J. Z. GIFFORD.

Manufacture of Paper Stencils.

No. 211,988. Patented Feb. 4, 1879.

Fig. 1.

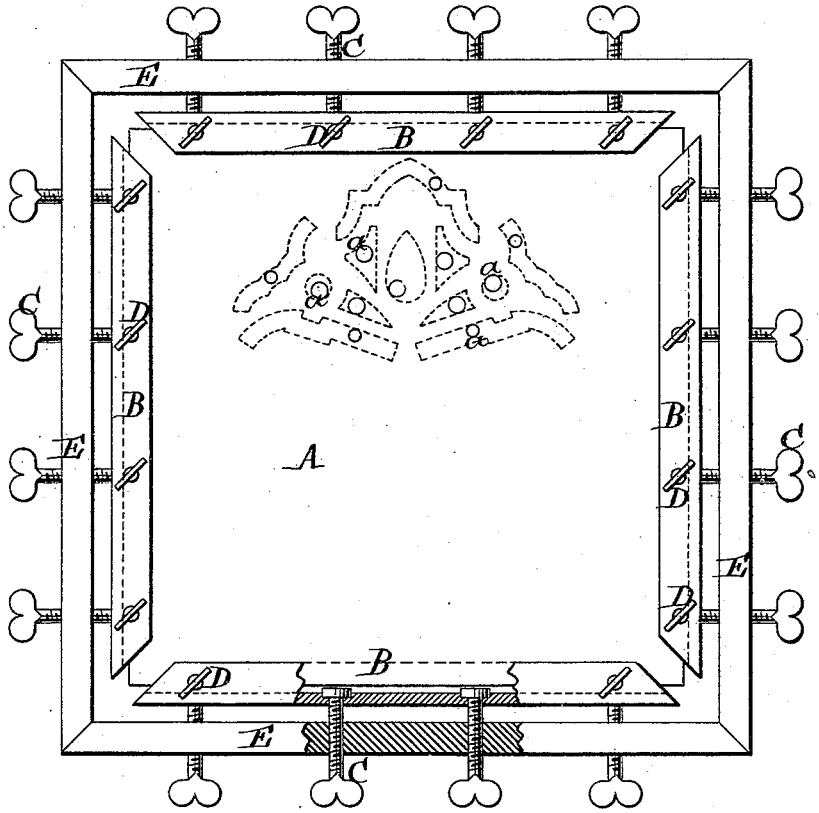
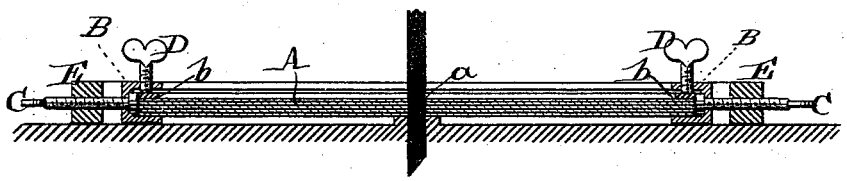


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN Z. GIFFORD, OF NEW YORK, N. Y.

IMPROVEMENT IN MANUFACTURE OF PAPER STENCILS.

Specification forming part of Letters Patent No. **211,988**, dated February 4, 1879; application filed December 4, 1878.

To all whom it may concern:

Be it known that I, JOHN Z. GIFFORD, of the city, county, and State of New York, have invented a new and useful Improvement in the Manufacture of Stencils from Paper and other materials, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan or top view of an apparatus used in carrying out my invention. Fig. 2 is a cross-section of the same.

Similar letters indicate corresponding parts.

The aim of my invention is to facilitate the sawing of stencils for frescoing and other purposes from paper and like materials, and to lessen the cost of manufacturing this class of articles.

Prior to my invention paper stencils have been made by simply laying the materials on a table or board and following the lines of the pattern to be produced with a knife. This operation, obviously, is a tedious one, and is therefore not practically adapted to the manufacture of stencils on a large scale. Paper has also been prepared for sawing the same into ornamental shapes by compressing a number of laminæ between two boards, and cementing the edges of the whole with a strong fabric.

The disadvantage attending this process is that the boards can be used only once, and also that considerable time is consumed in cementing the edges of the paper and the boards. To overcome the disadvantages narrated I clamp the paper or other material on its edges and stretch the same in a suitable frame or apparatus, and then perforate the same adjacent to the lines of the pattern to be produced to admit the cutting instrument, thereby bringing the material to a suitable condition to be cut by means of a saw. I make use of an apparatus consisting of a frame carrying stretching-screws and of edge-gages carrying clamping-screws, the edge-gages being connected to the stretching-screws within the frame, as hereinafter more fully set forth.

In carrying out my invention I place upon each other a number of sheets, A, of the paper or other material to be sawed out, and clamp or tightly compress the edges of the material, so as to obtain a firm hold thereof and prevent the sheets from shifting, this purpose being accomplished by inserting the edges of the material in gages B, and tightening a series of screws, D, arranged on such gages. I then stretch the laminæ so as to bring the same to a taut condition by means of stretching-screws C, engaging with the edge-gages B and working in a frame, E; and, finally, after the pattern has been marked on the upper sheet, punch into and through the material as many holes as there are lines to the pattern, as indicated in Fig. 1, the holes being formed at random in those portions of the pattern which are to be cut out. I thus prepare the laminæ of paper or other material so that it can be cut out by means of a saw without loss of time, and without causing the destruction of the devices used by the ensuing sawing operation.

In sawing out the paper or other material prepared according to my invention, the frame E is placed on a bed, as shown in Fig. 2, and the end of a jig-saw is successively inserted in each of the perforations *a*. This saw is made to follow the line or lines of the pattern by simply moving the frame E over the bed in the proper directions.

I have found that the operation of sawing out the pattern is improved by providing the bed of the saw with a boss around the saw to support the material at that point, as shown in Fig. 2.

Between the clamping-screws D and the surface of the material held in the edge-gages B, I interpose a strip, *b*, of wood or other material, to distribute the pressure of said screws and protect the material.

It may be remarked that one or two of the edge-gages B can be stationary, and also that a single stretching-screw can be used in connection with each of the gages, in which case slides are used to guide the gages in and outward.

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

1. The within-described method of forming stencils from sheets of fibrous material, the same consisting, first, in tightly stretching the sheets of material to bring them to a taut condition; second, marking the desired pattern on the upper sheet; third, perforating all the sheets at a point within the pattern to be

formed; and, finally, cutting out the pattern, substantially as described, whereby a series of patterns are simultaneously formed at one operation, as set forth.

2. The combination, with the surrounding frame E, carrying set-screws C, of the edge-gages B, connected with the screws C, and slotted or grooved longitudinally on their inner edges to receive the edges of the sheets of laminæ, a wooden or other strip arranged within said slots or grooves, and set-screws D, passing transversely through the gages B, with the slots or grooves therein, and bearing against the said strips, for clamping the sheets of laminæ, substantially as and for the purpose described.

In testimony that I claim the foregoing I hereunto set my hand and seal this 7th day of November, 1878.

JOHN Z. GIFFORD. [L. S.]

Witnesses:
W. HAUFF,
CHAS. WAHLERS.