

No. 661,770.

Patented Nov. 13, 1900.

J. H. RIDLEY.

METHOD OF PRODUCING INTERCHANGEABLE LETTER OR FIGURE DISKS.

(Application filed Mar. 14, 1900.)

(No Model.)

Fig. 1.

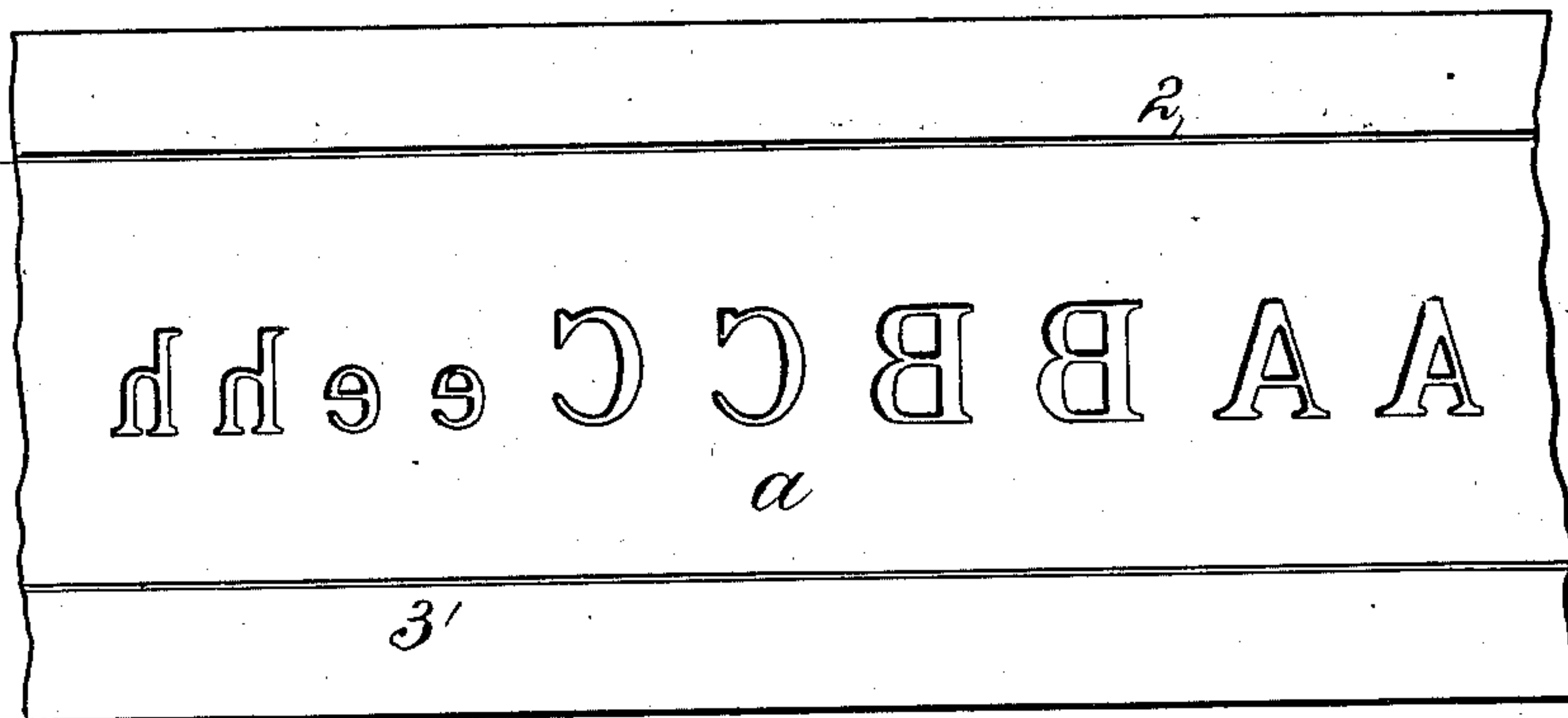


Fig. 2.

