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METHOD AND MEANS FOR THE OBTAINMENT OF DECORATIVE EFFECTS
UPON TEXTILE FABRICS BY BRILLIANT METALLIC DEPOSITS

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Fig. 1

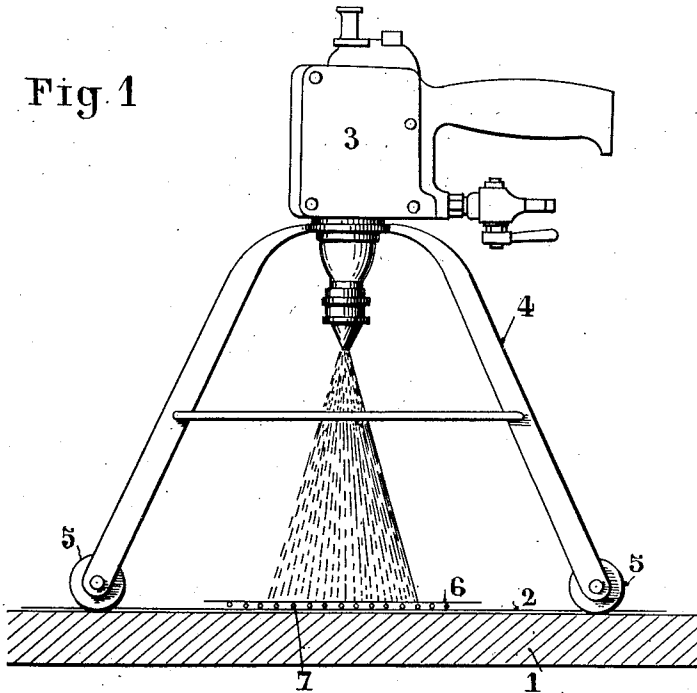


Fig. 2

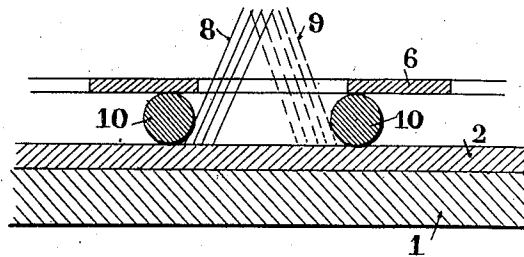
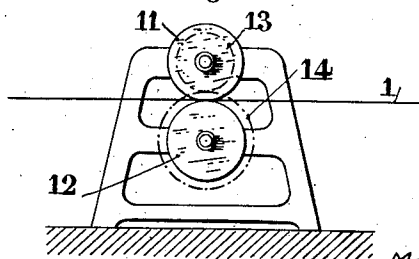


Fig. 3



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UNITED STATES PATENT OFFICE

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METHOD AND MEANS FOR THE OBTAINMENT OF DECORATIVE EFFECTS UPON TEXTILE FABRICS BY BRILLIANT METALLIC DEPOSITS

Application filed January 24, 1930, Serial No. 423,151, and in France June 19, 1929.

The present invention relates to a method of obtaining decorative effects on textile fabrics or other flexible sheet material by the application of brilliant metallic deposits.

It has already been proposed, for the decoration of textile fabrics and even of garments, to project or spray metal powder upon the surface to be decorated by means of a spray-gun in such manner as to give the said surface an aspect analogous to that of fabrics with a metal foil application, but without the heavy weight of such fabrics. However, certain methods which have been proposed for this purpose are defective inasmuch as they do not afford a sufficient flexibility for the fabric and also require a great expenditure of metal whereby the fabric is made heavy, while on the other hand, the metallized surfaces have a dull aspect.

The method according to the invention obviates all such defects according to said method for decoration purpose the textile fabric is coated by the projection or spraying of a metal or alloy in molten state, while maintaining the sprayer or metallizing apparatus at a constant distance from the surface to be metallized, also varying the nature of the metal which is sprayed according to the effect which is to be produced, and eventually interposing between the stencil and the surface to be decorated a regulating screen or filter, or like element made of wire-gauze, making contact with the surface to be decorated solely by the tangent generatrices of the wires of cylindrical section or the tangent edges if said wires are of polygonal section; the metallized surface is then subjected to a calendering, preferably between rollers or like calendering elements having different angular speeds, for the purpose on the one hand of maintaining the flexibility of the fabric without any appreciable breach of continuity of the metallic deposit, and on the other hand, of brightening the metal and thus affording a more brilliant decoration by a rubbing action applied on the metallized surfaces.

The accompanying drawings show by way of example an embodiment of plant or appa-

ratus by which the said method may be carried into effect:

Fig. 1 is a general view of the melting and spraying apparatus,

Fig. 2 is a detail view on a larger scale of the apparatus shown in Fig. 1,

Fig. 3 is a diagrammatic vertical section of the calender employed for the treatment of metallized fabrics.

In order to metallize the fabric, the said fabric 2 is spread upon a suitable surface such as table 1, and the cloth may thus be unfolded and extended upon its whole length; the metal is applied in the molten state by means of a suitable apparatus such as a Schoop melting and spraying pistol 3 supported by a frame 4 which is mounted on rollers 5 in such manner as to roll upon the stencil itself or upon suitable roller guides provided on the table 1 on either side of the fabric to be decorated.

