

UNITED STATES PATENT OFFICE.

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MANUFACTURE OF PAPER FELTING.

SPECIFICATION forming part of Letters Patent No. 278,350, dated May 29, 1883.

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To all whom it may concern:

Be it known that I, FRANK J. MATHER, of Morristown, New Jersey, a citizen of the United States, have invented a new and useful Improvement in the Manufacture of Paper Felting; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The nature of my invention consists in the use of spent bark and woolen, cotton, or equivalent fibrous wastes in the place of the more expensive materials and ingredients heretofore used in the manufacture of paper felting. For use as roofing-felt and for carpet-lining greater economy and efficiency are secured.

The advantages of my said invention are: securing a flexible, elastic, tenacious, attractive, moth-proof material for the above uses, with greater economy and satisfaction than has heretofore been practicable.

I have discovered that spent bark, especially of the oak or pine, is fibrous and tough as well as elastic, and, combined with cheap soft wastes and other materials herein described, makes a felting which somewhat resembles cocoa matting, and can be made of greater thickness and of greater flexibility and elasticity than has been heretofore known.

To carry my invention into effect I use the following materials, in substantially the following proportions: from twenty per cent. (20%) to twenty-five per cent. (25%)—preferably the former—of spent bark, preferably of oak or pine; twenty per cent. (20%) to twenty-five per cent. (25%) of cheap woolen, cotton, or other fibrous waste, preferably twenty-five per cent. (25%); fifteen per cent. (15%) of straw, (preferably bleached,) or of coarse meadow-hay, and the balance in what is known as "colors," in some cases substituting, as stock may require, ten per cent. (10%) of satinets for an equal amount of colors to secure greater strength. I may vary the proportions above given, and I may substitute for the straw or hay colors or other cheap fiber.

The spent bark is ground in any ordinary beating-engine, or in a suitable bark-grinder, of which many are well known, and the other materials are beaten, with the bark so disintegrated in the beating-engine, to a pulp suitable to pass over the dryers of a cylinder-machine, and be turned off and rolled up as a paper felting. The methods and conditions

of doing this are well known to any one ordinarily familiar with such manufactures.

I may use bark, though more expensively, before the same has become spent. What I lay most stress on is the use of, preferably, spent bark and the woolen or cotton or other cheap wastes—the bark as giving body and strength, color, and moth-proof quality, and the waste materials—woolen, cotton, &c.—as giving peculiar softness and flexibility, all being especially economical. I utilize materials heretofore wastes, and release better stock for other purposes in greater economy. The spent bark produces a rich color, and by the use of a little lime—say one bucketful to about four hundred pounds of stock—this color is heightened to a rich brown. I may produce any desired color by the use of any proper coloring materials therefor.

I am aware of numerous American patents and English, providing for the use of bark and of spent bark; but in every case some special expensive treatment of the same is required—disintegrating, washing, bleaching. In no case can all the bark be used. The spent bark is sorted, sifted, and some parts rejected.

The facts have made the use of spent bark heretofore unprofitable. In all preceding uses, also, the product is for a stiff, hard, inflexible material, such as boards for trunks, papier-maché, &c. My invention is the first, so far as I know, which secures by the use of tan a soft, flexible material, and which utilizes spent bark in its entirety without waste or expensive treatment of the same.

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

1. A paper felting made of spent bark and soft woolen or cotton waste, combined with other materials, substantially in the proportions set forth.

2. A soft paper felting made of spent tan-bark and soft fibrous waste, and colors and satinets, substantially as described.

3. A soft, flexible paper felt suitable for carpet-lining, roofing-felt, and similar uses, composed of spent tan-bark, soft fibrous waste, hay or straw, and colors and satinets, substantially as above set forth.

FRANK J. MATHER.

Witnesses:

JOSEPH C. BOOTH,
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