

UNITED STATES PATENT OFFICE.

TRUMAN J. PEARCE AND MELVIN W. BEARDSLEY, OF OAKLAND, ASSIGNORS
TO THE PARAFFINE PAINT COMPANY, OF SAN FRANCISCO, CAL.

RENDERING ANIMAL AND VEGETABLE FIBER WATER-PROOF, &c.

SPECIFICATION forming part of Letters Patent No. 348,993, dated September 14, 1886.

Application filed March 21, 1885. Serial No. 159,878. (Specimens.) Patented in England February 5, 1885, No. 1,604; in France March 30, 1886, No. 162,442, and in Belgium March 30, 1886.

To all whom it may concern:

Be it known that we, TRUMAN J. PEARCE and MELVIN W. BEARDSLEY, citizens of the United States, residing in the city of Oakland, county of Alameda, and State of California, have invented certain new and useful Improvements in Rendering Animal and Vegetable Fiber and Products thereof Water-Proof and Capable of Resisting Acids and Alkalies; and we do hereby declare that the following is a full, clear, and exact description of our said invention.

Our invention relates to improvements made in all kinds of cloths, knit goods, felts, matting, ropes, cordage, and all kinds of textures and fabrics, except paper, that are made of vegetable fiber, wool, hair, or silk, by weaving, matting, knitting, felting, spinning, twisting, or braiding.

We do not include paper in this specification, as we have made a separate application for patent to cover all kinds of paper improved under our invention, said application being known by the Serial No. 159,880, and filed of even date with this application.

We have discovered that by treating the foregoing substances with a mixture of bisulphide of carbon and maltha, as hereinafter explained, they will acquire new characters and properties to such an extent as to become essentially new articles of commerce.

The compound itself is new, and it may be made with many variations of its incidental qualities, such as are common to other substances, and yet all of the newly-found characteristics which are peculiar to itself will be preserved. Upon the compound itself Letters Patent have been granted to us, No. 338,868, dated March 30, 1886, and the formulæ given in said Letters Patent are employed by us in this invention when found applicable.

The following is a description of the mode in which our compound should be prepared for treating the commodities mentioned; but we would not be understood as limiting ourselves thereto, as the proportions may be varied to make a thicker or a thinner composition.

It is better to make our new compound for some purposes—such, for instance, as that of

covering coarse cloth for roofing—of a thicker consistency than it should be when it is intended for other purposes, such as saturating cotton belts for driving pulleys in machinery.

A mixture produced from fifty (50) parts refined maltha and fifty (50) parts bisulphide of carbon would be quite limpid, while one produced from sixty (60) parts refined maltha and forty (40) parts bisulphide of carbon would be also limpid, but in less degree.

We make the compound extremely heavy and stiff by mixing twenty-five (25) parts of the bisulphide of carbon with twenty-five (25) parts of refined maltha and fifty (50) parts of refined asphalt. In this form the compound would answer very well for covering coarse cloth for roofs and surfaces exposed to the elements and not subject to abrasion; but even for such purposes we would prefer the compound mixed with thirty-four (34) parts bisulphide of carbon and sixty-six (66) parts maltha. This would be a good form of the compound for most of the uses to which it would generally be applied.

By using a larger proportion of maltha than any herein mentioned the compound can be made in a plastic condition and so nearly solid that it will need to be applied with a trowel or similar instrument. In such condition it is tenacious and will not saturate unless very slightly. In this compound, also, the various well-known properties of various substances may be employed to produce their natural effects—such as, for instance, asphalt, which tends to make the compound more tenacious and adds body to it; sulphur, which furnishes hardness and smoothness of surface, but makes it more brittle when it becomes dry; rosin, which tends to make the compound flow more freely, and also adds hardness to it; paraffine, which makes it more elastic and pliable. Therefore, when desirable to give the compound special characteristics for special purposes, a proportion may be added to the compound of any of these substances. The maltha should have dirt and all impurities removed from it when found therein, as they tend to injure the mixture.

The substances mentioned are treated with

our compound either by applying the compound to them with a brush or by saturating the substance with the compound in any convenient manner.

5 Cordage and other fibrous materials have often been treated with compounds of which tar forms the principal element, for the purpose of making them less liable to be affected by water and the elements; but it is well known
10 that such compounds destroy about one-fourth of the strength of the fibrous material to which they are applied.

Our new compound is applied in a cold condition to the substances named herein, and not
15 only does not destroy their strength, but rather adds to it. By actual tests we have discovered that cordage treated with our compound is stronger than it was before being treated. The substances treated with our compound are also
20 cleaner to handle, are free from offensive odors, and can be applied to many useful purposes for which they would be objectionable if they soiled with tar or grease whatever came in contact with them, or if they emitted offensive
25 odors.

As already stated, the maltha and bisulphide-of-carbon mixture can be produced of varying consistency, and is therefore applicable for treating textiles of all grades, from the
30 finest silks, cotton, and linen goods to the heaviest canvas and cloth, and in none of the differing conditions of application is the pliability, strength, or other quality of the fabric

or fiber which forms the base of the material affected, but, on the other hand, the same is
35 strengthened and protected against extraneous influences of an injurious character. These effects are due to the peculiar properties of the mixture and to the intimate union of the mixture with the fiber or fabric. The character of the mixture enables us to carry on the
40 described process at normal temperature, both as regards the fiber or fabric being treated and the mixture, and entirely without the aid of heat. Consequently the fiber or fabric is not
45 scorched or injured in any manner, but, as above stated, receives additional strength from the treatment.

The treated fabric or fiber is insensible to the extremes of heat and cold, is odorless, and
50 less inflammable than untreated fiber or fabric.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

As new articles of manufacture, all kinds of
55 cloths, knit goods, felts, matting, ropes, cordage, and all kinds of textures and fabrics other than paper, when made of either vegetable fiber or wool or hair or silk and treated with a compound of bisulphide of carbon and maltha, substantially as herein described and set forth.

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Witnesses:

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