

No. 791,681.

PATENTED JUNE 6, 1905.

H. T. EPPERSON.
DECORATING MACHINE.
APPLICATION FILED MAR. 29, 1904.

Fig. 1.

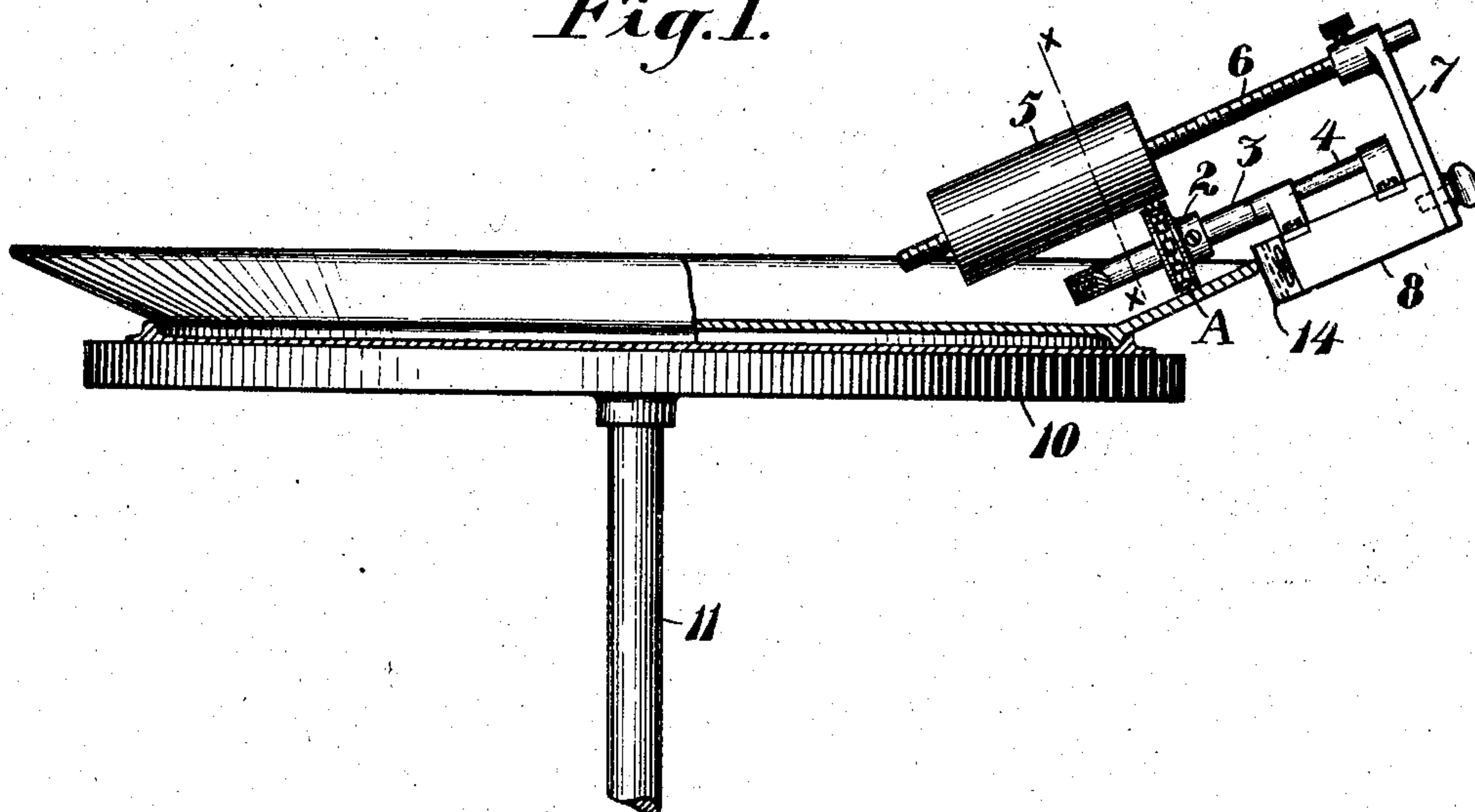


Fig. 2.

