

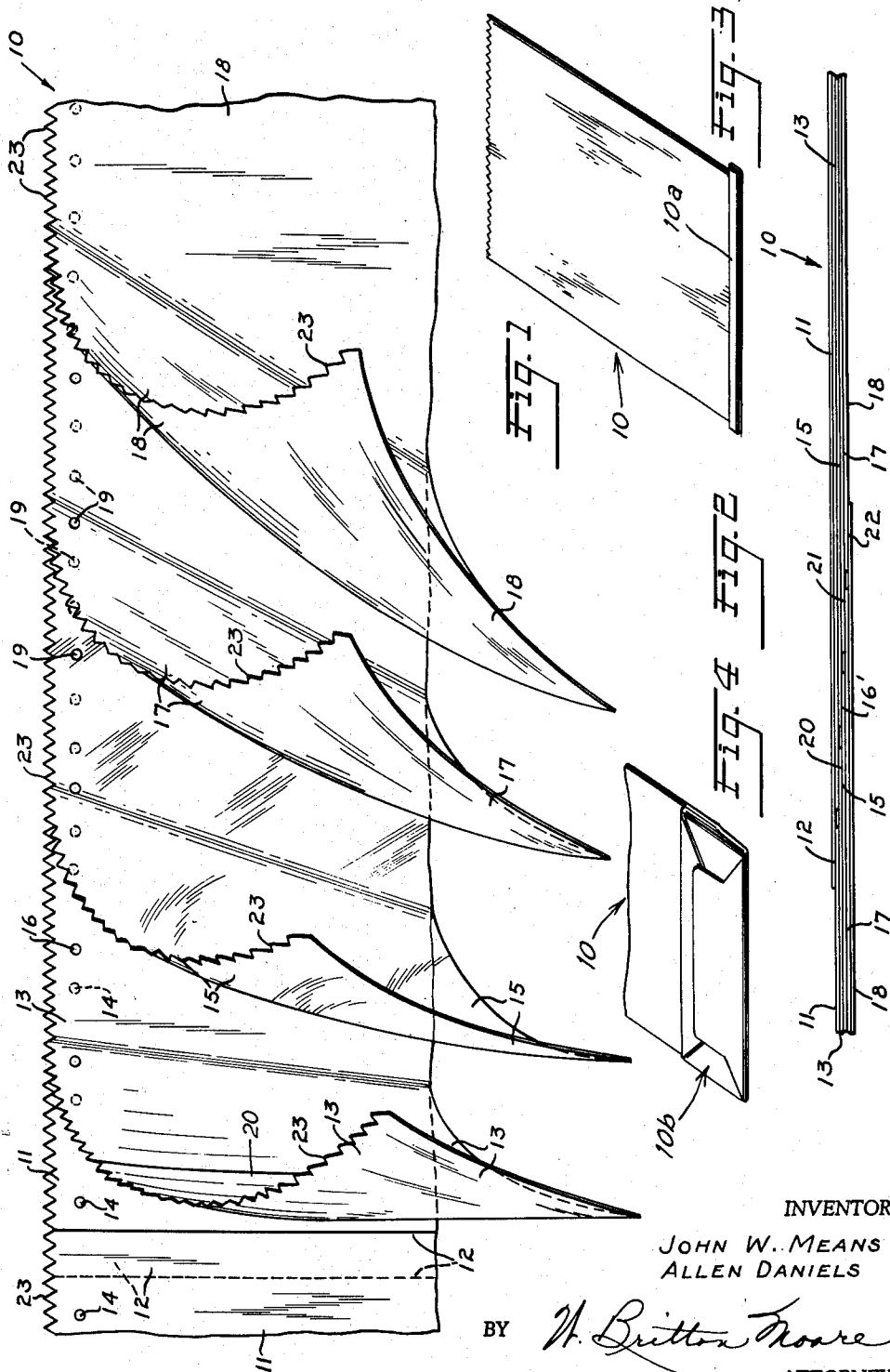
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MOISTURE RESISTANT MULTIWALL BAGS

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1

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MOISTURE RESISTANT MULTI-WALL BAGS

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2 Claims. (Cl. 229-55)

The present invention relates to a multi-wall bag having a freely supported elastic moisture resistant intermediate ply, and it consists in the combinations, constructions and arrangements of parts hereinafter described and claimed. It should be understood that this pertains to both sewn and pasted-end type multiwall bags made either in open mouth or valve form.

Generally there is provided a shipping bag formed of a plurality of paper laminae spot adhered to each other and to a circumferentially continuous intermediate lamina of elastic moisture resistant material, such as polyethylene, relatively freely supported between its immediately adjacent lining and surrounding protective paper laminae.

