Nov. 18, 1924. 1,515,676

W. F. GRUPE

METALLIZED PRODUCT

Filed Nov. 28, 1923

Fig. 1.

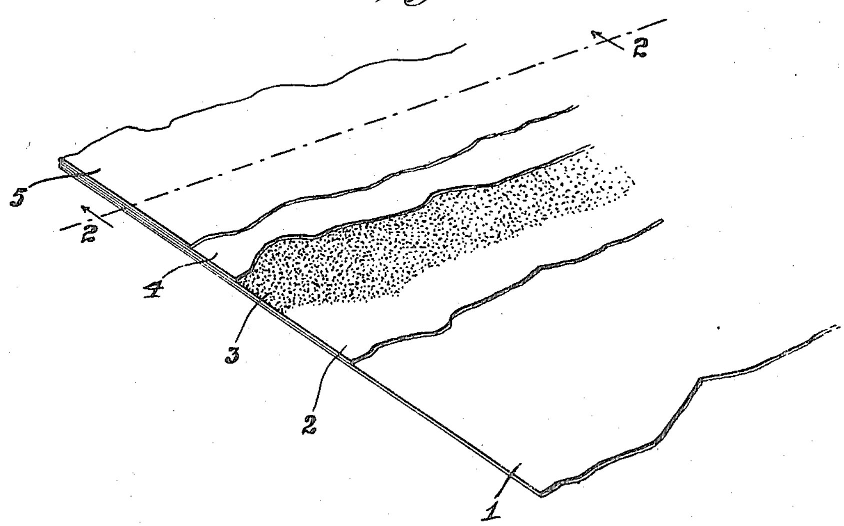


Fig. 2.

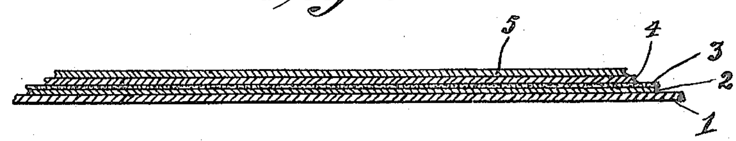
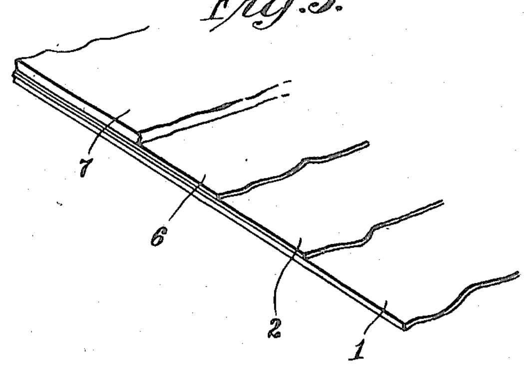


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. GRUPE, OF LYNDHURST, NEW JERSEY, ASSIGNOR TO PEERLESS ROLL LEAF CO., INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

METALLIZED PRODUCT.

Application filed November 28, 1923. Serial No. 677,386.

To all whom it may concern:

Be it known that I, William F. Grupe, a citizen of the United States of America, residing at Lyndhurst, county of Bergen, State of New Jersey, have invented certain new and useful Improvements in Metallized Products, of which the following is a specification.

This invention relates to improved metallic transfer media.

An object of this invention is to provide a transfer medium for metallizing purposes, either in the form of a sheet or roll, whereby improved metallizing effect, including "depth" is attained for various textiles, leather or like article to which the metallic media is transferred by hot stamping, or by tipping or like procedure.

Pursuant to one form of my invention, the foil of metal or mass of comminuted metallic powder, as in the form of a layer, is applied to a face of a sheet or strip of paper or like carrier by means of a releasable composition, and on the outer face of the metallic layer is applied a layer embodying suitable sizing admixed with chalk or equivalent. Such outer layer of the transfer medium, it will be observed, is disposed between the metallic layer and the textile or like article in the procedure of the hot stamping, or tipping or other transfer operation, and the improved result attained by my invention prevents the tarnishing or darkening of the metal and also effects a "depth" of the metallic layer by conjoint action of the glue and chalk constituents, or equivalent.

I have discovered that the usual textiles, such as silk, cloth, buckram and also leather and like materials for book cases, inner sweats and linings for hats and the like, due to treatments with alkali, acids or other chemicals, cause a tarnishing or darkening of the metallic layer due to the transmission of such chemicals in time from the decorated article to the metallic layer, and that the presence of the chalk or like chemical, containing calcium or the equivalent, effectually prevents such transmission of such chemical. The chalk or equivalent, by reason of its disposition between the metallic layer and the article decorated, brings about an increased luster comparable to burnishing and the virtual effect of an increased thickness of the metallic layer.

The above results, in certain circumstances, are further improved by the admixture of metallic powder in the outer or sizing layer of the transfer medium; also for certain purposes, I have discovered that the "life" of the metallic layer is enhanced by the use of multiple layers of sizing, one of which, such as shellac, is applied directly to the metallic layer, and the other sizing, such as fish glue, applied to the aforesaid shellac sizing, whereby upon application of the medium to the article decorated, improved adhesion is attained between the fish glue and the article decorated, combined by the adhesion of shellac or equivalent between the metallic layer and the layer of sizing of fish glue or equivalent.

Further features of the invention will be more fully understood from the following detail description and the accompanying drawings, in which—

Fig. 1 is a diagrammatic view in broken-away perspective showing a portion of one form of transfer medium embodying my invention, and comprising layers respectively of paper, releasable composition, metallic powder and two layers of sizing;

Fig. 2 is a central sectional view of the transfer medium shown in Fig. 1; and

Fig. 3 is a diagrammatic view, in broken-away perspective, similar to Fig. 1; but indicating a medium having a layer of paper, a layer of releasable composition, a layer of metallic material and a composite layer of sizing have metallic powder suspended in the sizing.