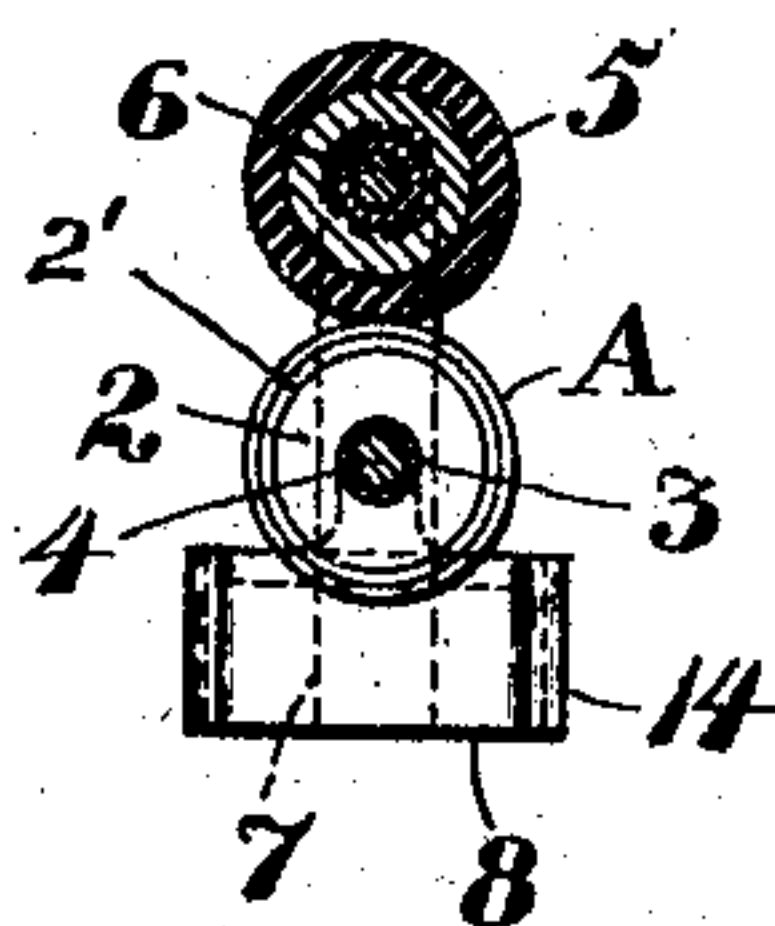
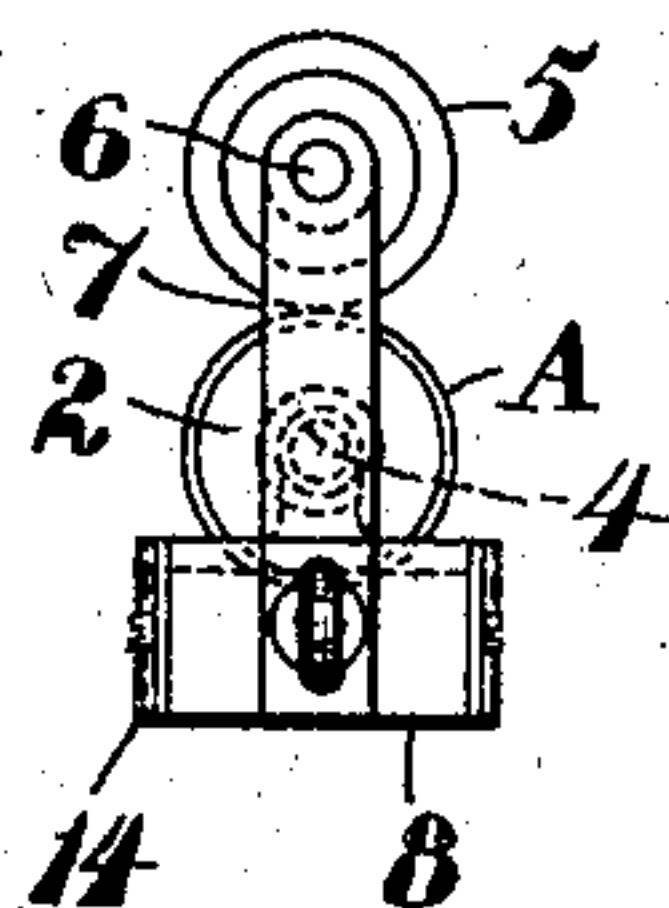


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY T. EPPERSON, OF SAN FRANCISCO, CALIFORNIA.

DECORATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 791,681, dated June 6, 1905.

Application filed March 29, 1904. Serial No. 200,564.

To all whom it may concern:

Be it known that I, HENRY T. EPPERSON, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Decorating-Machines, of which the following is a specification.

My invention relates to a machine which is designed for decorating china, glass, and ceramics generally, both over and under glaze, but is particularly adapted for under-glaze work.

It consists in the combination and arrangement of parts and adjustments for the same and also in details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side elevation showing application of my device. Fig. 2 is a section on line *xx* of Fig. 1. Fig. 3 is an end view of my device.

