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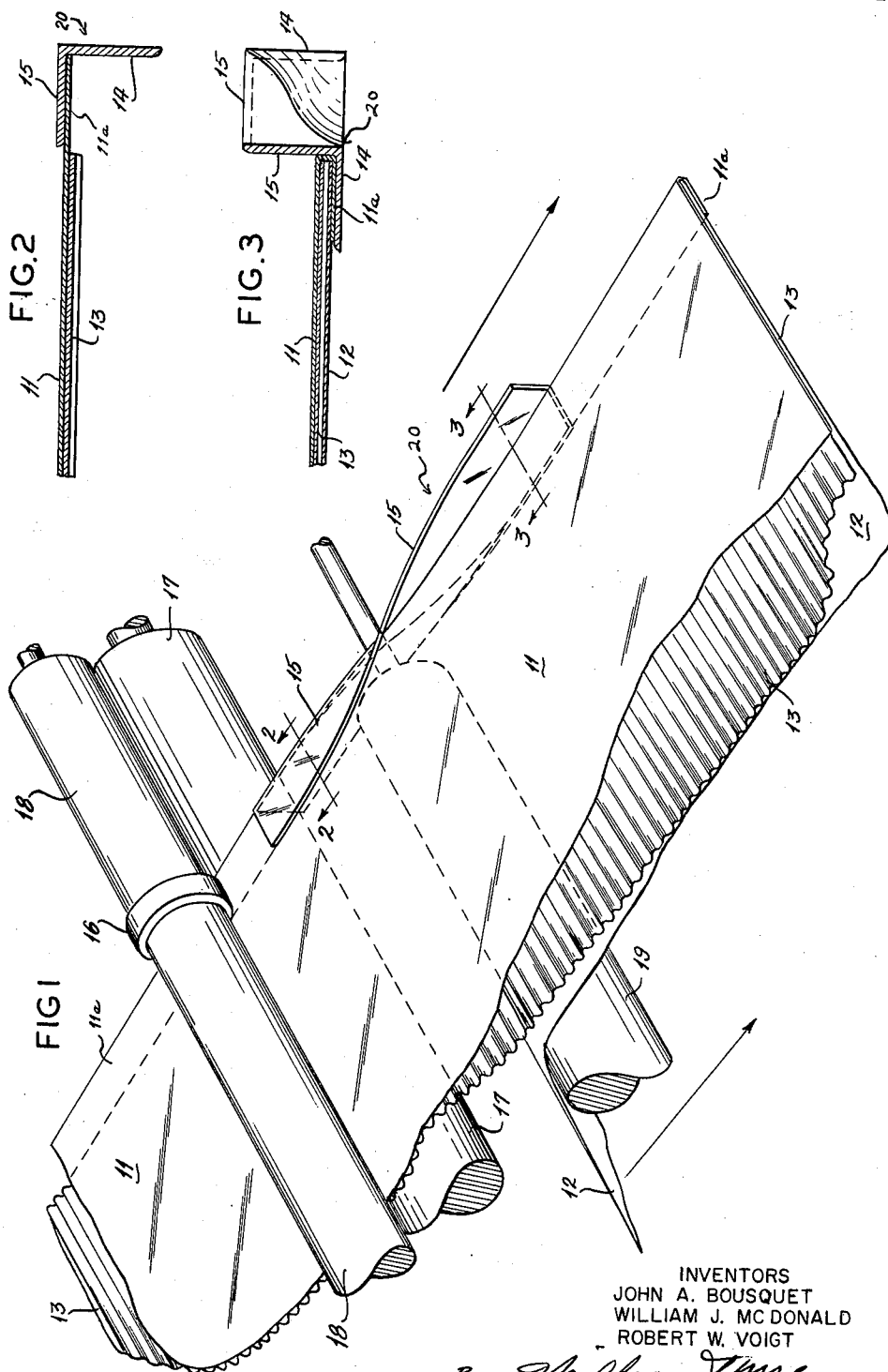
J. A. BOUSQUET ETAL

