H. MIDGLEY.

FOUNDATION FOR CARD CLOTHING.

APPLICATION FILED APR. 13, 1915.

1,293,504. Patented Feb. 4, 1919.

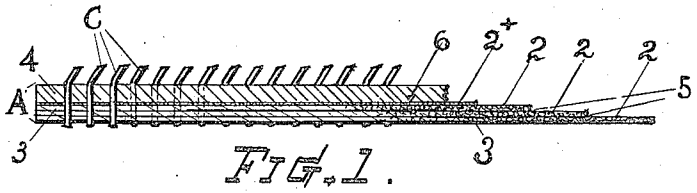



FIG. 1.

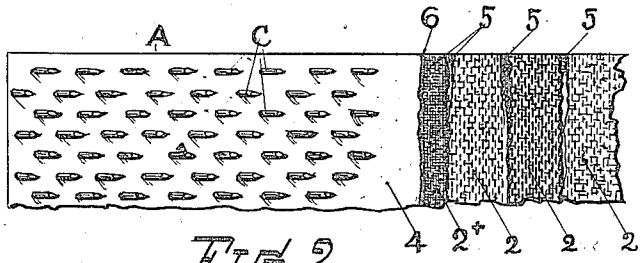



FIG. 2.

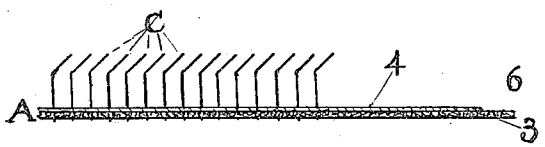



FIG. 3.

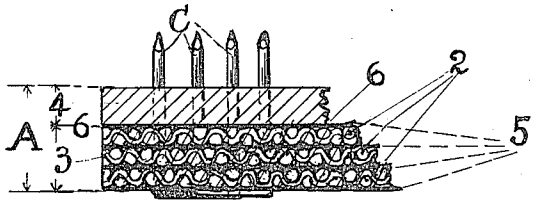



FIG. 4.

Witnesses—
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# UNITED STATES PATENT OFFICE.

HERBERT MIDGLEY, OF WORCESTER, MASSACHUSETTS.

## FOUNDATION FOR CARD-CLOTHING.

1,293,504. Specification of Letters Patent. Patented Feb. 4, 1919.

Application filed April 13, 1915. Serial No. 21,171.

*To all whom it may concern:*

Be it known that I, HERBERT MIDGLEY, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, has invented certain new and useful Improvements in Foundations for Card-Clothing, of which the following is a specification.

In the customary use of card clothing as heretofore manufactured, a prevailing source of annoyance, trouble and expense has always existed by reason of the stretching, to a greater or less degree, of the foundation in which the card-teeth are supported; and this stretch, though but slight at any one portion of the card-clothing, frequently amounts to quite a serious defect, as the strips of card-clothing, after they are spirally wound tightly upon the cylinders, workers or rolls (the usual method of applying clothing in carding machines) and put to use, will by such stretching of their backing, become loose and tend to crawl toward the rearmost end of the strip or coil, bulging or increasing to an appreciable degree the diameter of that portion of the roll, or cylinder, thereby rendering the coöperating faces of the lickers-in, workers, doffers and main carding cylinders inaccurate, irregular and variable in action and wear; and soon destroying the uniformity of the carding-faces so that the mechanism is incapable of doing perfect carding work; furthermore requiring too frequent regrinding and re-clothing of the cylinders and carding rolls, and other repairs. Especially is this stretching of the foundation a source of loss and expense if any extreme dampness or water comes in contact with the card-clothing, as from the discharge of automatic sprinklers, or other wet-downs, as may sometimes occur.

The object of my present invention is to overcome the above noted deficiencies or objections, and to provide a card-clothing that will not stretch and become loose after it is arranged upon the carding machine; also to provide a practicable and efficient non-stretchable foundation for supporting the card-teeth while affording the requisite firmness of set in the backing, and suitable yieldability of the carding face.

