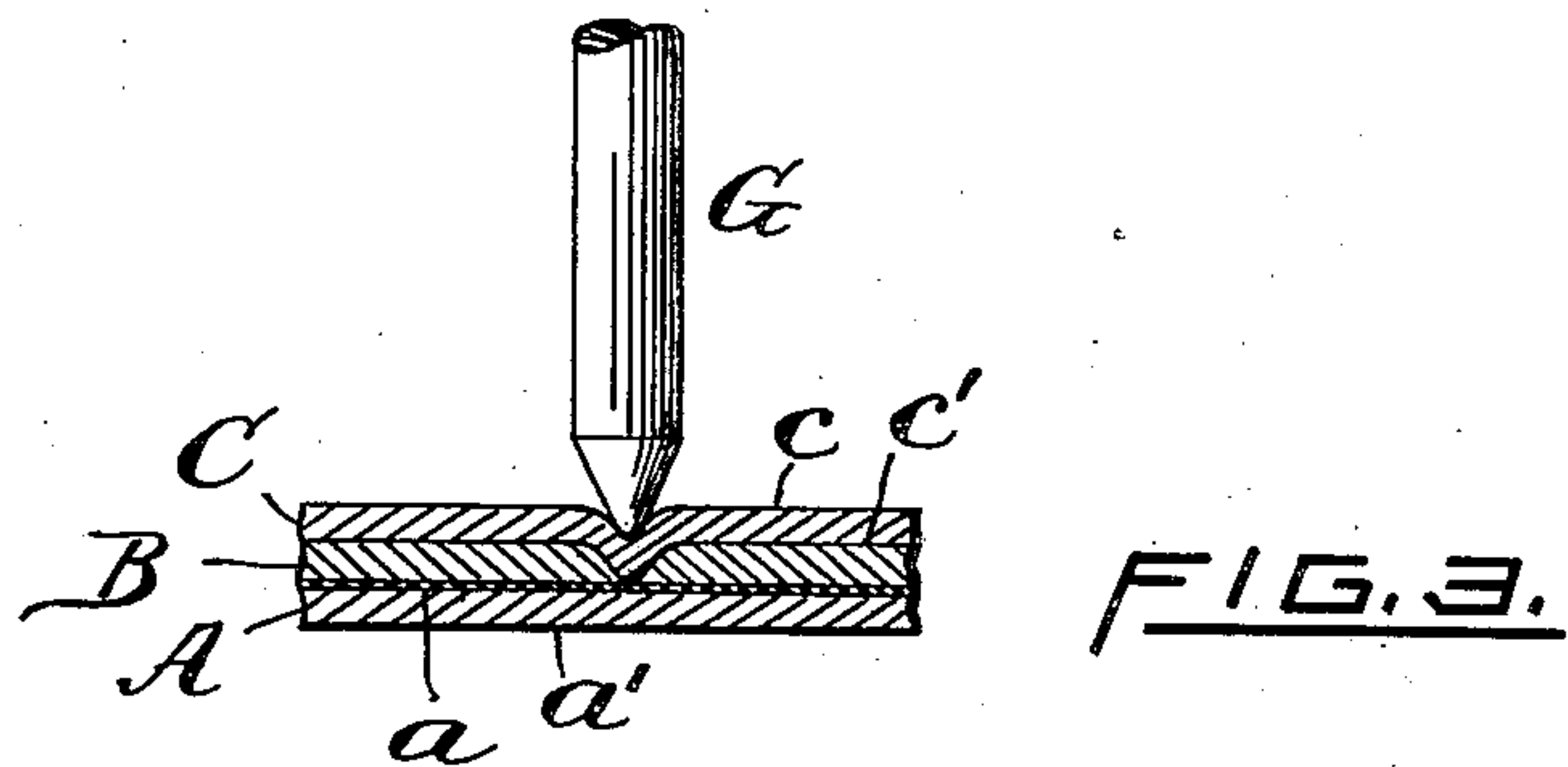
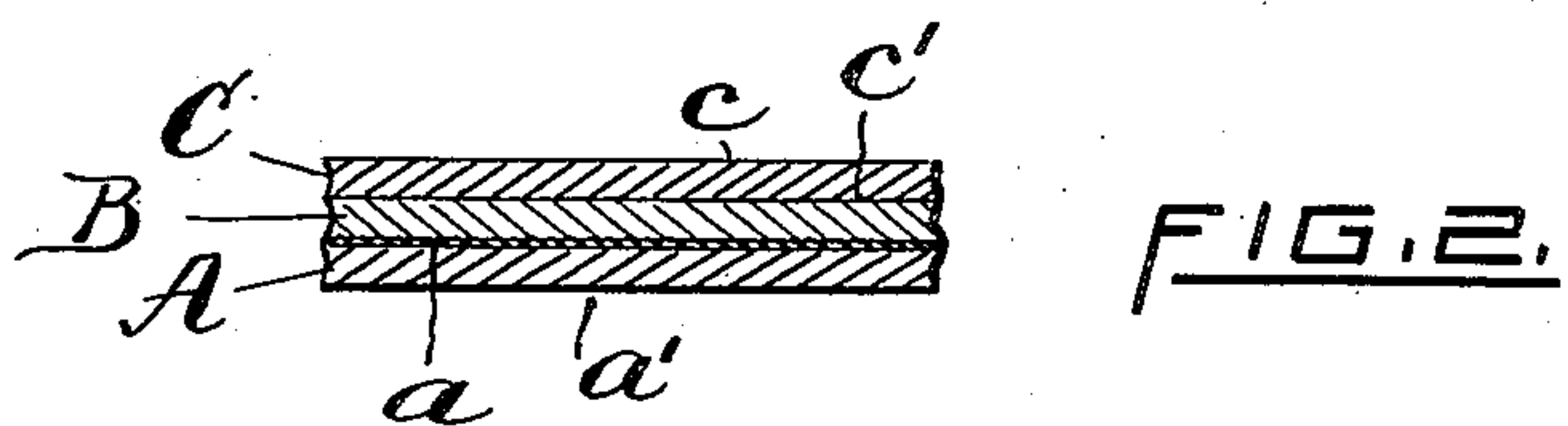
