(No Model.)

E. GREEN & W. K. PALMER.

PAINTING MACHINE.

No. 330,318. Patented Nov. 10, 1885.

Fig. 1.

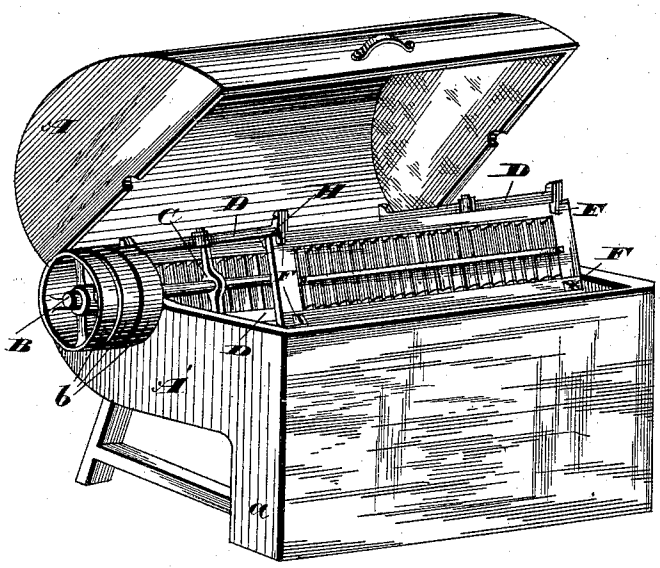


Fig. 2.

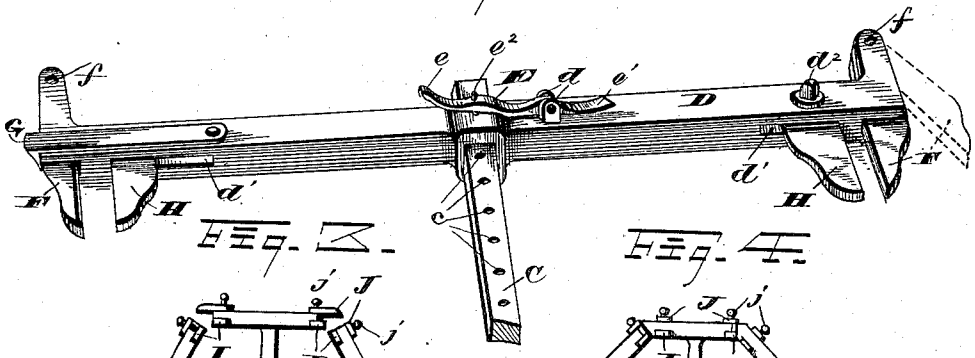


Fig. 3.

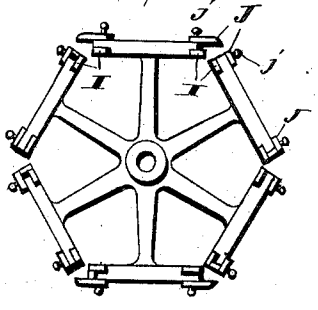
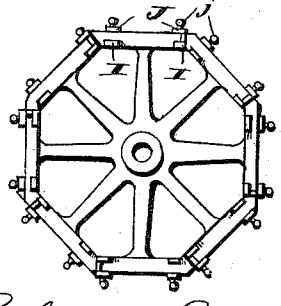


Fig. 4.



WITNESSES

Wm. M. Monroe,

Geo. W. King

Edwin Green INVENTORS

Warren K Palmer

Leggett & Leggett, Attorneys

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ELMER GREEN, OF NORTH EAST, PENNSYLVANIA, AND WARREN K. PALMER, OF CLEVELAND, OHIO.

PAINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 330,318, dated November 10, 1885.

Application filed March 23, 1885. Serial No. 159,806. (No model.)

To all whom it may concern:

Be it known that we, ELMER GREEN, of North East, in the county of Erie and State of Pennsylvania, and W. K. PALMER, of Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Painting-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to improvements in painting-machines, and is designed as an improvement on a device for which one Elmer Green has already obtained Letters Patent of the United States numbered 261,548, and bearing date July 25, 1882.

In the former device, patented as aforesaid, the articles were held by radial arms secured to a revolving shaft, said articles lying in a plane substantially radial with the shaft. If the articles were of considerable width—such, for instance, as window-blinds—there was too much difference in the motion of the outer and inner parts; also, in case of window-blinds, the holes in which the slats were pivoted in the outer stiles would be filled with paint that had been thrown outward by centrifugal force, and this paint, when dried, would stick the slats fast. We have therefore provided arms secured to, but at right angles with, the radial arms, and extending crosswise of the shaft, with suitable devices for securing window-blinds or other articles to the lateral arms, by which arrangement, for instance, a window-blind is held tangentially, instead of radially, with the shaft, and when revolved about the shaft all parts of the blind move approximately with the same speed, and the paint is thrown away from instead of into the said holes in the stiles.

In the accompanying drawings, Figure 1 is a view in perspective of our improved painting-machine. Fig. 2 is a view in perspective of one of the lateral or holding arms. Figs. 3 and 4 are views in elevation of modifications hereinafter described.

A casing is provided that in the main is cylindrical. The upper portion, A, is hinged to the lower portion and forms a cover. The lower part, A′ is mounted on suitable legs or supporting-frame, and has a pocket, *a*, that contains the paint in which the blinds or other articles are immersed. The mouth of the pocket is depressed, so as to drain the interior of the casing.

