(No Model.)

G. H. DAVIS.

METHOD OF PRINTING FROM STENCILS.

No. 421,561 Patented Feb. 18, 1890.

Fig. 1.

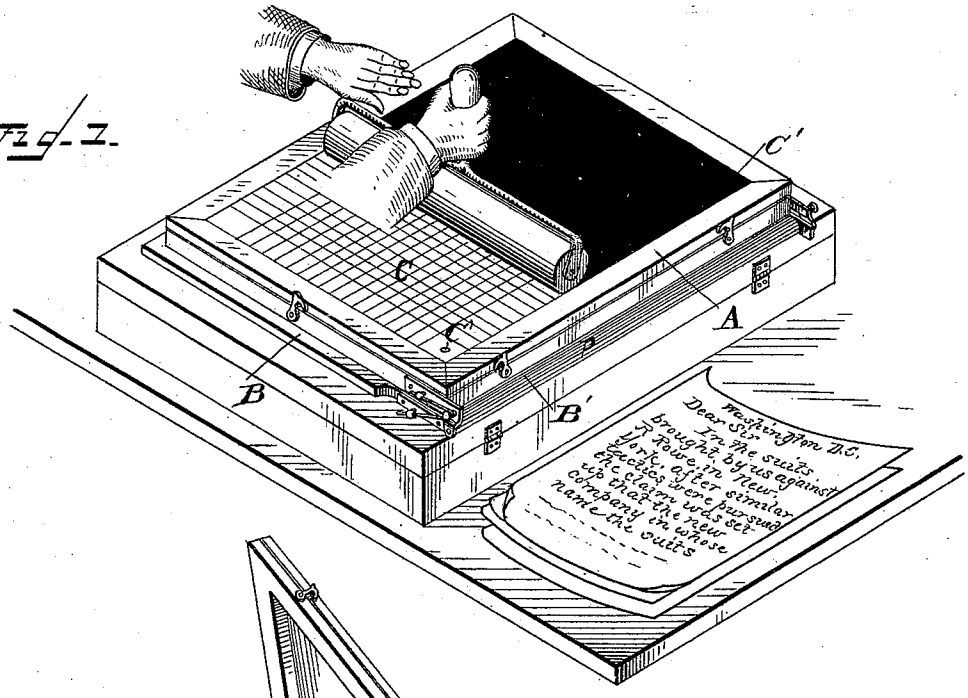
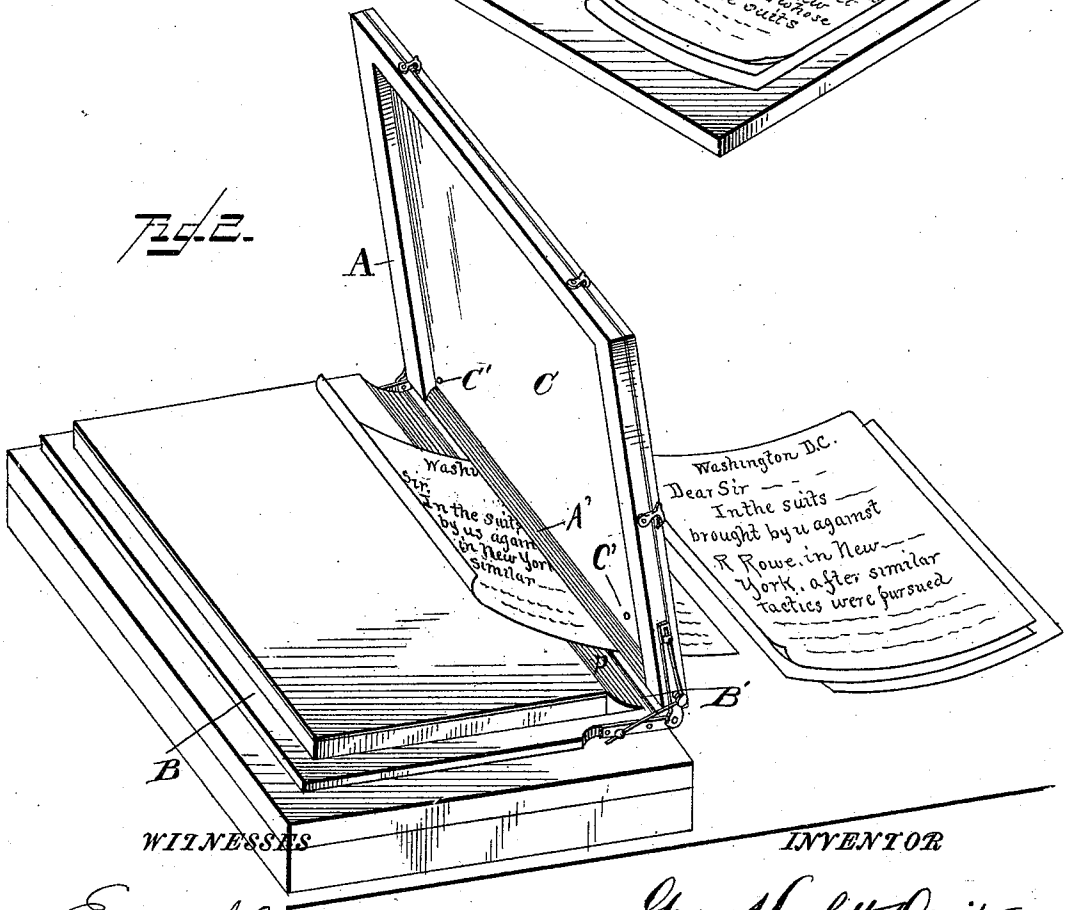


