Patented Apr. 19, 1932 1,854,948

UNITED STATES PATENT OFFICE

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MOTH PROOFING

No Drawing. Application filed November 7, 1927. Serial No. 231,777.

This invention relates to moth proofing of fibers and fabrics made therefrom. According to the invention, such fibers or fabrics have applied thereto rotenone, preferably by spraying them with a suitable solution or extract of this substance or immersing them in such a solution.

By the term "rotenone" it is intended to designate extractive substances having characteristics common to the active principles of derris elliptica, also known as tuba root, and of haiari and other plants.

The invention will be readily understood from the following example.

One pound of derris root is ground to a powder and admixed with one gallon of petroleum naphtha, boiling between approximately 300 and 400° F. The mixture is allowed to stand at room temperature for a considerable period, for example, five to seven days, being occasionally agitated during this period. The hydrocarbon oil containing the desired active principles of the derris root is then removed, filtered clear and, if desired, minute amounts of essential oils or other suitable odoriferous substances may be added.

In preparing the extract, if it is desired to hasten the operation, the mixture of oil and powdered root may be heated mildly, say to a temperature of 150 to 200° F., and the period required for the extraction of the active principles by the oil is thereby substantially reduced, say to 24 or 36 hours.

Extracts of haiari may be produced in the same manner. In using black haiari, it is preferred to extract both the roots and stem, while in the case of white haiari it is preferred to extract the stem and leaves.

The solution produced as described is particularly suitable for use by dipping the fabrics therein, pressing out excess solution and drying. In this way, rotenone is distributed over every fiber of the fabric, which is thereby rendered moth proof for a considerable time. The moth proofing dip may suitably be the last step in a dry cleaning operation.

Where it is desired to apply the active principle by means of a spray, it is preferred to employ a higher boiling naphtha cut, for example, one boiling between 450 and 550° F., since the slower evaporation of such naphtha permits a more complete penetration of the extracts into every portion of the fabric or garment which might not be directly exposed to the spray.

While it is preferred to employ petroleum naphthas as the extracting fluid, it must be understood that the invention is not intended to be limited in this respect since alcohol, benzol, ether, and other similar organic solvents are also effective in extracting and holding in solution the active principles of derris root and other substances containing rotenone.

Rotenone has important properties which render it invaluable as a moth proofing agent. It can be applied with great ease. It has no pronounced or objectionable odor. It is of relatively low volatility so that it persists on the fabrics for a considerable time. It is highly toxic and repellant to the moth larvae, but is non-injurious to human beings and warm blooded animals.

I claim:

1. A solution adapted for use in the moth proofing of fabrics, containing rotenone.

2. A solution adapted for use in rendering fabrics moth-proof comprising a volatile organic solvent and the active principle of haiari.

3. A solution adapted for use in rendering fabrics moth-proof comprising the active principle of haiari in petroleum naphtha having a oiling point between 450 and 550° F.

4. A mothproofing solution containing an extract of derris.

5. An article of manufacture comprising a mothproof fabric having rotenone incorporated therewith.

6. An article of manufacture comprising a mothproof fabric having an active principle of derris incorporated therewith.

7. A solution adapted for use in the mothproofing of fabrics containing rotenone in petroleum naphtha.

8. A mothproofing solution containing an extract of derris in petroleum naphtha.

In testimony whereof, I have hereunto set my hand and seal this 2nd day of November, 1927.

WILLIAM J. McGILL.