K. JAEK.

METHOD OF AND MACHINE FOR MAKING COLORED PATTERNED LINOLEUM, OIL CLOTH, LINCRUSTA, AND THE LIKE.

APPLICATION FILED APR. 29, 1914.

1,201,187. Patented Oct. 10, 1916.

3 SHEETS—SHEET 1.

Fig. 1

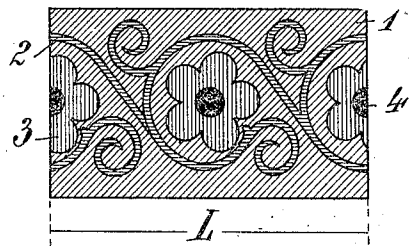


Fig. 2

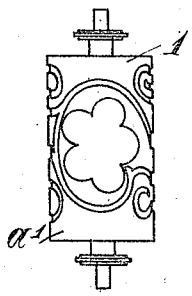


Fig. 3

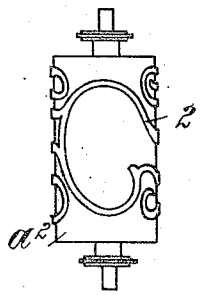


Fig. 4

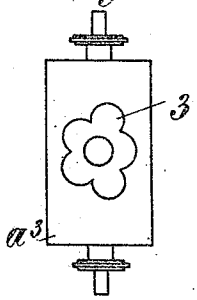
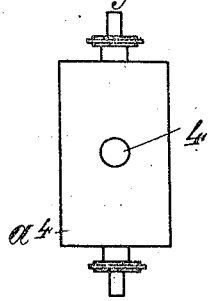


Fig. 5



Witnesses
E. G. McGee
W. H. Brereton

Inventor:
Karl Jaek
By Emil Baumbach
Attorney

K. JAEK.

METHOD OF AND MACHINE FOR MAKING COLORED PATTERNED LINOLEUM, OIL CLOTH, LINCRUSTA, AND THE LIKE.

APPLICATION FILED APR. 29, 1914.

1,201,187.

Patented Oct. 10, 1916.

