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B. EGEBERG ET AL

2,590,094

METHOD AND MATERIAL FOR PREVENTING THE TARNISHING OF SILVERWARE

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Fig. 1.

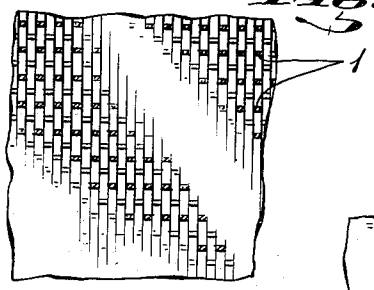


Fig. 2.

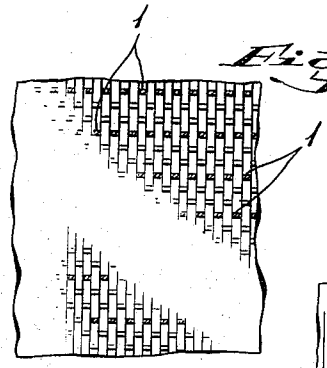


Fig. 3.

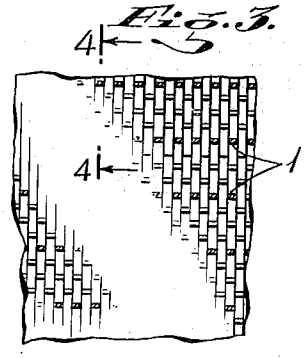


Fig. 5.

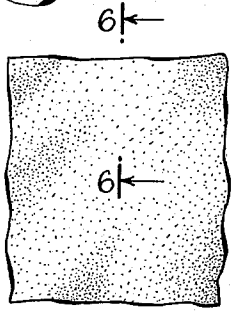


Fig. 4.



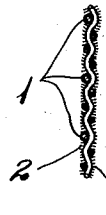
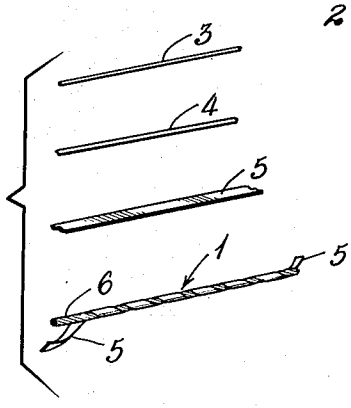


Fig. 6.

Fig. 7.



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METHOD AND MATERIAL FOR PREVENTING THE TARNISHING OF SILVERWARE

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6 Claims. (Cl. 139—425)

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This invention relates to a material for the manufacture of bags, pouches, rolls or for the lining of chests and boxes which is particularly suitable for the protection of silverware and the like wrapped or enclosed in the protecting material against tarnish by cleaning the air of the tarnishing gases.

It is a well-known fact that silverware will tarnish in a short time under regular and ordinary conditions of storage and keeping. This tarnish is caused by sulphide and other tarnishing gases in the atmosphere. These gases react with the silver to form silver sulphide which constitutes the tarnish on silver. The invention has to do with the prevention of tarnish resulting from atmospheric conditions—not the tarnish caused by certain foodstuffs which the silverware meets in use.

One object of the invention is a novel and improved material of the above indicated character.

A further object of the invention is a novel and improved process for manufacturing the material.

A further object of the invention is a novel bag, pouch, roll or chest lining formed of said material for wrapping or enclosing the silverware and the like therein.

Further objects of the invention will hereinafter appear.

For a better understanding of the invention reference may be had to the drawings accompanying this application, wherein

Fig. 1 is a plan view of a woven fabric material embodying the invention, diagrammatically illustrating the weave on an enlarged scale;

Fig. 2 is a similar view illustrating another embodiment;

Fig. 3 is a similar view illustrating another embodiment;

Fig. 4 is a section along the line 4—4 of Fig. 3;

Fig. 5 is a plan view of the embodiment of Fig. 3 illustrating a further step in the manufacture of the fabric;

Fig. 6 is a sectional view along the line 6—6 of Fig. 5; and

Fig. 7 is a diagrammatic view illustrating further steps in the manufacture of the material according to one embodiment of the invention.