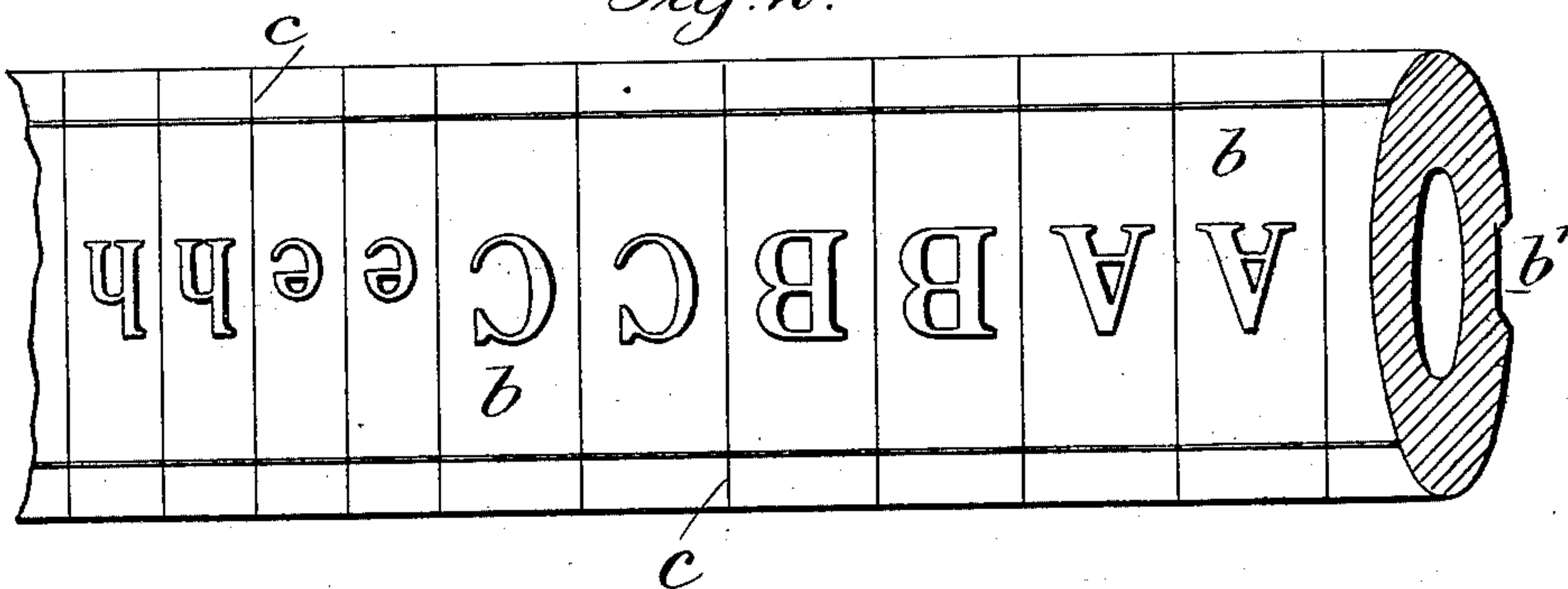


Fig. 4.