The decorative pattern or design is produced by placing upon the fabric a corresponding stencil 6. Between the said stencil and the fabric may be disposed a filtering device 7 consisting of wire gauze in the shape of wires 10 of round or polygonal section so disposed as to make a substantially lineal contact with the surface to be metallized, i. e. only by the tangent generatrices of said round wires or the angular edges of said polygonal wires tangent to said surface.

During the operation of the combined blow-pipe and spraying device 3, which is guided along the stencil 6 and remains at a constant height above the latter, the metallic droplets, which are successively projected in the opposite oblique directions 8 and 9 during the leftward displacement of the sprayer 3, will be applied upon the metal in a thickness depending on the fineness of the filter 7 and the section of the wires 10, and will reach the fabric even below said wires 10, in such manner that when the metal spraying is terminated, the eye will perceive no breach of continuity in the decorative pattern.

On the other hand, the disposition of the spraying device 3 upon a movable frame 4, by which the device is maintained at a constant distance from the surface to be metal-

lized, will assure a great regularity in the deposit of metal upon the fabric, and the manufacture will also be made more rapid. The risks of burning are also diminished.

In order to give to the surface of the metallic deposits its maximum brilliancy, there is employed a calender comprising for example two rollers 11—12 provided with driving gear wheels 13—14 of unequal sizes, whereby the said rollers will be driven at suitably different angular speeds.

When the band of metallized fabric is brought between the rollers 11—12, there is produced at the surface of the metallic deposit a friction or rubbing action of the upper roller 13, which rotates faster, and this when combined with the pressure of the calender, will clean off and brighten the metal, thus making the decorative pattern as brilliant as desired.

The calendering may be effected by passing the decorated fabric between several calenders whose speed ratio may be the same or suitably different. To give a better rubbing action the rubbing roller acting on the metallized surface may be longitudinally striated or wrinkled.

The said invention is adapted for the decorating of all fabrics consisting of flexible sheet material of all kinds, and adapted for all uses.

What I claim is:

1. Method of obtaining decorative effects on textile fabrics by the application of brilliant metallic deposits, comprising melting the metal or alloy to be deposited, spraying said molten metal or alloy in finely divided droplets upon determined parts of the fabric's surface to be decorated and then subjecting the metallized parts of said surface to a calendering having a rubbing action on the same for the purpose, on the one hand, of maintaining the flexibility of the fabric without appreciable breach of continuity of the metallic deposits, and, on the other hand, of brightening the metal, thus affording a more brilliant decoration.

2. Method of obtaining decorative effects on textile fabrics by the application of brilliant metallic deposits, comprising melting the metal or alloy to be deposited, spraying said molten metal or alloy in finely divided droplets upon determined parts of the fabric's surface to be decorated, while varying the nature of the metal or the composition of the alloy furnished to the melting device, filtering the spray of metallic droplets through a filter interposed between the stencil determining the design of the decoration and the surface to be decorated and contacting with said latter only by tangent lines and then subjecting the metallized parts of said surface to a calendering having a rubbing action on the same for the purpose, on the one hand, of maintaining the flexibility

of the fabric without appreciable breach of continuity of the metallic deposits, and, on the other hand, of brightening the metal, thus affording a more brilliant decoration.

3. Method of obtaining decorative effects on textile fabrics by the application of brilliant metallic deposits, comprising melting the metal or alloy to be deposited, spraying said molten metal or alloy in finely divided droplets upon determined parts of the fabric's surface to be decorated, while varying the nature of the metal or the composition of the alloy furnished to the melting device, filtering the spray of metallic droplets through a wire-gauze made of cylindrical wire interposed between the stencil determining the design of the decoration and the surface to be decorated and contacting with said latter only by the tangent generatrices of said cylindrical wires and then subjecting the metallized parts of said surface to a calendering having a rubbing action on the same for the purpose, on the one hand, of maintaining the flexibility of the fabric without appreciable breach of continuity of the metallic deposits, and, on the other hand, of brightening the metal, thus affording a more brilliant decoration.

4. Method of obtaining decorative effects on textile fabrics by the application of brilliant metallic deposits, comprising melting the metal or alloy to be deposited, spraying said molten metal or alloy in finely divided droplets upon determined parts of the fabric's surface to be decorated while varying the nature of the metal or the composition of the alloy furnished to the melting device filtering the spray of metallic droplets through a wire-gauze made of wires having a polygonal section interposed between the stencil determining the design of the decoration and the surface to be decorated and contacting with said latter only by the tangent edges of said polygonal wires and then subjecting the metallized parts of said surface to a calendering having a rubbing action on the same for the purpose, on the one hand of maintaining the flexibility of the fabric without appreciable breach of continuity of the metallic deposits, and, on the other hand of brightening the metal, thus affording a more brilliant decoration.

In testimony whereof I have hereunto set my hand at Paris, France, this 9th day of January, 1930.

MARIE CLAUDE ROGER HEDDE.