A disposable garment is made by repeatedly folding two parallel edges of a rectangular sheet of paper into pleats, providing a centrally located orifice as a collar, folding the sheet transversely to the pleats across the orifice and gluing the abutting edges of the innermost pleats one to another over a portion of their length not quite extending to the central fold. The unglued portion of the abutting edges serve as arm-holes when the resulting bag-like structure is pulled over the shoulders of a wearer.

10 Claims, 3 Drawing Figures
DISPOSABLE GARMENT BAG CONSTRUCTION

BACKGROUND OF THE INVENTION

The invention pertains to garments constructed in such a simple manner that they may be termed disposable. More particularly, the invention relates to such garments made from paper or similar synthetic sheet material, generally of a nonwoven texture.

Such garments are known to the prior art and are used in situations where requirements of cleanliness and hygiene preclude the use ordinary street-wear. Attempts have also been made to provide sportswear and similar articles of printed paper and other cheap materials whose cost would permit their disposal after a short period of use.

The garments of the prior art, however, have generally attempted to make such disposable garments in the same manner as clothing constructed from textile materials and the resulting clothes were neither pleasing in appearance nor suited to the type of mass production which would alone permit their being economically produced for single wear use.

It is, therefore, the primary objective of the instant invention to teach the construction of a garment of paper, or similar sheet material, whose basic structure is made from a single blank suitable for machine manufacture.

It is a further objective of the invention to attain the manufacture of such a garment with the greatest possible economy.

It is yet another object of the invention to provide a pleasing appearance in a disposable garment.

SUMMARY

The foregoing objectives of the invention are attained by providing a garment basically in the form of a self-opening square construction; such a bag having been disclosed in my co-pending application cited above.

The garment is made from a rectangular blank whose length corresponds to the total vertical dimension of the finished garment; that is to the sum of the length of the front, the depth of the shoulder and the length of the back panels; and whose width is equal to one-half of the circumference desired in the finished garment.

An orifice, substantially circular in form, is punched into the blank centered in the segment corresponding to the shoulder panel and the longitudinal edges on either side of the blank are folded back a number of times in a parallel alignment to form pleats. The pleats may be equal in width or vary in the width of the adjoining folded segments but corresponding pleats on either side of the blank are always equal, the garment being symmetrical of necessity. The pleated blank is next folded transversely in the shoulder panel, a single fold centered on the neck orifice may be sufficient or a number of such folds may be made, all the folds being in the same direction, to wit, such that the previously folded pleats will come to rest abutting one another on the other.

The outermost pleats having been brought into contact by the aforementioned transverse fold, or folds, their abutting faces are next cemented, or sown, together over a portion of their joint length, starting near the hem of the garment — represented by the sides of the blank farthest from the neck opening — to a point near the shoulder panel centered in the blank. The section near the shoulder panel which remains un-cemented opens to form openings on either side of the completed garment through which the arms of the wearer may be thrust.

The objects, features and advantages of the invention will become more apparent from the detailed description below, referencing the accompanying drawings.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWING

FIG. 1 is a plan view of the blank utilized to form the garment of the present invention;

FIG. 2 is a perspective view of the blank after the longitudinal edges thereof have been folded over upon themselves to form pleats; and

FIG. 3 is a perspective view of a garment made from the blank of FIG. 1, pleated and cemented according to the invention, worn by a child.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 shows the blank from which the garment of the preferred embodiment is manufactured in plan view; the blank 1 being a rectangular sheet of paper, single or multiple ply, or a similar flexible and creasable synthetic material.

The blank 1 is pierced centrally by a hole 19 for the admission of the head of the wearer, the hole 19 being additionally surrounded by radially incised slits, typically 119, for the provision of a flexible collar structure adapting the garment to the neck contours. While the orifice 19 is shown as a circular opening, other shapes may be employed to provide differing styles in the resulting collar, for example the orifice may show a triangular extension towards the front of the garment if a V-line shape is desired.

The blank 1 is subdivided into three panels; A, B and C; by transverse creases 20 and 22. The central panel B, representing the portion of the finished garment overlying the shoulders of the wearer, is further divided by a transverse crease 21 passing through the center of the orifice 19. The creases 20 and 22 do not extend over the full width of the blank 1 but are continued in their outboard segments by slit or rouleauette sections 30 and 130, and 31 and 131 respectively.

A further rouleauette seam 35 is provided issuing from the orifice 19 and running longitudinally down the center of the panel C, the back section of the garment. Rouletting in the present sense is to include any method of weakening of a given seam in the blank that does not produce actual separation along the seam but will, by the application of a small tearing force, permit such separation and guide it along its axis. Perforation, interrupted slitting and the intermittent crushing of the material, known in the art as rouletting, shall all be understood as among the permissible methods.

The blank is also creased by a number of fold-lines along its longitudinal axis, starting symmetrically from either edge; these fold-lines 10 and 110, 11 and 11, 12 and 112, 13 and 113, 14 and 114, being parallel to each other and symmetrical with respect to the longitudinal axis. The separation between adjoining fold-lines is equal in the embodiment illustrated but their number and spacing may be varied in differing garments to provide different effects in the finished item.

At the meridian of the waistline of the finished garment optional reinforcement, in the shape of paper,
3,747,122

3 cloth or elastic tape, may be sown to the blank over the pleated portions at 40, 140, 41 and 141. Such reinforcements aid in shaping the garment and define a definite waistline — such shaping being of some importance if the finished garment is to be worn by an adult female.

