

F. HOLTHAUSEN.
Mica Letters and Characters.

No. 220,903

Patented Oct. 21, 1879.

Fig: 1

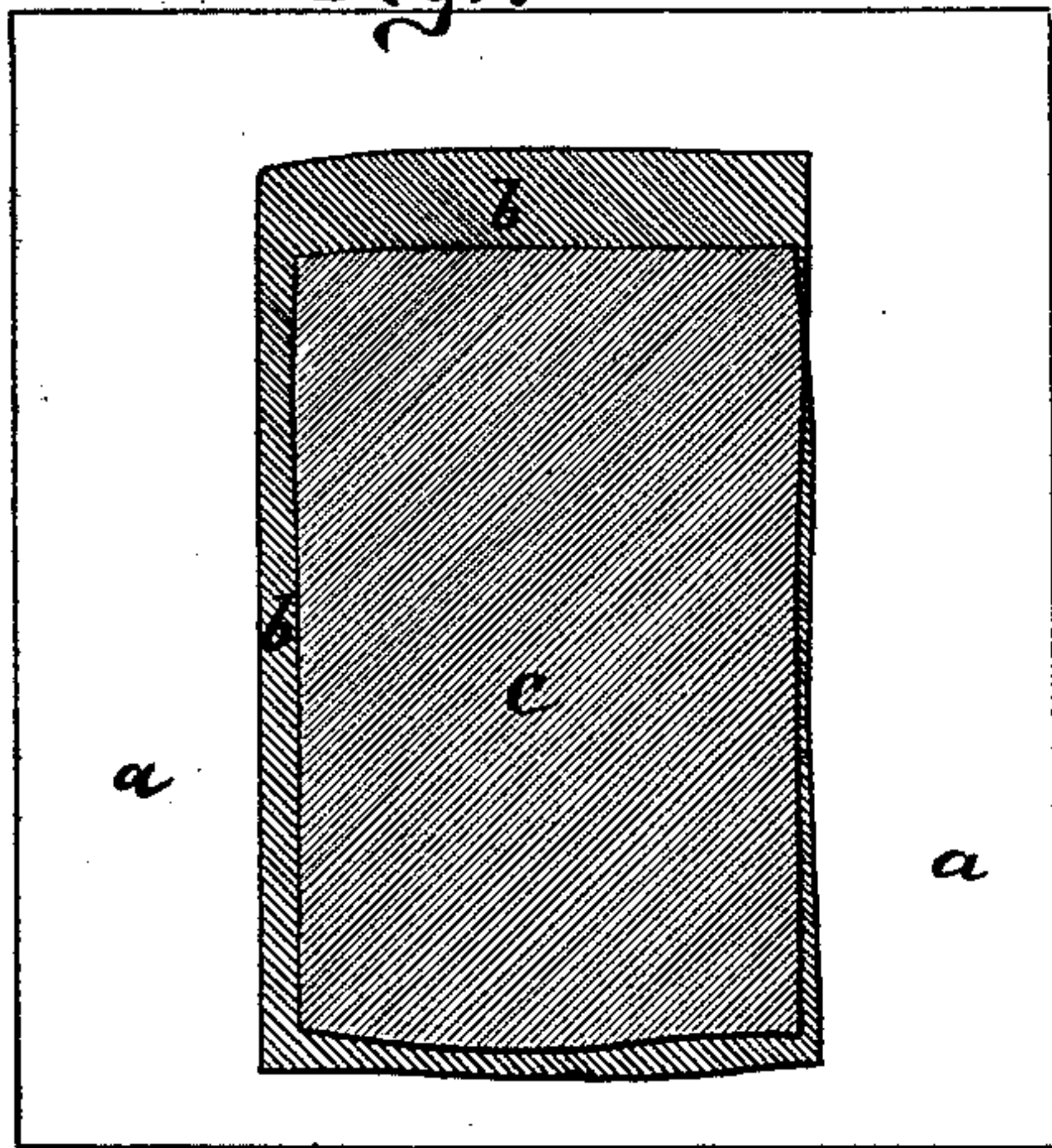


Fig: 4

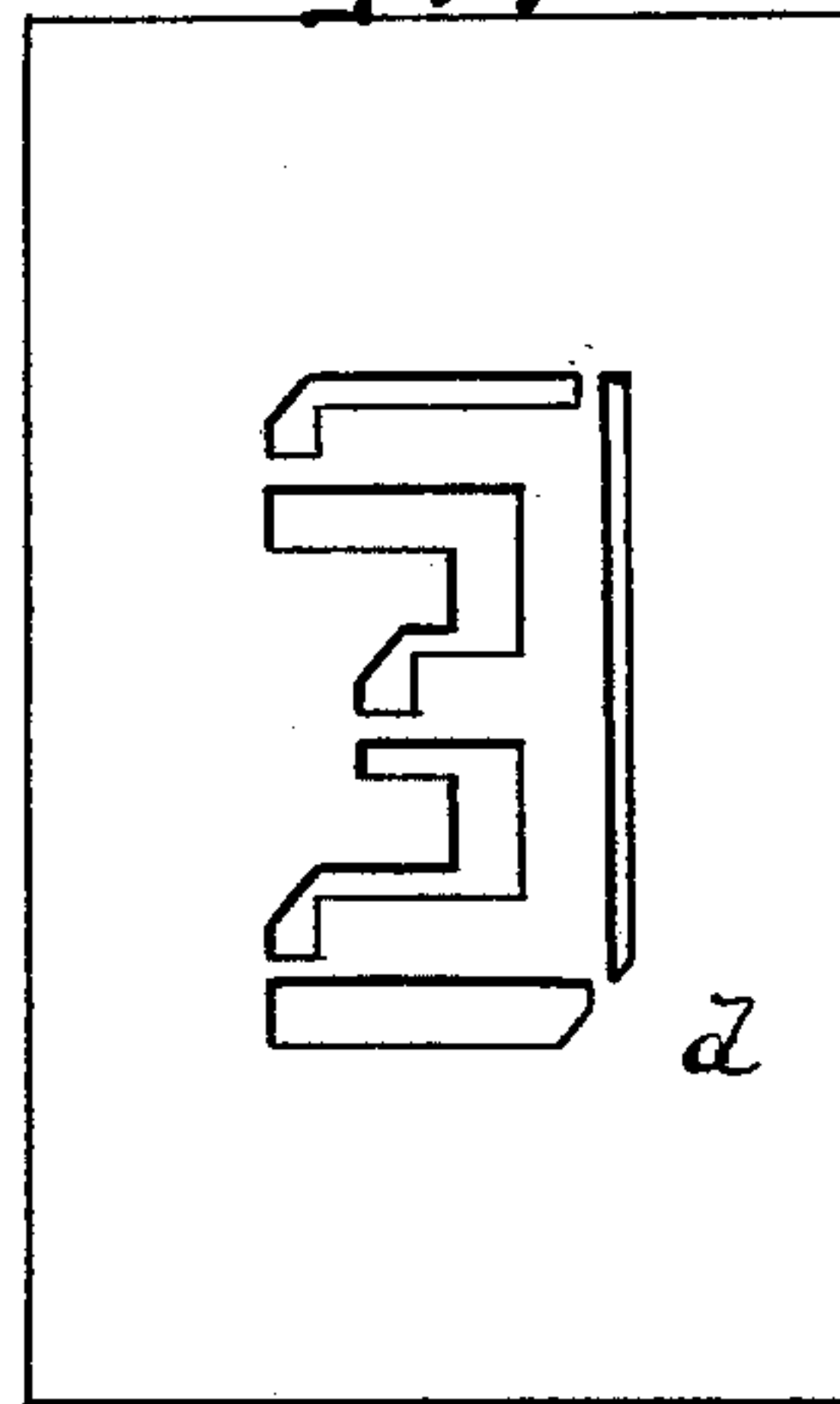


Fig: 2.

