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METHOD OF TREATING ANCHOR PLUGS

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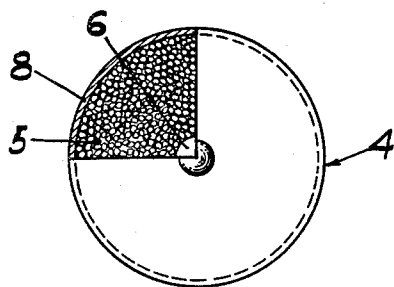


FIG. 1

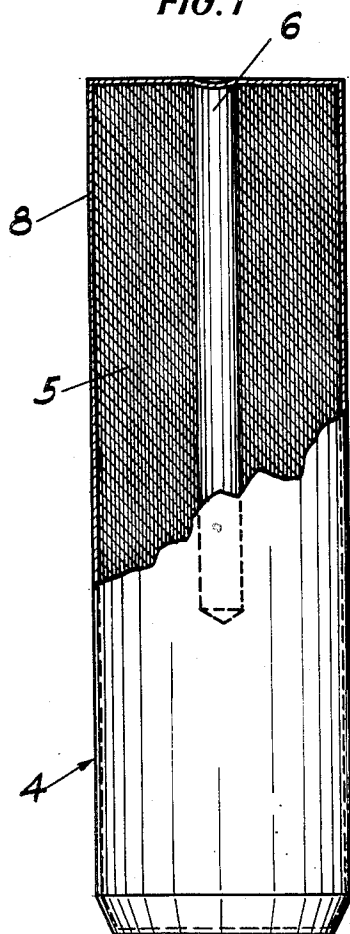


FIG. 2

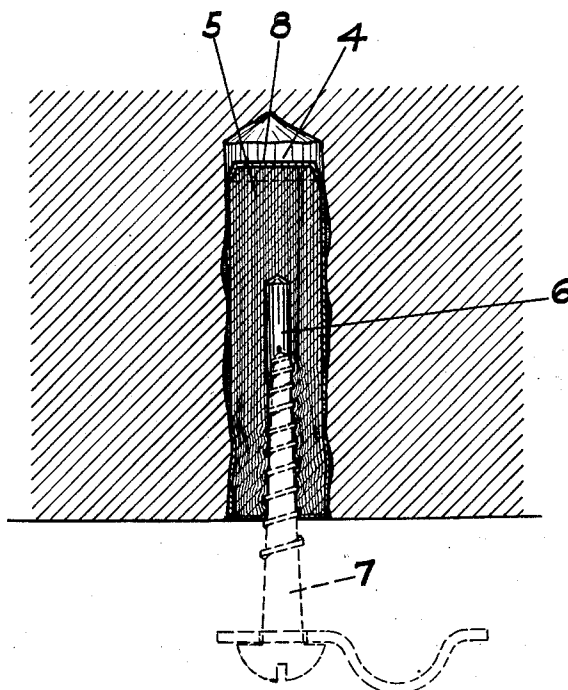


FIG. 3

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## UNITED STATES PATENT OFFICE

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## METHOD OF TREATING ANCHOR PLUGS

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4 Claims. (Cl. 91-68)

This invention relates to an improved method of treating anchor or wall plugs of the character described in my co-pending application filed March 11, 1932; Ser. No. 598,125.

5 An important object of this invention is to improve upon the creosote treatment disclosed in the parent application. In the improvement hereinafter described the impregnative acts upon the material from which the plugs are manufactured in such a manner that they retain their original toughness yet are rendered extremely pliable.

10 A further object is to provide a preservative, namely a coating for the plug, which is of a metallic nature, to act as a seal for retaining the desired substance in the plug after the solvent or undesirable element has been disassociated by evaporation. This metallic coating removes beyond all doubt the possibility of evaporation or deterioration of the substance which makes the material from which the plugs are manufactured, tough and pliable.

15 A still further object is to provide an outer coating for the plug which causes the plugs to grip tenaciously any material into which they may be inserted.

20 By carrying out these objects I obtain a product of maximum flexibility, toughness and durability, and one which will withstand a maximum of tension when correctly applied, and one which any one may use with great efficiency, regardless of skill. This process of treating plugs also renders the plugs waterproof and to a considerable extent fireproof.

25 Still other objects and features of an important nature exist, which will be manifest from the drawing, the disclosure, and what is claimed.

30 The process of treating the plug will be described in conjunction with a drawing which in many respects resembles that employed in the parent application of which—

35 Fig. 1 is an end view of the plug, a sector of which is sectioned to show inner construction.

40 Fig. 2 is a side view of the plug partly in elevation and partly sectioned.

45 Fig. 3 is a sectional view of the plug illustrating an important use thereof.

Briefly reviewing a part of what has already been said before in my former application referred to supra, the plugs comprise a natural product cut, from peeled rattan wood commonly known as wicker, into standard sizes befitting the standard sizes of screws, with which they are to be associated.

50 These plugs, after undergoing the special treat-

ment, which forms the basis of the present invention, are used as anchors and are inserted into holes formed in the walls of buildings, such as concrete, stone, stucco, plaster and the like to provide a suitable holding means for screws to which auxiliary articles may be applied as shown by way of example in Fig. 3.

55 Such a plug 4 is shown in the several views and is composed of a multiplicity of longitudinally extending cells 5 which are distributed uniformly throughout the cross section of the plug. The cellular character of said plug is purposely shown somewhat exaggerated in Figs. 1 and 2 in order to clarify this construction.

60 The walls forming the cells are composed of fiber which is very tough and which may be what I call elasticized or rendered pliable, after being treated as hereinafter more specifically described, so that the cellular wall may be collapsed to form a more dense wall into which may be moulded a socket or core conforming to the configuration of the screw screwed therinto without the walls or fibers composing the wall being ruptured by the sharp edges of the screw threads.

