

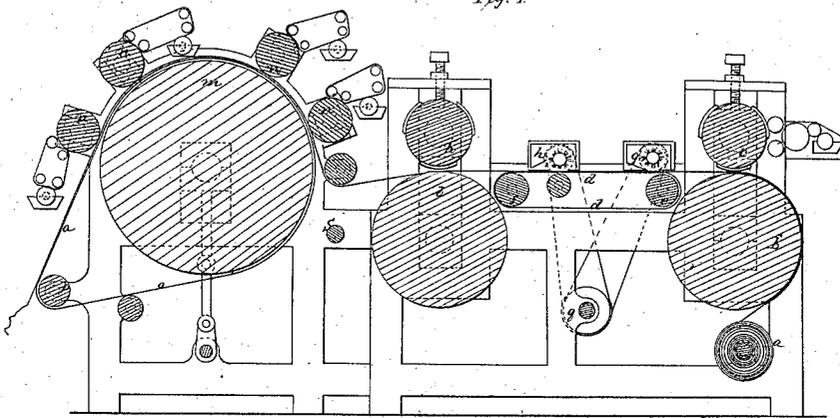
*E. S. Ormsby*

*Embossing Paper Hangings.*

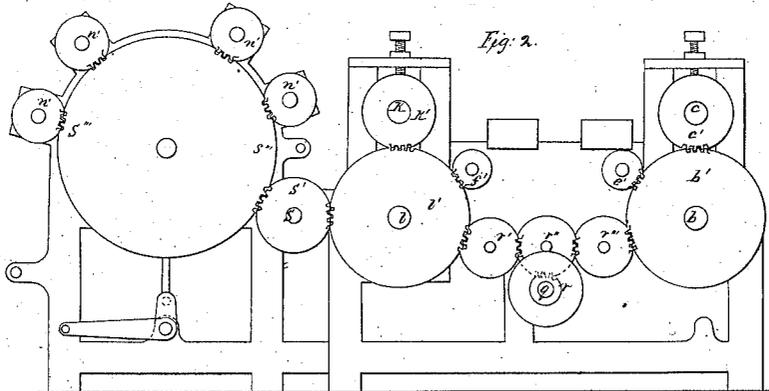
*N<sup>o</sup> 97,221.*

*Patented Nov. 23, 1867.*

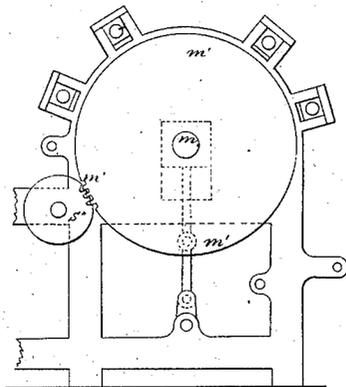
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses;*  
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*Inventor;*  
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*att'y.*

# United States Patent Office.

ELISHA S. ORMSBY, OF NEW YORK, N. Y.

Letters Patent No. 97,221, dated November 23, 1869.

## MACHINE FOR PRINTING AND EMBOSsing PAPER-HANGINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ELISHA S. ORMSBY, of New York, county and State of New York, have invented a new and useful Improvement in Machines for Printing and Embossing Paper-Hangings, and other articles; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention.

Figure 2 is a side elevation thereof.

Figure 3 is an end view of the same.

Similar letters indicate corresponding parts.

This invention consists in the combination of a rotary size-printing apparatus, with a rotary embossing-apparatus, and with a rotary water-color printing-apparatus, either or both, all being geared together in such a manner that a sheet of paper, or other material, after having been passed through the rotary size-printing apparatus, is immediately delivered to the rotary embossing-apparatus, and also to the rotary water-color printing-apparatus, and thereby the correct position of said paper or other material is preserved, and the printing and embossing are effected with ease and correctness.

The paper, or other material to be printed, is taken from a reel, *a*, and runs over a drum, *b*, and between this drum and a printing-cylinder, *c*. Said paper or other material is printed with size or ink, of a quick-drying nature, the cylinder being supplied with size or ink from an ordinary fountain.

From this size-printing apparatus *b c*, the paper or other material passes on to an endless apron, *d*, which runs over a pair of rollers, *e f*, with the same speed as the paper or other material passes through between the size-printing apparatus.

Over this apron are two revolving brushes, *g h*, driven in an opposite direction to that of the paper, the brush *g* being for the purpose of supplying the bronze, and the brush *h*, for removing the surplus bronze from the paper or other material.

In case gold-leaf is to be used, the brush *g* must be removed, and the gold-leaf placed by hand upon the printed design.

When the paper or other material leaves the apron *d*, it passes through between the revolving embossing-cylinder *k*, and a drum, *l*, and thence on to a revolving drum, *m*, where a number of printing-cylinders, *n*, prints thereon the various water-colors.

From the drum *m*, the paper or other material

passes off on an endless apron, *o*, which is stretched round said drum and a roller, *p*. The course of the material to be printed is shown in fig. 1, in a blue line.

All the printing-cylinders, drums, and rollers, are geared together, and driven by the driving-shaft *q*, in the following manner:

A pinion, *r*, on the shaft *q*, (see fig. 2,) transmits its motion, by means of intermediate wheels *r' r'' r'''*, to the wheels *b'* and *l'*, which are fastened upon the shafts of the drums *b* and *l*.

The cylinders *c* and *b* are geared together with their respective drums, and the rollers *e* and *f* are driven by the wheels *b'* and *l'*.

The wheel *l'* also gears into a wheel, *s'*, firmly fixed to the end of a shaft, *s*, which runs through the machine transversely, and is provided at the rear side with another wheel, *s''*, of the same diameter as the wheel *s'*, which gears into a large wheel, *m'*, fixed to the axis of the drum *m*.

The printing-cylinders *n* are driven by the wheel *s'*, in front of the machine, by means of a large intermediate wheel, *s''*, (see fig. 2,) which wheel runs on a stationary stud, independent of the drum *m*, this arrangement being necessary in order to be able to lower the drum, when the paper is to be inserted between the printing-cylinders and the drum, without disconnecting the gearing of said cylinders *n* from the driving-power of the machine.

By this arrangement I am enabled to pass sheets of paper or other material through my machine, the size-printing apparatus, the embossing-apparatus, and the water-color printing-apparatus being geared together, in such a manner that they will come in contact with the paper, precisely at the correct spots, which could not be effected, if the various apparatus were used detached.

I am aware of the English patent to J. Booth, No. 322, of 1865, in which a number of small rollers is arranged, around the periphery of a cylinder, whereby the paper is first covered with a coating of satin-white, then printed with different colors, and finally embossed. I disclaim Booth's invention.

I do not claim, as my invention, either of the devices above described, when separately considered; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the sizing-rollers *b c*, embossing-rollers *n l*, and printing-rollers *m n n*, when the same are arranged and operate substantially as herein described,

2. In combination with the above, the bronzing-

apparatus *d e f g h*, when arranged substantially as herein shown and described, between the rollers *k l*, *b c*.

3. The arrangement of the sizing-rollers *b c*, embossing-rollers, *h l*, printing-cylinder *m*, and rollers *n*, and the bronzing-apparatus *d e f g h*, all operating substantially as herein described.

4. A printing and embossing-machine for paper and other materials, consisting of a rotary size-print-

ing apparatus, *c d*, a rotary embossing-apparatus, *k l*, and a rotary water-color printing-apparatus, *m n*, substantially in the manner shown and described.

This specification signed by me, this 2d day of November, 1868.

ELISHA S. ORMSBY.

Witnesses:

W. HAUFF,

ERNEST F. KASTENHUBER.