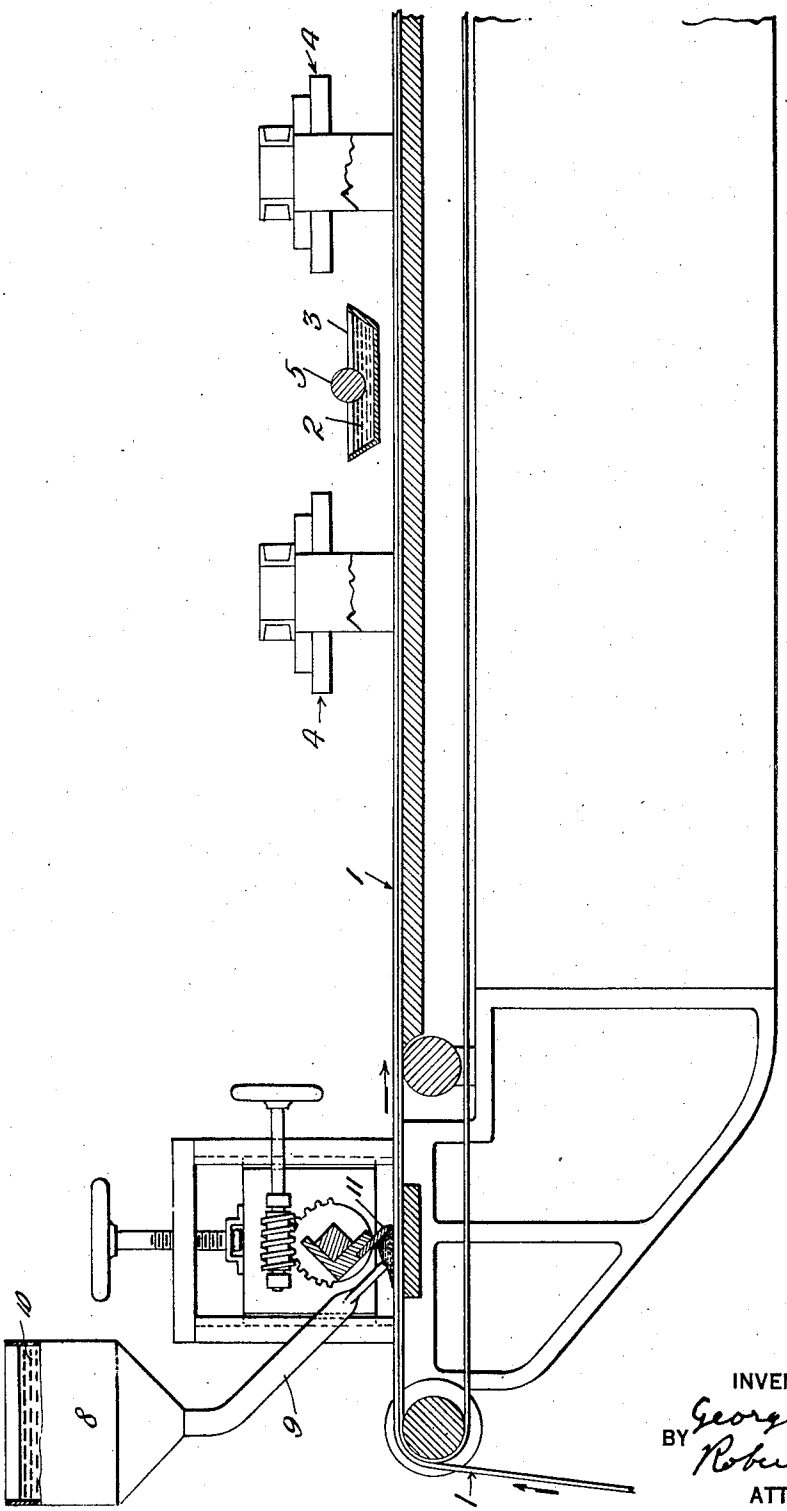
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METHOD OF SURFACE ORNAMENTATION AND APPARATUS FOR SAME

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METHOD OF SURFACE ORNAMENTATION AND APPARATUS FOR SAME

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This invention relates to a method of surface ornamentation and apparatus for carrying out the method.

A particular object of the invention is to reduce the cost of applying surface ornamentation to strip material such as floor covering. In surfacing such material, it has been customary to apply paint to the surface of the strip by printing, usually in a block printing machine. After the paint has been printed on and before the completed floor covering can be rolled up for storage or shipment, the paint must be thoroughly dry. During the drying, the strip of floor covering must be spread out so that air may have free access to its ornamented surface. It is customary to provide dryers in which heated air is brought in contact with the ornamented surface, but whether or not heated air is used the drying is an expensive operation because of the large amount of factory space which must be provided to permit spreading out the strips so that their surfaces are exposed to the air. This expense is, of course, a direct function of the time required for drying, and may be reduced with a consequent increase in production if the paint can be made to dry more rapidly.

