UNITED STATES PATENT OFFICE.

ROBERT ATHELSTAN MARR, OF NORFOLK, VIRGINIA, ASSIGNOR TO GENERAL WATER-PROOFING CO., INCORPORATED, OF NORFOLK, VIRGINIA, A CORPORATION OF VIRGINIA.

IMPREGNATED FABRICS AND METHOD OF PRODUCING SAME.

1,166,847. Specification of Letters Patent. Patented Jan. 4, 1916.

No Drawing. Application filed November 12, 1914. Serial No. 871,816.

To all whom it may concern:

Be it known that I, ROBERT ATHELSTAN MARR, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Impregnated Fabrics and Methods of Producing Same, of which the following is a specification.

In my copending application Serial Number 811,911, filed January 13, 1914 (now Patent No. 1,121,647), I have described and claimed a process of treating textile material, particularly ropes, fabrics and articles comprising the same, with a mixture containing paraffin wax, naphthalene and diatomaceous earth. In another copending application Serial Number 811,913, filed January 13, 1914, I have described and claimed the treatment of leather with the same mixture. While these two processes have been found to give excellent results, it is found advisable under certain conditions, to omit the use of the diatomaceous earth, and to impregnate the material with a mixture of paraffin wax and naphthalene, applied at a temperature above the boiling point of water, said mixture being free from diatomaceous earth, or other material having a similar degree of hardness, since such material may injure the hands of workmen using ropes, etc., containing the same.

In my prior Patent No. 1,023,784, I have described and claimed the treatment of wood, with a mixture including paraffin and naphthalene, applied at a temperature below the boiling point of water, for the purpose of preserving the wood. In the present process, however, I apply this mixture to leather or textile materials such as above referred to, while said mixture is at a temperature materially above the boiling point of water, a temperature between 230 and 250° F., at the commencement of the operation being found to be advantages.

In carrying out my process I first prepare a bath of molten paraffin 100 parts, containing naphthalene 3 to 5 parts or up to 10 parts to which I may add any suitable dye soluble in the menstruum, and under certain conditions I may also add Paris green 1 to 2 parts, and materials capable of reducing the inflammability of the product, although the addition or omission of either of these last three is optional. The proportions of paraffin and naphthalene may be varied somewhat, but in all cases I preferably employ a relatively small amount of naphthalene, as compared with the paraffin, 10% being about the upper limit.

The material to be treated may be in its air dry condition, containing say from 5 to 15 per cent. of moisture, although for securing heavy impregnation it is advisable to sometimes employ material containing considerably more moisture than this. In fact if desired I may wet the rope or fabric, or textile material composed of, or containing rope or fabric or leather or other material to be treated, by soaking the same in water prior to immersion in the bath of molten paraffin and naphthalene. After immersion of the material into the bath, while the bath is maintained at a temperature of say 230 to 250° F., the bath may be maintained at this temperature for a few minutes, five minutes being ordinarily sufficient. After this the material may be transferred to another bath, of the same or similar composition, or the first bath may be allowed to cool, in order to secure a heavy impregnation to a temperature considerably below the boiling point of water, but above the melting point of the bath. A temperature of 160 to 180 in the second bath being suitable. The object of the second bath is to produce a heavy impregnation of the material, and to leave the coating of the mixture containing paraffin and naphthalene upon the surface of the textile material.

Among the materials which may be treated in accordance with this process are fabric, rope, yarn, string, duck, canvas, nets for fishing, hammocks, bags and bagging, and in fact any materials made from textile materials, also leather, and materials made from leather, such as bags, boots and the like.

In the appended claims the term "textile material" is intended to cover any of these materials, and to cover any materials made from textile threads, or from leather, or from both these materials.

In connection with the impregnation of textile materials, I call attention particularly to the impregnation of ropes used for towing lines and the like, ropes so treated readily slide through the water with very

much less resistance than do untreated rope, and said ropes are also preserved against dry rot, mildew, attack by barnacles, and other marine insects, and the like. Ropes so treated, are also particularly applicable for use as casting lines and the like, since they readily can be accurately thrown from one point to another, and fresh or salt water is without action upon such ropes.

In some instances, I may immerse the textile material, in the bath at a temperature of 240 to 260° F., and remove the material when the temperature has fallen to about 212° F., or a little over.

What I claim is:—

1. A process of treating a textile material which comprises impregnating the same with a homogeneous, molten mixture, solid at ordinary temperature, said mixture containing paraffin and a relatively small amount of naphthalene, and being free from hard materials.

2. A process of treating textile materials which comprises subjecting the same to the action of a bath containing paraffin and naphthalene, maintained at a temperature above 212° F., and thereafter subjecting the same to the action of a bath containing paraffin and naphthalene at a temperature below 212° F., the amount of naphthalene in both these baths being much less than the amount of paraffin, and both baths being free from hard materials.

3. A process of treating rope which comprises subjecting the same to the action of a bath containing paraffin and naphthalene, maintained at a temperature above 212° F., and thereafter subjecting the same to the action of a bath containing paraffin and naphthalene at a temperature below 212° F., the amount of naphthalene in both these baths being much less than the amount of paraffin, and both baths being free from hard materials.

4. A process of treating textile materials which comprises subjecting the same to the action of a bath containing paraffin and a relatively small amount of naphthalene, said bath being free from hard materials, at a temperature of from 240 to 260° F., removing the materials from the bath when the temperature has fallen somewhat.

5. Textile material impregnated with a homogeneous mixture of paraffin and naphthalene, said mixture being solid at ordinary temperature and being free from hard materials, the proportion of naphthalene being relatively small.

6. Rope impregnated with a homogeneous mixture of paraffin and naphthalene, said mixture being solid at ordinary temperature and being free from hard materials, the proportion of naphthalene being relatively small.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT ATHELSTAN MARR.

Witnesses:

P. C. WARNOD, Jr.,

CHESTER K. SCOTT.