Feb. 10, 1931. R. STRESAU 1,792,197

FORAMINOUS MATERIAL AND METHOD OF MAKING THE SAME

Filed May 15, 1929

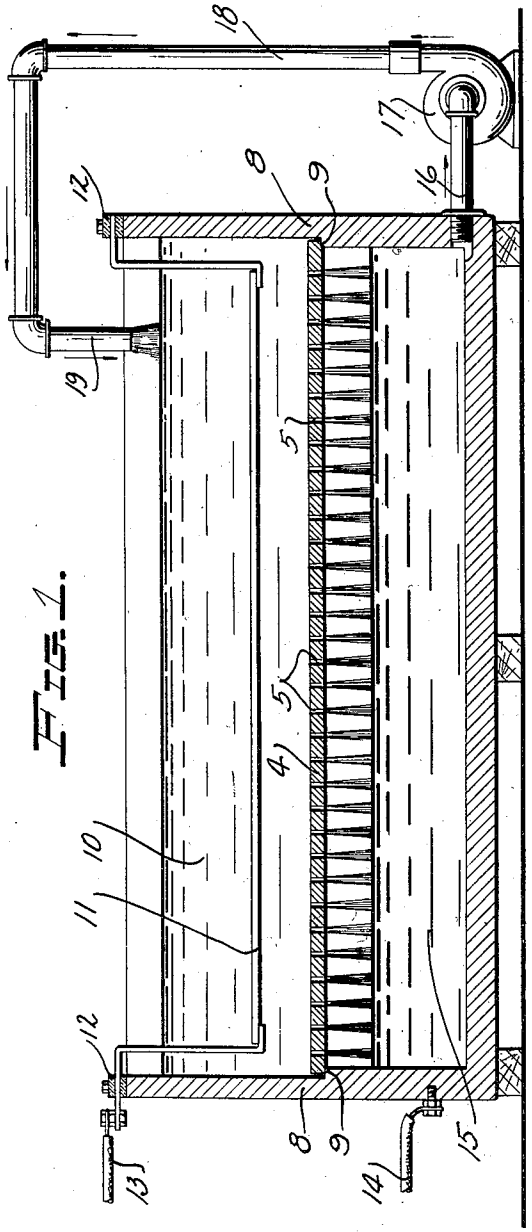


Fig. 1.

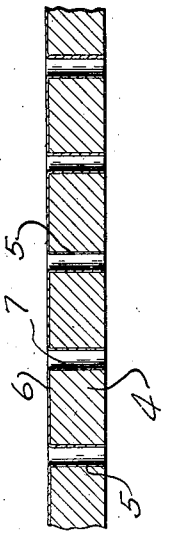


Fig. 2.

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UNITED STATES PATENT OFFICE

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FORAMINOUS MATERIAL AND METHOD OF MAKING THE SAME

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The invention relates to foraminous material and method of making the same.

Foraminous material, such as screens or screening used in feed mills, separators, graders of various kinds, etc., is subjected to extremely rough usage and due to the abrading action of the materials handled and the presence of moisture or acids in or associated with these materials, the life of such screening is very limited. It is one of the objects of the present invention to provide a wear-resisting foraminous material by coating the surface thereof with a hard, non-corrosive metal, preferably chromium or metals of the chromium group. It is a further object of this invention to provide a method of plating this chromium coating not only upon the top or bottom surfaces of the material but also upon the sides of the holes or interstices of the material which according to the present invention is accomplished by causing the electrolyte to circulate through the interstices of the material and thus insure a coating thereof.

The invention further consists in the new foraminous or screening material hereinafter described and the method of producing the same as hereinafter described and claimed.

In the drawings Fig. 1 is a vertical sectional view through apparatus used in carrying out the method;

Fig. 2 is a detail sectional view through the improved foraminous product embodying the invention.

In the drawings the numeral 4 designates the metallic body portion of a screen or foraminous structure. As here shown this material is formed from sheet metal having the interstices or holes 5 punched, drilled or otherwise suitably formed therein, but it will be understood that the invention is not limited to this particular form of screening, but may be otherwise formed as, for example, the usual woven wire mesh screening. This metallic body of the screening is rendered wear-resisting to abrasive or corrosive action by providing on one or both of its side surfaces a coating 6 of chromium plating or a plating of metal of the chromium group and the sides of the holes 5 are also coated or plated with a similar coating 7. As shown, one side and the holes are plated.

In order to produce a foraminous material in which the sides of the interstices of the material are coated with the plating material, I find that merely immersing the material to be plated in a bath of plating liquid will not accomplish this result. My method of producing this material consists in placing the body 4 within a casing 8, as, for example, by supporting it on ledges 9 at a distance from the top of the casing to form a separator, introducing the plating composition containing chromium or metal of the chromium group above the body 4, as indicated by the bath 10 in which the usual plating anode 11 is immersed, the same being suitably insulated from the casing by supports 12 of insulating material and connected by a conductor 13 to one side of a suitable source of electric current, the other side of this current source being connected by a conductor 14 to the casing, and allowing this plating composition to flow through the interstices of the foraminous material to a sump 15 from which it is taken off by a conduit 16 to a suitable pump 17 which discharges it through a pipe or conduit 18 that extends upwardly and returns it to the bath 10 through the outlet 19.

By this method the plating composition is caused to circulate through the holes or interstices of the foraminous material and thus, through the action of the current, to coat the same, whereby a product is obtained in which the materials being handled will not attack the foraminous material around the interstices and hence will not change the size of the openings and render the screening unfit for the purposes for which it is intended as, for example, the grading of the material to the desired size. While I have shown the plating coating as applied to one side of the foraminous material and the openings therein, it will be obvious that if it is desired to plate the other side it is only necessary to turn the foraminous material over and repeat the process until the desired thickness of coating is obtained. The thickness of the coating will, of course, vary with the kind

and conditions of use of the foraminous material.

What I claim as my invention is:

1. The method of coating metallic foraminous material with a metal of the chromium group by electrodeposition which consists in causing the electrolyte in which an anode is immersed to circulate through the interstices of the material, said material being connected as to cathode, and at the same time to pass electric current through the electrolyte so that the interstices as well as a surface of said foraminous metallic material is plated.

2. The method of coating metallic foraminous material by electrodeposition with a metal of the chromium group which consists in placing the material to be plated in a casing as a separator between a bath of the plating composition and the lower part of the casing, connecting said separator as a cathode and then circulating the plating composition in which an anode is immersed through said separator simultaneously with the passage of electric current through the circulating plating composition.

3. The method of coating metallic foraminous material by electrodeposition with a metal of the chromium group which consists in connecting as a cathode the material to be plated and in placing said material in a casing as a separator between a bath of the plating composition and a sump and immersing an anode in said bath and passing electric current through said bath, at the same time removing the plating composition from the sump and returning it to said bath.

4. The method of coating metallic foraminous material with a metal of the chromium group by electrodeposition which consists in connecting as a cathode the material to be plated and in placing said material as a separator between a bath of the plating composition and a sump and immersing an anode in said bath and in passing electric current through said bath, at the same time pumping the plating composition from the sump to the bath as it drains through said foraminous material.

In testimony whereof, I affix my signature.

RICHARD STRESAU.