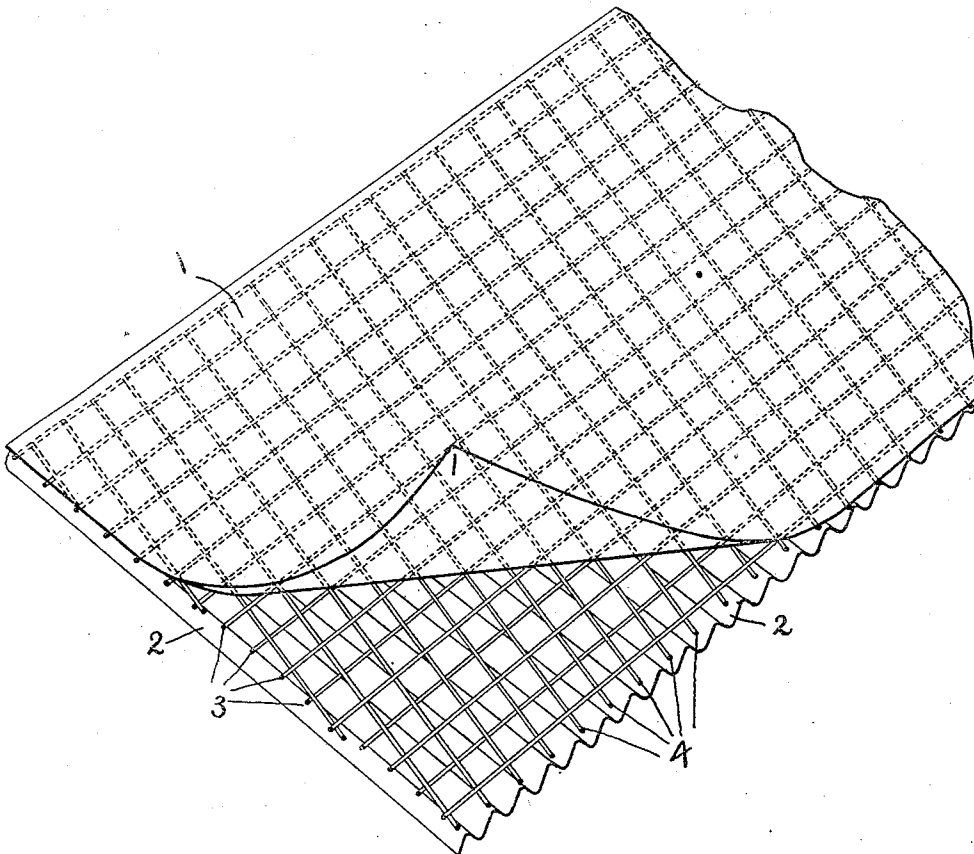
M. R. CARNEY (NOW BY MARRIAGE M. R. HARRISON.)

REINFORCED SHEET MATERIAL.

APPLICATION FILED SEPT. 3, 1914.

1,195,950.

Patented Aug. 22, 1916.



Witnesses

Fred W. Arnold
J. Leon Orin

Inventor

Mary R. Carney

by *Arthur E. Randall*
Att'y

UNITED STATES PATENT OFFICE.

MARY R. CARNEY, (NOW BY MARRIAGE MARY R. HARRISON,) OF WINTHROP,
MASSACHUSETTS.

REINFORCED SHEET MATERIAL.

1,195,950.

Specification of Letters Patent. Patented Aug. 22, 1916.

Application filed September 3, 1914. Serial No. 860,077.

To all whom it may concern:

Be it known that I, MARY R. CARNEY, (now by marriage MARY R. HARRISON,) of Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Reinforced Sheet Material, of which the following is a specification.

This invention relates to sheet material for wrapping and packaging purposes, and has particular reference to reinforced paper having both longitudinal and transverse reinforcing strands, usually of string.

The object of my invention is to provide an inexpensive material of this character as compared with the use of woven fabric assembled with paper. When woven fabric is employed, no matter how cheap a grade, the expense of the manufacture must be considered, such expense being considerable because of its being necessarily produced in a loom. Then, of course, a second operation of uniting it with the sheet material is necessary.

