G. R. CORNWALL.

TYPES.

APPLICATION FILED APR. 17, 1905.

1,079,402. Patented Nov. 25, 1913.

Fig. 1.

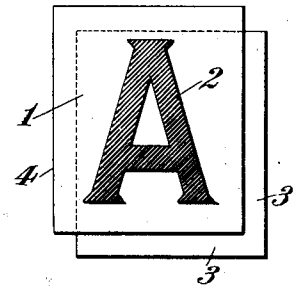


Fig. 2.

Fig. 3.

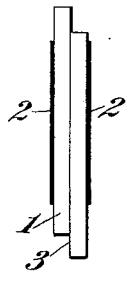


Fig. 4.

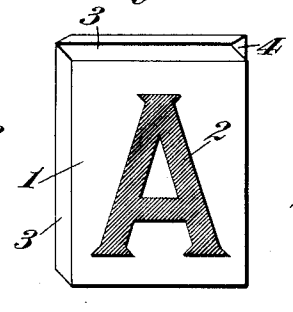


Fig. 5.

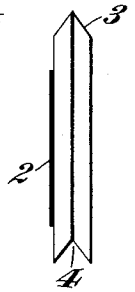


Fig. 6.

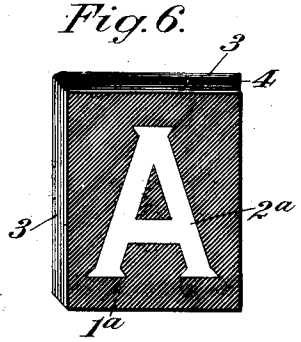


Fig. 7.

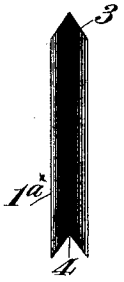


Fig. 8.

Fig. 9.

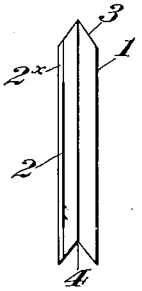


Fig. 10.

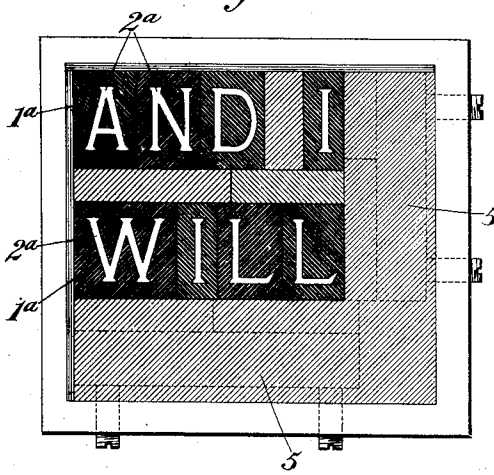
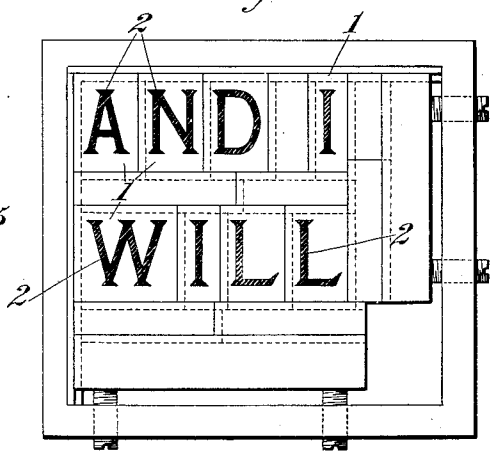


Fig. 11.



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By
John D. Morgan
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE R. CORNWALL, OF RYE, NEW YORK, ASSIGNOR TO AMERICAN PLANOGRAPH COMPANY, A CORPORATION OF WEST VIRGINIA.

TYPES.

1,079,402. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed April 17, 1905. Serial No. 256,122.

To all whom it may concern:

Be it known that I, GEORGE R. CORNWALL, a citizen of the United States, residing at Rye, in the county of Westchester and State of New York, have invented new and useful Improvements in Types, of which the following is a specification.

The invention relates to interchangeable, settable types and has for an object the providing of types which effect an impression by the action of light upon the surface to be impressed and not by the action of ink or similar medium placed upon the face of the type for the purpose of making an impression upon the character-receiving surface. These and other objects will more fully appear from the following description.

The invention consists in the novel articles, parts, and combinations herein shown and described.

The accompanying drawing, referred to herein and forming a part hereof, illustrate an embodiment of the invention, the same serving in connection with the description herein to explain the principles of the invention.

