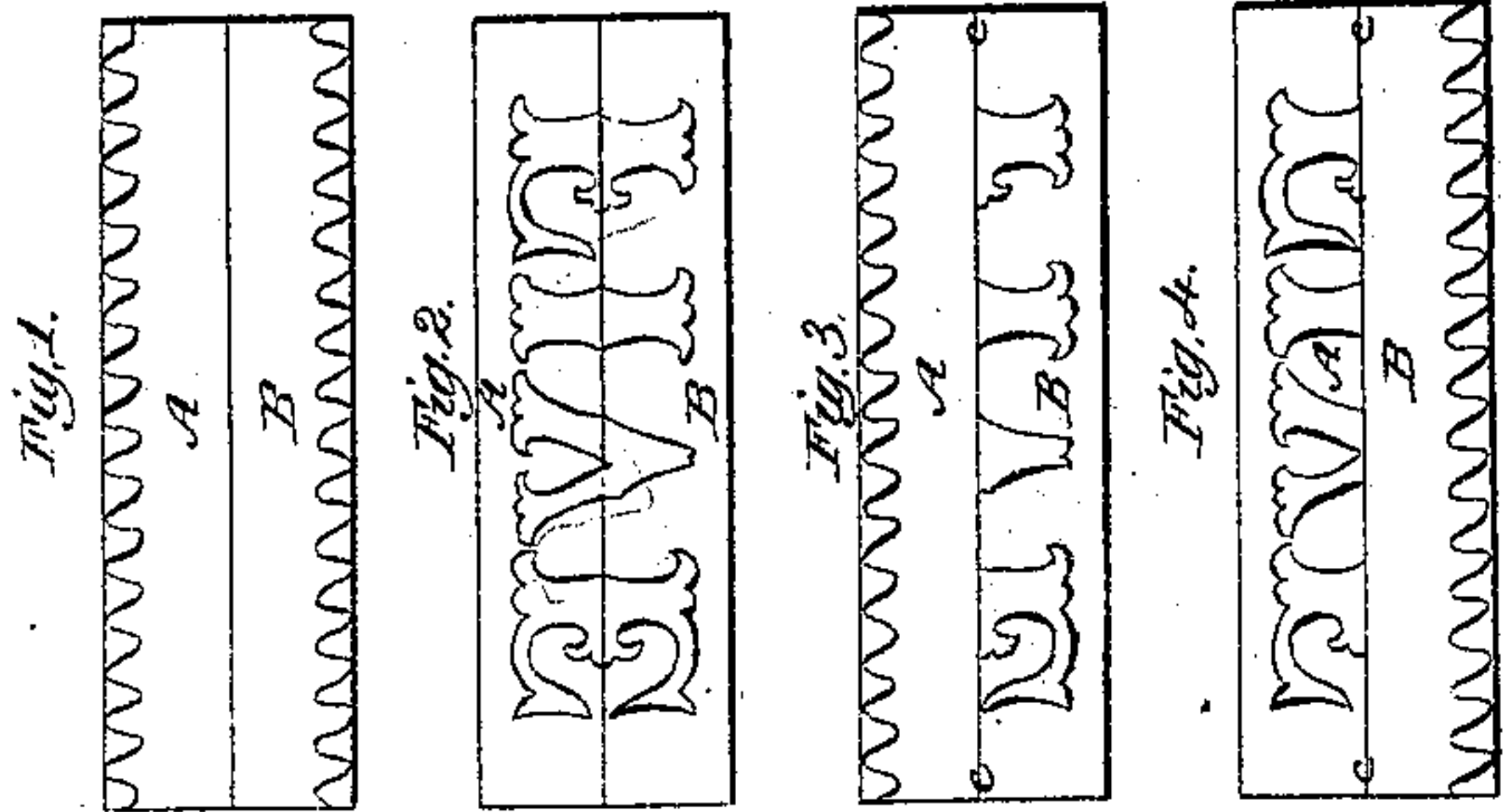