B is the driving-shaft, that is journaled in suitable boxes attached to the part A′. Usually three pulleys, *b*, are mounted on the shaft, the center pulley being a tight pulley and the other two loose pulleys, and an open and a cross belt are employed, so that the shaft may be revolved in either direction.

C are radial arms mounted on the shaft and secured by set-screws, so that the arms may be adjusted lengthwise of the shaft. These arms are preferably square in cross-section, and have a series of holes, *c*.

D are lateral or holding arms mounted, respectively, on either end of the arms C, embracing the latter with an easy fit, so that they may be moved toward or from the shaft B.

E is a small lever with a thumb-piece, *e*, and is pivoted between ears *d*, projecting from the arm D and terminating beyond the ears in a spring, *e′*, that presses the opposite end of the lever toward the arm. A pin, e^2, is secured to the lever and passed through a hole in the hub of the arm D and enters a hole, *c*, in the arm C. By pressing back the lever by means of the thumb-piece, the pin is withdrawn from the hole *c*, after which the arm D may be slid along the arm C to the position required, and when the pin e^2 is again in a hole, *c*, the tension of the spring will hold it secure. The ends of the arms D are slotted, and have holding-fingers F, pivoted at *f*, and operate in the slots. The fingers are held in the position shown in solid lines (see Fig. 2) by the springs G, that are secured to the arm and hook over the fingers. By pressing back the spring the fingers may be turned outward, as shown in dotted lines, Fig. 2.

H are sliding blocks that operate in mortises *d′* in the arms D, and are secured by set-screws d^2. These blocks are adjusted toward or from the adjacent fingers, according to the thickness of the blind or other articles to be held between the block and finger. When the parts are in position, each block and finger

are presenting toward a block and finger of the corresponding end of the arm D that is mounted on the opposite end of the arm C.

In operating the machines the arms C are adjusted on the shaft according to the length of the article to be painted, which we will suppose to be a window-blind, and the arms D are adjusted on the arms C to admit the blind widthwise between the arms D. The fingers are turned back, and the blind, after having been dipped in the paint, is laid upon the blocks H, and the fingers are turned down upon the blind and secured by the springs G. Another blind is placed in like position on the opposite end of the arms, the cover is closed down, and the shaft set in motion. The centrifugal force throws off the surplus paint that of course is caught in the casing, and returns by gravity to the paint-receptacle *a*. After a few moments the motion of the shaft may be reversed and run for a short time. The whole process requires only one or two minutes. The shaft is usually run about three hundred and fifty revolutions (more or less) per minute, the motion depending somewhat on the size of the machine. A great variety of articles may be painted in the machine at considerable reduction in cost as compared with hand-painting.

Window-blinds and other articles of irregular surfaces that are difficult to paint by hand are painted in this machine with equal facility as plain articles, and the reduction in cost is proportionately greater. If the blinds or other articles are long, one or more sets of arms may be arranged on the central part of the shaft B, and would be fac-similes of those shown.

The apparatus thus far described is especially adapted to large window-blinds. For smaller articles various modifications may be had in the holding device. For instance, as shown in Fig. 3, the radial arms are in the form of a spider, and the lateral arms are integral with the spider-arms. The lateral arms have lugs I, on which the work is laid, and any suitable device for holding the blinds, such, for instance, as buttons J, provided with thumb-screws *j*.

When buttons are turned parallel with the lateral arms, they are out of the way in placing the blinds on the lugs I, and when turned crosswise extend over the work, when by turning the thumb-screws the work is held fast.

In Fig. 4 the lateral arms are shown connected together for mutual support.

The holding devices may differ indefinitely, the essential feature being to hold the work in a plane, as aforesaid, tangentially with the shaft.

What we claim is—

1. In a painting-machine, radial arms mounted on a revolving shaft operating in a suitable casing, lateral arms secured to the radial arms, and suitable devices on the lateral arms for holding the work, and the parts so arranged that the work is held in a plane tangentially with the shaft, substantially as set forth.

2. In a painting-machine, radial arms mounted on a revolving shaft operating in a suitable box or casing, holding arms adjustably secured to the radial arms and extending crosswise of the shaft, and suitable devices connecting with the lateral arms for holding the work, and so arranged that the work is held between the ends of opposing lateral arms and in a plane tangentially with the shaft, substantially as set forth.

3. In a painting-machine, the combination, with a shaft, radial arms, and lateral arms, arranged substantially as described, of the adjustable blocks H, the pivoted fingers F, and spring-catches G, substantially as set forth.

4. In a painting-machine, the combination, with the arms C and D, arranged as described, of the pivoted lever E, spring e', and pin e^2, the latter arranged to engage holes *c*, of the arm C, substantially as set forth.

5. In a painting-machine, the combination, with a revolving shaft operating in a suitable box or casing, of suitable devices mounted on the shaft for holding the work, and so arranged that each article is held and rotated around the shaft tangentially with the shaft, substantially as set forth.

In testimony whereof we sign this specification, in the presence of two witnesses, this 13th day of March, 1885.

ELMER GREEN.
WARREN K. PALMER.

Witnesses:
ERNEST T. TAISBURY,
JOHN FERRIER.