S. W. BAKER.

DOUBLE-WOVEN TEXTILE-FABRIC.

No. 182,051. Patented Sept. 12, 1876.

Fig. 1.

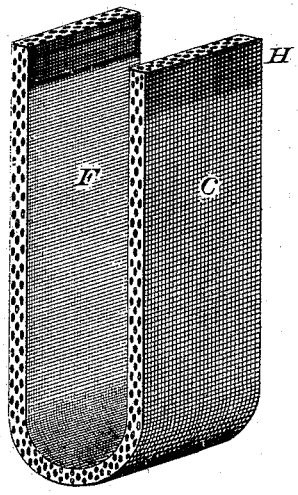


Fig. 2.

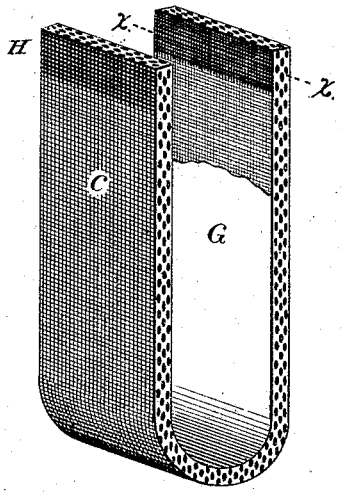


Fig. 3

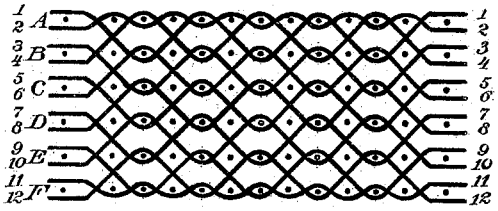
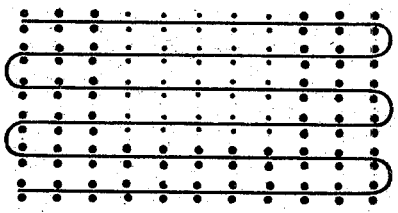


Fig. 4.



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UNITED STATES PATENT OFFICE.

SETH W. BAKER, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN DOUBLE-WOVEN TEXTILE FABRICS.

Specification forming part of Letters Patent No. **182,051**, dated September 12, 1876; application filed May 27, 1876.

To all whom it may concern:

Be it known that I, SETH W. BAKER, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Double-Woven Textile Fabrics for mechanical and manufacturing purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists of a thick double-woven textile fabric, having one side or face of a fine texture, and the other side or face of a coarse texture, the edges, which are to be united together in the manufacture of water-proof hose, being woven with a coarser thread than that employed in the body of the fabric to lend additional strength to the joint or seam, said fabric being intended, however, for use also in other mechanical and manufacturing purposes, all as will be hereinafter more fully described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of my improved fabric, showing the inner face of a fine texture, and the outer face of a coarse texture. Fig. 2 is a similar view, with a water-proof lining applied to the interior surface. Fig. 3 is a sectional view of my improved fabric, taken through line *x x* of Fig 2, showing the strengthened edge; and Fig. 4 is a similar view, taken transversely of the fabric.

Similar letters of reference occurring on the several figures indicate like parts.

The object of my invention, in the first place, is to produce an improved textile fabric for the manufacture of water-proof hose, in which by the fine-texture surface provision is made for a smooth interior surface for the water-way, and by the coarse-texture surface a coarse stout exterior is provided to sustain the abrasion and wear incident to the handling of the hose when in use in one and the same fabric; also, to so construct the edges of said fabric that it is strengthened to a greater degree at that point for securing the same in a tubular form by riveting or sewing.

The object of my invention, in the second place, is to produce an improved textile fabric, with the strengthened edges, for various uses to which it may be found applicable in the mechanical and manufacturing arts, such as the production of combing-aprons, machine-belting, and other analogous purposes; and my invention is intended as an improvement upon the fabric, as set forth in the Letters Patent granted to John Gujer, under date of May 18, 1858, and numbered 20,267, in which a great many warps are so interwoven with a number of shoots of filling-threads as to combine the whole in one closely-woven homogeneous mass or web having great strength, and at the same time lightness of weight.

Usually, in the production of my improved fabric, twelve warps and six shoots of filling-threads are employed, and of the warps, four of fine warps are used for the formation of one (the fine) face of the fabric F, and four of coarse warps are employed for the formation of the exterior face C of the fabric, leaving four other warps of the medium, the fine, or the coarse warps for the interior or body of the fabric. There are, consequently, six sheds formed, and as many (six) shoots of filling-threads. These are thrown in across in the direction of the hydraulic strain, and may be either of the same size throughout as the larger or stouter warps, or of the same size for the two or three outer shoots, and of smaller or finer size for the body and interior shoots to form the fine and smoother interior surface. The arrangement of the loom mechanism to accomplish this result being readily comprehended by those familiar with weaving-machinery of this class, two shuttles being employed to carry the filling—one conveying the coarse and the other the fine thread at its proper time and in its proper place.

The size of the yarns usually employed in the production of the said fabric is No. 20, four-ply, for the finer interior surface, and No. 20, nine-ply, for the exterior coarser surface; but the latter may be increased in size to twelve, fifteen, or eighteen ply of No. 20, or other suitable number of yarn and of the twist known as "cable laid," in order to afford the requisite coarseness of texture, the exterior filling-threads being also increased in size in

like manner. On the other hand the interior surface may be wrought in fine texture by a like reduction in the number of plies or of the yarn itself, or both, as may be deemed most proper or advantageous, by means of which any required fabric may be readily produced of superior quality to any other in respect to smoothness of interior, strength and durability for the purposes to which it may be found applicable in the mechanic and manufacturing arts.

In the employment of the improved fabric for the manufacture of water-proof hose the size and number of thread employed are increased toward the edges H of the fabric, so as to give an additional strength to the joint or seam formed by the union of the edges, secured together by rivets or sewing.

The fabric is coated on its finer and smoother surface F with india-rubber compound G, as shown in Fig. 2, and vulcanized to form an impervious lining or water-way either before or after the said fabric is put together in the tubular form in the manufacture of hose.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The improved woven fabric, having one side or face, F, of fine texture, and the other side or face, C, of coarse texture, the edges H being constructed of a stouter thread than that employed in the body of the fabric, substantially as described.

2. The hereinbefore-described fabric, provided with the strengthened edges H, in combination with the rubber lining G, substantially as described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

SETH W. BAKER.

Witnesses:

WALTER B. VINCENT,

GEO. E. A. KNIGHT.