In the decoration of china—such as plates, cups, saucers, and like ceramic work—or for glass it is customary to make patterns which are afterward transferred by various processes and in sections to the edges, circumference, or other parts of the articles to be decorated. Such methods are slow and are dependent upon the accuracy of the operator in matching these patterns, so as to produce a continuous and symmetrical effect.

It is the object of my invention to overcome the difficulties of previous methods and to provide a rapid and accurate decoration of such articles as my machine is applicable to and which can be operated by inexperienced operators.

A is a pattern, which, it will be understood, may be of any suitable character, either plain or ornamental. I have here shown this pattern in the form of one or more wheels or disks, carrying the pattern upon the peripheral edge. Such a wheel or disk is shown at 2 and is revolvably mounted. In the present illustration I have shown the wheel mounted upon a sleeve 3, turnable upon a spindle 4, upon which it is fitted, and which spindle may be suitably supported.

5 is a roller having any suitable soft or elastic surface—such as rubber, gutta-percha, or

other substance which is adapted to take up the oil, ceramic color, or equivalent material and to transfer it to the pattern when desired. This roller is here shown as having a central screw-threaded sleeve upon which it is mounted, and said sleeve is turnable upon a screw-threaded shaft 6, so that by the rotation of the roller 5 it will be advanced toward one end or the other of the shaft. This screw-threaded shaft is here shown as standing approximately parallel with the shaft upon which the pattern-wheel is mounted, and it is so supported that the roller may be moved into or out of contact with the pattern-wheel.

In the present illustration of the device as conveniently made for hand use the end of the screw-shaft 6 is fixed in a plate 7, which may be slotted or perforated at a distance from the screw-shaft and secured to a support 8, which may serve as a handle, by a locking-nut or equivalent clamp, so that it may be turned about its point of support and the roller 5 thus moved to or from the pattern A.

It will be manifest that various mechanical devices may be substituted for that herein described, the object in any case being to provide a support for the revoluble pattern-wheel and for the roller 5 and means for bringing the two into contact or separating them.

The operation of this portion of the device will then be as follows: The roller being separated from the pattern is revolved in contact with a surface carrying an oil or prepared color, gold, or a medium of a substantially translucent character, and the roller will thus be coated with this substance. If the substance is to serve as a medium for the color which is to be imparted to the pattern, said color will be mixed with the medium and will be applied to the roller, as previously described. The roller may then be brought into contact with the periphery of the pattern, and the pattern may be applied around the edge of the plate or other portion of the plate or other article to be decorated. The revolution of the roller as it is moved over the article will transfer the pattern to the article to be decorated, and the pattern will be continued as often as it is repeated by the revolutions of the wheel. In

order to insure a perfect transmission of the design and evenness of the color or medium, the roller traveling in contact with the pattern will at the same time be advanced along its screw-threaded shaft, so that fresh parts of its coated surface will be continually brought into contact with the pattern-wheel, thus insuring a perfect pattern of the most delicate character and such continuous application of the pattern by the revolving wheel as will prevent any breaks or irregularities.

Various devices may be employed for holding the article to be decorated, so as to move it with relation to the pattern-wheel or to move the pattern-wheel with relation to the article, as convenience may dictate. I have herein illustrated such a device in the form of a circular table 10, which may be supported and revoluble upon a central spindle, as at 11, and such table may be provided with any suitable means for centering and holding the plate or other article to be decorated. The support and the article carried by it may then be revolved with relation to the pattern-wheel, which can be either held in the hand or carried by a fixed support, or the support for the article to be decorated may be stationary and the pattern-wheel may be moved with relation thereto, it being within the province of my invention to move either or both parts with relation to each other, as convenience may dictate. If it is desired to apply the pattern at two operations, the adherent oil or medium will be first applied to the disk, and the color, which may be in the form of a dry dust, will be applied to the line of the pattern which has already been placed upon the article by the pattern-disk, as previously described, by sifting or dusting it upon the viscid transparent medium, to which the color will readily adhere and produce the pattern in the desired color, it being understood that the decorations are fixed by firing in the usual manner after having been applied.

14 is an adjustable gage that fits on the outer edge of the article to be decorated. The one shown is for plain-edge ware; but for festoon or scalloped edges a gage is made sufficiently long to secure an even bearing according to the size or unevenness of the edges of the ware to be decorated. Where the ware has an extremely uneven edge or for other reasons it is so desired, the machine may be worked from the center instead of the edge.

