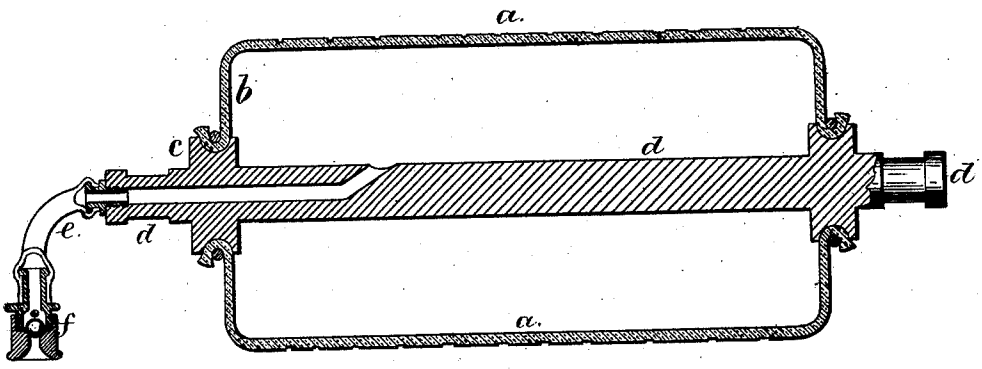
H. GMEINER.

Manufacture of Colored Papers.

No. 223,337. Patented Jan. 6, 1880.




Witnesses

Chas. H. Smith

William G. Mott

Inventor

Hermann Gmeiner

per Lemuel W. Serrell

atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

HERRMANN GMEINER, OF DRESDEN, SAXONY, GERMAN EMPIRE.

## MANUFACTURE OF COLORED PAPER.

SPECIFICATION forming part of Letters Patent No. 223,337, dated January 6, 1880.

Application filed December 11, 1879.

*To all whom it may concern:*

Be it known that I, HERRMANN GMEINER, manufacturer of colored paper, of Dresden, Kingdom of Saxony, German Empire, have invented certain Improvements in the Manufacture of Colored Paper, of which the following is a specification.

In order to produce certain designs and patterns in colors upon the surface of paper I employ one or more rollers or cylinders of elastic material, such as vulcanized india-rubber, filled with compressed air. The diameter of such rollers or cylinders I determine by the pressure of the air. These rollers or cylinders are closed at the ends, and supported by an axle in a frame. I produce upon the surface of such rollers or cylinders of elastic material, such as vulcanized rubber, any suitable design or pattern. This may either be done by cutting the design or pattern out of the india-rubber or vulcanized-rubber surface or by cutting the ground out of it; or it may be produced by a mold, into which the rubber is forced before curing or vulcanizing.

In the drawing the roller is represented sectionally.

The elastic cylinder *a* and its heads *b* are connected to rings *c* on the axle *d;* and *e* is a tube at one end of the axle for introducing air, and *f* is the valve for retaining the air.

The design or pattern will present itself raised.

I employ these rollers or cylinders of india-rubber or vulcanized rubber in the following manner: In the machine used in the manufacture of colored paper the advancing paper is covered with the moist color in the well-known manner. On this paper covered with moist color the cylinder or roller of india-rubber or vulcanized rubber is placed with its axle in suitable bearings. The roller or cylinder is extended to any desired diameter by forcing air into it, so as to distend the same and the pattern thereon more or less. Any suitable tube and valve or cock is employed for introducing and retaining the air under pressure that is forced into the cylinder. The roller will revolve by the contact with the advancing paper, and projecting portions of its engraved surface will take up more or less of the color and the designs or patterns in the moist color on the paper.

I am especially enabled to produce by these rollers or cylinders designs or patterns with very soft shading, which have not been produced hitherto by mechanical contrivance.

The great elasticity of the roller allows considerable of the surface thereof to be in contact at one time with the paper, and the circumference of the roller can be varied to stretch or distend the pattern more or less.

I claim as my invention—

1. Producing designs or patterns on colored paper by hollow cylinders or rollers of elastic material, such as vulcanized rubber extended by air blown into them, in the surface of which india-rubber or vulcanized-rubber cylinders or rollers designs or patterns have been previously engraved.

2. An elastic cylinder or roller the surface of which contains the design or pattern in raised and depressed portions, in combination with an air-inlet and valve or cock, by means of which the roller is distended more or less by the contained air under pressure, substantially as set forth.

This specification signed by me this 5th day of November, 1879.

HERRMANN GMEINER.

Witnesses:

LÉON KLEMPERER,

PAUL DRUCKMÜLLER.