Nov. 24, 1936. K. KURZ 2,062,226

METHOD OF PRODUCING EMBOSSING FOILS

Filed June 6, 1932

Fig. 1

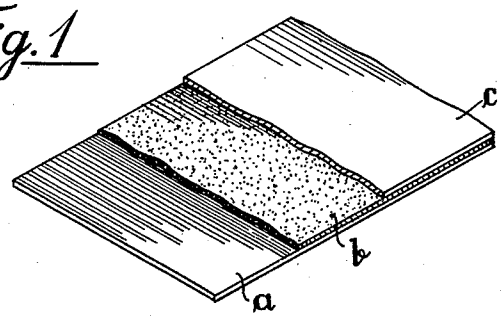
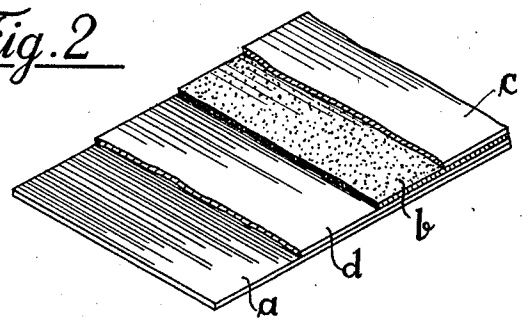


Fig. 2



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METHOD OF PRODUCING EMBOSSING FOILS

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3 Claims. (Cl. 41—33)

Gold leaf is gold beaten to very thin leaves. The gold beating work is very expensive, and the thinness of the leaf and therefore the saving in gold is limited by the production of porous portions of the leaves through which the embossed article might become visible.

In order to do away with the tedious and expensive gold beating and to save gold, it has already been proposed to produce a gold deposit electrolytically on bright polished metal plates or bands in a gold bath. This deposit or coating is of uniform thickness throughout and it is possible, in order to save gold, to make it so thin that it is just sufficient to prevent the embossed article being visible. In order to be employed as embossing foil, this deposit, however, must be stripped from the metal plates or bands and the uniform stripping of the dried deposit is a difficult operation which may often cause trouble.

In order to obtain the gold strips separately, it has also been proposed to electrolytically deposit on a silver band brushing over the surface of the gold bath and to dissolve the silver band by passing the double band over the surface of a nitric acid bath. It is evident, that this does not present considerable advantages as compared with the gold beating.

According to the invention an embossing foil is obtained by chemically producing a mirror coating on one of the known, smooth supports capable to be embossed in sheet or band form, for example of paper, "cellophane" or similar film masses, and by grounding the mirror coating in known manner.

Embossing foils can be produced in this manner by means of all mirror forming metals, such as gold, silver and platinum. Glassine paper, "cellophane" or similar film masses may be employed as supports, "cellophane" being preferred. If a silver embossing foil is to be obtained, silver is precipitated on the "cellophane" from an ammoniacal solution of silver nitrate by means of reducing salts, Rochelle salt for instance, as known in precipitating a silver coating on to a glass plate. To ground the mirror coating, shellac, Zapon lacquer or the like may be used, as for grounding the layer of bronze powder embossing foils.

The production of such an embossing foil by direct chemical production of a mirror coating on the support is cheaper, simpler and more reliable than one with beaten or electrolytically precipitated metal leaf and gives embossings, the brightness of which is far superior than those of the two other types. The production of the new foil can as is apparent, be effected, similarly to the production of the mirror surface on the back of a glass plate, with the difference that instead of the glass a flexible, exceedingly thin film as smooth as possible is employed, from which film the mirror coating, owing to its greater adhesion to the grounding, can be detached during the stamping process under the influence of the heat of the die. The detaching may be facilitated by interposing a suitable fusible layer, for example of soft resin or cellophonium, between the mirror coating and the support, but this is not necessary if it is not desired to colour the interposed fusible layer in order thereby to change the color of, for example a white mirror coating.

Smooth cellulose films in the form of so called "Cellophanes", "Cellit" and the like have already been employed as supports for the fusible layer and the beaten leaves. This measure, however, does not anticipate the invention because the invention first proposes to chemically provide such films with a mirror coating and then to apply a grounding layer on to these deposits for obtaining an embossing foil, and patent protection is only sought for the combination of these two measures.

It has further been proved that the embossing is the brighter and sharper the thinner the metal deposit is made. The new method of producing the embossing foils is also far superior to the known methods of production as regards the saving in precious metals, especially gold, platinum or silver.

The new embossing foil is illustrated in the accompanying drawing in which:—

Fig. 1 is a perspective view of a foil without a fusible layer, and

Fig. 2 is a similar view of a foil with a fusible layer.

With reference to Fig. 1, *a* is the smooth support capable of being embossed, *b* the chemically precipitated mirror coating and *c* the grounding layer or sizing. According to Fig. 2, a fusible layer *d* is interposed between *a* and *b*.

I claim:—

1. Method for producing an embossing foil the metal layer of which is transferred by the heat of the embossing die from its carrier on to the object to be embossed, consisting in chemically producing a mirror coating on a flexible smooth film support capable of being embossed and in grounding this mirror coating on the outer side.

2. Method for producing an embossing foil the metal layer of which is transferred by the heat of the embossing die from its carrier on to the ob-

ject to be embossed, consisting in producing a mirror coating by chemically reducing a precious metal on to a smooth flexible and pliable film support capable of being embossed and in grounding this mirror coating on the outer side.

3. Method for producing an embossing foil the metal layer of which is transferred by the heat of the embossing die from its carrier on to the object to be embossed, consisting in coating a flexible smooth film support capable of being embossed with a layer of fusible material, and in chemically reducing a precious metal onto this fusible layer, and in grounding this mirror coating on the outer side.

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