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A. D. KLABER.
PROCESS OF MAKING STENCILS.
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Fig. 1

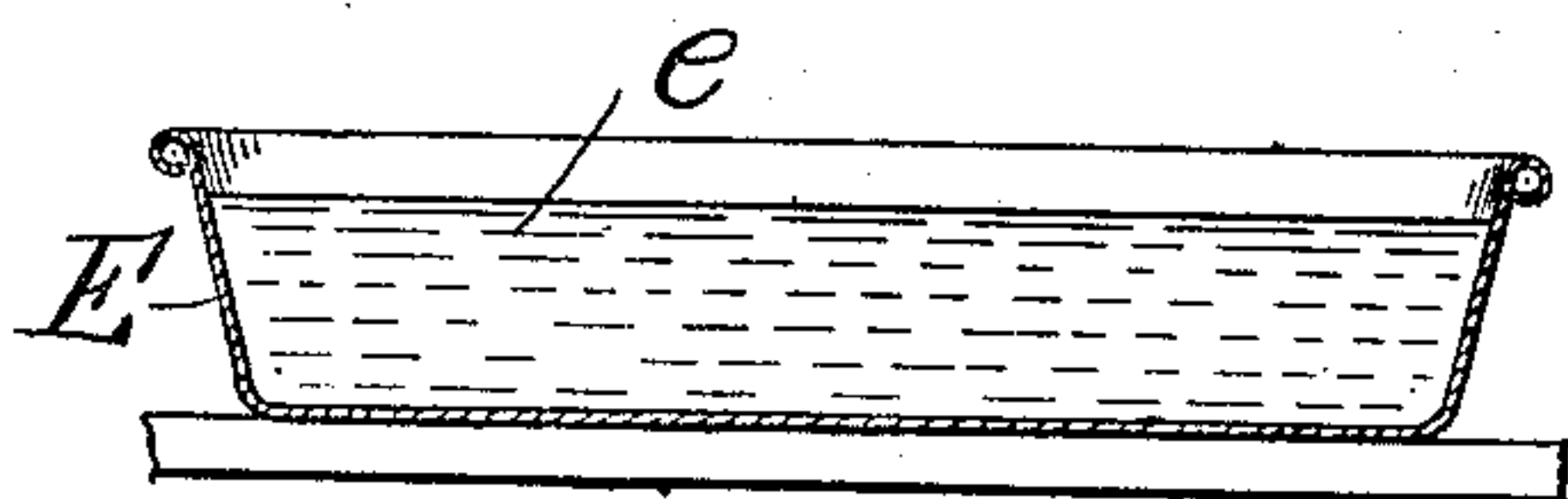
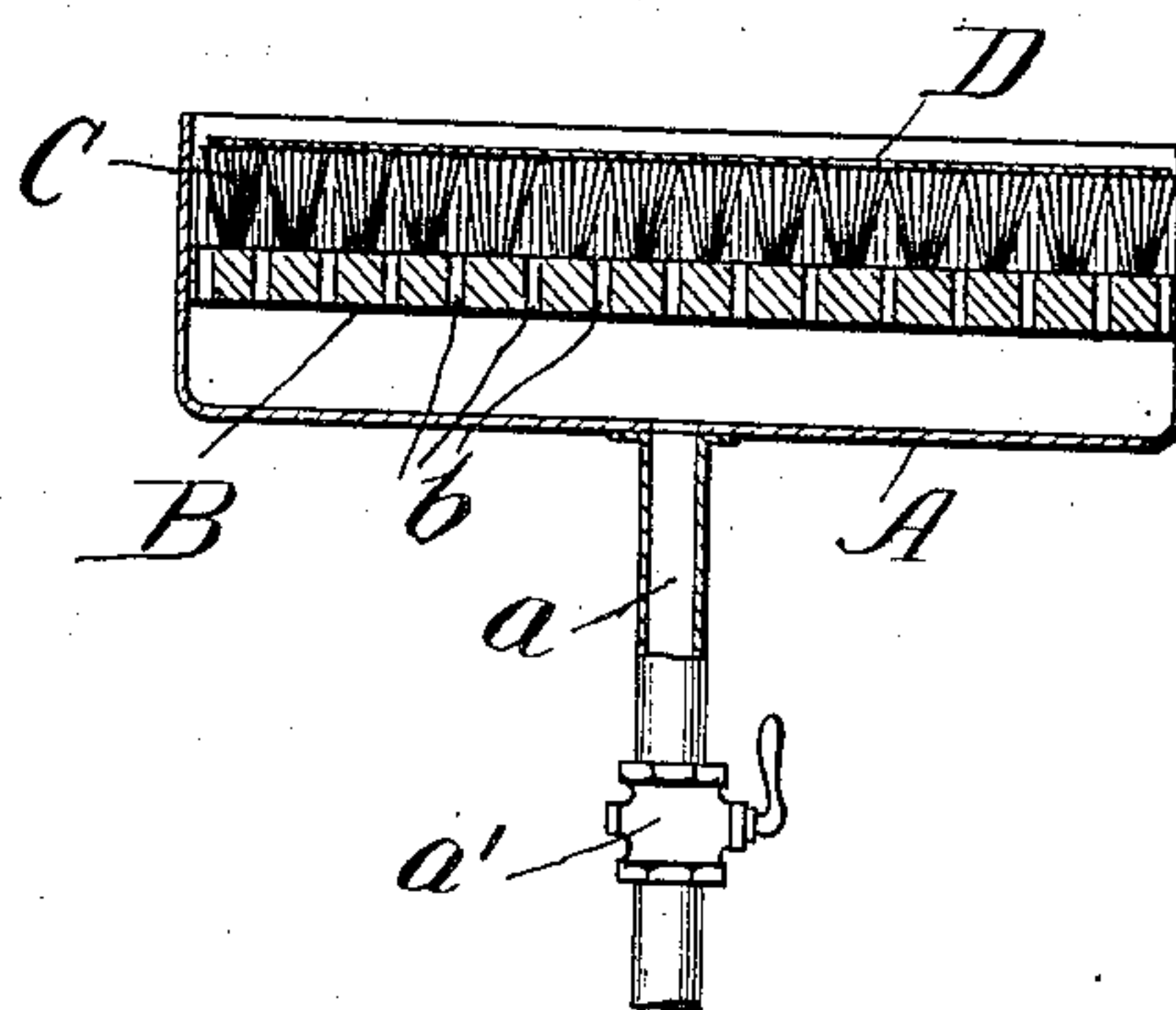