Many materials and processes of manufacture have been devised or proposed in the past for use in the prevention of the tarnish of silverware but all that have come to our attention have involved the treatment or impregnation of fabrics with the non-tarnishing medium or media after the manufacture of the base fabric material such, for example, as treating or impregnating the same by soaking or dipping into metal salt solutions. All of these heretofore proposed or used materials are or would be unsatisfactory for one reason or another as, for example, because of lack of endurance in tarnish prevention, difficulty in dyeing the fabric materials so treated to obtain the shades desired, changes in shade and color when exposed to tarnishing gases, detrimental or corrosive character of the soluble salts chiefly to carbon and stainless steel knife blades, and in some instances sterling silver, loss by washing, etc. of tarnish prevention compounds or mediums with which the materials are treated, high cost of manufacture, etc.

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We have found that a highly improved fabric enclosure material for prevention of tarnish may be obtained by incorporating metallic silver integrally as a part of the fabric weave as distinguished from the conventional or proposed materials as above referred to which are treated or impregnated with the tarnish preventing compounds or media after the manufacture of the base fabric material. For example, we have found that by incorporating flexible silver threads in the weave of the fabric a particularly suitable fabric for the purpose may be obtained and further that this purpose can be effected as for example by having every second, third or fourth thread formed of silver. This permits the fabric to be napped and dyed in any suitable color with the metallic threads hidden and concealed. A fabric material of this character need not be treated or impregnated with tarnish preventing compounds, etc. since it already embodies in the base fabric structure a tarnish prevention medium in the form of the metallic silver threads disposed at intervals which are entirely adequate as we have found to function by reason of the peculiar affinity of the metallic silver of the threads for the tarnish gases of the atmosphere to protect the silverware contained or enclosed within the fabric material.

Among others, the new material and the bags, pouches, rolls or linings of silver chests and boxes made of such material have the following advantages.

When the metallic thread is invisible and buried in the nap, the material can be dyed to any desirable color, even the lighter shades, as there are no treatment-chemicals present so powerful and disagreeable in color that they need strong dye colors to hide or blend with these tarnish preventing compounds. Also, with this invention, by dyeing of the yarn before weaving,

it would be possible to have a striped material, if this were preferred, while we believe with the treated or impregnated materials this is not possible.

The cloth may be dyed to any desired color as the discoloration that occurs in use is on the metallic threads which are hidden by the nap of the cloth. To make a comparison, an impregnated or treated cloth changes in shade and color when exposed to tarnishing gases as these gases combine with the metallic salts contained in the exposed fibers.

Another advantage is the absence of soluble salts in the material of our invention. From our experience, soluble salts have been found to be detrimental or corrosive chiefly to carbon and stainless steel knife blades and in some instances, to sterling silverware. The conventional treatments and impregnations with which we are familiar involve the introduction of soluble salts and in most of these treatments they remain as such in the finished material.

Our invention embodies a tarnish prevention metallic constituent rather than a chemical compound and moreover incorporated as a part of the base structure of the enclosure material. This is an advantage as our metallic constituent will not be lost by dusting, washing etc. while such loss occurs in treated or impregnated materials.

When the tarnish prevention active element is metallic silver and incorporated as described and when employed in cloth rolls, bags or pouches this metallic silver can be detarnished after its active life has been exhausted and thus rejuvenated by a dip of the enclosures and subsequent washing much the same as silverware is conventionally detarnished.

Moreover, the material of this invention may be economically manufactured.

A particularly suitable method of incorporating the metallic silver in the weave of a fabric is to form certain of the warp threads at suitable intervals of composite character as, for example, by spirally winding flexible metallic wires or strips about the textile threads which are to carry them.

As an example of a particularly suitable method of carrying out the invention, a copper wire of suitable diameter is electroplated with silver. This wire is then drawn down and rolled to a flat thin filament entirely coated with silver. This filament is then spirally wound onto a cotton or other thread with a sufficient number of turns per inch to provide the desired silver surface. This composite thread is then used in the weaving of cloth and in such numbers as to carry out the aims of this invention. As an example, every second composite thread has been found to substantially meet our aims, when the spirally wound filament covers approximately half of the surface of the yarn around which it is wound. Following the weaving, the fabric is napped and dyed in the usual manner. The napping process aside from producing the desired finish, raises the fibers of the fabric and thus obscures the metallic threads. During the entire process, care must be exercised to use only materials which will not contaminate the finished cloth with sulphur or other tarnishing compounds.