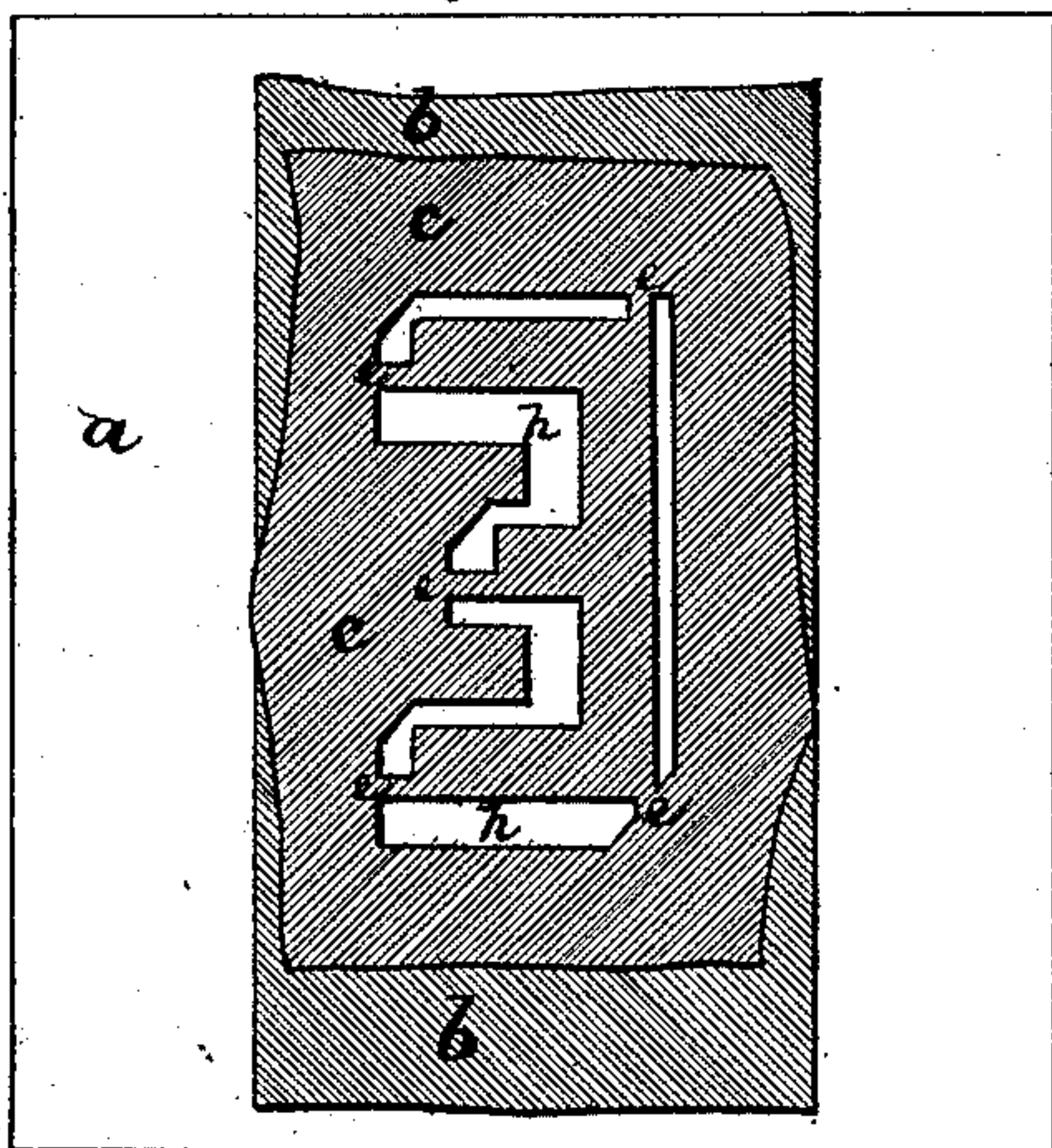


Fig: 3

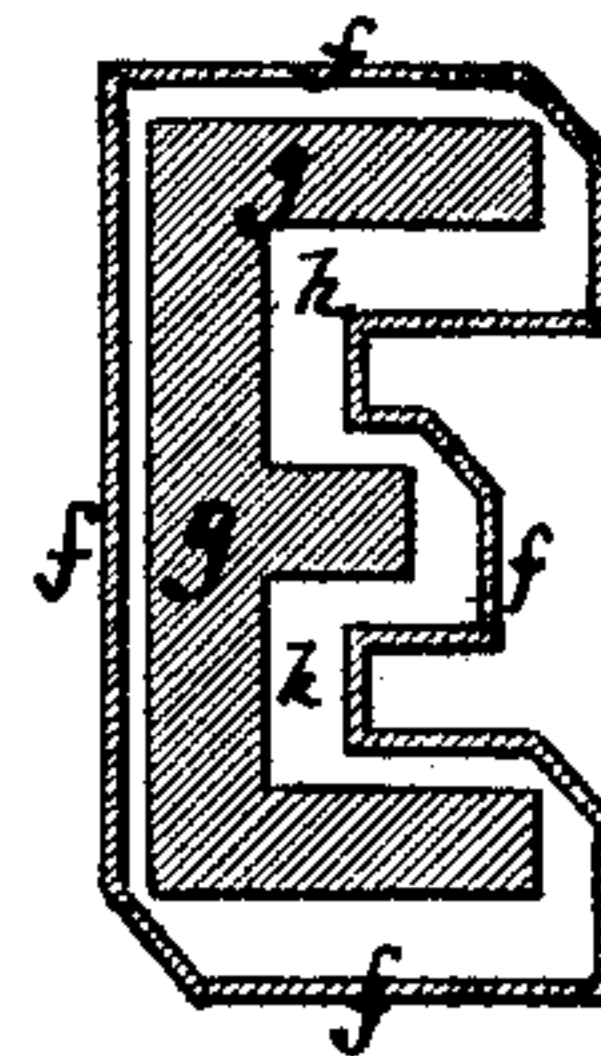


Fig: 6

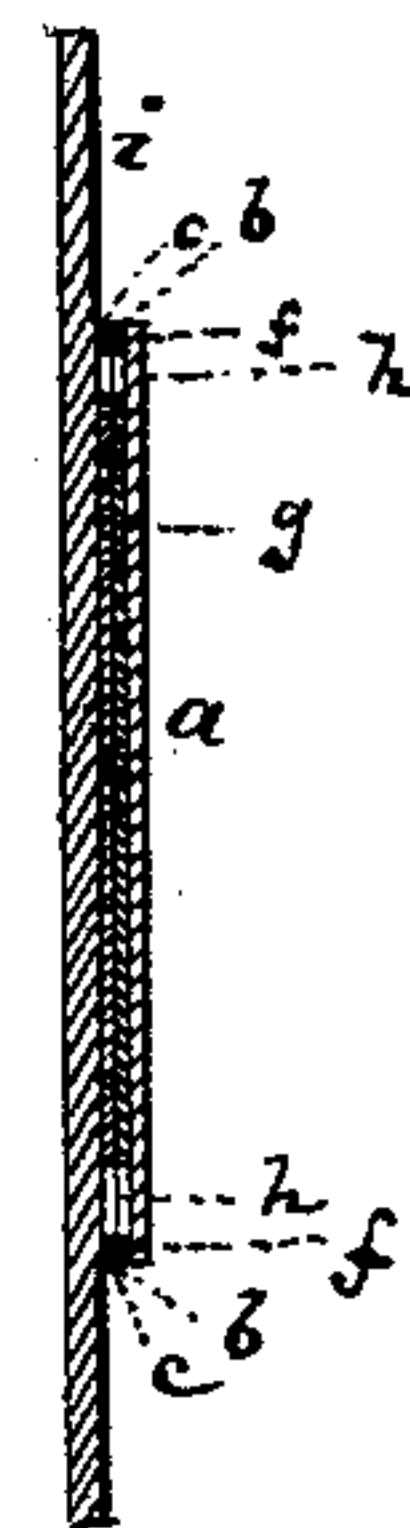