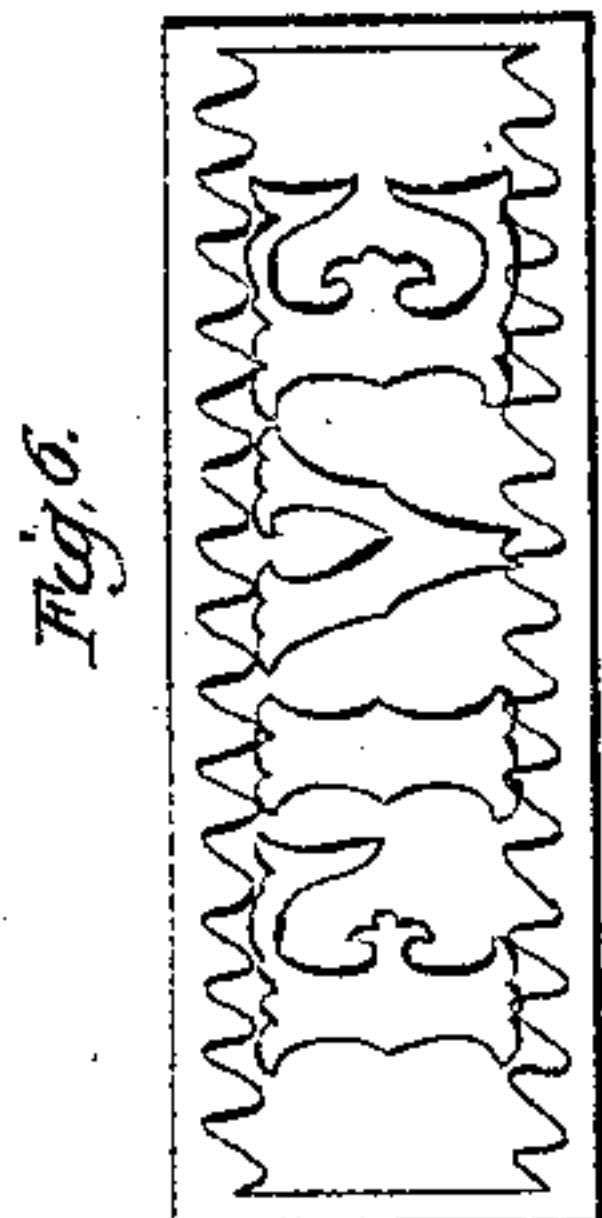
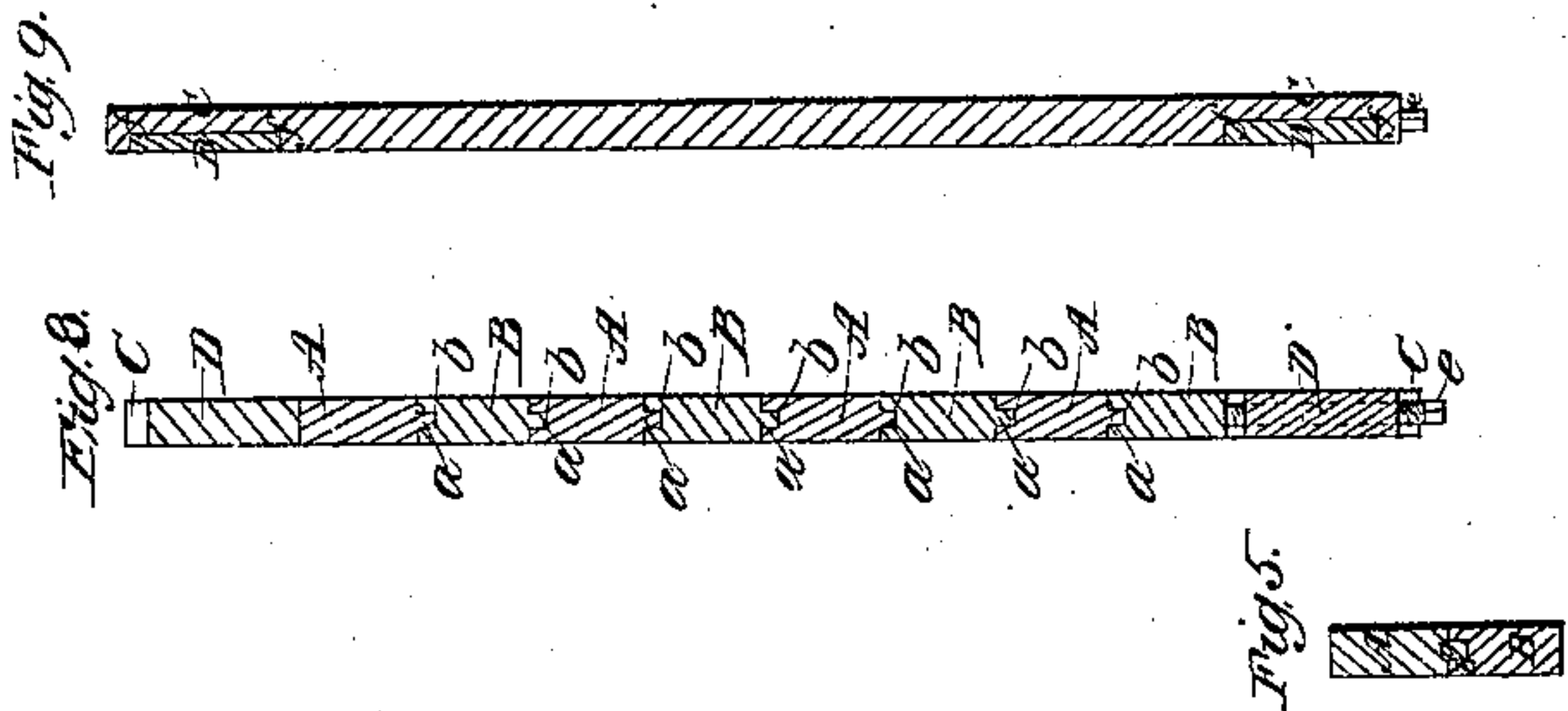
