

No. 693,759.

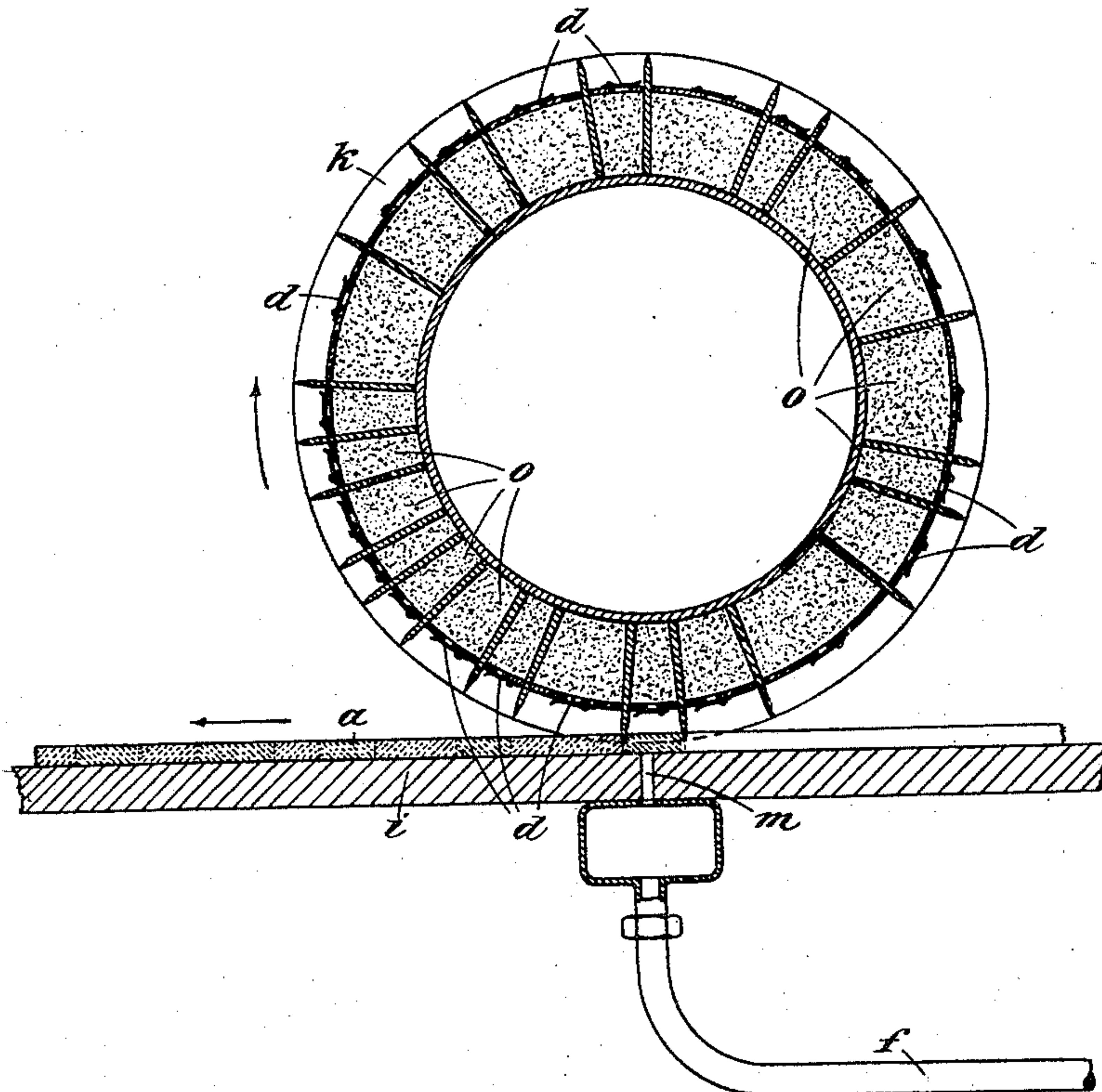
Patented Feb. 18, 1902.

C. TÖNJES.

APPARATUS FOR PRODUCING COLOR PATTERNS IN LINOLEUM OR LIKE MATERIALS.

(Application filed Nov. 5, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

CARL TÖNJES, OF DELMENHORST, GERMANY.