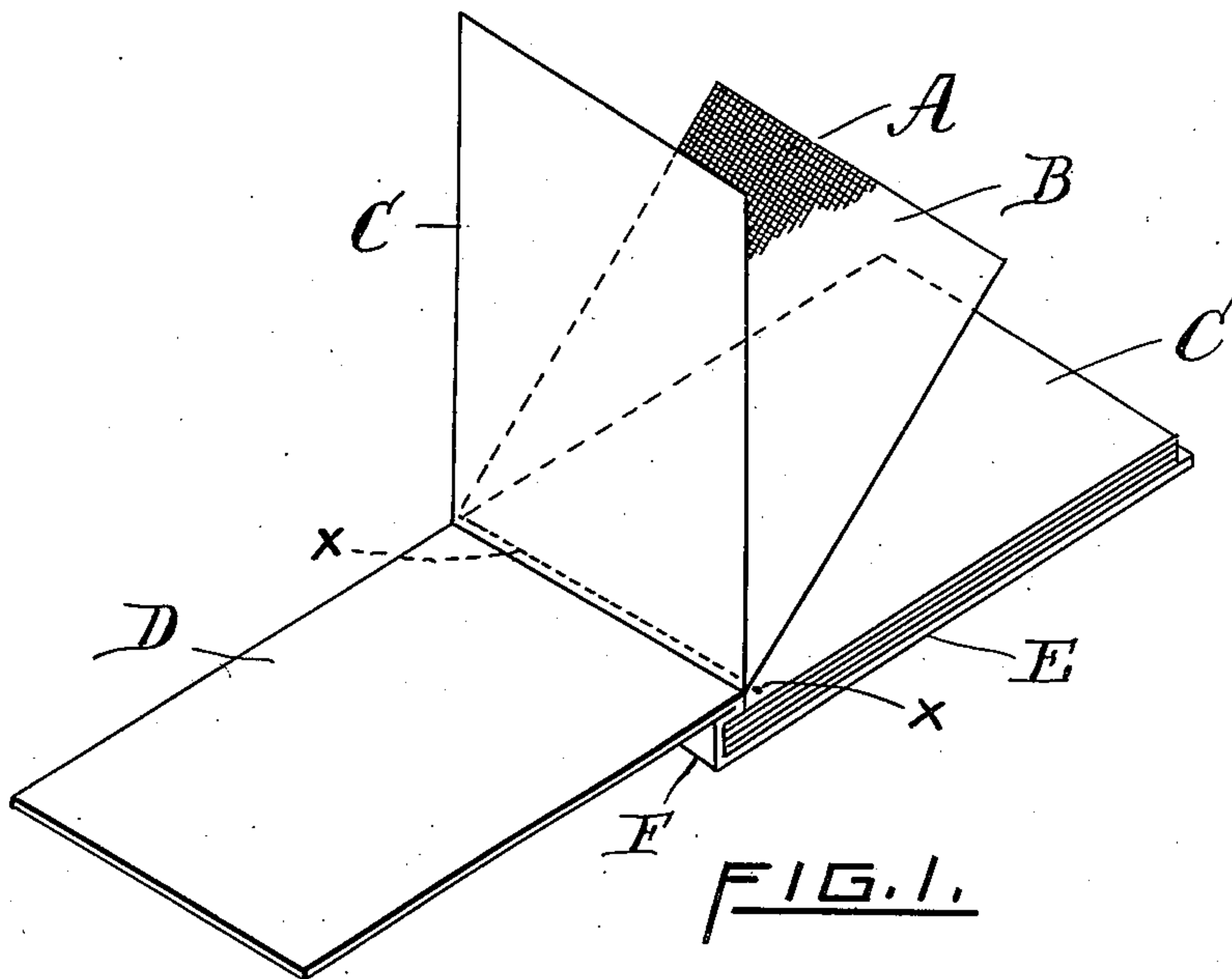