Referring to the drawings, Figs. 1, 2 and 3 diagrammatically illustrate weave patterns embodying the invention. The weave is exaggerated in dimensions purposely to show the warp threads spaced from each other for convenience in illustration. The threads embodying the metallic constituent are designated by the numeral 1. In Fig. 1 every other warp thread is formed of such a metallic constituent. In the embodiment of Fig. 2 every third warp thread is so formed and in the embodiment of Fig. 3 every fourth warp thread is so formed. The number of composite threads required depends generally upon the area of their active silver surface. These threads 1 may be formed in any suitable manner. As pointed out above, we have found it particularly advantageous to form the threads 1 of a composite character, including a thin flexible metallic strip spirally wound about a textile thread. This method of forming the composite thread is illustrated in Fig. 6. We have illustrated at 3 a metallic wire of suitable character and dimensions to receive a coating of silver as by electroplating or other methods, and to be drawn and flattened for spiral winding around the yarn thread. This wire 3 may be copper which is easily workable. At 4 we have illustrated the same wire after having been coated with silver. At 5 we have illustrated the silver plated wire as drawn and flattened out into a flexible thin band capable of being spirally wound about a cotton or other fibrous thread to form a composite thread capable of weaving in with the other threads of the fabric in a particularly suitable and satisfactory manner. At 1 in Fig. 6 is illustrated on an enlarged scale the composite thread formed of the flat silver coated flexible filament 5 spirally wound about a fibrous thread 6.

Fig. 5 is a plan view of the fabric illustrated in Fig. 3 after the fabric has been napped. The nap is indicated at 2 (Fig. 6) and it is observed that the nap completely conceals the metallic threads 1. The fabric thus prepared may be easily dyed to have any desired shade without interference from the tarnish prevention metallic constituents embodied in the base or weave of the fabric. Some of the important advantages of this fabric are pointed out above.

The spirally wound elongated filament 5 may be wholly of metallic silver but the copper core with the coating of silver is entirely adequate and is preferred because of the lesser cost. It is understood of course that silver alloys in the place of the silver could be used as the metallic tarnish preventive material.

The fabric with the composite silver threads at intervals incorporated therein is preferred because of the great affinity of silver for the tarnishing sulphide and other tarnishing gases in the atmosphere but other metals having an affinity for the tarnishing gases of the atmosphere may be employed provided they are of a character to retain such gases after absorbing or chemically combining with them such, for example, as copper in which case the copper wire 3 could be flattened to form an elongated flat flexible strip similar to the strip 5 and spirally wound about the thread 6.

We have set forth above the preferred order of the steps in the manufacture of the fabric where silver is used in the composite threads of the fabric. If for any reason, however, it should be preferred to produce the woven fabric first before coating the spirally wound copper filament with silver, this could be done and then the silver could be subsequently applied to the spirally wound copper portion of the composite thread. Also as indicated above any other suitable metal than copper may be used as a basis metal on which to deposit or coat the silver.

Bags, pouches, rolls, linings for chests and bags

formed of the above described fabric have the advantages above pointed out with respect to the material itself and this applies to all other types of enclosures which may be made of this material for storing or keeping silverware.

We claim:

1. The method of making a woven textile fabric material for protecting silverware and the like from tarnish which comprises incorporating at intervals in the fabric during the weaving thereof threads of a suitable tarnish prevention metal and then napping the fibrous threads to conceal the metallic threads.

2. The method of making a woven textile fabric material for protecting silverware and the like from tarnish which comprises incorporating at intervals in the fabric during the weaving thereof threads of a suitable metal having a coating of silver thereon and then napping the fibrous threads to conceal the metallic threads.

3. An enclosure for silverware and the like comprising a woven material having certain of the threads of the fabric formed at least in part of silver with the fabric napped and with the nap concealing the silver.

4. An enclosing material for protecting silverware and the like, comprising a fabric woven mainly with threads wholly of fibrous material but with composite threads including silver substituted at intervals, such composite threads being concealed within the body of the fabric.

5. An enclosure for silverware and the like comprising a woven material having warp and weft groups of threads, all of the threads of one group and at least half the number of threads of the other group being entirely formed of fibrous material, the remaining threads of the last mentioned group being composed at least in part of a tarnish prevention metal and being separated in the weave by at least one thread entirely of fibrous material, said threads containing tarnish prevention metal being concealed within the fabric.

6. The enclosure for silverware according to claim 5 wherein said tarnish prevention metal is silver.

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