

No. 655,084.

Patented July 31, 1900.

J. S. HOERNER.
EMBOSSING PROCESS.

(Application filed Apr. 25, 1896. Renewed Apr. 27, 1899.)

(No Model.)

Fig. 1.

A

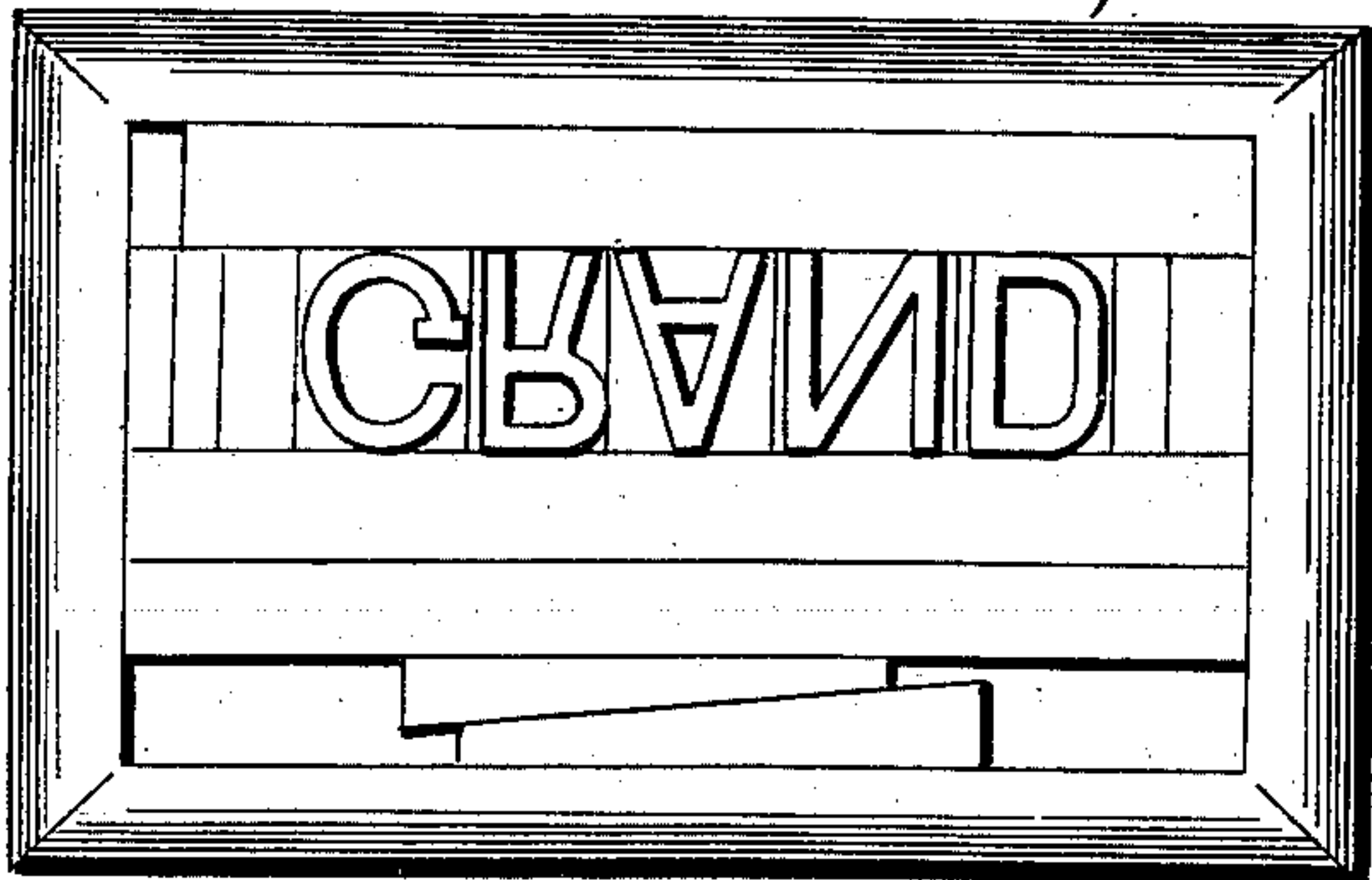


Fig. 2.