3,031,356

METHOD OF MAKING CORRUGATED PAPERBOARD WITH A WRAPPED EDGE

Filed May 8, 1957

2 Sheets-Sheet 1



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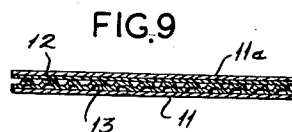
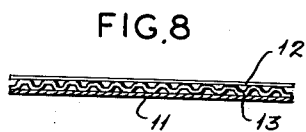
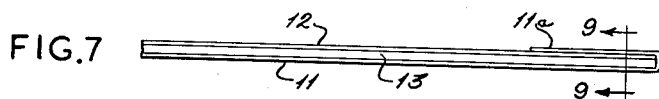
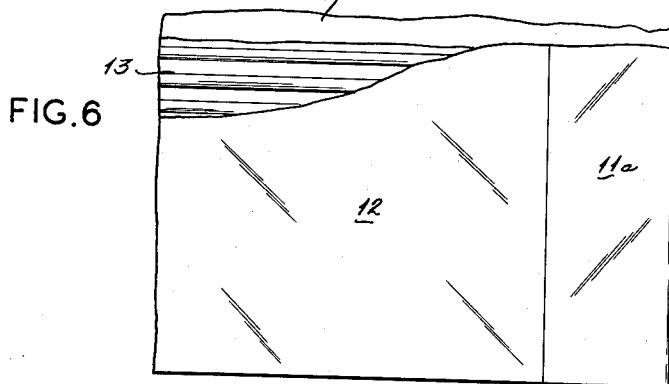
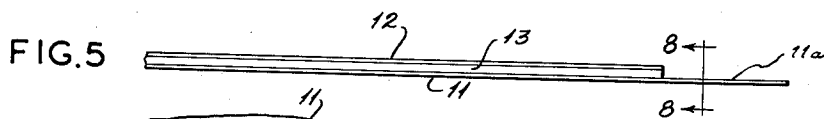
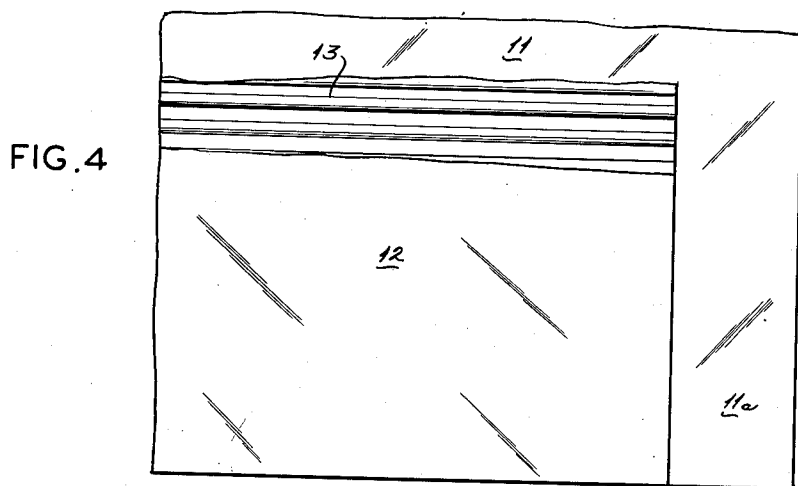
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METHOD OF MAKING CORRUGATED PAPERBOARD WITH A WRAPPED EDGE

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2 Sheets-Sheet 2



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3,031,356

METHOD OF MAKING CORRUGATED PAPERBOARD WITH A WRAPPED EDGE

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1 Claim. (Cl. 156—202)

This invention relates to an improved corrugated paperboard, the said improvement resides in wrapping an extended portion of one of the outer liners about an exposed edge of the corrugated paperboard and adhesively securing the said wrapped extended portion to the other outer liner in flatwise relation, thereby providing a corrugated paperboard product suitable for conversion into shipping containers for a great and increasing number of bulk commodities required to be maintained free from adulteration by paperboard chemical and particle contamination.

In recent years, there has been an increasing demand for relatively inexpensive containers for bulk shipment of chemicals in pellet or powder form, synthetic rubber and various other commodities. This demand has been met by large paperboard containers such as those illustrated by United States Patent No. 2,634,038 entitled "Container," issued April 7, 1953, to Walter C. George et al., and United States Patent No. 2,762,551 entitled "Heavy-Duty Container for Bulk Materials," issued September 11, 1956, to Clifford D. Fallert. However, to insure adequate protection of the contents from paperboard chemical or particle contamination it has been necessary to wrap, by expensive hand labor, all exposed raw edges of paperboard with a gummed paper or cloth tape or by other suitable means.

Our invention comprises a new and novel method of wrapping an exposed edge of corrugated paperboard inexpensively during its manufacture with but a relatively minor mechanical addition to the very costly and complicated paperboard corrugating machines currently in use and without decreasing the high operational speeds of the paperboard corrugating machines.

An object of our invention is to provide a sheet of corrugated paperboard with a wrapped edge thereof suitable for conversion into paperboard containers having an interior entirely free of exposed raw end edges of paperboard.

An object of our invention is to provide a method of wrapping a raw edge of corrugated paper board during its manufacture on the corrugating machinery currently in use, by utilizing an extended edge portion of one paperboard liner and wrapping that extended edge portion about the edge of the corrugations and securing it in flatwise relation to the other paperboard liner.

These and other objects and advantages will become apparent to those skilled in the art upon a clear and complete understanding of the construction and operation of our invention as hereinafter described in detail, reference being had to the drawings in which the preferred form only is illustrated.