No. 886,782.

PATENTED MAY 5, 1908.

W. E. EASTERBROOKS.
BOOK FOR MANIFOLD WRITING.
APPLICATION FILED FEB. 1, 1907.



WITNESSES.

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WALTER E. EASTERBROOKS, OF WARWICK, RHODE ISLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF, AND ARNOLD A. WILKINSON AND JESSE W. CORDERY, BOTH OF PROVIDENCE, RHODE ISLAND.

BOOK FOR MANIFOLD WRITING.

No. 886,782.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed February 1, 1907. Serial No. 355,209.

To all whom it may concern:

Be it known that I, WALTER E. EASTERBROOKS, a citizen of the United States, residing at Warwick, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Books for Manifold Writing, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to books for use in manifold writing and is illustrated in the accompanying drawings.

Figure 1 is a perspective view of my said improved book and of the several kinds of the leaves thereof. Fig. 2 is a cross sectional view of a piece of the compound or coated leaf A, B, with a piece of the plain white leaf C laid in loose contact therewith. Fig. 3 is the same as Fig. 2, except that the operation of a pencil or stylus point thereon is illustrated to show the indentation of the lead C and of the coating B to disclose portions of the black surface of the leaf A as hereinafter described.

Like reference letters indicate like parts.

In Fig. 1 is shown a plurality of said compound or coated leaves A, B, and of said plain white leaves C in alternation bound together in a book whose covers are designated D and E and the back of said book as F. Each of the sheets C has a row of perforations *x* to facilitate the removal of said sheets from the book.

The second sheet of the series shown in Fig. 1, as bound in the book has a smooth, white, calendered coating or surface, marked B in said figure, spread upon and covering the black surface of the sheet A, as presently explained. In said Fig. 1 a portion of said coating or surface B is represented as removed from the sheet A in order to disclose the black surface of the sheet A.

The compound sheet A, B, is made as follows. On the black side of the leaf A is spread a composition of matter made preferably of five parts of lard oil or grease and one part of glycerin, which, when coated upon the leaf A, is covered with pulverized French chalk and calendered. The chalk is laid on evenly and in sufficient quantity to absorb the liquid and to do so before the paper can absorb it. To make this delay in the absorption of the liquid by the paper, I prefer to

give said black surface to the leaf A by printing the same thereon with an oleaginous ink, or by a black calendered glaze. The glazing or oil of the print partially destroys the bibulous or absorptive property of the leaf A, so that when the grease and glycerin are applied thereto, as aforesaid, they do not sink into or penetrate the paper readily, and the immediate application of the chalk fully takes up the grease and glycerin and makes a pasty mass. Thus the white or outer side of the leaf A is not stained, discolored, or in any manner injuriously affected. This mass of chalk mixed with the glycerin and the oil or grease is brought to about the consistency of soap and is spread evenly over the leaf by a roller, spatula, or other suitable implement. The surface or coat so formed is white, or nearly white, and is indicated in the drawing as B, one edge thereof being therein shown as broken away in order to disclose the black surface of the leaf A.

The leaf A having the coat or surface B of soft greasy chalk is then subjected to calendering rolls, or hot pressure plates, or any other mechanical means known in the art of paper manufacture, and the white coating B is compressed, hardened and brought to or nearly to a polish or glaze, thereby presenting a uniform and substantially white finish, the interior portions of the white coating B being somewhat softer than the outer surface.

Upon writing with a pen or pencil upon one of the leaves C of common, white paper, the pressure of the pen or pencil through said leaf C of common, white paper makes corresponding marks upon the manifolding paper A, B, beneath. The portion of the white glazing or coating B, which receives this pressure, yields to the same and is broken through or spread laterally by the wedge-like pressure of the pen or pencil, and the black surface of the leaf A shows through along the lines of such pressure, thus making an exact duplicate copy upon the manifolding leaf B of that which is marked or written on the leaf C of common writing paper, the copy being visible and legible in black lines upon the white ground. The pen- (or pencil-) written leaf C, which is the original document, is removed and mailed, filed, or otherwise used, and the duplicate copy.

made upon the manifolding paper A, B, as described, is the copy reserved by the writer for his own files.