The manner of using my machine is varied; but in all cases the principle is the same and the gage or chuck for holding the article to be decorated is designed to fit its own peculiar shape to the machine—as, for instance, cups, bowls, and hollow ware will require a broad flat gage working from any straight side, while jugs or sauce-boats require a narrow gage with a back-support which will permit the design to follow the uneven curves of the ware.

It will be understood that the machine can be operated by hand or by any suitable power, and machines may be made to fit the particular articles or class of articles and for different sizes and used for these only.

A soft-rubber cushion 2' is interposed between the pattern and the wood or other inelastic center, and this provides sufficient flexibility to insure the design being perfectly printed upon embossed or uneven surfaces.

Any pattern, as line, band, border, names, letters, or characters of any description, may be applied by these machines, which may be modified or changed to suit the work.

The diameter of the disks is small, so that the point of contact is also small, and this insures a perfect transmission of the pattern to plain or uneven surfaces. The disks carrying the designs are adjustable upon the shaft or sleeve and may be so regulated as to apply any design to the piece to be decorated, such as a band, fine line, and shoulder-line, which may all be applied in a single revolution.

The pitch of the screw-threads on the shaft 6 will be determined by the width of the design which is to be applied, the object being always to apply the color or medium evenly whether it be wide or narrow.

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

1. A means for decorating articles, said means comprising a revoluble pattern-carrying disk, a roller to which the pattern medium or color is adherent, said roller having a fixed interior screw-threaded sleeve and a screw-threaded spindle substantially corresponding in diameter to the inner diameter of the sleeve and directly engaging said sleeve, whereby the roller is successively advanced on the spindle while turning, and means maintaining the roller and pattern-carrying wheel in contact.

2. A means for decorating articles, said means comprising a revoluble pattern-carrying disk, a color-distributing roller adapted to be rotated by contact with the disk, and means whereby the roller is advanced simultaneously with its rotation said means consisting of a spindle having a single continuous thread and an internally-threaded sleeve fixed in the roller and having an inner diameter substantially coequal to the exterior diameter of the spindle.

3. A device for decorating china and the like consisting of a revolubly-supported wheel or disk carrying a pattern upon its periphery, an elastic roller to which an adhesive color or medium is applied said roller having fixed within it an internally-threaded sleeve, a shaft having its exterior provided with a single thread which extends continuously in one direction, the diameter of the shaft corresponding to the inner diameter of the sleeve whereby the shaft and sleeve directly engage, and the roller is advanced simultaneously with its rotation,

means for bringing the roller into contact with the pattern, or separating it therefrom, and means for revolubly moving the pattern-disk and article to be decorated with relation to each other.

4. In a device for decorating ceramic ware, the combination of a wheel or disk having a pattern upon its periphery, a central support upon which it is revoluble, a yielding cushion interposed between the pattern-surface and the center, a color-distributing roll having an interiorly-threaded sleeve, and an externally-threaded shaft passing through the sleeve and corresponding to the inner diameter thereof, whereby the shaft and sleeve directly engage.

5. A device for decorating ceramic ware, said device comprising a wheel or disk carrying a pattern or design, a roller by which a color or medium is applied to the pattern, means by which the roller is advanced in the line of its axis and in one direction while revolving, and an adjustable gage adapted to contact with the edge of the article to be decorated.

6. In a device for decorating ceramic ware, a wheel or disk with a pattern upon its periphery, a handle upon which the wheel is turnably mounted, a revoluble roller, a screw-threaded shaft upon which the roller is advanced in one direction while turning, and means movably connecting the roller-shaft with the handle.

7. In a device for decorating ceramic ware, a wheel or disk having a pattern upon its periph-

ery, a handle upon which the wheel is turnably mounted, a revoluble roller and a screw-threaded shaft upon which the roller is advanced in one direction while turning, means movably connecting the shaft with the handle, and a gage carried by the handle and movable in contact with the article to be decorated.

8. In a device for decorating ceramic ware, a handle, a pattern-carrying wheel or disk adjustably journaled thereon, a roller of greater length than the pattern-wheel, said roller having a surface to receive an adhesive medium, a shaft upon which the roller is turnable, a movable connection between said shaft and the handle, and means by which the roller is advanced in one direction in the line of its axis during its revolution.

9. A means for decorating articles, said means including a revoluble pattern-carrying disk, a color-distributing roller, adapted to be rotated by contact with the disk, means whereby the roller is advanced continuously in one direction simultaneously with its rotation, and means whereby the roller at the completion of its advanced movement may be moved out of contact with the disk and returned to initial position without contacting with said disk.

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

HENRY T. EPPERSON.

Witnesses:

WILLIAM H. SCHOOLER,
H. B. ODGERS.