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D. PISAREV

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DRESSING OF FIBROUS MATERIALS

Filed June 21, 1938

Fig. 1.

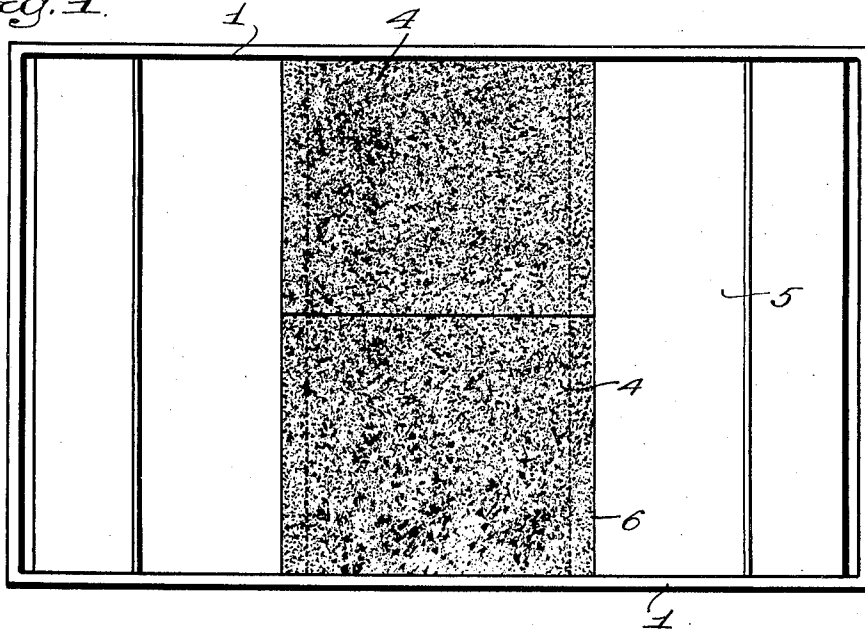
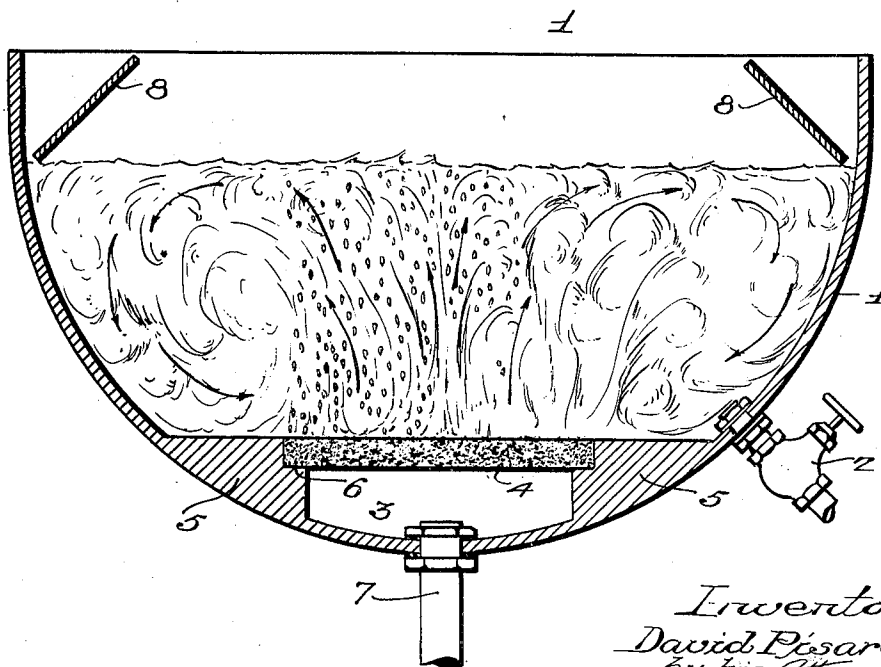


Fig. 2.



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DRESSING OF FIBROUS MATERIALS

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2 Claims. (Cl. 8—111)

This invention relates to new and useful improvements in methods or processes for dressing fibrous materials such as fur pelts, and the like, the term dressing as herein used meaning and including soaking, tanning, bleaching, mordanting, dyeing and other related treatments of fibrous materials in a liquid bath.

In the dressing of fibrous materials such as pelts, difficulty has been encountered in obtaining a uniform treatment of all of the filaments due to the fact that the dressing liquor is prevented from reaching the whole of the filament surface. Difficulty is also encountered in these various treatments due to the presence of certain natural greases, waxes and oils in the filaments which act as a protective coat thereon and tend to resist the action of the liquor, thus requiring the fibrous material to be first subjected to a scouring or soda wash to remove them in order that the treating liquor may have direct contact with the filament structure.

With these observations in mind, the principal object of the present invention is to provide a novel method or process for treating fibrous materials wherein the natural greases, waxes and oils in the filaments are liberated and removed and the filaments maintained in continuous agitation so as to be insured of uniform and better contact with the treating liquor.

Another object of the invention is to provide a novel method or process of the character set forth which is practical, inexpensive and readily applicable to conventional and existing methods.