Referring to Figs. 1 and 2, the strip of paper is indicated at 1, and the layer of releasable composition is indicated at 2. Such releasable composition may be formed of the ingredients as set forth in U. S. Patent No. 1,444,345, entitled Transfer metallic deposits, Paul Heygel, inventor, and granted on February 6th, 1923, to Peerless Roll Leaf Company, Inc., assignee. It will be understood that other forms of releasable composition may be employed for the purposes desired.

In the form of the invention indicated in Figs. 1 and 2, the layer 2 of releasable composition is preferably relatively thin, and an admixture of beeswax and rosin or other resin is well suited for the purpose.

The layer 3 of gold leaf or other metallic foil or the like is applied to the outer face of the layer 2 of releasable composition. Exteriorly of the metallic layer 3 is applied the layer 4 containing a suitable sizing medium such as shellac, or varnish or the equivalent, admixed with powdered chalk or like chemical composition containing lime or equivalent. Such admixture 4 may be formed by thoroughly stirring the sizing in alcohol or like vehicle with the desired quantity of chalk or equivalent.

Such form of the invention is applied in the usual manner to the article to be ornamented, as by the use of a hot die press, such as is disclosed in the U. S. Patent No. 1,333,168, entitled Die press, Nelson E. Funk, inventor, and granted on March 9th, 1920, to Peerless Roll Leaf Company, assignee.

Marked improvement in the resulting metallizing ornamentation is attained by virtue of the chalk in the sizing layer. It will be appreciated that such admixed sizing layer, by and subsequent to the transfer operation is disposed between the article ornamented and the metallic layer, and such admixed sizing layer serves as a background for the metal and maintains its brilliancy. The lime serves further to preclude any deleterious effect on the metallic layer such as tarnishing or darkening; further, the lime serves as an opaque mass or a screen to prevent the color or other surface effects of the decorated article being transmitted through the metallic layer.

The chalk or equivalent serves also to counteract any acid or alkali or other deterring chemical employed in the manufacture or finishing of the leather, textile or other article decorated.

The chalk serves also as an effective carrier for the shellac and its accompanying binders and in the pressure and heat stage in the transfer operation retains the shellac and therewith the metallic layer in position, to create sharp definition at the edges of the impression. In certain circumstances, fish glue or the like effects an improved bond with leather, textiles and like materials. In such circumstance it is preferable to apply a layer 5, see Figs. 1 and 2, of sizing such as fish glue, with the employment of a suitable vehicle on the outer face of the shellac or equivalent sizing layer of the transfer medium.

To further enhance the background effect of the chalk, or equivalent, in the outer sizing layer, metallic, powder may be added to the sizing admixture. Also, metallic powder without chalk may be employed with sizing admixture.

The invention is also applicable for use with metallic leaf as is generally illustrated in Fig. 3. The paper or equivalent carrier 1 has applied on one face of the releasable composition 2 and to the outer face of the layer 2 is applied the leaf 6. On the outer face of the layer 6 is applied the sizing layer 7 which may conform to the aforesaid layers 4 and 5, or both, as hereinabove described. The foil 6 may be burnished if desired.

If desired, the outermost layer embodying the binder or sizing may be colored by the use of pigments or dyes which is desirable in certain trades to conform to the prevailing colors, as for example, red for bookcases or book binding generally, and green for tipping. The use of color pigment or dyes may also be had with the releasable composition alone or in combination.

It will be observed that the particles of chalk or like material admixed with the sizing and applied to the metallic layer are distributed in the sizing after hardening and retain their inherent properties of substantial opaqueness relative to light rays after application of the heat transferring operation. During the heat transferring operation, the chalk or equivalent by reason of its low heat co-efficient serves to retard the heat from the heated die, thus precluding the sizing from undue flow and thereby preventing blurring or what is known in the art as "smudging" of the impression.

Whereas I have described my invention by reference to specific forms thereof, it will be understood that many changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. A metallic medium comprising a carrier strip, a layer of releasable composition on one face of said strip, a metallic layer disposed on said layer of releasable composition and an outermost layer comprising sizing admixed with a material for increasing the lustre of the metallic layer.

2. A metallic medium comprising a carrier strip, a layer of releasable composition on one face of said strip, a metallic layer disposed on said layer of releasable composition and an outermost layer comprising sizing admixed with a material for precluding deleterious action on the metallic layer.

3. A metallic medium comprising a carrier strip, a layer of releasable composition on one face of said strip, a metallic layer disposed on said layer of releasable composition and an outermost layer comprising sizing admixed with a material for precluding deleterious action on the metallic layer by the ingredients of the article to be decorated.

4. A metallic medium comprising a carrier strip, a layer of releasable composition on one face of said strip, a metallic layer

disposed on said layer of releasable composition and an outermost layer comprising sizing and chalk.

5. A metallic medium comprising a carrier strip, a layer of releasable composition on one face of said strip, a metallic layer disposed on said layer of releaseable composition and an outermost layer comprising sizing and chalk and metallic powder.

6. A metallic medium comprising a carrier strip, a layer of releaseable composition on said strip, a layer of metallic particles disposed on said layer of releaseable composition and an outermost layer of sizing admixed with particles of chalk distributed in the sizing.

7. A metallic medium comprising a carrier strip, a layer of releaseable composition thereon, a layer of metallic particles disposed on said layer of releaseable composition and an outermost layer comprising shellac, fish glue and chalk.

In testimony whereof I have signed this specification this 19th day of November, 1923.

WILLIAM F. GRUPE.