In the drawings:

FIG. 1 is a perspective view of a portion of a paperboard corrugating machine showing the apparatus for wrapping an exposed raw edge of paperboard embodied in our invention;

FIG. 2 is a sectional view taken in the direction of the arrows 2—2 in FIG. 1;

FIG. 3 is a sectional view taken in the direction of the arrows 3—3 in FIG. 1;

FIG. 4 is a plan view of a sheet partially cut away of

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corrugated paperboard having an extended edge portion on one of the paper liners;

FIG. 5 is a front elevation view of the sheet of corrugated paperboard shown in FIG. 4;

FIG. 6 is a plan view of a sheet partially cut away of corrugated paperboard showing an extended edge portion of one liner wrapped about the corrugations and secured in flatwise relation with the other liner;

FIG. 7 is a front elevation view of the sheet of corrugated paperboard shown in FIG. 6;

FIG. 8 is a sectional view taken in the direction of the arrows 8—8 of FIG. 5, and

FIG. 9 is a sectional view taken in the direction of the arrows 9—9 in FIG. 7.

In FIGS. 1 to 3, both inclusive, we have shown in schematic form, an apparatus and method, during the manufacture of corrugated paperboard, of wrapping an extended edge portion of one paper liner about the exposed end edges of the corrugations and securing that portion to the other outer paper liner in flatwise relation. A sheet of single-faced corrugated paperboard comprising a paperboard liner 11 and a paperboard corrugated medium 13, which has an edge portion 11a of the liner 11 extending over an edge of the corrugated medium 13, is continuously fed between a glue roll 17 and a pressure roll 18 which has a built-up portion 16 to depress the edge extended portion 11a of the liner sheet 11 onto the glue roll 17, thereby applying adhesive to the underface of the extended edge portion 11a of the liner 11 as well as the bottom portion of the flutes of the corrugating medium 13. The other paper liner 12, which is termed in the art as a double backer, is affixed to the under side of the corrugated medium 13 by a double backer idler roll 18. It is at this point in the corrugated paperboard manufacture that an appliance 20 is attached to the machine frame (not shown) to wrap an edge of the corrugated paperboard, with the extended edge portion 11a of the liner 11. The appliance 20 is a right angle iron which has been deformed and uniformly twisted throughout its length and generally rotated 90 degrees counter-clockwise and on the left side looking in the direction of manufacture. It should be noted, however, that the appliance can be located on either or both sides of a paperboard corrugating machine and forms of the appliance other than a deformed right angle iron may be used.

When the paper first comes into contact with the appliance 20 as best illustrated by FIG. 2 the iron has a horizontally disposed leg 15 covering the extended edge portion 11a of the liner 11 and downwardly extending vertical leg 14 which at its inner upper portion is in abutting relation with the outer edge of the paperboard liner 11a. As the paperboard travels through the machine, the extended edge portion 11a is turned downwardly and around the corrugations and affixed to the other paper liner 12 in flatwise relation thereto as best illustrated in FIG. 3. At that point the leg 15 is vertically disposed and its lower inner portion abuts the wrapped extended edge portion 11a of the liner 11, and the leg 14 is disposed horizontally under the extended edge portion 11a of the liner 11 that has been secured to the liner 12 in flatwise relation, thus completing the wrapping operation.

As is clearly shown in FIGS. 4, 5, and 8 corrugated paperboard is made up of two paperboard liners 11 and 12 with a corrugated paperboard medium 13 disposed therebetween. One of the liners has a portion 11a extending from the edge of the other liner 12 and corrugated medium 13. FIGS. 6, 7, and 9 illustrate the new article of manufacture embodied in this invention which comprises wrapping an extended portion 11a of one of the liners 11 about the exposed edge of the corrugated medium 13 and into flatwise relation with the other paperboard liner 12.

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As above indicated, and as will be understood by those familiar with this art, changes in construction, and arrangement of parts of our invention may be resorted to without departing from the scope thereof and we intend to include all such variations, as may fall within the scope of the appended claim in which the preferred form only of our invention has been disclosed.

We claim:

The method of fabricating wrapped edge corrugated paperboard during manufacture on a conventional corrugating machine which comprises, continuously advancing a composite web including a corrugated member of a determined width and having at least one raw edge and a top sheet secured to the upper surface of the corrugated member and having a marginal portion extending beyond the edge of the corrugated member, depressing the top sheet extending portion into substantially planar relation with the corrugated member bottom surface, applying adhesive simultaneously to the corrugated member bottom surface and the depressed top sheet extending portion, advancing a bottom facing sheet coextensive in width to the corrugated member into adhesively secured contact with said corrugated member and simultaneously inward-

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ly directing the adhesively coated top sheet extending portion about the raw edges of the corrugated member and bottom facing sheet into flatwise adhesively secured relation with the exterior surface of the bottom facing member.

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