3 SHEETS—SHEET 2.

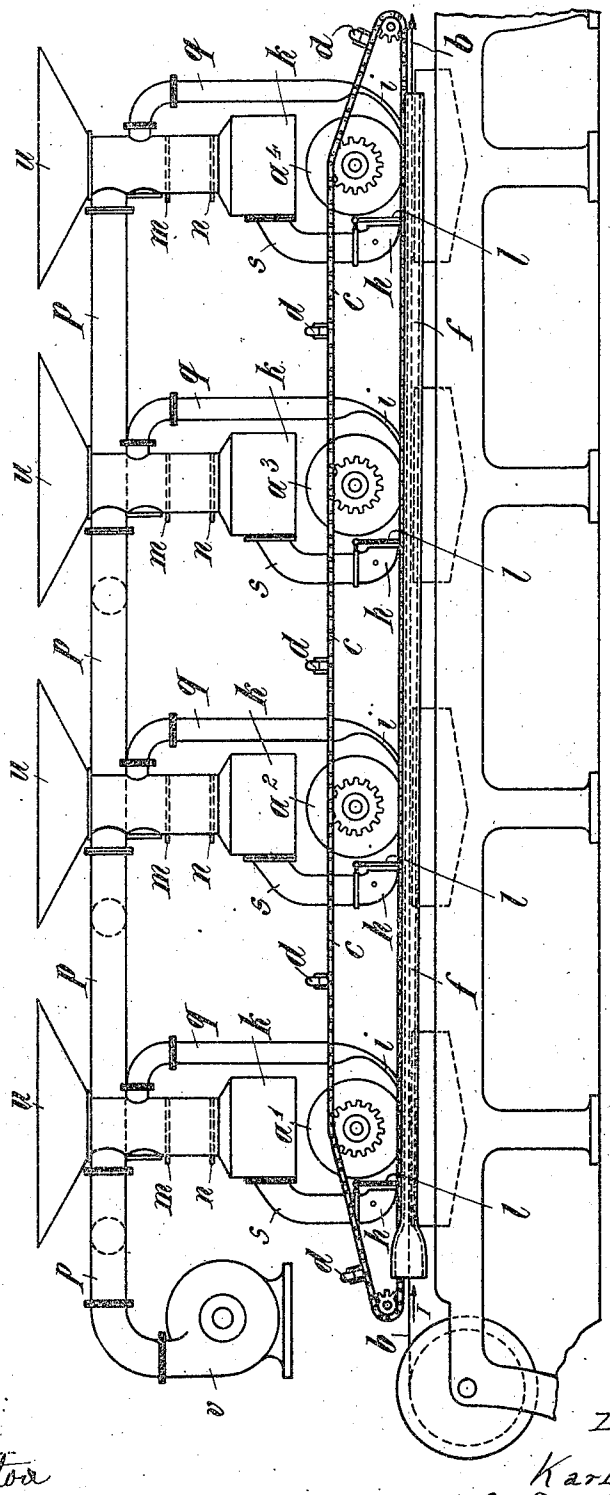


Fig. 6

Witnesses:
E. G. McGee
W. H. Brereton

Inventor
Karl Jaek
By Emil Bimmelgke
Attorney.

K. JAEK.

METHOD OF AND MACHINE FOR MAKING COLORED PATTERNED LINOLEUM, OIL CLOTH, LINCRUSTA, AND THE LIKE.

APPLICATION FILED APR. 29, 1914.

1,201,187. Patented Oct. 10, 1916.

3 SHEETS—SHEET 3.

Fig. 7

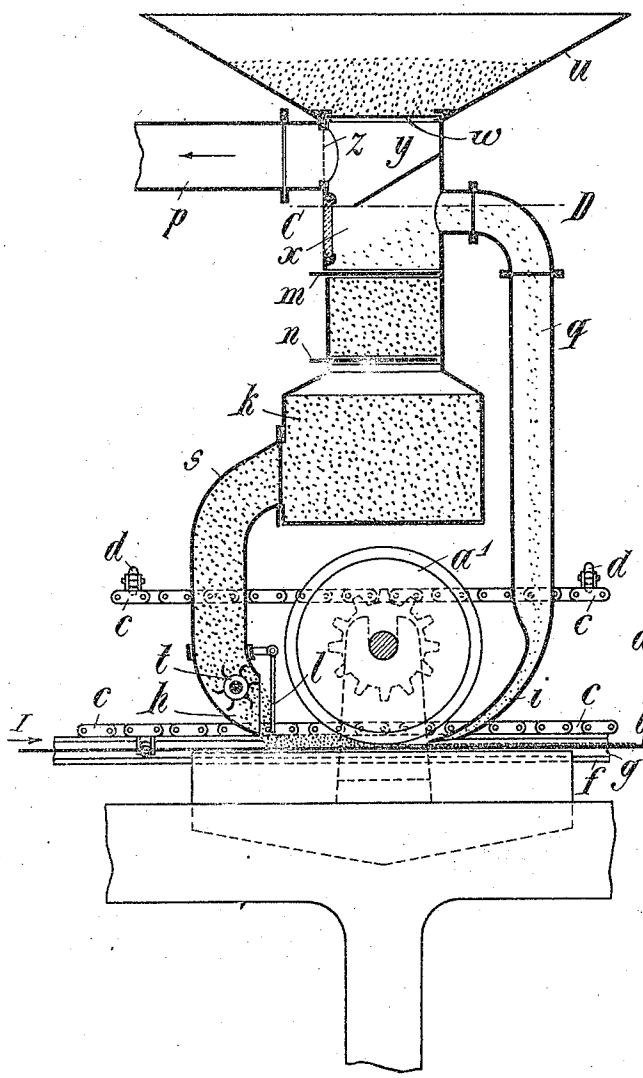
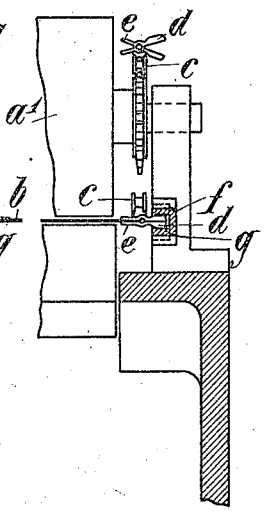


Fig. 8



Witnesses.
C. G. McGee.
N. H. Brereton

Inventor:
Karl Jaek
By Emil Brinckmeier
Attorney.

