No. 690,007. Patented Dec. 31, 1901.

E. ARMITAGE.

FABRIC COATING MACHINE.

(Application filed Dec. 23, 1899.)

(No Model.)

Fig. 1.

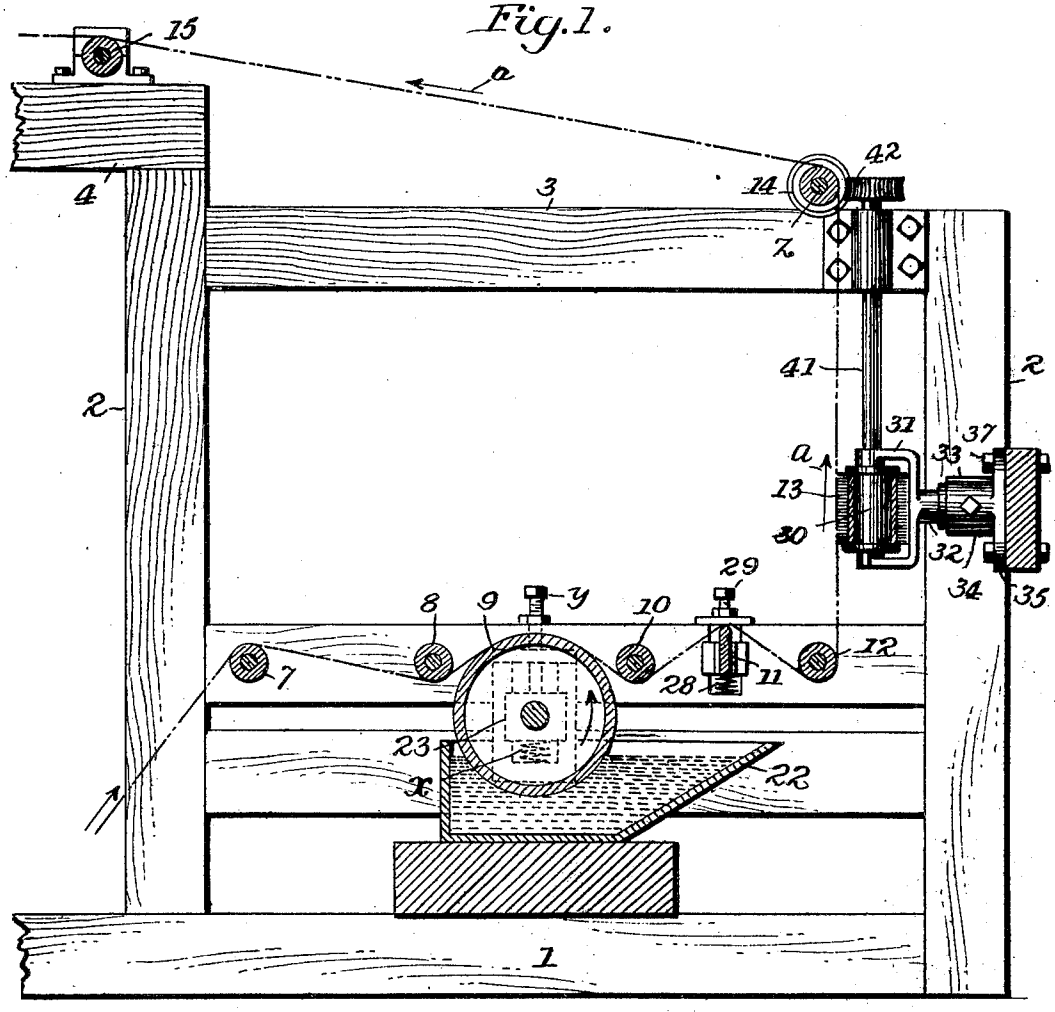
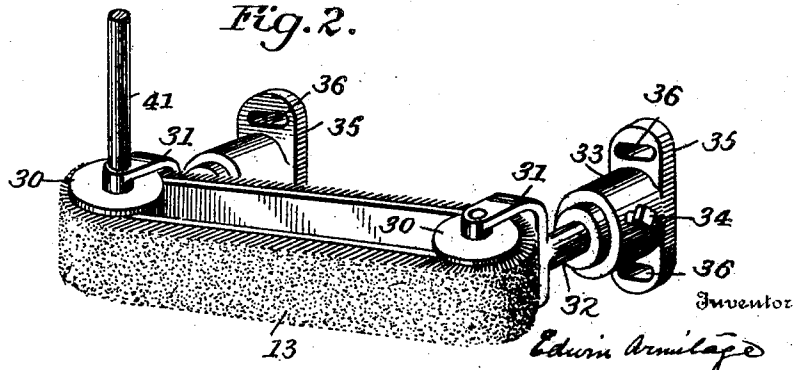


Fig. 2.



Witnesses
J. J. Finkel
Paul Steiner

Inventor
Edwin Armitage
by Foster Freeman
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN ARMITAGE, OF DETROIT, MICHIGAN.

FABRIC-COATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 690,007, dated December 31, 1901.

Application filed December 23, 1899. Serial No. 741,351. (No model.)

To all whom it may concern:

Be it known that I, EDWIN ARMITAGE, a citizen of the United States, residing at Detroit, Michigan, have invented certain new and useful Improvements in Machines for Painting or Enameling Fabrics—such as Window-Shade Cloth, Bookbinders' Cloth, and Goods of a Like Description—of which the following is a specification.