In the past, moisture barrier materials coated on or bondedly laminated with paper have been considered to be the most economical and most practical way of providing moisture protection in a multi-wall bag. The applicants discovered that polyethylene film of a thickness sufficient to provide a given degree of moisture protection plus a ply of kraft paper was considerably less expensive than an equal amount of polyethylene coated on the same paper. This observation led to the development of the herein disclosed and claimed bag which consists of a relatively freely supported polyethylene film constituting one of the plies of a multi-wall bag plus one ply of paper in place of a coated or laminated sheet of equivalent strength and moisture barrier properties.

The advantages of this design over a polyethylene coated paper are: lower cost, film-to-film contact on the longitudinal seam for better moisture protection, and the fact that breakage of the paper plies can occur without rupturing the somewhat elastic polyethylene ply, thus preventing the contents of the bag from spilling out. In the case of polyethylene coated paper, the paper and the polyethylene coating always break at the same time.

It is accordingly a principal object of the invention to provide a multi-wall bag having a relatively freely supported elastic moisture resistant intermediate ply, whereby the contents are protected against moisture penetration and/or spillage through breaks in the paper laminae.

It is another object to provide a bag of this type in which the moisture resistant ply is continuous, to obviate the seepage that heretofore occurred at the longitudinal seams of coated or laminated moisture barrier liners.

It is a further object to provide a bag of the character described that can be made on conventional multi-wall bag machines.

It is the overall object to provide a shipping bag of the nature set forth which is simple in construction, inexpensive to manufacture and yet effective and efficient in use.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawing, in which:

FIGURE 1 is a fragmentary partially exploded perspective view of a preferred embodiment of the invention,

FIGURE 2 is a fragmentary plan view of an edge of the assembled bag of FIGURE 1,

FIGURE 3 is an isometric view of a bag embodying the invention, and

FIGURE 4 is a fragmentary view similar to FIGURE 3 but showing a modified form of the invention.

With reference now to the drawing, the numeral 10

2

generally designates the multi-wall bag which may be sewn with an adhesively secured strip thereover at its closed end, as shown in 10a in FIGURE 3 or the closed end may be a pasted-end valved type as indicated at 10b in FIGURE 4. Bag 10 comprises an outer ply 11 of paper of desired strength and appearance, the latter including finish, coloration, printing matter, etc. Ply 11 has an overlapped adhered conventional seam 12. Ply 11 is herein shown as being lined by another lamina 13, held assembled therewith by spots 14 of adhesive material located at widely spaced points along or relatively close to the upper margin of the laminae 11 and 13.

The next ply 15 is a sheet of polyethylene or equivalent elastic and moisture resistant material. Ply 15 is similarly adhered along its upper margin or relatively close thereto, to the lamina 13 by spots 16 of suitable adhesive material. The ply 15 has a plastic-to-plastic seam 16' (FIG. 2) which prevents any seepage of moisture into or from the bag 10 (as would occur where the lamina 15 is formed of plastic-impregnated or coated paper, or paper laminated with a film of plastic material, as in the prior art). The moisture barrier ply 15 is lined by one or more plies 17 and 18 of paper. Plies 17 and 18 are similarly adhered to the film 15 and to each other by spots of adhesive material as indicated at 19.

As best seen in FIGURE 2, the overlapped seams 12 and 16', which respectively make the laminae 11 and 15 circumferentially continuous, and the seams 20, 21 and 22, which join the mating edges respectively of the laminae 13, 17 and 18, are all disposed in somewhat offset arrangement circumferentially of the bag to prevent objectionable thickening of the bag walls, as would occur if the seams were superimposed relative to one or more other seams. The numeral 23 designates the serrated edge formed on each and all of the laminae.

While but one form of the invention has been shown and described herein, it will be readily apparent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. A multiwall bag, comprising: at least one outer lamina of flexible and relatively inelastic paper, at least one inner lamina of relatively inelastic paper, and an intermediate lamina of somewhat elastic moisture resistant plastic sheet material, said laminae being free of attachment to each other throughout the side wall areas thereof, said intermediate lamina being attached to the inner and outer layers by means of spaced spots of adhesive adjacent the free upper edges thereof providing relatively free movement of substantially all of the surface of said intermediate lamina over the surfaces of the other laminae engaging the same to minimize the danger of simultaneous rupturing of all of said laminae by bag damaging forces.

2. A bag according to claim 1, said somewhat elastic plastic sheet material being polyethylene.

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