The next step in the manufacturing process is illustrated in FIG. 2, where the pleats created by the fold-lines recited above, 10–14 and 110–114, have been folded over to create pleats and seams of adhesive 50 and 150 applied over the uppermost flange of the pleats in the panel A. It is clearly indicated that these seams start at one end of the blank, representing the hem of the finished garment, but do not cover the full length of the panel A, stopping short of the shoulder line represented by the seam 31/22/131. When the blank is folded transversely about the seam 21 the adhesive seams 50 and 150 cause the overlying portions of the outermost pleats to adhere permanently, thereby joining the front and back panels of the garment around the sides.

That portion, on either side of the garment, of the pleats that are not joined by the adhesive seams open in the finished garment to provide arm-holes. Admission of the arms through these openings may be further facilitated by the, optional, tearing out of the inner pleats along the perforated seams 30/31 and 130/131, thereby forming a flap overlying the upper arms. Such flaps may also serve to attach separately manufactured sleeves; such attachment may be part of the manufacturing process or separate arms may be supplied along with the garment and attached at the time of donning same.

In end-uses where it may be desirable to provide means for changing such sleeves with ease, the latter need not be attached to the garment itself but may be of tubular construction and provided with tie cords at the shoulder end. These cords are to threaded through the armholes of the garment and tied behind the back of the wearer. The lower end of these sleeves may be provided with an elastic band for snug closure on the wrist. Such a construction would be of particular benefit in surgical gowns or similar garments where the sleeves may become soiled before the remainder of the garment. A similar arm construction could have the pair of arms interconnected by an elastic band, in which case the arms would be pulled on before the main portion of the garment.

A further aid in entering the garment is provided by the rouletted seam 35 running up the back panel of the finished item. This may be torn open and thereby convert the garment into a smock open in the back. Means for refastening the back seam may be provided in the form of short segments of tape whose ends are sewn or cemented at either side of the seam 35 in confronting pairs.

A finished garment 100, worn by a child, is shown in FIG. 3, in which the frontal panel A, the pleats at either side, and the collar formed by the radial slits 119 issuing from the neck orifice are clearly visible. In the garment 100 the optional waist-reinforcing elements have been omitted, since a generally tubular finished product is desired without a pinched waist. Similarly, since the garment 100 is a sleeveless smock, the corresponding blank 1a, not illustrated but readily visualizable with reference to FIG. 1, omits the rouletted seam across the outer pleats along the edges of the shoulder panel B and has the fold-lines 20 and 22 extending across the full width of the blank.

It should be noted that the finished garment is a completely flat, rectangular structure — resembling a folded newspaper — and is readily packaged on display and otherwise handled with little likelihood of damage and great economy of storage space.

Many variations in the details of construction or the appearance of the finished garment will become apparent to one skilled in the art, once exposed to this disclosure, without deviating from the fundamental teachings of the instant invention. In particular, the shaping of the garment into dresses, smocks, aprons and other forms; the provision of open seams at the front or sides; the inclusion of pockets, reinforcements and decorations; the coloring and printing of the basic material; the substitution of sewn or welded seams for the cemented structure illustrated; the use of unsymmetrical blanks, including the use of the longitudinal centerline of the blank as a side of the finished garment, are all encompassed by the invention which is defined by the claims appended hereto.

What is claimed is:

1. A continuous method of making expandable disposable garments from a continuous length of flexible sheet material, comprising the steps of; cutting a rectangular blank from said sheet; piercing said blank with an orifice; making folds in the longitudinal edges of said blank to form at least one pleat along each of said edges and parallel thereto so as to provide the expansion for said garment; folding said blank upon a transverse fold line in the region of said orifice, to bring one portion of the outermost pleat on each side of said blank into abutting relationship with another portion of same; and fastening a section of each of said abutting portions one to another by the continuous securement of said longitudinal EDGES, said sections extending from a spaced relationship with said transverse fold line towards the transverse edges of said blank farthest therefrom.

2. An expandable disposable garment formed from a rectangular blank of flexible sheet material, said blank having an orifice adapted to accomodate the head of a person and being provided with at least one fold line extending transversely thereof in the region of said orifice and a plurality of longitudinal fold lines parallel to the said edges thereof; said blank being folded upon said longitudinal fold lines to form a plurality of side pleats and upon one of said transversely extending fold lines to bring one portion of the outermost pleat on each side of said blank into abutting relationship with another portion of same, a first section of said pleats in abutting relationship being left unsecured to form armholes and a second section being fastened by the continuous securement of the abutting faces for the remaining longitudinal length thereof to the bottom of said garment; said first section being disposed on either side of said one transversely extending fold line and said second section extending from said first section towards transverse edges of said blank farthest therefrom; the securement of said second portion on either side adapted to form an expandable tubular region of said garment for enclosing the torso of said person.

3. The garment defined in claim 2, wherein said flexible sheet material is paper, at least one ply in thickness.

4. The garment defined in claim 2, wherein said orifice is circular in shape.
5. The garment defined in claim 2, wherein said second portion of said pleats are secured by an adhesive one to another.

6. The garment defined in claim 2, wherein the periphery of said orifice shows with a plurality of radially extending slits, for forming a collar thereon.

7. The garment defined in claim 2, wherein said orifice is centrally located in said blank and said one of said transverse fold lines passes through center of said orifice.

8. The garment defined in claim 2, wherein said blank is perforated along a line interconnecting said orifice and one transverse edge thereof.

9. The method defined in claim 1, further comprising the step of perforating said blank along a line interconnecting said orifice with one transverse edge thereof.

10. The garment defined in claim 2, wherein said orifice is located equidistant from longitudinal edges of said blank and near one transverse edge thereof.

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