Attempts have been made to accelerate the drying of the paint printed upon the surface of strips of floor covering by the addition of dryer to the paint. This expedient may be used only to a very limited extent, since it is essential to the operation of printing that the paint remain in liquid, undried condition on the printing blocks. I have found that the addition of more than one per cent. of dryer to the paints ordinarily used in printing results in a deleterious drying of the paint on the printing blocks, and also has a tendency to make the paint applied by the blocks dry rapidly at its outer surface, forming a hard skin which retards or altogether prevents the drying of the paint under it.

I have devised a method which eliminates these disadvantages, and at the same time greatly accelerates the drying of printed paints with a consequent reduction in cost and increase in production in surfacing floor coverings. An essential feature of my method consists in applying a dryer to the under-surface of a layer of printed paint, that is, between the strip itself and the layer of paint printed upon it. In this method, the dryer does not affect the printed paint until after the paint has left the printing blocks, so that it can have no tendency to make the paint dry on the blocks. Furthermore, as the dryer is applied to the under-surface of the printed paint, the rapid drying which it causes has no tendency to form a dried skin on the surface of the paint.

In order that my invention may clearly be understood, I will describe an illustrative specific way of carrying it out, by means of a block printing machine, which is, in the main, of ordinary construction, but has additional parts to adapt it to the carrying out of my method. Such a machine, which, in itself forms a part of my invention, is diagrammatically illustrated in the annexed drawing.

It will be understood that, in the block printing machine shown in the drawing, the strip 1 to be surfaced is moved through the machine from left to right, and the print paints 2 contained in resorvoirs 3 are applied to the printing blocks 4 by rollers 5 and then applied to the strip by the printing blocks.

At the front end of the machine is a device for applying a liquid coat to the entire upper surface of the strip. This liquid is applied on each individual part of the strip 1, before that part of the strip has come under any of the printing blocks 4, so that the paint 2 applied by the printing blocks is printed over this wet layer or coating, which consists of, or contains, a material adapted to accelerate the drying of the print paint. The device for applying the wet undercoating includes a reservoir 8 having a conduit 9 which directs the liquid 10 in the reservoir directly upon the surface of the strip behind a doctor blade 11, which extends the entire width of the strip and smooths out the liquid 10 so as to form it into an even wet coating covering the entire surface of the strip 1. The distance between the doctor blade 11 and the strip 1, and the inclination of the doctor blade are preferably adjustable, as illustrated.

In carrying out my method with the aid of this machine, I supply ordinary print paint to the printing blocks 4. For reasons which I have explained, such paints should not contain more than one per cent. of dryer. A usual and satisfactory formula for such print paint is:

	Per cent
Filler	64
Oil	20
Varnish	13
Solvent	2
Dryer	1

The under-layer applied under the doctor blade 11 consists, essentially, of a material adapted to accelerate the drying of the print paint and a liquid vehicle for this dryer. The dryer may be

any kind of dryer customarily used in paint, but is preferably an oxidizing agent such as lead oxide—red lead or litharge. The vehicle for the dryer is preferably a paint more or less similar to the print paint. A satisfactory formula for the material supplied to form the under-coating is as follows:

	Per cent
Filler	65
Oil	21
Varnish	10
Dryer (for example, red lead or litharge)	3.75

A paint of this formula cannot be applied to a floor covering by printing, as it drys on the printing blocks, there is, however, no difficulty in applying it by pouring it on the strip and spreading it with a doctor blade, as in the machine illustrated, and when so applied, it forms an under-coating which remains wet while the print paint is applied to it by the printing blocks.

As soon as the print paint is applied over this under-layer, the dryer in the under-layer assists in oxidizing and drying the print paint from the bottom up, so that the entire surface of the floor covering becomes hard and dry much more rapidly than in the ordinary method, in which no dryer is applied, except such as can be put in the print paint itself.

What I claim is:

1. The method of applying an ornamenting surface to strip material, which comprises directly applying to the surface of the material a paint containing more than one per cent. of dryer, spreading said paint into a smooth layer, and spreading over said layer, while it is still wet, a paint containing not over one per cent. of dryer.

2. The method of applying a plurality of paints to strip material which comprises applying to the surface of the material a paint containing more than one per cent. of dryer, and spreading over said layer while it is still wet, a paint containing not over one per cent. of dryer.

3. The method of ornamenting strip material which comprises printing a paint containing not over one per cent. of dryer over a wet surface containing more than one per cent. of dryer.

4. The method of applying an ornamenting surface to strip material which comprises printing a paint containing not over one per cent. of dryer over a wet ground coat of paint containing more than one per cent. of dryer.

5. The process of making floor covering which comprises the steps of applying a ground coating containing more than one per cent. of dryer to a base, spreading said coating into a smooth layer, and overlaying said layer while it is still wet with a coating containing not over one per cent. of dryer.

6. The process of making floor covering which comprises the steps of applying a ground coating containing more than one per cent. of dryer to a base, and overlaying said layer while it is still wet with a coating containing not over one per cent. of dryer.

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