(No Model.)

W. ZIMMERMAN.

LETTER COPYING APPARATUS.

No. 358,954. Patented Mar. 8, 1887.

Fig. 1

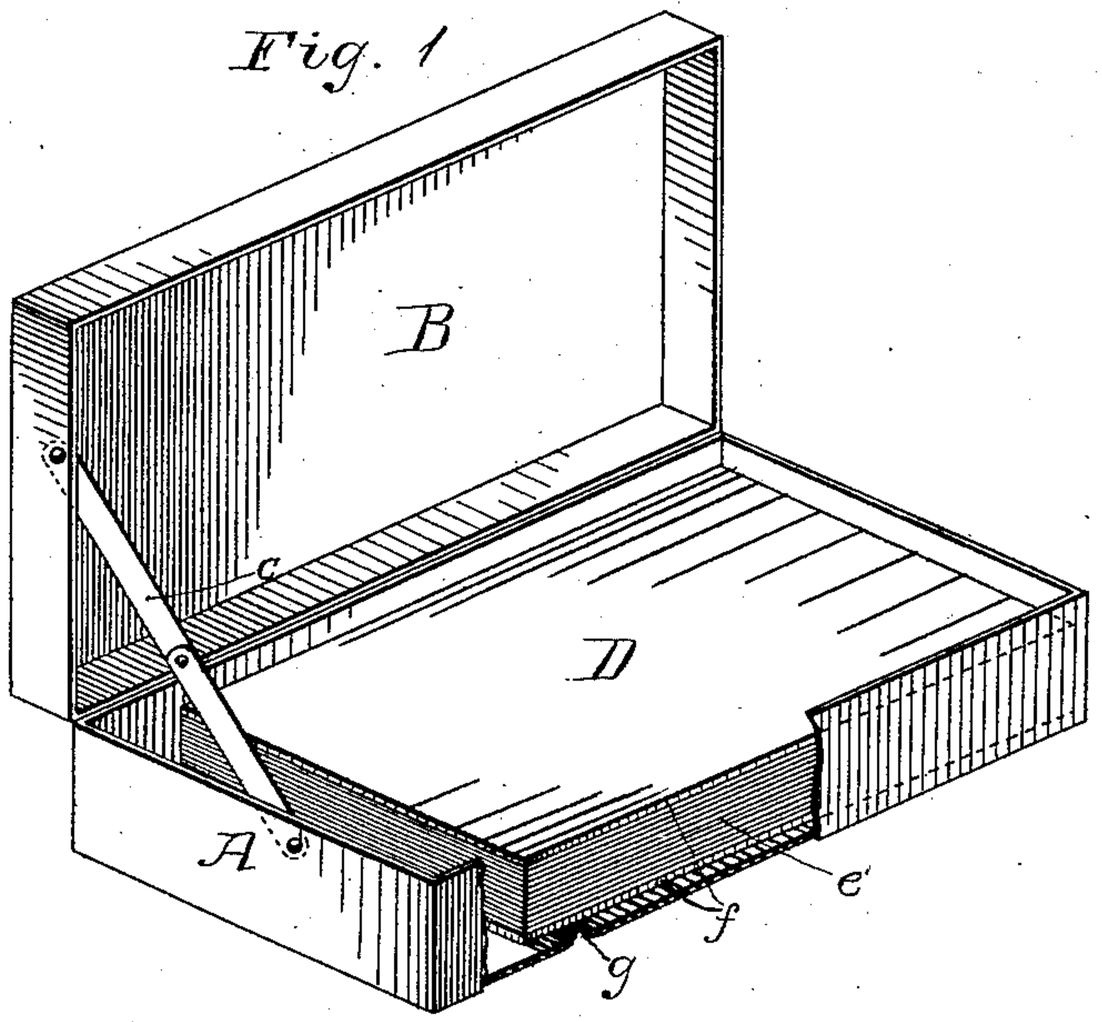


Fig. 2.

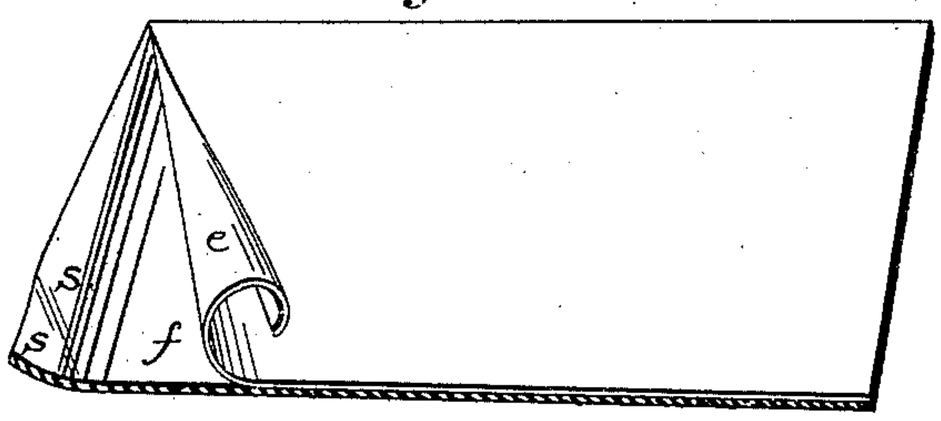
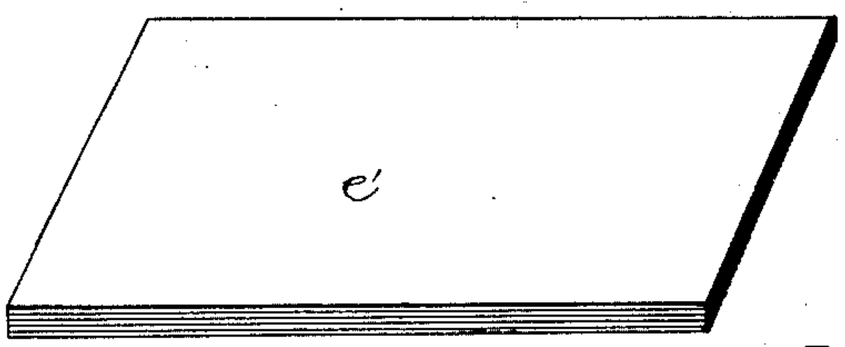