Fig: 5

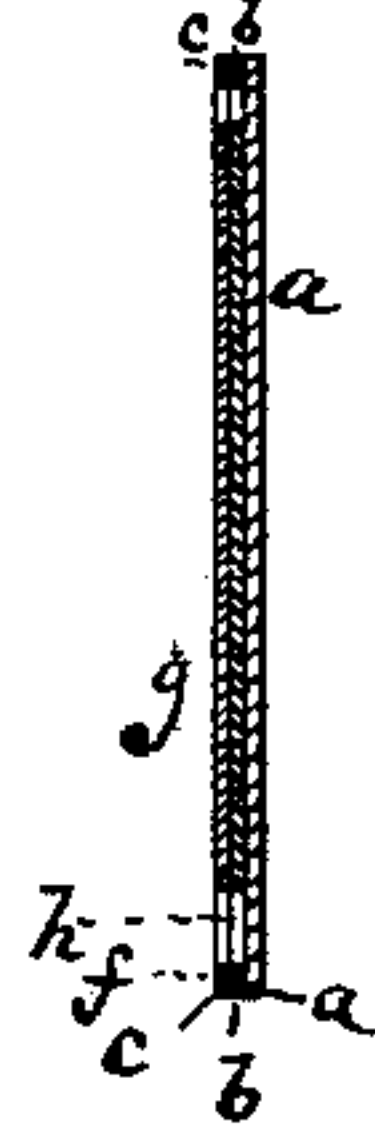
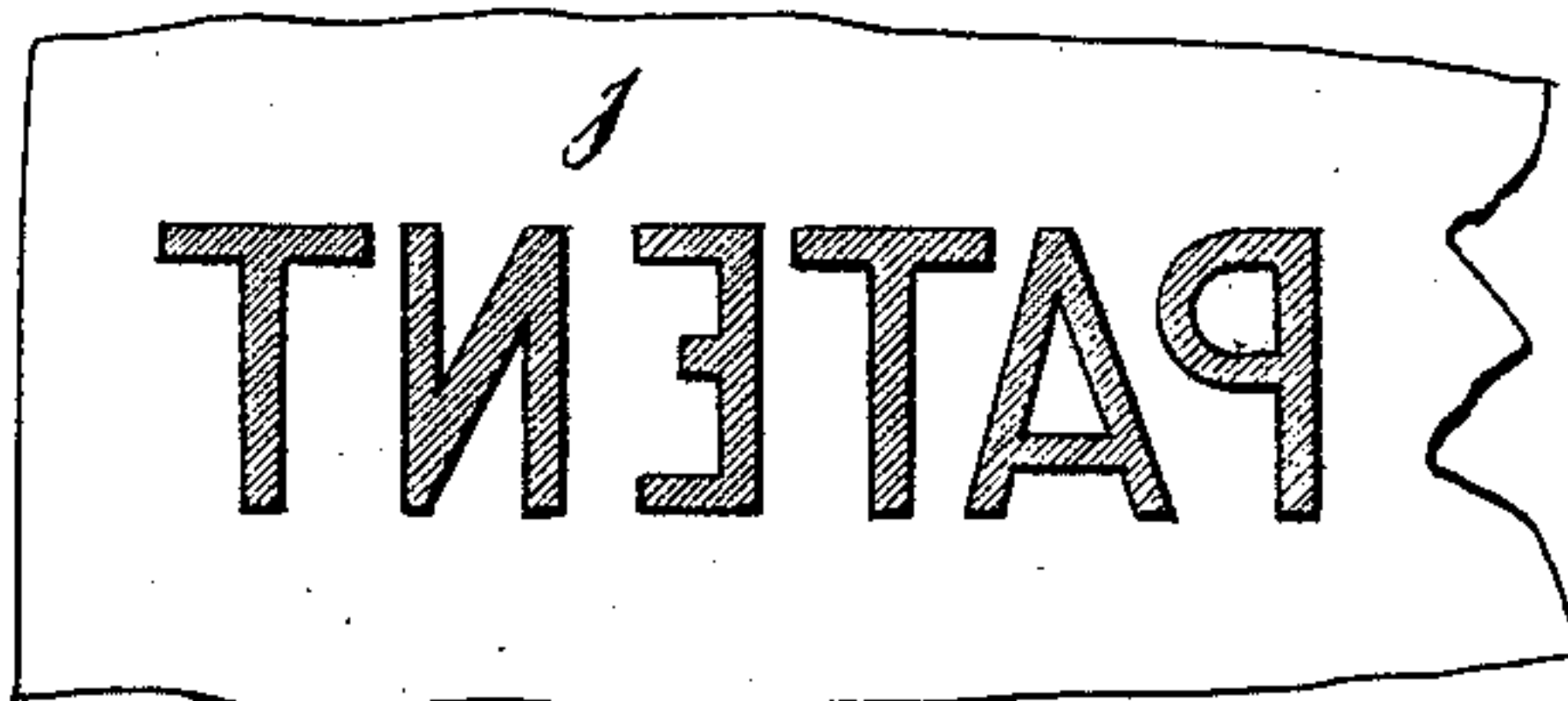


Fig: 7



Witnesses:

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Inventor:

F. Holthausen
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A. V. Briesen

UNITED STATES PATENT OFFICE.

