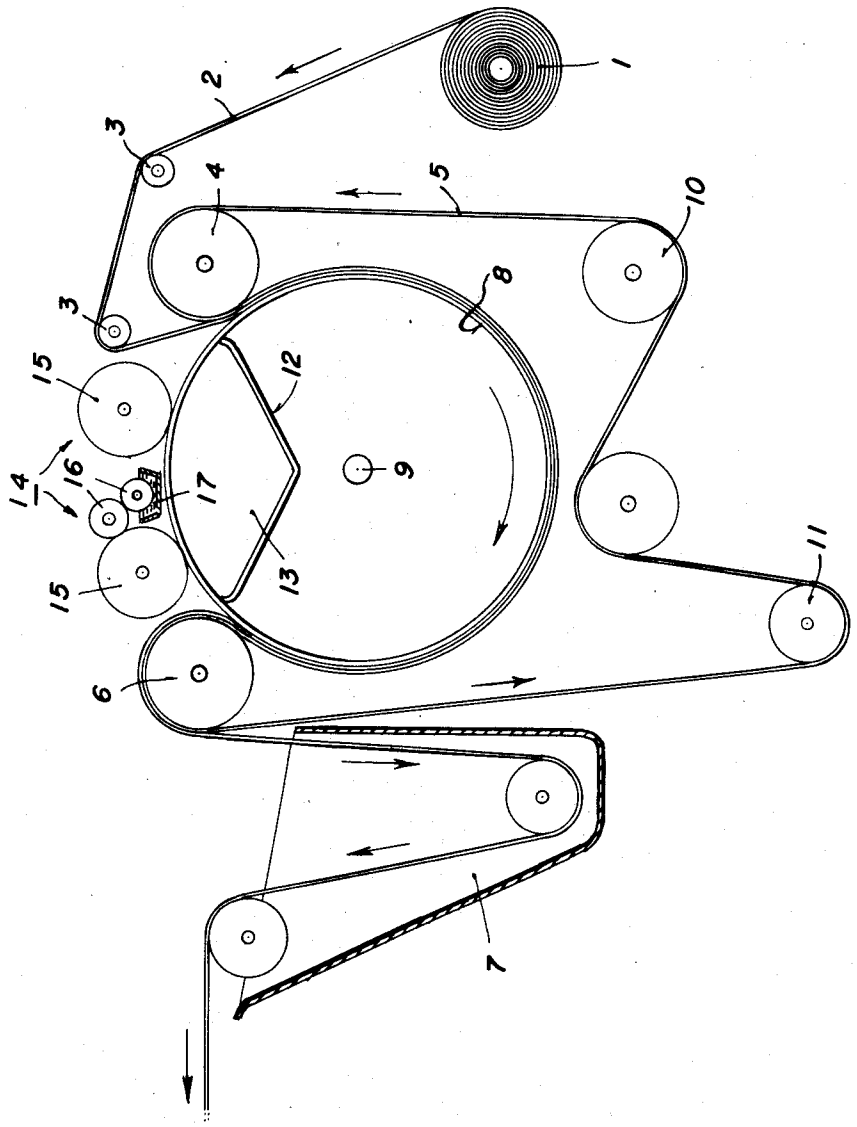
Oct. 28, 1952 T. HAEFELI 2,615,381

DEVICE FOR PHOTOGRAPHICALLY PRINTING ON TEXTILE FIBERS

Filed Dec. 9, 1949



INVENTOR

THEODOR HAEFELI,

BY Wenderoth, Lind & Ponack

ATTORNEYS

Patented Oct. 28, 1952

2,615,381

UNITED STATES PATENT OFFICE

2,615,381

DEVICE FOR PHOTOGRAPHICALLY PRINTING ON TEXTILE FIBERS

Theodor Haefeli, Lucerne, Switzerland, assignor, by mesne assignments, to Collux A. G., Vaduz, Liechtenstein, a company of Liechtenstein

Application December 9, 1949, Serial No. 132,159

1 Claim. (Cl. 95—77.5)

1

For many years the textile industry has been familiar with dyestuffs which, by way of wet or steam developing, as well as by the effects of light and heat, are developed as colours on the fiber. The clumsy process of exposing to sunlight fabric provided with such dyestuffs, on the one hand, and, on the other, the absence of suitable mechanical devices which replace sunlight—therewith making possible industrial evaluation—have contributed in support of the fact that up till now only the first named processes have been applied although light-developing, in certain respects, would have proved to be far more advantageous and more desirable.