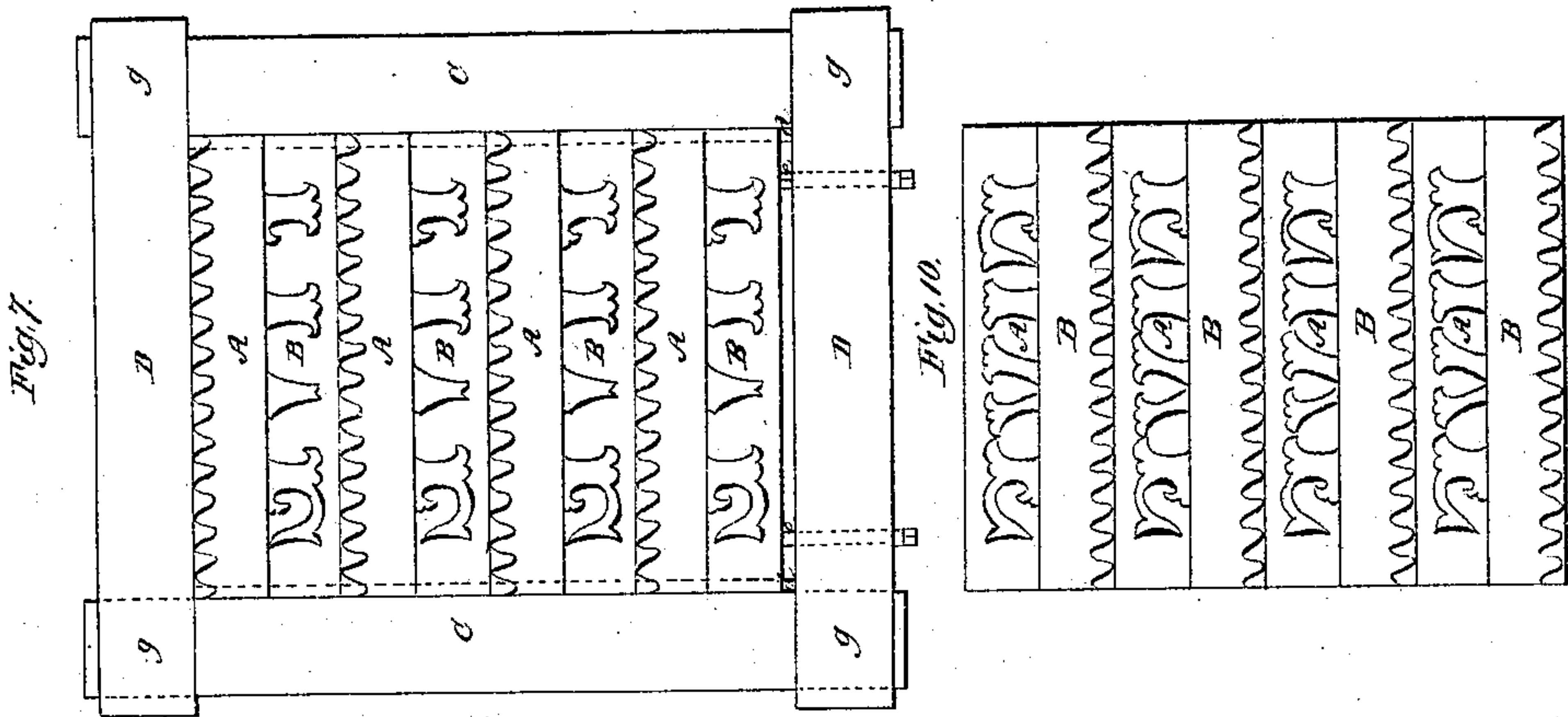