Fig. 2.



WITNESSES

Enoch G. Johnson

T. B. Harrison

INVENTOR

George Howlett Davis

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE HOWLETT DAVIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

METHOD OF PRINTING FROM STENCILS.

SPECIFICATION forming part of Letters Patent No. 421,561, dated February 18, 1890.

Application filed March 7, 1889. Serial No. 302,322. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HOWLETT DAVIS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented an Improved Method of Printing from Stencils, of which the following is a full and clear description.

My invention relates to that class of duplicating apparatus which employs a printing-stencil, and has for its object to provide a practical method for automatically discharging the sheets from the printing-stencil to the outside of the duplicating apparatus after they have been printed.

In order to clearly describe and illustrate my improved method, I show in the accompanying drawings a duplicating apparatus, the peculiar construction of which is claimed in a patent granted to me on June 4, 1889, No. 404,708, and in my application of even date, Serial No. 302,321.

In the accompanying drawings, Figure 1 shows the duplicating apparatus elevated on a box with the stencil-frame closed, and Fig. 2 shows the same apparatus with the stencil-frame opened.

A is a stencil-frame with the inner side A′ rounded off, and is joined to the printing-board B by means of hinges placed to the extreme sides thereof, the said printing-board being cut away between the hinges, so as to provide an incline P and in order to form a large longitudinal opening B′ between the hinged sides of the printing-board and stencil-frame upon the latter being opened.

S are springs placed at either side of the apparatus next the hinges, and are of sufficient tension to raise the frame very rapidly.

The operation of my improvements is as follows: The sheet of paper to be printed is placed on the printing-board and the stencil-frame closed and held down by the left hand while the roller is being passed over the stencil with the right hand. After the stencil has been inked the left hand is removed, whereupon the springs raise the frame very rapidly to about the height shown in Fig. 2, and the rapid upward movement of the stencil creates a suction of air or a vacuum between it and the sheet, whereby the latter is lifted part or entire way with the stencil, and afterward falls or shoots in a slanting direction through the large longitudinal opening specially provided therefor and delivers itself upon the table beyond. The rounded side A′ of the stencil-frame and the incline P of the printing-board serve to slide the lower edge of the falling sheet into the opening, should it strike them in falling.

It is advisable, though not always essential, before commencing to print, to slightly bend or curl one side of the pile of paper to be printed, so that each sheet when placed on the printing-board presents a slightly-concave surface to the stencil, as greater air-suction or a more perfect vacuum is thus made when the stencil-frame is raised, thus lifting the printed sheet with greater certainty. The side of the sheet which is curled is best placed farthest from the hinges.

C′ C′ are air-holes made through the stencil C, and the air coming through these small holes when the stencil-frame is raised assists in releasing a sheet in case it adheres to the stencil too long; but these air-holes are not necessary except when the ink coming through the perforations tends to make the printed sheet adhere thereto.

It is obvious that my invention can be applied to all classes of duplicating apparatus which employ a printing-stencil by providing a suitable opening in such a position that when the sheet is raised by and discharged from the stencil it will fall through the same. In some duplicating apparatus the printing-board and stencil-frame are hinged at the end instead of at the side, in which case it would be necessary of course to provide the opening at the end instead of at the side. The certainty with which the sheets are raised with the stencil depends entirely or largely upon the rapidity with which the stencil-frame is raised, particularly at the commencement of its upward movement, and hence I prefer to employ suitable springs for raising the frame, not only because they do it better and more regularly than could be done by hand, but also because their use saves the time and labor of raising the frame in the latter way; but of course my improved method is applicable to either manner.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described method of printing and discharging a sheet from a duplicating apparatus, which consists in coiling or bending the sheet to be printed and placing the said sheet on the printing-board with concave side up, impressing the same and raising the stencil-frame after the impression with sufficient rapidity to create a suction of air or produce a partial vacuum, whereby the printed sheet is first raised above the printing-board and then falls to the outside of the apparatus.

In testimony that I claim the above I have hereunto set my hand and seal.

GEORGE HOWLETT DAVIS. [L. S.]

Witnesses:
JAS. B. NEWLIN,
R. M. GEDDINGS.