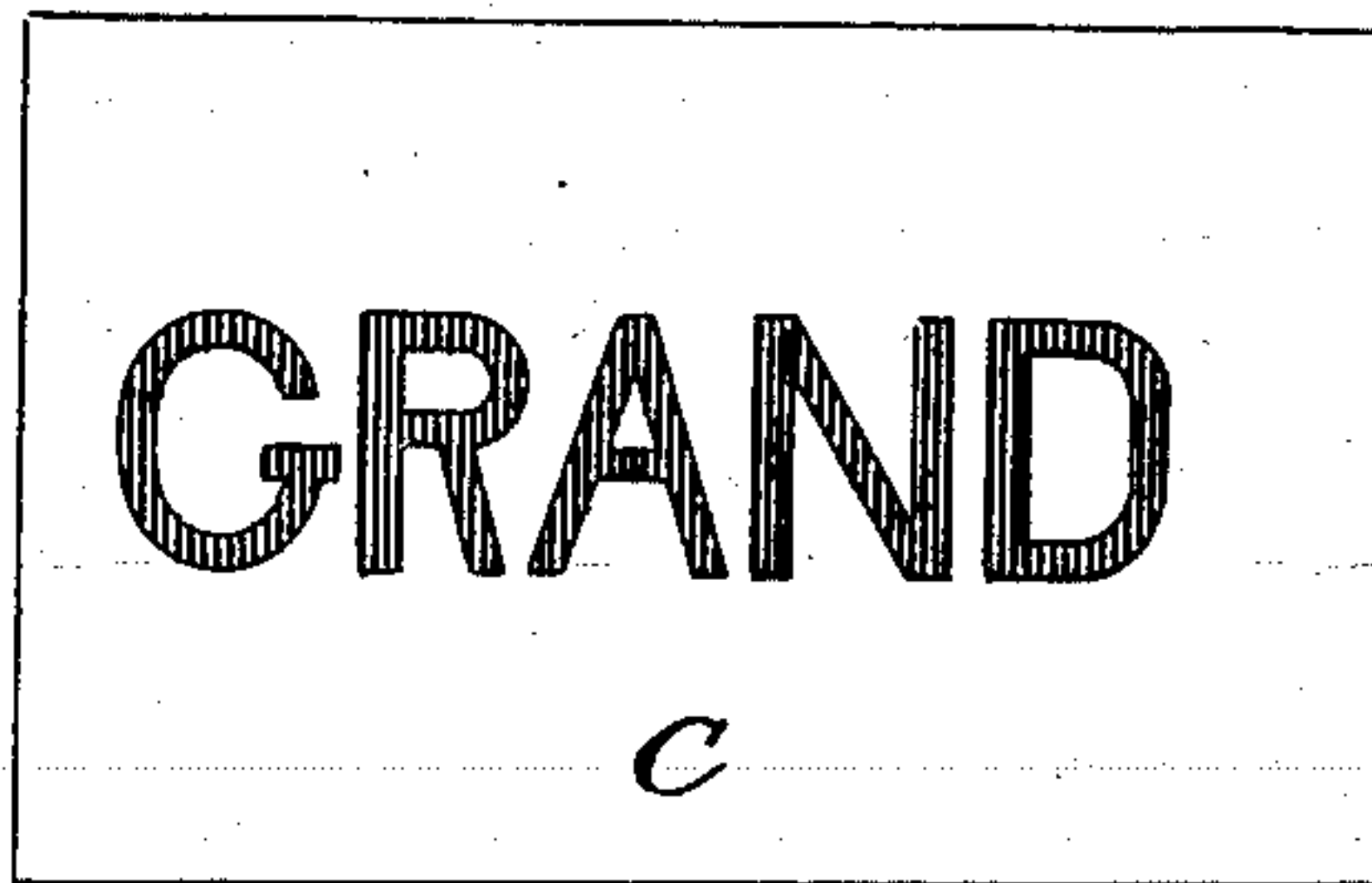


Fig. 3.

