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Improvements in or relating to papermachine and like clothing.

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A papermakers wet felt is proposed which comprises a flat woven duplex fabric wherein the warp yarns (15) at the roller side of the fabric are "fine" yarns of similar diameter to the warp yarns (13) of the face fabric and wherein the warp yarns (13, 15) exist in like numbers at both fabric faces. The fabric has a reduced tendency to retain water.

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IMPROVEMENTS TO PAPER MACHINE AND LIKE CLOTHING

The invention concerns papermachine and like clothing and has particular, though not exclusive, reference to wet end fabrics.

Papermachine fabrics of duplex form are known wherein the face, or paper side, is of plain weave construction and the back of the fabric is, for example, a four-shaft satin. In conventional fabrics of this kind the face fabric is woven from "fine" warp and weft yarns, whilst in the back the warp and weft both comprise "coarse" yarns.

However, the known fabric as aforesaid, whilst providing the smooth paper-receiving face necessary to avoid marking, does possess a characteristic which detracts from its effectiveness. More particularly, the fabric has a tendency to retain water, such water being released, by centrifugal forces, on passage of the fabric around support rollers at the end of a fabric run.

The present invention proposes a fabric wherein the inherent disadvantage of the prior structure as regards a high degree of water retention is avoided.

Thus, according to the present invention, a flat woven papermachine or like fabric of duplex form comprising a face layer of plain weave construction and a back layer joined thereto by binder yarns is characterised in that the warp yarns of the said back layer are of "fine" yarns.

According to a preferred feature, the warp and weft yarns of the face layer both comprise "fine" yarns and the warp yarns of the back layer of the duplex fabric correspond in number to the warp yarns of the face layer.

By "fine" yarns is meant a yarn of a diameter (or the equivalent) commonly used at the paper supporting face of a papermakers fabric, in contradistinction to the "coarse" yarn commonly used at the "machine" side of the fabric. Typically, a "fine" yarn will be, say, 0.22 mms in diameter, whilst a "coarse" yarn will have a diameter of, say, 0.35 mms.

The invention will now be described further by way of example only, with reference to the accompanying diagrammatic drawing illustrating one embodiment thereof.

Thus, referring now to the drawing, a forming fabric for a papermaking machine is of duplex construction, and comprises a face layer 11 of plain weave and a back layer 12 defined by a 3 and 1 straight twill.

The warp and weft yarns 13, 14 of the face layer are "fine" yarns having diameters of .17mms and .18 mms, respectively.

The warp yarns 15, of the fabric layer at the roller side are, in the present example, of like

diameter to the warp yarns 13 of the face layer, and are present in like number at both faces of the fabric, whilst the weft yarns 16 have a diameter of 0.25 mms.

The weft binder yarns 17, two of which yarns are conveniently present in each pattern repeat, are of polyester monofilament of a diameter of 0.12 mms, the warp and weft yarns of both fabric layers similarly being monofilament polyester yarns.

In the face layer the weft is woven 24 picks per centimetre whilst in the back layer the corresponding figure is 16 picks per centimetre, there being 8 weft binder yarns per centimetre. There are 63 warp yarns per centimetre, in total.

The fabric as aforesaid has a thickness of 0.73 mm.

We have found that a wet end fabric constructed as aforesaid is effective in operation, and avoids, in whole or in part, the problem of water-retention inherent in known structures.

By way of comparison, a conventional duplex fabric having a "fine" face layer of plain weave and a "coarse" back layer comprising a 3/1 twill, and wherein the diameter of the yarns of the face layer and back layer are respectively .17 and .25 mms respectively, wherein the warp yarns exist as 26 ends per centimetre and 13 ends per centimetre in the face and back respectively, and wherein the weft direction yarns are present at 30, 15 and 7 picks per centimetre in the face layer, back layer and in the binding layer, has a thickness of .82 mms and a materially greater tendency to retain water than has the fabric of the invention.

The invention is not limited to the precise detail of the example herein set forth, since alternatives will present themselves to one skilled in the art.

Thus, for example, whilst, in the embodiment described, the warp yarns at the back of the duplex fabric are of the same diameter as those in the front, yarns of a different diameter may be preferred in some instances, although in practical terms, substantial differences could not be accommodated. A warp diameter of 0.17 mms at one face is acceptable in combination with a warp diameter of 0.2 mms at the other face, but differences materially in excess of this may well give rise to difficulty. It is thought that, subject to the foregoing, yarns of a diameter lying within the range .15 to .25 mms will be of application in the context of the invention, with a preferred range of from .17 to .22 mms.

Furthermore, as in the embodiment described, the weft yarns in the face and back of the fabric may be of a different diameter from each other and indeed from that of either of the warp yarns.

Claims

1. A flat woven papermachine or like fabric of duplex form comprising a face layer of plain weave construction and a back layer joined thereto by binder yarns, characterised in that the warp yarns of the said back layer are "fine" yarns. 5
2. A fabric as claimed in claim 1, wherein the warp yarns of the back layer of the fabric correspond in number to the warp yarns of the face layer. 10
3. A fabric as claimed in claim 1 or 2, wherein the warp yarns of both fabric layers comprise synthetic monofilament yarns and the warp yarns of the face and back layers are of substantially the same thickness. 15
4. A fabric as claimed in any one of the preceding claims, wherein the warp and weft yarns comprise polyester yarns.
5. A fabric as claimed in any one of the preceding claims, wherein the binder yarns extend in the weft direction of the fabric. 20
6. A fabric as claimed in any one of the preceding claims wherein the warp and weft yarns of the face layer both comprise "fine" yarns. 25
7. A fabric as claimed in any one of the preceding claims wherein the warp yarns of the back layer have a diameter within the range .15 to .25 mms.
8. A fabric as claimed in claim 7, wherein the warp yarns have a diameter within the range .17 to .22 mms. 30

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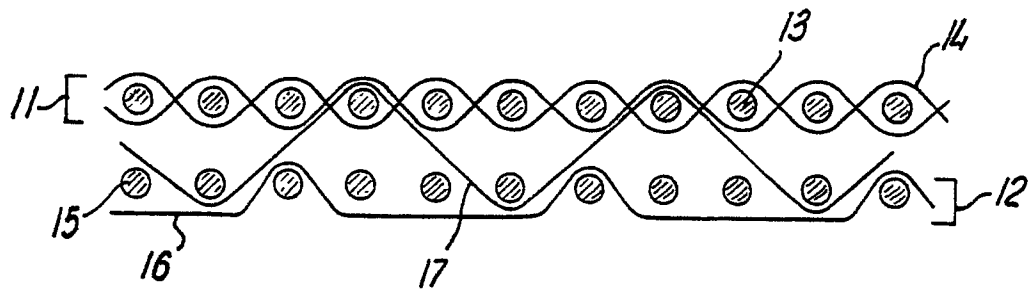
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	EP-A-0 117 856 (NORDISKAFILT) * Whole document * ---	1-8	D 21 F 1/00
A	EP-A-0 141 791 (NORDISKAFILT) * Whole document * ---	1,2,4-7	
A	DE-A-3 318 990 (OBERDORFER) * Whole document * ---	1,2,5,6	
A	DE-A-3 318 985 (OBERDORFER) * Whole document * -----	1,2,5,6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			D 21 F D 03 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30-06-1988	Examiner DE RIJCK F.
CATEGORY OF CITED DOCUMENTS			
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