Fig. 2



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AUGUSTUS D. KLABER, OF LONDON, ENGLAND.

PROCESS OF MAKING STENCILS.

No. 848,557.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed November 30, 1906, Serial No. 345,619.

To all whom it may concern:

Be it known that I, AUGUSTUS D. KLABER, a subject of the King of Great Britain, residing at London, England, have invented a certain new and useful Improvement in Processes of Making Stencils, of which the following is a specification.

This invention relates to a process of making stencil-sheets for the duplication of type-written or autographic matter.

The object of the invention is to provide a process of manufacturing stencil-sheets possessing great strength, such that they will be capable of use under conditions much more severe than those to which the stencil-sheets as now commonly made may be subjected.

The invention is directed particularly to the production of stencil-sheets which may be used in addressing-machines, though the sheets made in accordance with the process may be used as well in other ways. In such machines a movable member is employed, which is brought down upon a suitable stencil to force the duplicating-ink through the interstices therein and upon a letter, envelop, wrapper, or other article supported on a suitable platen. The stencil-sheets now in common use consist of an open porous base having thereon a wax-like coating, such as paraffin. The base is usually a sheet of tissue-paper of open fibrous construction, such as that known as "yoshino" paper, and the wax-like coating of paraffin is applied to both sides thereof. On account of the blow upon the stencil-sheet struck by the movable member of the addressing-machine, sheets constructed in this manner are not suited for such use.

My invention consists in applying to a suitable stencil-sheet—as, for instance, one constructed in the manner above described—a strengthening-film which may consist of any suitable varnish. This strengthening-film is applied to the sheet after the stencil is cut and for that reason must be so applied as not to settle in the interstices cut in the sheet. The preferred manner of preventing such clogging of the interstices by the strengthening compound is by causing a flow of air through the interstices cut in the stencil, either while applying the strengthening compound thereto or immediately after such application and before the film has dried. In this way a sheet is obtained having the characters cut therein and strengthened sufficiently to withstand the conditions of use in

an addressing-machine without even partially closing the interstices through which the duplicating-ink is to be forced to print the characters upon the envelop or other impression-sheet.