UNITED STATES PATENT OFFICE.

CARL JAEK, OF BERLIN, GERMANY.

METHOD OF AND MACHINE FOR MAKING COLORED PATTERNED LINOLEUM, OIL-CLOTH LINCRUSTA, AND THE LIKE.

1,201,187. Specification of Letters Patent. Patented Oct. 10, 1916.

Application filed April 29, 1914. Serial No. 835,143.

To all whom it may concern:

Be it known that I, CARL JAEK, manufacturer, subject of the King of Prussia, residing at Berlin, Prussia, German Empire, have invented certain new and useful Improvements in Methods of and Machines for Making Colored Patterned Linoleum, Oil-Cloth, Lincrusta, and the like, of which the following is a specification.

The present method for making colored, patterned linoleum, oil-cloth, lincrusta or the like consists therein that at each operation a quantity of raw material of a color corresponding to the respective equally colored sections of the design is supplied onto the backing at a distance equal to the length of the design and compressed by means of a pressure roller having a raised portion corresponding to the equally colored section of the design, while behind the said roller the loose, not compressed remainder of the raw material is sucked away.

For carrying out the method hereinbefore described a machine is employed, which has as many compressing rollers as there are different colors in the design. On the one side of these rollers is the mouth piece of a container, on the other side the nozzle of a suction pipe.

In the accompanying drawing a constructional form of a machine is exemplified, in which the backing travels in a horizontal plane over a pressure table, and the compressing rollers revolve in stationary bearings.

Figure 1 is the design to be reproduced. Figs. 2 to 5 are the several compressing rollers with their raised portions corresponding to the respective equally colored sections of the design. Fig. 6 is a side elevation of the machine. Fig. 7 is a vertical longitudinal section through a compressing roller with the container arranged above it. Fig. 8 is a vertical cross section through the right hand frame of the machine.

Of the design shown in Fig. 1 it is assumed, that the background 1 which is shaded obliquely, is gray, the section shaded in horizontal lines (stem of the flower) 2 is green, the section shaded with vertical lines (petals of the flower) 3 is blue and the full black section (heart of the flower) 4 is yellow.

In carrying out the process, four differently colored raw materials, corresponding to the four colors of the pattern are fed to a set of compressing rollers a^1, a^2, a^3, a^4, each differently colored raw material being acted on by a separate roller. The circumference of each of these rollers is equal to the length L of the design (Fig. 1). On this circumference of the said rollers are raised portions, which correspond to the respective sections of the design 1, 2, 3, 4 (Figs. 2, 3, 4, 5). By these rollers the raw material is compressed, while the remainder, which has not been compressed is sucked away. The backing b is drawn in the direction of the arrow I in Fig. 6. For insuring that the travel of this backing corresponds with the sections of the design the backing is drawn by means of a chain c (Fig. 8), on which grippers having the shape of tongs d, e, are provided, which are automatically closed by a bar f on the machine, the legs d of the tongs entering into a longitudinal slot g in the bar, whereby the legs d and thereby also the legs e are pressed together. In the constructional form of the machine exemplified in the accompanying drawing the compressing rollers are arranged at a distance from each other equal to the length of the design, and they revolve at the same velocity as the backing travels. In front of each of these rollers, seen in the direction of the arrow I is a mouthpiece h for the supply of the raw material, behind the roller the suction nozzle i for carrying off the material which has not been compressed by the roller. The supplying and carrying off arrangements are the same for each roller, wherefore hereinafter the arrangement for the roller a^1 alone shall be described.

Over the roller a^1 is situated the container k for the gray material, which container is shut off from the feed hopper u by means of a slide w. Beneath the slide w is arranged a sluice with two hermetically closing slides m and n. To the chamber x

formed between the slides w and m and serving to produce a continuous vacuum a suction pipe p and q is connected, of which the pipe p communicates with a fan v, the pipe q with the suction nozzle i. Beneath the slide n is situated the feed tube s with the mouthpiece h.