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM ZIMMERMAN, OF CHICAGO, ILLINOIS.

LETTER-COPYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 358,954, dated March 8, 1887.

Application filed June 5, 1882. Serial No. 63,289. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ZIMMERMAN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Letter-Copying Apparatus; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 represents my apparatus complete. Fig. 2 represents one of the blotters attached to one of the sheet-metal plates, partly rolled back from one corner. Fig. 3 represents a set of blotter-pads.

Like letters of reference indicate like parts.

The object of my invention is to provide a more convenient, rapid, and perfect method and apparatus for copying business letters, &c., and one that shall at the same time dispense with the use of a brush, water-cup, oiled board, dry blotter, and the unpleasant slop attendant upon the old or common method; and to that end I construct and use my apparatus as follows, viz:

I provide two sheets of medium or light weight zinc or other metal of the full size of or slightly larger than the paper used in writing, and upon one side of each of two sheets of zinc, *f*, I attach a sheet of good medium or thick blotting-paper, *e*, in any well-known manner. A series of sheets of blotters, *e'*, are then cut of the same size as the zinc plates *f* and laid between them, which, after being properly dampened, completes the part D of the apparatus. A box, A, with a hinged lid, B, held by a brace, *c*, at one end, called the "upper end," is also provided. Said box is preferably made somewhat wider and about an inch or more longer than the plates *f*, and the bottom of the box provided at the upper end of the plates *f* with a transverse ridge, *g*, to hold it up from the bottom of the box, so that the fingers may readily pass under to lift it up, or the ridge *g* may be dispensed with and the plate *f* turned at its upper edge, *s*, or one corner thereof; but the former construction is preferable. A part of the front of the box is broken away in Fig. 1 to show the apparatus D lying on the ridge *g*.

When all the different parts of the apparatus are constructed as described, the apparatus D is taken from the box and a plate, *f*, replaced, with its attached pad facing upward, and so that the plate shall touch the back or front and lower end of the box with its edges. Then a pad, *e'*, is drawn through clean water and laid upon the plate in the box, with its edges touching the same sides of the box as the plate *f*; then two or three dry blotters, with their edges touching the same sides of the box as those of the blotter already in; then another wet blotter, and so on until all the blotters are in the box, after which the remaining plate *f*, with its attached blotter touching the blotters, is placed in the box in the same way, with its attached blotter upon the pads *e'*, thus piling up the part D in a proper manner, after which it is taken out and placed under a press and strong pressure applied for a few minutes. This causes all the pads in the pile to become equally dampened and of the proper degree for immediate use. When thus prepared, the apparatus D is replaced in the box A, kept closed ready for use.

To copy a series of sheets written upon one or both sides, the apparatus D is taken out of the box and a plate, *f*, replaced, with its attached blotter facing upward and touching two sides of the box, as before described, and upon this is then laid a sheet of copying-paper, with its edges touching the same sides of the box that the plate *f* touches. Then the writing to be copied is laid upon the copying-paper, and upon this sheet is laid, back to back, another written sheet. Upon this a copying-sheet, and over these a damp blotter, and so on, and over the last copy the plate *f*, with blotter down. If the sheets have writing on both sides, then copying-paper is laid upon the writing and a damp blotter upon it, and so on, in all cases observing to pile up every sheet and part in the box with their edges touching the same side and end of the box both for the purpose of neatness and uniformity, and because in so doing the sides of the box form a guide, by the help of which the parts may be placed much more conveniently and quickly than if attempted without the use of the box. When copies are to be made in copying-books, the order of the sheets remains the same, of course, and then the plates *f* serve the double purpose

of keeping the extraneous leaves of the book dry and of dampening the parts inside of them.

A copying apparatus made and used as here described possesses these practical advantages, viz: first, only two metal plates are required for a series of many dampened pads; second, the metal sides protect the leaves of the book when copies are made in it and save the expense and handling of oiled boards; third, the two metal plates serve to keep all the intermediate dampened pads from drying and warping; fourth, all intermediate pads can be used for copying from both sides of each at the same time; fifth, all the sheets are easily and quickly brought to the proper degree of moisture; sixth, with the box the edges of the blotters are kept moist uniformly with the interior parts, and, also, the parts are quickly, easily, and properly piled upon each other.

What I claim is—

The apparatus D, formed of plates *f*, provided with fixed blotters *e* and series of loose blotters *e'*, all uniformly dampened, in combination with covered box provided with transverse ridge *g* at one end of the apparatus D, substantially as specified.

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