The subject of the present invention is a device which is suitable for the formation of insoluble dyestuffs on a fabric by the application of a light sensitive dyestuff developed on the textile fiber by the action of light, the dyestuff being applied in conventional manner.

The attached drawing illustrates the subject of the present invention in cross-section.

The machine in accordance with the application is provided with an unrolling device 1 from which the fabric 2, that is to be printed or dyed and which has previously been provided with the dyestuff components, is led over the feed rollers 3 into the developing passage (between glass cylinder 8 and conveyor cloth 5), leaving same via the roller 6 in the water container 7.

The formation of the insoluble colour takes place on the fiber, during the period round the glass cylinder 8, by means of the effects of light and heat of the unit 9, which is provided for inside the glass cylinder 8.

In case the fabric in the machine in accordance with the application is to be provided with the printing pattern, either the glass cylinder 8 will carry as a negative the printing pattern to be transferred, or a stencil bearing the printing pattern in negative is placed round the glass cylinder 8 so that the formation of the colour takes place in the reverse order.

The glass cylinder 8 is freely suspended in the conveyor cloth 5 and without any lateral bearing or guide whatever. It is pressed by this cloth, by means of load roller 10, against the two upper guide rollers 4 and 6, as a result of which the requisite squeezing between conveyor cloth 5, material 2 and glass cylinder 8 (and possibly stencil) occurs.

The driving roller 11 sets the conveyor cloth 5 in motion whereby the glass cylinder 8 also revolves in the same direction and automatically carries along with it the fabric 2, that is to be printed, from the feed roller 4 to the exit roller 6.

The top surface of the glass cylinder must have a constant controllable degree of heat. Since the light-heat unit must never be exposed to a current of cold air and, consequently, the air in the

2

glass cylinder 8 never directly allowed to cool down, the reflector 12, provided for above the unit, has been designed as a cooling system in the sense that the current of air of the fan is led between the reflector 12, built as an air flue 13, and the upper quarter of the glass cylinder 8 so that in this way the requisite cooling takes place on the revolving cylinder 8.

Any deposit of dyestuff on the glass cylinder when working for several hours is prevented by a wiper device 14 provided for on the upper quarter of the glass cylinder 8, and which wiper device consists of two rollers with plush coating 15, one of which is moistened by two additional rollers 16 which carry a glycerine mixture out of the container 17. Actuation of this device is effected, similarly, directly by the revolving glass cylinder, but can also be coupled to the drive roller 11.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

An automatic apparatus for producing color patterns with a light sensitive dye on a textile fabric, comprising, a revolving glass cylinder suspended along a portion of its periphery by an endless conveyor belt, a printing pattern attached to said cylinder, radiant heating and illuminating means supported within said cylinder, a driving roller in contact with said conveyor belt to drive said conveyor belt and glass cylinder, guiding rollers to guide said conveyor belt, a fabric feeding roller to feed the fabric between the conveyor belt and the revolving cylinder, a tensioning roller between said fabric feeding roller and said cylinder to provide smudge-free contact between the fabric and the glass cylinder, a shaped reflector within said glass cylinder, an air flue and cooling means above said glass cylinder and moistened wiping device in peripheral contact with said glass cylinder to wipe said cylinder.

THEODOR HAEFELI.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,361,555	Weiss	Dec. 7, 1920
1,972,323	Shiraeff	Sept. 4, 1936
2,027,229	Hinman	Jan. 7, 1936
2,041,478	Niederle	May 19, 1936
2,204,297	Brunk	June 11, 1940
2,214,365	Flynn et al.	Sept. 10, 1940
2,320,334	Bates	June 1, 1943
2,373,040	MacDonald et al.	Apr. 3, 1945
2,467,241	Streich	Apr. 12, 1949