These and other objects of the invention and use are hereinafter fully set forth and shown in the accompanying drawing in which:

Figure 1 is a view in plan of one form of bleaching, dyeing or tanning tank equipped to carry out the present invention; and

Figure 2 is a view in section taken on line 2—2, Figure 1.

The invention consists essentially in my discovery that by causing oxygen to diffuse upwardly in the liquor or bath in which fibrous materials such as fur pelts and the like are being dressed, the fibrous materials are maintained in agitation or circulation for example, through courses moving in the general direction of the arrows in Figure 1 of the drawing; that is, in the particular arrangement shown the fibrous materials will be carried upwardly in the central region of the vat or tank until they successively reach the surface of the liquor at which time they move laterally in one direction or the other

and then downwardly to the bottom of said tank to be again raised and recirculated. This continuous circulation afforded the fibrous materials causes the filaments to remain relatively separated or in the case of furs to be opened up as if each fur were alone in the bath and prevents matting and bunching thereof with the result that all of the filaments are uniformly exposed to the action of the dressing liquor.

I have further found that by causing oxygen to diffuse upwardly through the liquor in the tank or vat the natural greases, waxes, and oils present in the filaments may be liberated and removed without the necessity of first subjecting the filaments to a scouring or soda bath due to the tendency of the emulsified particles of oil and grease on the filaments to adhere to the small rising bubbles of oxygen with the result that said emulsified particles are carried to the surface of the liquor where they move laterally with the circulating current and may be skimmed off or otherwise removed.

In addition to the foregoing, and particularly in connection with the bleaching of fibrous materials, the diffusion of oxygen upwardly through the bleaching liquor substantially accelerates and aids the bleaching operation since bleaching primarily involves the oxidation of the pigment of the filaments and I have found that the diffused oxygen augments and increases the supply of oxygen liberated by the bleaching liquor with the result that oxidation of the fibrous materials or filaments is materially aided and speeded up. Furthermore, the oxygen bubbles liberated from the bleaching liquor tend to lodge between the filaments and the bubbles of oxygen diffused through the bath repeatedly or continuously dislodge the oxygen bubbles liberated from said bleaching liquor and allow fresh oxygen bubbles subsequently liberated from the bleaching liquor to replace them.

In practicing the invention, a tank, drum or vat having a drain 2 is usually provided and an oxygen chamber 3 is formed at the bottom of said tank or vat by a diffuser plate or plates of mineral and chemical composition, these diffuser plates being supported transversely of the vat or tank upon suitable supports formed therein and provided with rabbets upon which rest the edge portions of said plates. These plates are well known commercially and need not be described at length or in detail. An oxygen inlet 7 is provided to the chamber 3 and in carrying out the invention, the fibrous material together with a predetermined quantity of suit-

able liquor, selected according to the treatment desired, are placed in the tank or vat 1 at which time oxygen is admitted to the chamber 3 from which it diffuses upwardly through the plates 4 and the body of liquor. Extending longitudinally of the tank or vat 1 adjacent opposite sides thereof are baffle elements 8 arranged at an angle as shown with their lower edges disposed just below the surface level of the liquor, and as the grease and oil is liberated and rises to the surface of the liquor as previously described, it moves laterally, passing under the baffles 8 where it is trapped. In the various wet treatments of fibrous materials best results quite often are obtained under certain predetermined temperature conditions such as a uniform, increasing or decreasing temperature and such a requirement for any given treatment may be met in the present instance by initially heating the liquor to the desired temperature before it is placed in the tank or vat 1 after which the temperature of said liquor may be effectively regulated by heating and controlling the temperature of the oxygen admitted to the chamber 3 and caused to diffuse upwardly through said liquor.

From the foregoing description, it will be seen that the present invention embodies a novel method or process for treating fibrous materials whereby the filaments are maintained in continuous agitation and relatively separated or open with the result that bunching and matting thereof is prevented. The filaments furthermore are thoroughly degreased without preliminary treatment thus enabling uniform contact with the treating liquor, and in certain treatments of such fibrous materials the present invention may be employed to effectively increase and aid the oxidation of said materials and the pigment of the filaments thereof.

Practice of the invention is, of course, not limited to the form of apparatus shown and described and equally satisfactory results may be obtained by employing diffuser elements of both the plate and tubular form disposed in various positions within the tank or vat 1. The term oxygen used herein is intended to mean and include oxygen in the pure state or in the combined form of air and while the invention has been described in particular relation to the dressing of fibrous materials, it is not intended that said invention shall be limited to such processes but may be applied to others involving the degreasing, oxidation and agitation of filaments and fibrous materials in a liquid bath within the scope of the annexed claims.

I claim:

1. The method of bleaching pelts which consists in immersing said pelts in an aqueous bath of oxidizing bleaching liquor, passing oxygen through said bath for the purpose of maintaining the filaments of the pelts relatively separated and removing the greases and oils therefrom, said oxygen also functioning to facilitate and enhance oxidation of the pigment of said filaments.

2. The method of bleaching pelts which consists in immersing said pelts in an oxidizing bleaching liquor, diffusing oxygen through said liquor in a manner to effect circulation of the pelts through the liquor and thereby prevent matting and bunching of the filaments thereof so that each filament is uniformly exposed to said liquor, the oxygen functioning also to facilitate and enhance oxidation of the pigment of said filaments.

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