

UNITED STATES PATENT OFFICE.

HENRY THAME, OF LONDON, ENGLAND, ASSIGNOR TO JAMES RAPER THAME, OF SAME PLACE, AND HERBERT SANGUINETTI, OF MIDDLESEX COUNTY, ENGLAND.

METHOD OF MANUFACTURING ARTICLES FOR CONTAINING PETROLEUM.

SPECIFICATION forming part of Letters Patent No. 434,739, dated August 19, 1890.

Application filed February 20, 1888. Serial No. 264,618. (No specimens.) Patented in England August 25, 1886, No. 10,867.

To all whom it may concern:

Be it known that I, HENRY THAME, electrical engineer, of 3 Winders Road, Battersea, in the county of Surrey, England, a subject of the Queen of Great Britain, have invented an Improvement in the Method of Manufacturing Articles for Containing Petroleum, (for which I have received Letters Patent in Great Britain, No. 10,867, dated August 25, 1886;) 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.

It has long been a desideratum to provide for the reception and storing of petroleum, vessels of such a character as would neither leak nor sweat, petroleum being of so penetrating a character as to find its way through all the materials hitherto available for the manufacture of storage-vessels. Now as the result of many experiments I have discovered an improved method of making articles of a material which is impervious to petroleum, and which can be used either for lining wooden or metal vessels, or for the making exclusively of such material vessels, funnels, or pipes for use in the petroleum trade.

My improved method of making vessels, pipes, and other receptacles consists in saturating or impregnating a bibulous paper with a solution of shellac, as hereinafter more particularly described, and then wrapping said impregnated paper, layer upon layer, upon a core or former of the desired shape and dimensions to the thickness required, said layers being severally united by interposed films of shellac, as will be presently explained.

The manner of preparing the material varies somewhat, according to the particular uses to which it is to be applied. Thus, for example, I take bibulous paper and treat it with shellac dissolved in any usual or suitable solvent in the proportions hereinafter described, and while soft I employ it in the manufacture of receptacles, pipes, or other articles. Supposing a round, square, or other shaped vessel is to be formed, I provide a core or "former" of the shape and dimensions

corresponding to those of the interior or body of the vessel to be manufactured, and dust it over with chalk to prevent the adhesion of the material thereto. I then apply the saturated bibulous paper to the former in layers, taking care that the laps of the layers shall break joint, so as to avoid the possibility of a breakage occurring at the joints. Having thus formed the walls of the vessel, I construct a bottom of the same material, bending up the edges around the lower edge of the walls, and securing the joint, if necessary, by liquid shellac.

When applying the invention to the lining of barrels, I first make the lining on a suitable core or former corresponding in shape to the interior of the barrel by laying around the same coils of the bibulous paper. On removing the core I apply end pieces to the lining, securing the joints by liquid shellac. The barrel is then built up around the lining after the usual manner of constructing a cask.

The number of the layers or coatings to form the walls and bottom of the petroleum-vessel or the lining of such vessel will vary according to circumstances. When it is intended to strengthen the vessel externally and to use the saturated bibulous paper as a mere lining—as in the example of the barrel just mentioned—two or, at the most, three layers will suffice; but when the vessel is to receive no external strengthening-supports a greater thickness of material must be employed, such thickness being regulated by the size of the vessel and the weight which it is intended to carry. In preparing this bibulous paper I prefer to use it in long lengths or rolls and just sufficiently thick to enable it to be safely handled. The paper in this form I lead through a bath of the shellac solution and then under and over guide-rolls to expose it to the air and to permit the evaporation of the solvent. It is while the paper is in a soft or unset state that I employ it in the manufacture of vessels or of the linings for vessels, and I thus secure a firm adhesion of the layers, while a homogeneous compound, impervious to petroleum oil, is obtained.

In making tubes or pipes I lay the paper, treated as above, while in a moist state round a mandrel powdered with chalk, and afterward draw it through a die to consolidate the whole.

Angle-joints may be equally well secured by the application thereto of bibulous paper prepared as above mentioned.

The strength of the solution which I have found to work best in practice for the saturation of the bibulous paper is composed of one gallon of methylated spirit to four pounds of shellac. The faces of the sheet of bibulous paper when saturated, as described, with shellac have thus a superficial film of shellac, and such a continuous sheet of paper being enwrapped around a former produces a superposition of layer upon layer of paper, each layer becoming united to the next adjacent one by the films of shellac which have been previously applied to the paper, and

which thus have become interposed between the layers.

I claim—

The described method of making vessels, pipes, and other receptacles, consisting in saturating or impregnating a bibulous paper with a solution of shellac, as set forth, and then wrapping it layer upon layer to the thickness required, such layers being united by the interposed films of shellac.

In testimony whereof I, the said HENRY THAME, have hereunto set my hand this 24th day of January, 1888.

HENRY THAME.

Witnesses:

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