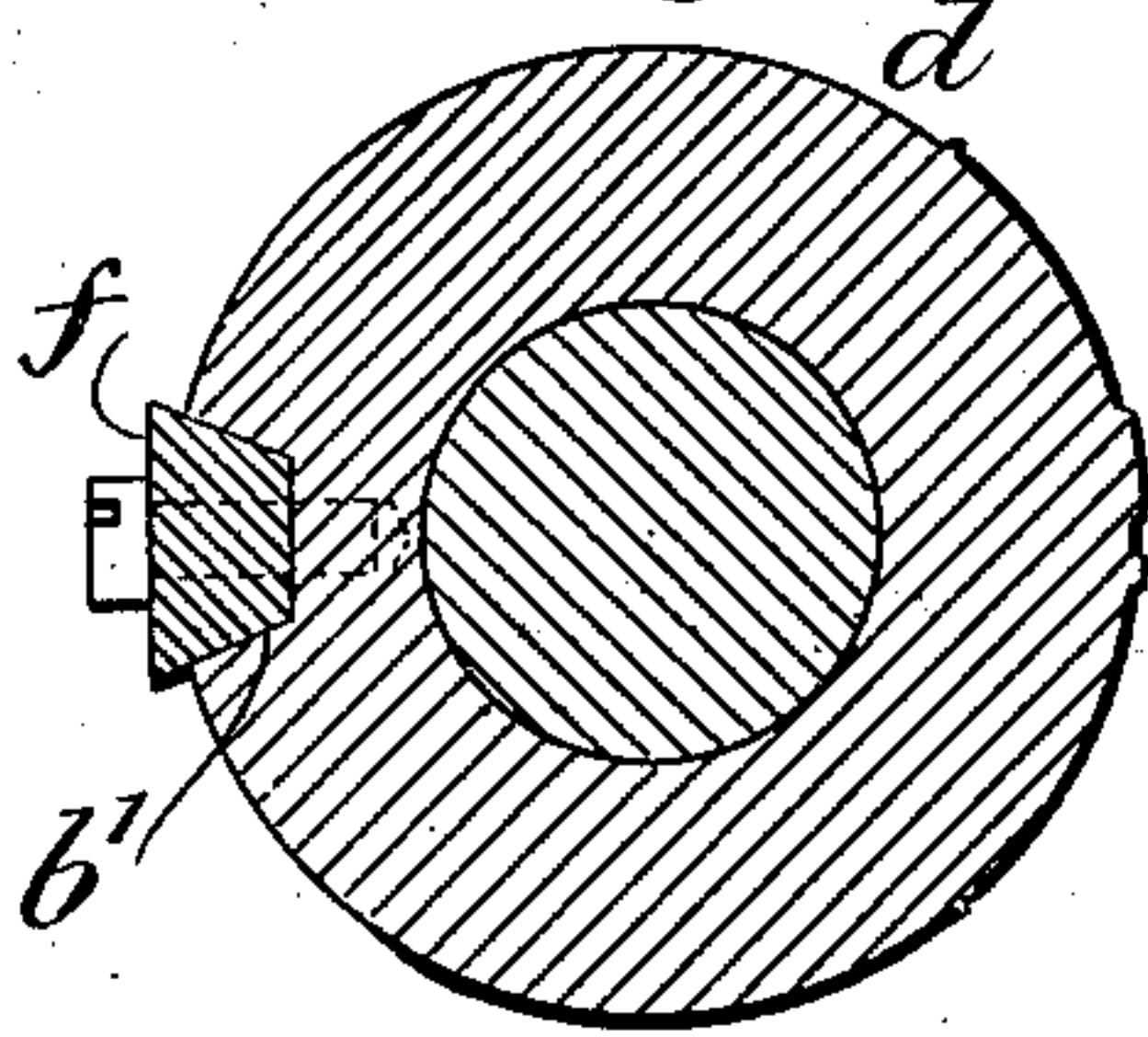
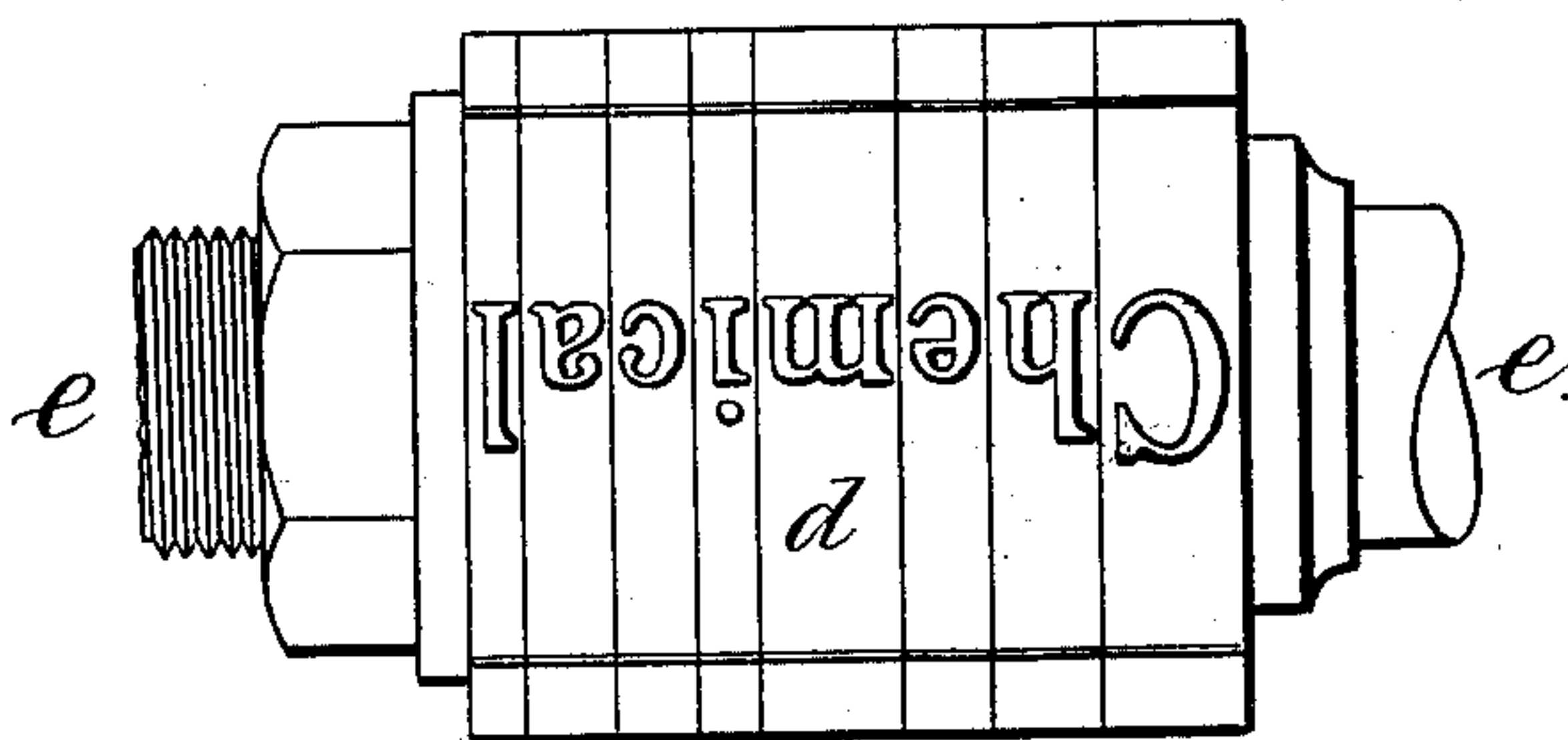


Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN H. RIDLEY, OF NEW YORK, N. Y.

METHOD OF PRODUCING INTERCHANGEABLE LETTER OR FIGURE DISKS.

SPECIFICATION forming part of Letters Patent No. 661,770, dated November 13, 1900.

Application filed March 14, 1900. Serial No. 8,592. (No specimens.)

*To all whom it may concern:*

Be it known that I, JOHN H. RIDLEY, a citizen of the United States, residing at the borough of Manhattan, in the city, county, and State of New York, have invented an Improvement in the Method of Producing Interchangeable Letter or Figure Disks, of which the following is a specification.

My invention relates generally to bank-note engraving and printing. Heretofore in this art letters and designs have been engraved upon a plate, the plate being soft. The plate thereafter has been hardened and a soft roller employed to take up from the engraved plate the letters, designs, or other characters in relief. The roller has then been hardened, so that the letters, designs, or characters thereon can be thereafter rolled into any number of plates arranged or grouped for printing. The original plate is saved and another roller can at any time be made from the original plate should the first roller become damaged. These original plates are never printed from, but only used for making rollers for transferring to other plates. In this art it has been necessary to engrave a plate for each note, check, or other article to be printed, the various letters, figures, names, or designs all being upon the original plate, and where the same design is to be employed with other names and figures it has usually been necessary to engrave an additional plate; and the object of my invention is to overcome these difficulties, it being only essential that the design should be engraved on the original plate.

My invention applies particularly to alphabets and figures of various designs, and the object sought is to be able to group the letters of the alphabet or the figures in any desired order, so as to impress upon the plate or plates to be printed the name or number required.

In carrying out my invention I engrave a suitable plate with any one or more of the letters of the alphabet or figures. These are engraved in the plate when the same is in a soft condition before hardening. The letters are preferably engraved backward and they are spaced apart, and I prefer to engrave parallel lines at opposite sides of the row of let-

ters or figures, which lines afterward become guides. I then harden the plate and preserve the same for future use. A roll of soft metal is thereafter employed in connection with the plate to take off from the plate the letters and the lines in relief. This roll is hollow, and after the letters or figures and the lines have been produced on the surface thereof in relief from the original engraved plate a groove is cut on the opposite side of the roll and the roll is put into a lathe and cut up into sections or disks, which disks are somewhat thicker than desired for the finished disks. These disks are then ground down to the required thickness and they are hardened in any way well known in the art. Disks may thus be made comprising entire alphabets of various designs with any desired number of each letter of the alphabet, and figures may be treated in the same way, the disks being kept in stock. These disks are afterward associated or grouped according to the name to be employed or the number desired and they are arranged upon a mandrel and clamped there- to and the name desired, such as the name of an individual or the name of a bank, can be made up of these disks and be rolled into the soft metal of a plate afterward employed to print from. In this way the design of a check or of a bank-note can be taken on a roll from an original plate and rolled into a printing-plate, and the name of an individual can be made up and rolled across the corner of the check and the name of the bank made up and rolled into the panel usually provided in the design of the check. The plate then prepared is entire and ready to be printed from, and for making check-books any number of these printing-plates can be made from the rolls thus prepared.