In producing my improved reinforced sheet material, I wrap the transverse strands around the sheet material as the latter is fed in the direction of its length, in such manner that whatever could be considered the equivalent of a fabric is produced at the moment of assembling it with the paper, all as more fully explained in my application No. 820,451 filed February 24, 1914.

The accompanying drawing comprises a perspective view illustrating reinforced corrugated paper, but I do not limit myself to corrugating one of the two sheets.

The sheet material comprises two sheets 1 and 2 of which the latter may be corrugated as shown in the drawing. Adhesively secured to the two sheets are longitudinal strands 3 and transverse strands 4. As explained in my said application, some of the longitudinal strands 3 are preferably led in so that they are drawn along as the paper moves in the direction of its length, there being two sheets of the material, these two sheets being then wrapped by one or more transverse strands, both of these two sheets and the strands being then covered by other sheets which are adhesively secured to two intervening wrapped sheets; then the strands are severed along the edges so that the two pairs of sheets can be separated, producing double material, each comprising

two sheets with intervening longitudinal and transverse strands. The longitudinal strands pass through alternately within and without the transverse strands so that when the sheets are pressed together the transverse strands pass alternately above and below the longitudinal strands similar to the path of the weft of woven fabric relatively to the warp.

The machine described in said application produces material illustrated in the accompanying drawing, as well as other forms of sheet material. In said drawing one of the two sheets is shown as curled up so as to illustrate more clearly the reinforcing strands, but it is to be understood that in practice the two sheets are adhesively connected, and the strands are adhesively secured in place between the two sheets.

The transverse strands are all separate from each other and are parallel and are straight from end to end. They extend across the material in an inclined direction and not at a right angle to the edges of the sheet material. Therefore, when one of the two sheets is corrugated, there is no liability of any transverse strands being so located between the ribs of the corrugated sheet that they would pull out. In other words the transverse strands, as well as the longitudinal strands, cross the ribs of the corrugated paper and are adhesively secured at a plurality of points.

By longitudinal strands I mean, of course, those which extend in the direction of the length of the paper or in other words at a right angle to the ribs of the corrugated sheet. By transverse strands I mean those which cross the material from edge to edge.

I do not limit myself to the employment of the flat sheet 1, or to the use of only one such flat sheet. Both sides of the corrugated sheet may have flat sheets adhesively secured thereto, or I may omit the flat sheets entirely, causing the longitudinal and transverse strands which are secured to the ribs of the corrugated sheet to take the place of a flat sheet of paper.

In further explanation of the method of producing the specific sheet material illustrated in the drawing, I will state that this, referring to my said application No. 820,451, may be performed by corrugating paper webs 11 and 14 described and illustrated in said application before they are adhesively

secured to the transversely wrapped webs 12 and 13.

I claim:

1. Reinforced paper having parallel edges
5 and having longitudinal and transverse strings secured thereto, the longitudinal strings being parallel with the edges of the paper and the transverse strings being separate from each other and straight from end
10 to end, all of said transverse strings extending across the paper oblique to the longitudinal strings and parallel with each other.

2. Reinforced paper having transverse reinforcing strings connected therewith, said
15 strings being separate from each other, and parallel, and straight from end to end, and extending across the material on lines other than a right angle to the edges thereof, and longitudinal strings arranged alternately on
20 opposite sides of said transverse strings.

3. Sheet material comprising corrugated

paper having unwoven reinforcing strands crossing the ribs thereof at an acute angle and adhesively secured thereto.

4. Sheet material comprising corrugated
25 paper having unwoven reinforcing strands crossing the ribs thereof in both longitudinal and transverse directions and adhesively secured thereto.

5. Reinforced sheet material comprising
30 a flat sheet of paper and a corrugated sheet of paper with intervening longitudinal and transverse strands adhesively secured between the two sheets, the transverse strands crossing the ribs of the corrugated sheet at
35 an acute angle thereto.

In testimony whereof I have affixed my signature, in presence of two witnesses.

MARY R. CARNEY.

Witnesses:

GEORGE A. ROCKWELL,
AGNES M. SHEA.