This invention relates to machines for painting or enameling fabrics—such as window-shade cloth, bookbinders' cloth, and goods of like description—and particularly relates to the devices for applying the coating material to the fabric.

The invention will be fully described hereinafter, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional side elevation of part of a fabric-coating machine embodying my invention, and Fig. 2 is a perspective view of a brush and its supports detached.

The supporting-framework may be of any suitable material and dimensions and, as shown, consists of bottom frame 1, vertical posts 2, and top frames 3 and 4.

The cloth A to be treated will pass through the machine in the direction indicated by the arrows *a* and will be unwound from a roll. (Not shown.) From the roll it will first pass over a guide-roller 7, thence under another guide-roller 8, over the coating-cylinder 9, under guide-roller 10, over scraper 11, under guide-roller 12, thence upward to contact with the brush 13, and thence over guide-rollers 14 and 15 to other parts of the machine not necessary to be specifically described.

The paint, enamel, or other coating material is placed in a pan or other receptacle 22 under the cylinder 9, and the latter will be partially immersed in the coating material, so that when revolved it will carry the coating material to the cloth. The cylinder will be journaled in spring-supported and adjustable bearings 23, in order that the degree of pressure upon the cloth may be regulated. The cylinder will be driven in the reverse direction to that in which the cloth travels over it, and this will cause a friction or rubbing between the cylinder and cloth and result in forcing the coating material into the interstices in the cloth, filling them up, and thus forming a perfect surface. The guide-rollers 8 and 10 are supported in a plane below the top surface of the coating-cylinder, and thereby force the cloth into close contact with a considerable area of the surface of the coating-cylinder. Owing to this arrangement and the direction in which the cylinder is driven the greater portion of the coating material lifted by the cylinder will be deposited on the cloth at the point of contact between the cloth and cylinder nearest to the roller 10. The thin layer which will still remain on the cylinder will be forced into the interstices in the cloth and may be termed the "priming." What constitutes the surface coating is applied just as the cloth moves out of contact with the cylinder.

Each bearing 23 is supported on a spring *x*, (only one bearing being shown in the drawing,) and a set-screw *y* engages the top of the bearing and limits the upward movement of the bearing under the action of the spring, and it is obvious that by adjusting the screw *y* the bearing may be adjusted vertically and the tension of the spring *x* be varied. All the guide-rollers are journaled in fixed bearings, and the guide-rollers 8 and 10 are so located with respect to the cylinder 9, and the downward movement of the bearings 23 against the force of their spring-supports will be so limited that no matter what the tension of the fabric A may be it (the fabric) will not be able to straighten out between the rollers 8 and 10, but must always be in contact with a considerable area of the cylinder 9. The cylinder 9 and other parts of the machine may be driven by any suitable devices, not necessary to describe. The knife or scraper 11 is also adjustable in order that its pressure on the cloth may be varied for the purpose of varying the amount of coating material to be removed by it from the cloth in order that the thickness of the coating on the cloth may be regulated. As shown, the scraper is vertically adjustable by means of spring-supports 28 and set-screws 29. It is obvious, however, that it may be journaled and adjusted to different angles of inclination, suitable locking devices being employed to retain it in its adjusted position.

The brush 13 is endless and is supported to travel transversely the line of travel of the

cloth. As shown, it is mounted upon two rollers 30, journaled in brackets 31. Each bracket has a stem 32, which fits in a socket 33 and is held therein by a set-screw 34. This arrangement permits the adjustment of the brush toward or away from the cloth to regulate its pressure on the cloth and also to compensate for wear of the bristles. Each socket is provided with flanges 35, having elongated openings 36, through which bolts 37 pass and serve to rigidly connect the sockets to the frame. The elongated openings permit adjustment of the brackets toward or away from each other to regulate the tension of the belt. One of the pulleys 30 is provided with a shaft 41, which extends upwardly and receives motion from a shaft Z, upon which the roller 14 is supported through any suitable connection, as a worm-gearing 42. As the brush travels transversely to the line of travel of the cloth, the brush will give a very smooth and even finish to the surface, entirely free from brush-lines.

Having described my invention, I claim—

1. In a machine for coating cloth, &c., a spring-supported coating-cylinder, a receptacle containing coating material in which latter the cylinder is partially immersed, means for drawing the cloth over the cylinder in contact therewith, a fixed guide-roller on each side of the cylinder below the plane of the top surface of the cylinder and under which the cloth passes, and means for rotating the cylinder, in a direction reverse to that in which the cloth moves over it, whereby the coating material is forced into the interstices of the cloth before the latter moves out of contact with the cylinder and the surface coating is applied at the line where the cloth moves out of contact with the cylinder, substantially as set forth.

2. In a machine of the class described, a spring-supported coating-cylinder, a receptacle containing coating material in which latter the cylinder is partially immersed, means for drawing the cloth over the cylinder in contact therewith, a fixed guide-roller on each side of the cylinder below the plane of the top surface of the cylinder and under which the cloth passes, means for adjusting the cylinder vertically to regulate the degree of pressure between it and the cloth, means for rotating the cylinder in a direction reverse to that in which the cloth moves over it whereby the coating material is forced into the interstices of the cloth, before the latter moves out of contact with the cylinder and the surface coating is applied at the line where the cloth moves out of contact with the cylinder, a scraper to remove surplus coating material and a brush for smoothing the coating material remaining on the cloth, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN ARMITAGE.

Witnesses:

J. O. HIBBARD,

STANTON CLARKE.