FREDERIC HOLTHAUSEN, OF PARIS, FRANCE.

IMPROVEMENT IN MICA LETTERS AND CHARACTERS.

Specification forming part of Letters Patent No. **220,903**, dated October 21, 1879; application filed March 31, 1879.

To all whom it may concern:

Be it known that I, FREDERIC HOLTHAUSEN, of Paris, in the Republic of France, at present residing in New York city, have invented a new and useful Improvement in Mica Letters and Characters, of which the following is a specification.

Figures 1, 2, and 3 represent face views of the mica and foil in the various stages of making a letter. Fig. 4 is a face view of the stencil-plate used in the making of the letter. Fig. 5 is a sectional view of the letter; Fig. 6, a sectional view of the letter applied to a pane of glass. Fig. 7 shows a series of the letters applied to a sheet of paper previous to transferring them to glass.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a new transparent letter or character, which is made of mica, with a backing of gold-foil, and so constructed that the metal will be fully protected against abrasion and injury when the letter is being displayed.

The invention consists in the new construction of letter or character, as hereinafter stated.

To make a letter or character, I take a piece, *a*, of mica, of proper size, and thoroughly clean it on both sides. I then cover it on one side with a sheet, *b*, of gold-foil or other costly metal foil, which I secure in place with best fish-glue, which will not be perceptible to the eye when viewing the gold through the mica. When the glue is dry I rub the foil gently down to smoothen it and take out all wrinkles. I next place a sheet, *c*, of silver-foil, or other metal foil less costly than the sheet *b*, upon the latter, and secure it by proper glue. I then take a stencil-plate, *d*, Fig. 4, having the required design cut out of it, and place it over the sheet *c*, and take out, by means of a hard brush or otherwise, those parts of the foil which are under the openings of the stencil-plate, leaving the parts as in Fig. 2. The short connecting-pieces *e e* left by the stencil-plate are then also removed by means of a pin or knife, to leave the design in perfect form. The sheet is now cut with knife or

shears into the required form, so, in fact, that a border, *f*, of gold-foil will appear around the letter when the same is viewed through the mica, as in Fig. 3. The body *g* of the letter will also appear as gold; but there will be no gold apparent at *h*, where it was removed with the aid of the stencil-plate. The part *h* of the letter is now (or before the letter is cut out) painted on the silvered side of the mica with transparent varnish-paint or other paint, so that the part *h* will appear as tinted shading.

When the letter thus produced is applied to a window-pane, *i*, as in Fig. 6, the more costly foil *b* will be confined between the mica *a* and the less costly foil *c*, and also between mica and glass, so that the action of the atmosphere and the washing and rubbing of the letters and windows will have no effect upon the metal foil, nor upon the paint which is applied to the part *h*. The letters may also be applied to sheets or pieces of zinc or tin, which can be suspended in place where desired, and readily removed when necessary.

By using a precious metal backed by a common metal the cost of material is greatly reduced, as I can thus use the precious metal in sheets much thinner than could be employed if the paint or varnish had to be applied thereto directly without any intervening substance. The combination gives a thick durable body of metal, not liable to be removed in applying the backing or by the shrinking or cracking of the latter, while the cost is much less than a single gold sheet of the thickness required to effect like results.

It will be perceived that I produce a very brilliant and durable gold letter or character at very small expense, where, heretofore, gold-lettering, particularly when applied to glass, was very costly and very liable to be destroyed by abrasion and by heat or cold.

To apply the letters to glass I prefer to first place them in reverse order upon a piece, *j*, of paper, as in Fig. 7, and to lightly gum them thereto. I then cover the reverse—*i. e.*, the metal—side of each letter with a preparation of india-rubber and turpentine, or other appropriate gum, and fasten them to the window

while yet on the paper. They may then be gently rubbed, and, finally, when the fastening is secure, the paper is moistened and taken off.

Ornaments for church windows and other purposes may be produced with most striking effect and brilliancy by the aid of my invention.

I claim—

A letter or character composed of a sheet,

a, of mica, and of the two sheets *b c* of metal foil, the metal foil being at the back of the mica and partly cut away, and a backing of paint or varnish, substantially as herein shown and described.

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Witnesses:

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