A. Tichenor,

Printing Bank Notes.

N^o 24,341.

Patented June 7, 1859.



UNITED STATES PATENT OFFICE.

ALFRED TICHENOR, OF NEWARK, NEW JERSEY.

METHOD OF PRINTING BANK-NOTES.

Specification of Letters Patent No. 24,341, dated June 7, 1859.

To all whom it may concern:

Be it known that I, ALFRED TICHENOR, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Bank-Note Printing; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

The object of this invention is to increase the difficulty of counterfeiting bank-notes and other engravings or impressions from engraved plates.

The invention consists as follows: I employ two or more plates which I call "primary plates," each made in two or more pieces which are so proportioned and fitted together, that by taking a piece of each plate and putting said pieces together, they are made to form practically one plate which I term a "combination plate," of the same size as the primary plates, two or more combination plates, thus transposed being requisite to finish a bill or other engraving in more than one color. On each primary plate I engrave a different pattern or different figures, numerals, letters, or other devices, which extend continuously over its two or more pieces;—for instance, in using two primary plates made each in two parts, I would engrave on one what is known as the "tint-work" of a bank note, and on the other what is known as the "face-work;"—but to print from the plates, I put together the pieces of each to form combination plates corresponding in number with the original primary plates, and I print from the several combination plates in succession, using a different color for each impression. By this transposition of each section of each primary plate; a continuous portion of each pattern or several figures, numerals, letters or other devices, is printed in a different color, so far as the figure or design crosses the line of separation of the primary plates; and the colors on every portion of said engraving are combined in a manner which is both novel and striking, and at the same time difficult to counterfeit.

The accompanying drawing exhibits the simplest application of my invention to bank-note printing, that is to say by the use of a set composed of two primary plates, each in two pieces; one of the said plates

having engraved upon it the "tint-work" and the other the "face-work."

Figure 1, is a face view of the primary plate on which is the "tint-work." Fig. 2, is a face view of the primary plate on which is the "face-work." Figs. 3 and 4 are face views of the two combination plates capable of being formed by the union of the two primary plates. Fig. 5 represents a transverse section of either of the primary or combination plates. Fig. 6, is a face view of the combined impression produced from the two combination plates by printing from one in black ink and from the other in red ink. Fig. 7 exhibits a face view of a frame or as it may be termed a "chase," containing several combination plates like those shown in Fig. 3, to print several notes at a time. Fig. 8 is a transverse section of the same through the center. Fig. 9 is a transverse section through one side of the same. Fig. 10 exhibits a series of combination plates like those shown in Fig. 4, to fit the frame shown in Figs. 7, 8, and 9.