A

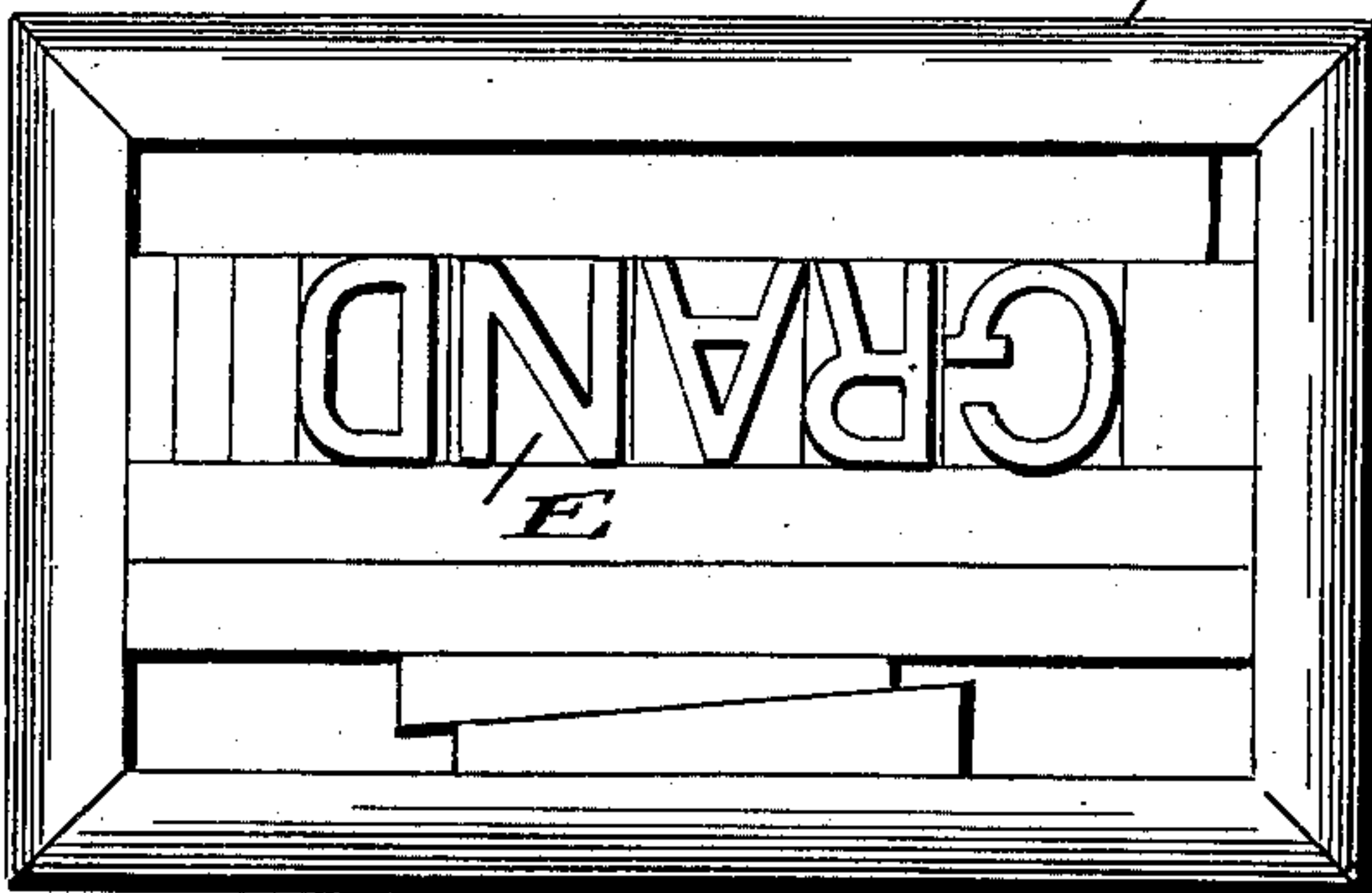
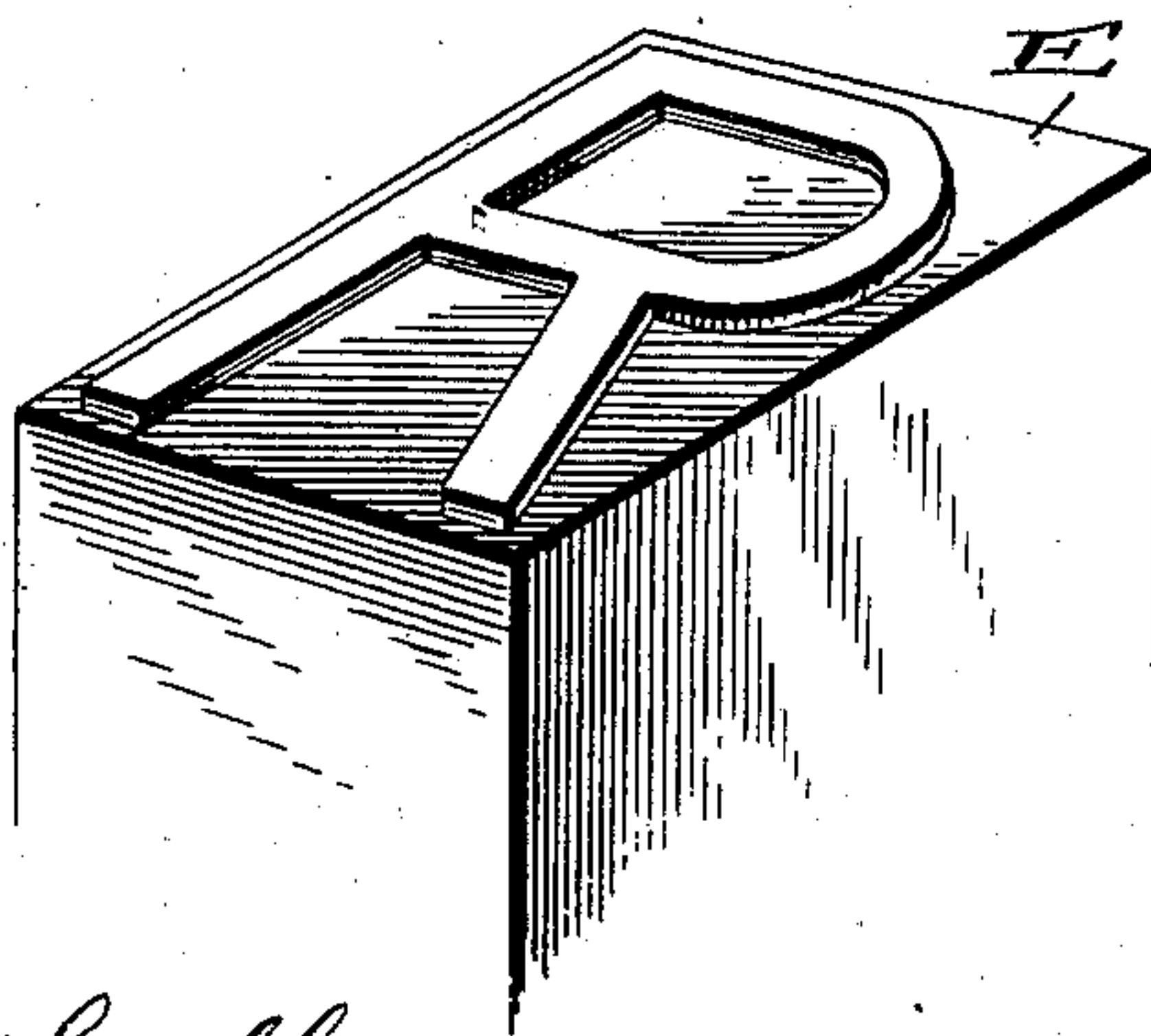