When the machine is started, the raw material drops through the mouthpiece h in front of the roller. For insuring a uniform supply a roller t with blades is provided in the mouthpiece, and behind the latter a scraper l. The raw material thus drops onto the backing b and is fed under the roller a^1. At the same time the suction is produced behind the roller, as the fan is started together with the machine. The raw material which has not been compressed passes through the nozzle i and the pipe q back into the container k.

In order to prevent the raw material being carried along in it the mouth of the pipe q is arranged at a lower level than that of the pipe p. Furthermore a baffling plate y is provided in the chamber x and a filter z in the pipe p. When the raw material has accumulated over the slide to about the level C—D, which may be controlled through an inspection window, the slide m of the sluice is opened. The accumulated raw material then drops into the sluice, whereupon the upper slide m is closed and the lower slide n is opened. The provision of the sluice thus insures the production of a continuous vacuum in the chamber x. By the roller a^1 the gray raw material is thus applied to the backing in a compressed condition and in accordance with the design, and the loose not compressed raw material has been removed by suction behind the compressing point. After the backing is then advanced by the length of the design the green raw material is supplied to the roller a^2 and compressed thereby, while the remaining not compressed surplus is again sucked away, and so on. When at last the last section of the design has been compressed by roller a^4 the web of linoleum is removed from the machine and may, if necessary, be again rolled in a calendering machine.

It is necessary that the portions on the rollers are of a considerable height. This is however practically impossible with metal rollers, owing both to the difficulty in manufacture and the high cost. It is therefore suggested to make the rollers of artificial stone, consisting of a mixture of cement, sand and magnesia in known manner. In such material a sufficiently high relievo design may be produced by aid of a sand blast and suitable templets.

It is not imperative, that the rollers are arranged at a pitch equal to the length of the design. For reducing the manufacturing cost of the machine it will be advisable to make the machine shorter and to arrange the rollers at a pitch equal to half the length of the design, which arrangement, however, provides, that the rollers following the first roller alternate relatively to the first by half their circumference.

I claim:

1. A method for making colored patterned linoleum, oil cloth, lincrusta, and the like, consisting in continuously feeding a loose raw material onto a backing material, compressing a design from the loose material onto the backing, and pneumatically removing the surplus after the compressing operation.

2. A method for making colored patterned linoleum, oil cloth, lincrusta, and the like, consisting in successively and continuously feeding loose colored raw materials onto a backing material, compressing the design for which each raw material is intended as the latter is fed onto the backing material, and pneumatically removing the surplus after the compressing operation.

3. A method for making patterned linoleum, oil cloth, lincrusta and the like, consisting in continuously feeding loose raw material in uniform quantity across a backing, forming a design in said raw material by compressing predetermined portions thereof, and then removing the uncompressed material.

4. A method for making patterned linoleum, oil cloth, lincrusta and the like, consisting in continuously feeding a loose raw material onto a backing, in uniform quantity across the latter, compressing a predetermined design therein, removing the uncompressed material, continuously feeding another loose material onto the backing in uniform quantity, compressing further design from the last mentioned loose material in unoccupied portions of the backing, and successively feeding loose raw materials onto the backing, compressing designs therefrom and removing the uncompressed material continuously until the pattern is completed.

5. Machine for making colored, patterned linoleum, oil cloth, lincrusta and the like, comprising a number of pressing rollers corresponding each to one color of the design, in front of each roller a container adapted to supply a correspondingly colored raw material and behind each roller a suction nozzle adapted to suck away the loose raw material not compressed by said roller.

6. Machine for making colored, patterned linoleum, oil cloth, lincrusta and the like, comprising a number of pressing rollers, corresponding each to one color of the

design, in front of each roller a container adapted to supply a correspondingly colored raw material and behind each roller a suction nozzle adapted to suck away the loose raw material not compressed by said roller, the suction pipe communicating with the said container, said container being adapted to be sealed to provide a continuous vacuum with said suction pipe beneath its closing slide adapted to produce a continuous vacuum.

In testimony whereof I have affixed my signature in presence of two witnesses.

CARL JAEK.

Witnesses:
HENRY HASPER,
WOLDEMAR HAUPT.