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

The steel plates employed in carrying out my invention require to be very stout, in order that the two pieces A and B of each primary plate may be fitted together with a tongue and groove joint, as shown at *a, b* in Fig. 5, or with dowels, but the tongue and groove joint is the best, and in order that the said joint may be made stiff enough to prevent deflection. The two pieces A, A, of the two primary plates should be in all respects exactly alike, as should be also the two plates B, B, in order that when the piece A, of each is united with the piece B of the other, the junction lines *c, c*, in the faces of the two combination plates thus formed may exactly correspond in position with each other, and that when the said lines and the ends of the said plates are in register with each other, the whole of the pattern or figures on the two plates may register correctly. Each primary plate is engraved while its two parts are together, so the engraved lines may be continuous across the junction line *c, c*.

To insure the registration of the plates in printing, their ends are fitted snugly between the parallel sides C, C, of the frame or chase C, C, D, D, shown in Figs. 7, 8, and 9, the said chase being no thicker than the plates

in order that it may not interfere with the printing, and the faces of the said plates are kept perfectly level with each other by grooves being made in their ends to fit
 5 tongues *d, d*, on the sides C, C, of the chase. The plates A, B, fit up to one end D of the chase and are confined in place within the frame by set screws *e, e*, working through the other end D. I prefer to use chases
 10 large enough to contain several plates as represented in Figs. 7, 8, 9, so that several notes may be printed at a time, and in this case I not only fit the pieces A, B, of each plate together with tongues and grooves or
 15 dowels but provide every piece A, and B, (except those which come next to the ends of the frame) with a tongue or dowels on one side and a groove or holes in the other, so that all may fit together as shown in Fig. 8,
 20 and thus tend to prevent each other's deflections and hold them all with their faces in the same plane. To permit the introduction of and removal of the plates from the chase, the sides C, C, and ends D, D, are made
 25 capable of being taken apart but yet made to constitute a stiff frame when put together, by being made to cross each other, and being each half cut away to receive the other at their intersecting parts, as shown at *f, f*,
 30 in Fig. 9. When put together, they are secured by screws *g, g*.

The combination plates secured in the chases are printed from by the usual process, an impression being taken from one of such
 35 plates or one series of such plates locked together in the chase, in one color, and from the other plate or series of plates in another color, thus producing the peculiar effect represented in Fig. 6. A separate chase may be
 40 used to contain each plate or series of plates, provided one chase is a perfect duplicate of the other; or after printing from one plate or series, it may be removed from the chase and the other substituted for it and printed;
 45 care being taken in either case that the registration is very perfect for the second im-

pression. The means of securing perfect registration in the printing press may be the same as are commonly employed in printing.

I will remark that in engraving the tint- 50 work on the primary plate, the lines may be stopped so as to leave blank the parts which correspond to the parts of the other primary plate which are covered by the face-work, so that on no part of the impression will 55 there be two colors.

It is obvious that the same system of printing may be performed in more than two colors by making a set of primary plates corresponding in number to the number of 60 colors to be employed, and making each of such plates in a corresponding number of parts to enable a corresponding number of combination plates to be produced, each of which may be printed of a distinct color. 65 In such case the tint-work may be engraved on one primary plate, certain portions of the face-work as the vignette and side pieces on another, and the numerals and lettering on another, and so on. The distribution of 70 the engraving on the several plates may however be varied to an almost indefinite extent.

What I claim as my invention and desire to secure by Letters Patent is: 75

1. The making bank note and other engraved plates, or sections of plates with "tongue and groove or dowel joints."

2. The locking together tongue and grooved bank note or other engraved plates by a 80 "chase," having its sides formed with tongue or groove, or with dowels made to match or correspond to the ends and sides of the tongue and grooved plates, which chase is made in pieces fitted together and fur- 85 nished with set screws *e, e*, substantially as described.

ALFRED TICHENOR.

Witnesses:

W. TUSCH,
 W. HAUFF.