Of the drawings: Figure 1 illustrates one form of type; Figs. 2 and 3 are edge views of a type such as is shown in Fig. 1; Figs. 4 and 5 show a similar type with a different form of joining and alining means; Fig. 6 illustrates a type having a light-arresting body and a light-transmitting character; Figs. 7 and 8 are end views of the character such as is shown in Fig. 6, showing various forms of joining and alining means; Fig. 9 shows a modified form of type; Fig. 10 shows a chase carrying a form made up of types of a character included in this invention; and Fig. 11 shows a chase carrying a form made up of another character of types included in this invention.

In the embodiment of the invention illustrated in the drawings herewith, a type body 1 is shown which is of a material that transmits light and bearing a character 2 which is of a light-arresting nature. The type may be provided, if desired, with locating and alining means for coöperation with similar means on adjacent types, and such means are herein illustrated as a proud portion 3 on two edges thereof and a recessed portion 4 on the two corresponding edges, for the purpose of permitting adjacent types to be joined together in proper alinement. In Fig. 3 of the drawings a character is shown upon both faces of the type body while in Fig. 2 it is shown upon only one face. In Figs. 4 and 5 are shown locating and alining means of a different character.

In Fig. 6 of the drawings is shown a type body 1^a which is of a light-arresting character and which bears a character 2^a which is of a light-transmitting nature. The type body in this case may also be provided with suitably designed portions, some forms of which are shown in Figs. 7 and 8, for the purpose of locating and alining adjacent types. In this case the said alining portions may also be of a light-arresting nature or character.

In Fig. 9 of the drawings is shown a form of type in which a protecting plate or surface 2^x, which may be of a light-transmitting medium, is placed over the character-bearing surface of the type. It is obvious that this may be applied to either the form in which the character is light-transmitting or light-arresting.

In Figs. 10 and 11 are shown forms of the characters described locked up in chases. In the form shown in Fig. 10 the surface surrounding the form within and without the chase where the plate extends beyond the form may be covered over with a light-arresting material, shown in the drawings as 5, in order that the action of the light upon the plate may take place only through the characters. In the form of the invention illustrated in Fig. 11 where the plate is of greater extent than the form, furniture and other locking means may be provided which is of a light-transmitting nature.

Types of this character may be used for the purpose of acting upon a sensitive surface, and this may be done in any suitable manner. A convenient way of doing this is to place the form and plate in contact, with the character-bearing faces of the types, if desired, in contact with the sensitive surface of the plate. The plate may then be developed and prepared for planographic printing, or it may, by etching properly, be made into a relief or intaglio printing surface.

The types of the character included in this invention may be made in various ways. The surface of the types may be sensitized and the character may be photographed thereon, and development of the surface may be of a nature so as to render the non-charac-

ter part of the surface light-arresting. This will be the case where, for instance, a silver salt is the light-sensitive element of the sensitized surface. The surface of the types may also be prepared in various other ways, as by coating the surface of the type with sensitive asphalt which may then be dried, then photographing thereon, or impressing thereon by means of the action of light through a negative, the character desired and then developing the exposed surface with turpentine or other suitable agent. This would provide a type surface of great durability. The type body may be of glass or other light-transmitting material.

The plate upon which the composed matter of the form is to be impressed may be of any desired and convenient material, such as zinc or aluminum, or glass. Such a plate may be coated with sensitive asphalt, in a manner known to the art, and after exposure to the light under a form such as is herein shown, the surface of the plate may be developed and be prepared for printing planographically, or by being rolled up in an acid resist it may be etched away and used as a relief or intaglio plate as hereinbefore indicated.

From the foregoing it will be understood that a new variety of types has been provided which is of great usefulness; which may be quickly made up into forms, including types of various sizes; which are adapted to produce either a planographic or relief printing surface; which, while susceptible of a variety of uses, lend themselves readily to the making up of job work for printing on a planographic rotary press, thus yielding work of a very high character, and at great speed; besides possessing many other advantages.

The invention, in its broader aspects, is not limited to the particular constructions shown, nor to any particular constructions by which it has been or may be carried into effect, as many changes may be made in the construction without departing from the main principles of the invention and without sacrificing its chief advantages.

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

1. An interchangeable settable type body bearing a character, the portion constituting the character and the remaining portion of the type body, respectively, being of opposite action with respect to the transmission of light.

2. An interchangeable settable type body comprising a light-transmitting character, the remainder of said type body being light-arresting.

3. An interchangeable settable type body bearing a character, said character and the remaining parts of said type body being of opposite qualities as regards the transmission of light, said type body being provided with a proud portion for the purpose of engaging with adjacent type bodies.

4. An interchangeable settable type body bearing a character, the portion constituting the character and the remaining portion of the type body being of opposite action with respect to the transmission of light, said type body being provided with means for preventing the action of light about the edges of the type body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE R. CORNWALL.

Witnesses:
JOHN D. MORGAN,
CLARA PHILLIPS.