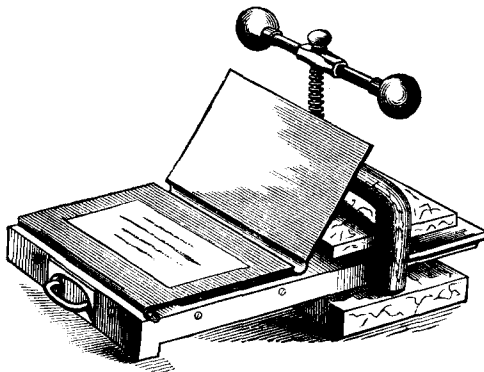


ZUCCATO'S PAPHYROGRAPH.

Report of the Committee on Science and the Arts of the Franklin Institute.
Adopted August 1st, 1877.

The Papyrograph is a new process for the rapid production of facsimile copies of manuscripts, pen drawings, &c. It was invented by Eugenio De Zuccato, of Padua, Italy, and patented in the United States November 24th, 1874, and January 4th, 1876. * * * *
The process is very simple, and may be briefly described as follows:

The Company holding the patent, supply, to their licensees, sheets of paper that have been made waterproof by a resinous, flexible varnish, applied on one side of the paper; on the opposite side, the



manuscript or drawing is to be executed with a steel pen, using a special ink composed of a concentrated alkaline solution with suitable coloring matter added to it. The effect of this ink wherever it touches the paper is to destroy its waterproof quality by attacking the varnish. The sheet is

then floated on the surface of water, the written side uppermost, and in a few minutes the water makes its way up through the paper to the alkaline ink, and completes the solution of the varnish at those points. It is then brushed with a camel's hair brush and plenty of water, and all the dissolved varnish washed out of the pores of the paper, thus producing a porous stencil of the manuscript. A special printing ink or "color" is furnished, composed of glycerine and aniline violet; a small quantity of this color is brushed over the written side of the stencil sheet and it is then placed face downwards on a printing pad of velvet, which has been previously saturated with the same "printing color."

A waterproof folio is furnished, having a central leaf made of heavy sheet zinc, with an aperture slightly larger than the printing pad; the pad with the porous stencil being properly placed in the

folio, the zinc is turned down so that the marginal frame holds the stencil sheet in place on the pad, and then all is ready for printing. All that is now necessary is to place a sheet of ordinary paper on the stencil, close the folio on it, slide the whole into an ordinary copying press and apply a slight pressure for a moment; a portion of the color is forced through the stencil to the clean sheet in contact with it, and the copy is complete.

Several hundred copies may be printed from the one stencil, and without replenishing the printing color in the pad beneath it.

It will be seen by the foregoing description, that all the manipulations are simple and easily acquired, the materials and apparatus always ready and in order for immediate use. In the opinion of this committee, these are great advantages over any other method which they know of for duplicating manuscripts.

The copies are fac-similes of the originals, with all the characteristic light and heavy touches of the pen, and music can therefore be well duplicated.

We suppose it is possible for the manufacturers to make other colored inks besides the violet one now furnished, and if so, we think that a more permanent ink is desirable than one made of aniline.

In conclusion, the committee commend the invention for its ingenuity, simplicity, and its easy application to the many practical uses for which it is adopted.

(Signed),

SAMUEL SARTAIN,
OTTO SUTHY,
HENRY R. HEYL,

Sub-Committee.

Lontin Magneto-Electric Machines.—Among the many candidates for favor in electric lighting, plating, etc., are the dynamo-electric and magneto-electric machines of Lontin & Co., 24 Rue Cassette, Paris. They are made both for continuous and for reciprocating currents, and the same machine may be used either as a motor or for lighting, or simultaneously for both objects. The regulation of the light is said to be so perfect, that it is specially adapted for naval service; pitching, rolling, wind, and the other inconveniences of navigation, have no influence on the steadiness of the light.—*Les Mondes.* C.