Fig. 4.



Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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EMBOSSING PROCESS.

SPECIFICATION forming part of Letters Patent No. 655,084, dated July 31, 1900.

Application filed April 25, 1896. Renewed April 27, 1899. Serial No. 714,700. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN S. HOERNER, a citizen of the United States, residing at Highland, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Embossing Processes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in the art of embossing; and it consists in first printing the design upon a sheet, then setting up positive-faced type, which are made to register with the impression taken upon the sheet, and then taking a second impression upon the reverse side of the printed sheet, as will be more fully described hereinafter.

The object of my invention is to use positive-faced type in connection with negative-faced type, such as are commonly employed in printing, whereby printed matter may be embossed without the aid of engraved plates, such as have heretofore commonly been employed.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, indicate like parts throughout the several views, and in which—

Figure 1 is a top plan view in which a word is shown as set up in ordinary negative-faced type, the same being shown as locked in a printing-chase in readiness for use upon the printing-press. Fig. 2 is a like view of the word as it appears when printed from the form shown in Fig. 1. Fig. 3 is a top plan view of the same word shown in Figs. 1 and 2, the same being shown as it appears when set up in positive-faced type and locked in a chase in readiness for use upon the press. Fig. 4 is a like view of the word as it appears after having been printed and the rear face of the paper subjected to the action of the positive-faced type shown in Fig. 3. Fig. 5

is a perspective view of one of the positive-faced type which I employ.

