

# UNITED STATES PATENT OFFICE.

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## SATURATING FIBROUS MATERIAL.

No. 862,454.

Specification of Letters Patent.

Patented Aug. 6, 1907.

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*To all whom it may concern:*

Be it known that I, JESSE A. DUBBS, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have  
5 invented or discovered certain new and useful Improvements in Saturating Fibrous Material, of which improvements the following is a specification.

Great difficulty is experienced in saturating fibrous material, such as the covering of electric wires etc.,  
10 with insulating material. This difficulty is increased when the wire with its fibrous covering is incorporated in electrical machinery, as motors, generators, etc. It is the present practice to form the parts of the generators, etc., before the covered wire has been saturated,  
15 and then to place such parts in a tank containing asphaltum which is heated to render it fluid. The liquid asphaltum with the articles immersed therein are subjected to pressure to cause the penetration of the asphaltum to the interior portions of the article.  
20 This method is defective as it is found that the saturation is not complete, probably on account of the lack of fluidity of the asphaltum.

The invention described herein has for its object the insuring of a thorough saturation of porous or  
25 fibrous substances as brick or wood, the covering of electric wires, etc., with a preservative or insulating material.

The invention described herein consists generally in the addition to the saturating material as asphaltum,  
30 of a diluent which will not have any injurious effect on the material or the article to be insulated, and is capable of being removed or eliminated by a process of distillation from the saturating material, while the articles are immersed therein.

35 In the practice of my invention the material with which the fibrous material is to be saturated, such for example as asphaltum, is diluted and rendered quite fluid by adding thereto some material which will not have any injurious action on the saturating material  
40 or the article treated. When using asphaltum to saturate a fibrous material, the asphaltum may be diluted with a hydrocarbon as crude petroleum or products thereof, chloroform, bi-sulfid of carbon, etc., so as to render the compound sufficiently fluid to  
45 easily penetrate to all parts of the article treated.

The compound is placed in a receptacle such as will permit its being subjected to pressure and the articles to be treated are placed therein. The charge in the receptacle is then heated and subjected to pressure. After sufficient time has elapsed to permit  
50 thorough saturation, pressure in the receptacle is reduced but the temperature is maintained or raised sufficiently to vaporize the diluent which should have a lower vaporizing temperature than the asphaltum. This treatment is continued until all or  
55 practically all the diluent has been eliminated leaving a plastic or liquid material when the articles are removed from the plastic or liquid treating material. Under these conditions the elimination of the diluent is uniform through the compound, the portion which  
60 has been incorporated with the article treated using its portion of the diluent as readily as and uniformly with other portions of the compound. The volatilized diluent may be caused to pass through a condensing apparatus and the liquid thus recovered may be used  
65 again to dilute the asphaltum.

I claim herein as my invention:

1. As an improvement in the art of saturating fibrous material, the method herein described which consists in adding a diluent to the saturating material, immersing  
70 the article to be saturated in the compound thus formed eliminating the diluent while the article is immersed in the compound and removing the article while the material to be applied is in plastic condition.

2. As an improvement in the art of saturating the  
75 fibrous covering of wires with asphaltum, the method herein described, which consists in adding a diluent to the asphaltum, immersing the fiber covered wire in the compound, eliminating the diluent while the wire is immersed  
80 in the plastic compound.

3. As an improvement in the art of saturating the  
85 fibrous covering of wire with asphaltum, the method herein described which consists in diluting the asphaltum with a liquid volatilizable at a lower temperature than the asphaltum immersing the fiber covered wire in the compound, subjecting the compound while the wire is immersed therein, to a temperature at which the diluent will volatilize and removing the saturated article while the saturating material is in a plastic condition.

In testimony whereof, I have hereunto set my hand.

JESSE A. DUBBS.

Witnesses:

CHARLES BARNETT,  
WILLIAM H. WILSON.