The invention is independent of the form of apparatus used in the manufacture of the sheet, and any suitable apparatus may be employed for the purpose. The base of the sheet may consist of the open porous tissue, as above described, or of a sheet of silk bolting-cloth, the latter being preferred in some cases because of its greater strength. To this sheet is applied the wax-like coating of paraffin in the manner now common in the manufacture of stencil-sheets for duplicating upon such machines as the well-known mimeograph. With the sheet thus formed the operation of "cutting" the stencil is performed, this consisting in removing the wax along the lines of the characters to be printed in any suitable manner. The cutting of the stencil is usually effected by placing the sheet in a type-writing machine and operating the type-writer in the usual manner, the blow of the type upon the sheet serving to remove the wax therefrom along the lines of the characters to be printed. If desired, the operation of cutting the stencil may be performed by hand, using a pointed stylus with which to remove the wax-like coating. After the stencil has been cut the strengthening-film is applied thereto. This may be done in any desired manner, as by drawing the sheet through a bath of a suitable varnish or by applying the varnish to the sheet with a brush. Any suitable strengthening compound may be used, but preferably one which dries very quickly. I have used a shellac varnish with good results, and a volatile linseed-oil compound may also be employed. While applying the strengthening compound to the sheet or immediately thereafter and before the compound has dried currents of air are caused to flow through the interstices in the stencil-sheet along the lines of the characters to be printed, such as will prevent any of the compound from settling and drying in these interstices, so as to partially or entirely clog them. During this operation the sheet should not be subjected to too great a strain, since otherwise it will be torn before the strengthening compound has hardened to such an extent as to assist in withstanding these strains. I have found it desirable to support the sheet upon bristles while forcing

the air through the interstices, so that the sheet will be supported at a multiplicity of distributed points, all of these points being very small, so as not to impede the flow of air through the interstices. This operation is continued while the strengthening compound is drying and hardening, little time being required for this purpose, since the strengthening compound dries very quickly.

By this process a stencil-sheet is provided having a strengthening-film additional to the wax-like coating of paraffin, this strengthening-film being applied after the stencil has been cut in the usual manner. The interstices in the sheet, however, are quite open, so that the duplicating-ink may pass freely therethrough, since the blast of air through the interstices prevents any of the strengthening compound from settling therein, and for this reason the characters printed with the stencil upon the impression-sheet are as clear and well defined as those obtained with a sheet not provided with the strengthening compound. The sheet thus made is therefore well adapted for use upon an addressing-machine, with which the stencil is subjected to severe strains occasioned by the blow thereon necessary to force the duplicating-ink through the interstices.

I have illustrated in the accompanying drawings a type of apparatus which may be employed in practicing the process, Figure 1 being a central section of a coating-pan, and Fig. 2 a similar view of a drying device.

Referring first to Fig. 2, A indicates a pan having a plate B mounted therein a little above the bottom. In this plate are a plurality of distributed openings *b*. Secured on and extending upwardly from plate B are bristles C, all of the same length and covering practically the entire surface of the plate. A pipe *a* enters the bottom of pan A and has a cock *a'* therein. This pipe connects with a pump for drawing air from the pan.

If the stencil-sheet D is to be coated with the strengthening-film on one side only, it is laid

upon the ends of the bristles C and the film applied to its upper surface, as with a brush. The pump then draws air through the interstices in the stencil-sheet between the several bristles and through the openings *b* in plate B, pan A, and pipe *a* while the film is hardening, and thus prevents the film from settling in and clogging the interstices in the sheet. When the film has dried, the cock *a'* is turned off, the sheet removed, and another one is similarly treated.

If it is desired to coat the sheet with the strengthening-film on both sides, a pan E for the strengthening-varnish *e* is arranged close to the pan A. The operator grasps a sheet at two of the corners and passes it through the bath of varnish *e*, so that all parts of the sheet become immersed and on taking it out carries it over to and lays it upon the bristles C. The operation of drying the film is then performed in the manner above described.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. The process of making stencils which consists in cutting the characters to be reproduced in a stencil-sheet, then applying a strengthening compound to the sheet, and causing a flow of air through the interstices formed in cutting the stencil to prevent the compound from clogging the interstices, substantially as set forth.

2. The process of making stencils consisting in cutting the characters to be reproduced in a stencil-sheet, then coating the sheet with a quick-drying varnish, and causing a flow of air through the interstices formed in cutting the stencil before the varnish has dried to prevent the varnish from clogging the interstices, substantially as set forth.

This specification signed and witnessed this 21st day of November, 1906.

AUGUSTUS D. KLABER.

Witnesses:

I. McINTOSH,
D. S. EDMONDS.