In Fig. 2 is shown on a greatly enlarged scale a cross sectional view of a portion of the plain, thin, white leaf C, and also a portion of the coated, manifolding leaf A, B. The plain, white leaf C has the upper surface *c* and the lower surface *c'*. The sheet or leaf A has the black, permanent surface *a* of dried ink or glaze and the white surface *a'*, both of which surfaces *a* and *a'* are smooth and calendered. B is the white coating made of said composition of matter, smooth and calendered, and detachable under pressure from the black surface *a* of the sheet A.

In Fig. 3 are represented on the same scale said leaves C and A and the said coating B and the said surfaces *c*, *c'*, *a*, *a'*. G is a pencil or similar writing instrument, having a slightly blunted, conical point. The pencil point resting upon the exposed page *c* of the leaf C of plain, white paper is pressed downward thereon and indents the same, thus forming the conical projection extending downward from the lower surface *c'* of the leaf C. By the continued downward pressure of the pencil point, the apex of said paper projection is sunk through the soft glaze or coating B and spreads the latter radially, thus uncovering the black, permanent surface *a* of the manifolding leaf A, and any linear movement of the pencil point along the surface *c* of the leaf C will develop said apex or projection in a linear direction, and cause a lateral spread of the coating B, thus uncovering a corresponding portion of the black permanent surface *a* of said leaf A. In this manner black lines will be disclosed through the white glaze or coating B, showing the black surface *a* of the leaf A in lines or points corresponding to those written upon the leaf C by the pencil or instrument G.

It is seen that by the use of my improved paper, the carbon sheets commonly employed for manifolding are entirely dispensed with. This manner of duplicating writings is more clean and expeditious and less expensive, than carbon copying. The result is far superior to the work done by means of carbon paper. Whatever portion of the surface B of the manifolding leaf is broken up and loosened, although the loose particles thereof may temporarily adhere to the back of the pen- (or pencil-) written leaf C as the result of the pressure of the pen (or pencil), do not disfigure the back *c'* of the original leaf C, because they are of the same color, white, as the color of the original leaf C, and having no longer any permanent adhering quality, are easily brushed off, or, if they remain thereon, do no harm.

The calendering or polishing process preserves the combination and gives the requi-

site conditions so that the permanent record cannot be erased or changed without detection. The glycerin keeps the chalk and oil in a sufficiently soft state to retain the manifolding quality of the paper as treated and also adds to the life of the paper.

Instead of having the dark side of the leaf A black, it may be purple, green, blue, or other desirable color, by printing such selected color upon said leaf. Instead of using French chalk, good results may be secured by the use of finely powdered magnesia, clay, or similar pulverulent substance; and for lard oil or grease may be substituted, in whole, or in part, paraffin, Japan wax, beeswax, or any other suitable material. I do not intend to confine myself to the use of any of the materials named, as other substances and materials may be combined and used with substantially the same results, so far as the ability to transfer is concerned. The essential idea of my invention is a leaf of paper, having a black or colored surface, covered with a coating of a contrasting color, which coating is sufficiently hard to retain its finish, but sufficiently soft to separate under the pressure of the point of a pen or pencil or of the type of a typewriter and to disclose thereby the color of the sheet beneath.

The foregoing method of manifold writing differs from the carbon method now commonly practiced, because in mine two sheets of paper are used instead of three, and the copy is not caused by a transfer of a colored material from an interposed sheet to the carbon-written or duplicate sheet, but a colored coating material is removed from the duplicate sheet to disclose a contrasting color wherever the said coating material has been so removed.

I claim as a novel and useful invention and desire to secure by Letters Patent:

1. The improved book for manifold writing herein described, consisting of the combination of a plurality of leaves of thin, white paper, bound in alternation with other leaves of paper, each of which last named leaves is black on one page and white on the other page, said black page being coated with a composition detachable from said black page under pressure and made of an oleaginous material and a pulverulent substance mixed, spread and calendered in a substantially uniform mass and thickness upon said black page.

2. The improved book for manifold writing herein described, consisting of the combination of a plurality of leaves of thin, white paper, bound in alternation with a plurality of other leaves of manifolding paper, each of which manifolding leaves has one page thereof provided with a permanent black surface, which is covered by a coating of a comparatively soft, white substance, detachable from said black surface by the pressure of an edged

or pointed instrument, applied to one of said white leaves, when said leaf is in contact with the said coated surface of the next adjacent leaf of manifolding paper.

- 3 3. The improved book for manifold writing herein described, consisting of the combination of a plurality of leaves of thin, white paper, suitable to receive the mark of a pencil and bound in contact with a plurality of
10 manifolding leaves alternately in series, each of which manifolding leaves has a black page,

coated with a white substance, which coating is transferable from said manifolding leaf to the next adjacent thin, white leaf above the same by means of the pressure of said pencil 15 upon said adjacent thin, white leaf.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER E. EASTERBROOKS.

Witnesses:

EDWARD A. STOCKWELL,

HOWARD A. LAMPREY.