Reference now being had to the details of the drawings by letter, A designates a printing-chase of ordinary construction.

In Fig. 1 of the drawings I have shown the word "Grand" set up in ordinary negative-faced type and locked in position for printing within the chase by the use of the commonly-employed furniture. An impression is taken from the word upon any of the various styles of printing-presses in common use, and the impression when thus taken appears as shown in Fig. 2.

Before undertaking the description of the use to which my improved form of positive-faced type is put in the next substantial step in the process I will proceed to describe in detail the construction of such type. Upon reference to Fig. 5 of the drawings it will be observed that the letter upon the type has its printing or contact surface uniformly parallel with the shoulder E of the type, this shoulder extending over the entire face of the body of the type. In the construction of negative-faced type, such as have heretofore been and are now commonly employed in printing, the shoulder or surface is not uniformly level; but upon the contrary is more frequently cut away or inclined at an angle from the printing-face of the type. In using my positive-faced type the type are set up in positive order or the reverse of that in which the negative-faced type are set, and the paper or other surface upon which the impression has been previously taken in the first step of my process by the use of negative-faced type, as shown in Fig. 1, is reversed and is subjected to pressure from the positive-faced type. The reversal of the paper results in the application of pressure from the positive-faced form upon the reverse side to that which has received the impression from the negative-faced form. It will at once be evident that in order to accomplish this the positive-faced type must in every particular be exact counterparts of the negative-faced type used in taking the first impression, both in design as well as size, and it will be further evident that perfect adjustment is necessary in or-

der that the position of the positive-faced type with reference to the reverse side of the printing-surface may be accurate. This accurate adjustment may be obtained by any
5 of the methods now employed by those skilled in the art of printing in securing accurate registration—such, for instance, as that employed in color-printing, &c.—and a detailed description of any one of these well-known meth-
10 ods of securing registration is not therefore deemed necessary in this connection.

The object, as will be at once understood in taking an impression from the positive uninked type upon the rear face of the paper,
15 card, or other substance printed, is to force the printed surface outward, so as to produce a raised or embossed letter, and in this connection attention is called particularly to the importance of the level shoulder E employed
20 upon the positive-faced type, as in order to do perfect work it is essential that that portion of the paper or card which is being embossed between the letters and within the inclosed spaces in the letters should have a sub-
25 stantial and level bearing-surface, as otherwise the paper when subjected to the pressure employed in embossing would be likely to wrinkle or to break and the letter or character printed would not present the same
30 clear-cut and sharp appearance that is required in perfect work. Attention is also called to the fact that it is necessary that the height of the spaces and quads should correspond exactly with the height of the body por-
35 tion of the type, and it is also necessary that the height of the slugs employed should be uniform, so that the entire space immediately surrounding the word should be of uniform height with the body of the type employed.
40 The printing-surface of the positive-faced type is but slightly raised above the shoulder of the type, so that when the embossing impression is taken those portions of the paper being embossed between and surrounding the
45 letters is forced against a solid unyielding

flat surface, which thus prevents breaking or wrinkling the paper, as will be at once understood.

By the process which I have above described for producing printing-plates it is at once
50 evident that plates may be readily produced in which the letters or other characters will appear intaglio or depressed, and by the use of plates of this kind white letters upon a colored background may be produced upon
55 either platen or cylinder presses.

In case it is desired to produce uninked embossed impressions it is at once evident that the use of negative-faced uninked type is dispensed with and the embossing is done by one
60 application of the positive-faced type.

Having thus described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. The herein-described process of emboss-
65 ing words, characters, or designs, upon paper or other material, the same consisting in first printing the word, character or design in the usual manner, afterward taking a second impression upon the reverse side of the printed
70 sheet, said second impression being taken from the positive-faced type which are made to register with the impression taken upon the paper in originally printing the sheet, substantially as described.
75

2. The process of embossing words, characters, or designs upon paper or other material, the same consisting of first printing the word or character to be embossed upon one
80 side of the paper or sheet, and then taking an impression without ink from positive-faced type upon the rear face of the sheet, substantially as set forth.

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

JOHN S. HOERNER.

Witnesses:

GEO. J. KEONER,
THEODORE GERBER.