A further object is to provide a card-clothing having a water-repellent, oil proof, non-stretchable flexible foundation of the character and material specified, as an improved article of manufacture.

These objects I attain by the means and construction illustrated and fully described, the particular subject matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 represents a longitudinal section of card-clothing embodying my invention; one end of the piece shown dissected to more clearly reveal the structure. Fig. 2 represents a plan or face view of the same. Fig. 3 is a modified section view showing the card-clothing as made with a comparatively thin foundation or body adapted for slender teeth. Fig. 4 is a fragmentary section view illustrating the described structure, the parts being drawn to a somewhat enlarged scale.

My invention consists in a card-clothing having its foundation or body sheet, in which the wire teeth are set and supported, formed of the materials described, combined and constructed in the peculiar manner set forth, resulting in a non-stretching, water-proof and oil-proof backing of a firm and substantial character, yet having a sufficient amount of flexibility to be readily and properly conformed to the circumferential contour of rolls and cylinders upon a carding machine.

Referring to the drawings, the letter A indicates the card-strip, foundation or body, which, as shown, includes the solid backing portion 3 and united facing portion 4. The backing 3 is, in accordance with my invention, composed of strong close meshed woven fabric, preferably cotton duck 2, having the surfaces thereof coated, and the meshes of the fabric impregnated and filled with the oil-proof, water repellent substance known as balata, or balata gum compound.

As many plies or layers of said treated or balata-filled woven duck 2 as will give the required thickness of backing 3 in any instance, are superimposed one upon another, for combining together with the balata compound, 5, and the whole compressed and consolidated into a compact integral body of uniform density.

Upon one side of this backing 3, and firmly cemented thereto at the meeting surface line 6, I arrange the facing portion 4 which is

of fibrous material, preferably wool felt or strong woven woolen cloth fabric, which may if desired, be formed in one or more plies united to give the desired amount of thickness as in any particular instance desired.

In some instances a ply or plies of comparatively fine-meshed canvas or the like 2×, treated with the balata material, may be securely cemented between the felt facing portion 4 and backing 3; an instance of such method is illustrated in Figs. 1 and 2. The fine meshed canvas may be omitted when so preferred.

The wire card-teeth C are set, in usual manner, through the solidly compressed impregnated woven duck backing 3, and project up through the fibrous felt or wool-fabric facing 4, which latter affords a cushion or degree of elastic action to the teeth.

The thickness of the backing 3 may be made more or less, to meet the requirements for the various different grades of card-clothing by uniting a greater or less number of plies or layers of the woven duck treated and consolidated in the manner set forth.

To accommodate the different requirements of carding, and for different size and sets of wire teeth, etc., the relative proportional thickness of the backing 3 and facing 4 may be varied in the make up of the complete foundation A. A heavier backing 3 makes a stiffer card and supports or holds the teeth C more firmly than does the lighter backing; while a heavier or thicker facing 4 makes a more yieldable cushioning support for the teeth than does a thinner facing.

It will be understood that I do not claim broadly the idea of making up card clothing foundation of different layers, or the idea of a soft fibrous facing element in a card-clothing, irrespective of the specific construction specified and hereinafter defined.

What I claim and desire to secure by Letters Patent, is—

1. The within described card-clothing, in which the tooth-holding foundation consists of strong close-woven cotton duck with its meshes filled, solidified and united with a comparatively hard slightly flexible balata substance integrated therewith, a ply of comparatively fine textile fabric adhesively attached to the face thereof, and wire teeth inserted therethrough, the whole forming a substantially non-stretchable, water-repellent, oil-proof card-clothing structure, as set forth.

2. A card-clothing foundation comprising a back portion including a plurality of layers of woven cotton-duck, its mesh impregnated and solidly united with a slightly flexible hard balata filling, and a face ply of non-impregnated fibrous fabric.

Witness my hand this 10th day of April, 1915.

HERBERT MIDGLEY.

Witnesses:
MYRON F. CONVERSE,
CHAS. H. BURLEIGH.