65 When this seat for the screw is once formed the screw may be removed and reinserted similarly to the manner in which a nut is screwed onto and off of a bolt.

70 It is therefore essential in the treatment of the plug that the fiber be caused to retain its characteristic toughness while the pliability thereof is enhanced.

75 The plug is provided with an accommodating aperture 6 of less length and diameter than the screw 7 screwed therinto.

80 Such construction permits the point of the screw to be screwed into stock, whereby a toe-hold for the screw is provided. The collapsing of the cellular walls forming the aperture provides a thread hold for the main body of the screw.

85 The plug stock is figured to accommodate specified sizes of screws as stated supra, yet this plan may be deviated from when occasion warrants, since the girth of the plug itself may be expanded without impairing the holding value of the plug.

90 It is also essential that, on account of the plugs being subjected to different climates, the elastic rendering of the fibers be in no manner impaired.

95 The necessity of guarding against the intrusion of moisture or the exudation of the saturation is obvious. To meet this need, I provide a metallic coating, which in addition to serving the purpose

of a seal and preservative, enhances the appearance of the plug.

Lastly it is essential that the plug be made grip tight or hole tight in the hole.

- 5 Since the holes in the walls have to be formed subsequently to the construction thereof, it is necessary that they be drilled or formed by a cutting tool. It is almost impossible to construct a perfectly concentric hole, as the walls have a tendency to crumble. For the latter reason, a characteristic hole has been devised, such as shown in Fig. 3.

When the plug is driven into the hole it is not infrequent, where a plug of a small diameter is hammered thereinto, that the plug itself becomes somewhat distorted.

The metallic coating being of a pliable character causes the coat not to break but on the other hand conforms to the distorted shape of the plug when the occasion warrants.

20 In order to further accommodate the objection of an imperfectly constructed hole and whereby I create an adherence of the plug to the wall of the hole, I spray my plug with a resin coat.

25 This adhesive contact of the coat with the wall adds many pounds of resistive force when it is attempted to remove the plug from its hole.

Having reviewed the fundamental characteristics of the plug and set forth the purposes and intentions of the invention, I will now disclose the steps in the process whereby these features and objects may be accomplished.

30 I first provide a solution consisting of water and glycerin in the proportion of 100 parts of water to 1 of glycerine, and into this admixture I immerse the plugs for 3 hours.

During that time the plug becomes thoroughly impregnated and saturated.

35 The plugs are then removed and allowed to dry for 24 hours. During that interim of time, that portion of the solution, consisting of the water, which is not desired to be retained is evaporated and that portion of the solution which is desired, consisting of the glycerin, is retained. By virtue of the latter operation much of the weight of the plug is eliminated.

40 In order to seal the thus impregnated plug, whereby its pliable qualities will always be retained, I spray the plug with a metallic coating composed of the following ingredients.

45 Into one gallon of acetone, I dissolve two pounds of celluloid and to this admixture I add twenty grams of powdered aluminum and three grams of zinc.

50 The plug is sprayed with the latter solution, and thus there is formed completely around the core, the coat 8.

At the entrance of the aperture 6, it will be noticed that the coating at that point is slightly recessed. In this manner the hole is completely sealed and the recess indicates the point where the end of the screw is to be introduced. The seal at this point may be easily punctured.

75 The coat 8 dries almost instantly, only two minutes at the most being consumed to insure perfect satisfaction.

When the plug is thoroughly dry it is finally sprayed with a coat of resin and de-natured alcohol of the following proportions. To one gallon of de-natured alcohol I add one pound of powdered resin. To this admixture when I desire to speed up the operation, I sometimes add three to four ounces of acetone.

80 The acetone in addition to acting as a cutting agent whereby the operation is quickened, acts as a bleaching and drying agent also.

85 When a plug as thus treated is inserted, into a hole, the outer coat acts as an adhesive to cause the plug to cling tenaciously to the walls of the hole whenever a pulling force is exerted thereon.

I claim:

90 1. The method of rendering the fibers of peeled rattan plugs pliable which consists in impregnating the plug with an admixture consisting of the proportions of 1 part of glycerin to 100 parts of water, disassociating the water from the admixture of impregnation by evaporation, spraying the thus treated plug with a metallic coating consisting of a solution composed of two pounds of celluloid dissolved into one gallon of acetone to which admixture has been added 20 grams of powdered aluminum and 3 grams of powdered zinc.

95 2. The method of treating an anchor plug which consists in impregnating the plug with an admixture consisting of the proportions of 1 part of glycerin to 100 parts of water, disassociating the water from the admixture of impregnation by evaporation, spraying the thus treated plug with a metallic coating consisting of a solution composed of two pounds of celluloid dissolved in one gallon of acetone to which admixture is added 20 grams of powdered aluminum and 3 grams of powdered zinc and then applying a finish coat consisting of resin and de-natured alcohol in the proportion of one pound of powdered resin to one gallon of de-natured alcohol.

100 3. The method of rendering the fibers of peeled rattan plugs pliable comprising impregnating the plug with an admixture consisting of water and glycerine, then disassociating the water from the admixture of impregnation by evaporation, and then coating the plug thus treated with a solution composed of celluloid dissolved in acetone to which admixture has been added powdered aluminum and powdered zinc.

105 4. The method of treating an anchor plug which consists in impregnating the plug with an admixture consisting of the proportions of glycerin and water, disassociating the water from the admixture of impregnation by evaporation, spraying the thus treated plug with a metallic coating consisting of a solution composed of celluloid dissolved in acetone to which admixture is added powdered aluminum and powdered zinc and then applying a finish coat consisting of resin and de-natured alcohol.

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