In the drawings, Figure 1 is a plan view of part of an engraved plate. Fig. 2 is a plan of part of a hollow roll, with the letters in relief as rolled from the plate. Fig. 3 is an elevation of the mandrel and associated disks, and Fig. 4 is a cross-section of the parts shown in Fig. 3.

The plate *a*, of soft metal, is engraved with letters or figures and preferably with the lines 2 3 parallel to one another and on either side of the row of letters, forming guides.



The letters or figures engraved on the plate may be in rotation or in like groups, and after engraving the plate is hardened.

The hollow roll *b*, of soft metal, is rolled upon the hard plate *a* and the letters and lines thereon are taken up onto the surface of the roll in relief, after which the groove *b'* is produced in the surface of the roll longitudinally of the roll. This roll *b* is thereafter cut up into disks or sections upon the imaginary lines *c* in a lathe or suitable tool, the letters of the plate and the corresponding letters of the roll being spaced apart, so as to give room for the cutting up of the roll into disks, the lines 2 3 of the plate producing the ribs of the roll, and consequently the ribs of the disks, the said ribs forming guides to insure the alining of the letters of the disks. This is further insured by the groove *b'*, which is made to receive a bar *f*, and to which disks in a finished condition the bar *f* is secured, preferably by a screw. (Shown in Fig. 4.)

When the roll *b* is cut up into disks or sections, they are too thick to be adapted for grouping, and they are therefore ground down to the desired thickness, so as to bring the letters approximately close together, and the disks are then hardened and thereafter form a stock from which various letters or figures can be taken for the production of a name or number.

*d* represents the letter-disks, and *e* a mandrel on which the same are grouped in the forming of a word or number, the said figures being in relief and the ribs alining upon the disks.

As associated the various letter-disks upon the mandrel form a roll, so that the letters can be rolled into the surface of a plate to be printed from, and these lettered or numbered disks can be grouped from the stock according to the requirements of the case, and after use are to be put back in stock similar to type and into spaces provided for the respective letters or figures.

I claim as my invention—

1. The method herein specified of producing interchangeable letter or figure disks, consisting in engraving a plate with the letters

or figures spaced apart, hardening the said plate, taking off in relief the letters or figures from the plate upon a hollow roll, cutting up the hollow roll into disks or sections and hardening the same so that the disks may thereafter be associated for the name and number desired, substantially in the manner and for the purposes set forth.

2. The method herein specified of producing interchangeable letter or figure disks, consisting in engraving a plate with the letters or figures spaced apart, hardening the said plate, taking off from the plate the letters or figures in relief upon a hollow soft-metal roll, longitudinally grooving the said roll at a point distant from the letters or figures, cutting up the said roll between the letters or figures into disks or sections, grinding down the said disks to the required thickness and thereafter hardening the same, the disks being thereafter adapted to be associated for names or numbers, substantially in the manner and for the purposes set forth.

3. The method herein specified of producing interchangeable letter or figure disks, consisting in engraving a plate with the letters or figures spaced apart and with lines parallel to one another and at opposite sides of the row of letters or figures, hardening the said plate, taking off from the said plate upon a hollow roll of soft metal the said letters or figures and the parallel lines, grooving the said hollow roll longitudinally upon the opposite side from that having the letters or figures in relief, cutting up the said hollow roll between the said letters or figures into disks or sections, grinding the surfaces of said disks to the thickness desired and thereafter hardening the same, so that the letters or figures are adapted to be associated for names or numbers and the ribs on the surface thereof becoming guides, substantially in the manner and for the purposes set forth.

Signed by me this 9th day of March, 1900.

JOHN H. RIDLEY.

Witnesses:

GEO. T. PINCKNEY,  
BERTHA M. ALLEN.