APPARATUS FOR PRODUCING COLOR PATTERNS IN LINOLEUM OR LIKE MATERIALS.

SPECIFICATION forming part of Letters Patent No. 693,759, dated February 18, 1902.

Application filed November 5, 1901. Serial No. 81,260. (No model.)

To all whom it may concern:

Be it known that I, CARL TÖNJES, a subject of the Grand Duke of Oldenburg, residing at Delmenhorst, in the Grand Duchy of Oldenburg, German Empire, have invented a certain new and useful Improvement in Apparatus for Producing Color Patterns in Linoleum or Like Materials, of which the following is a full, clear, and exact description.

By means of the apparatus which forms the object of the present invention a pattern or design which passes right through the linoleum or other like material may be produced in a continuous operation.

The apparatus consists, essentially, of a drum carrying the coloring-matter and revolvably mounted on one side of the material, which drum is divided by partitions into a number of separate radial chambers containing the different dyes, arranged according to the order or scale of the colored pattern to be produced. On the forward movement of the band of material and the rotation of the drum, which takes place simultaneously therewith, the separate different chambers of the drum are brought to rest successively on the band of material, and the respective dye is drawn from each chamber, which at the time is resting on the band of material, by means of an air-suction arrangement constantly acting at this place on the other side of the band of material, according to a process which is already known, and the dye is drawn through the material by suction. Instead of this action, however, the dyes may be forced through the material by means of air, gas, water, or the like acting under pressure from the interior of the drum. In this manner all the chambers of the drum are caused to successively deposit their dye on the band of material and to produce thereby the desired colored pattern in the same without any interruption of the working taking place. Hitherto for this object only flat forms were employed, which had to be again removed after each color pattern was made and replaced on the next spot which was to be colored, and therefore no continuous pattern was possible with them.

A form of construction of this apparatus is shown in vertical section in the accompanying drawing.

A drum *k* is revolvably mounted above a table *i*, over which is drawn a strap or band *a*, of the linoleum or like material. A suction-opening *m* is arranged in the table, to which a suction-pipe *f* is connected. The radial dye-chambers *o*, formed by partitions arranged to correspond with the pattern in the drum *k*, are closed to the outside in order that when the chambers in the rotation of the drum are inclined downward the dye cannot fall out of the same; but each chamber is provided with one or more back-pressure valves *d*, of suitable kind, opening to the outside. The dye is thus drawn each time out of that dye-chamber of the revolving drum which is passing over the suction-opening *m* in consequence of the suction action opening the back-pressure valve, and the dye is thus drawn through the fabric of the linoleum. By the suction action the further supply of dye into the chambers of the drum may also be effected.

In place of the suction action already mentioned the discharge of the dye through the loose layer of fabric may be effected by means of pressure, and this pressure may be obtained either by air, gas, or liquid pressure, (a treatment of the dye by the gas or the liquid may also simultaneously take place—such, for instance, as the bleaching of vegetable dyes by means of chlorine or the like,) or even by direct mechanical pressure by means of pressure-stamps exactly fitting into separate chambers of the dye-container. Either dry or liquid dye may be employed.

In order to close the dye-chambers to the outside, instead of back-pressure valves felt or other suitable porous material may be employed, which prevents the dye from falling out and through which it may be drawn or forced.

In addition to its employment in the manufacture of linoleum the apparatus may be used for other dyeing purposes—for instance, for making artificial bricks, flags, paper, carpets, cork slabs, or the like.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Apparatus for producing a colored pattern upon linoleum and like material consisting of a rotatable drum, radial chambers therein, said chambers containing coloring-matter,

a porous outside wall covering said chambers and means for transferring the coloring-matter from the chambers to the material to be colored while the drum is being rotated, substantially as described.

5 2. Apparatus for producing a colored pattern upon linoleum and like material, consisting of a rotatable drum, separate radial chambers therein, said chambers containing coloring-matter, outside porous walls covering the
10 chambers, back-pressure valves located in

said walls and suction means for drawing the coloring-matter out of the chambers and into the material to be colored while the drum is being rotated, substantially as described. 15

In testimony whereof I have hereunto set my hand in presence of two witnesses.

CARL TÖNJES.

Witnesses:

F. A. BRYER,

F. HOYERMANN.