July 10, 1928. 1,676,637

G. DI BONA ET AL

METHOD FOR PRODUCING DESIGNS UPON STONES

Filed Feb. 16, 1925

Fig. 1

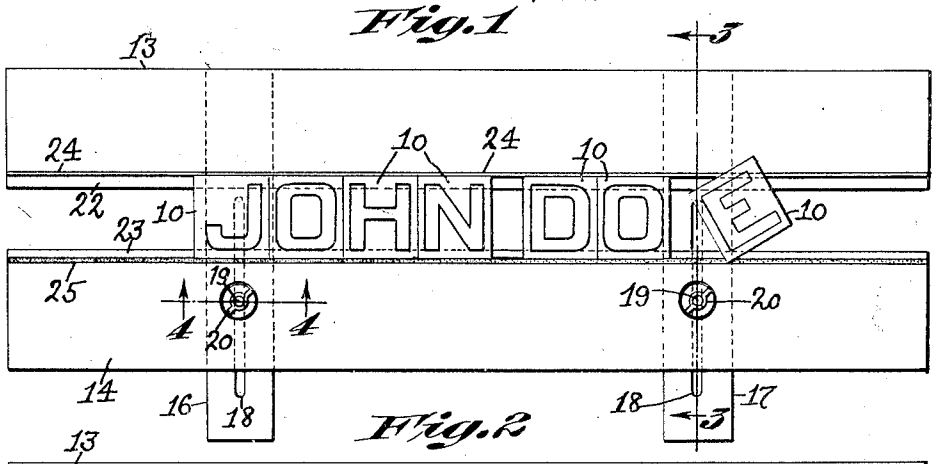
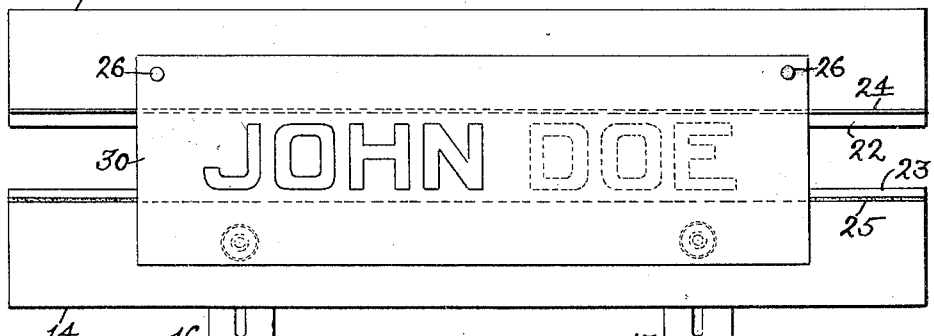


Fig. 2



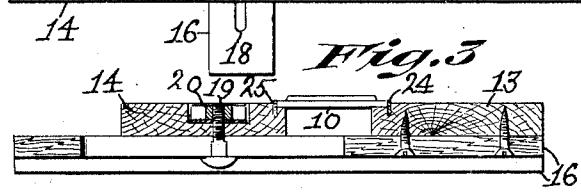


Fig. 3

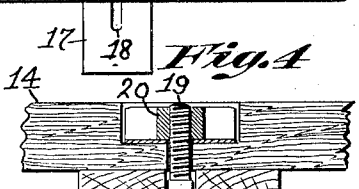


Fig. 4

Fig. 5

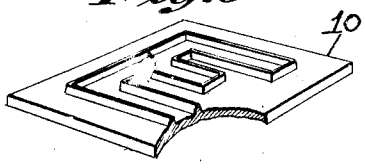


Fig. 6

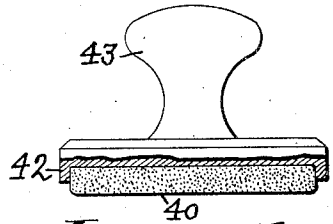
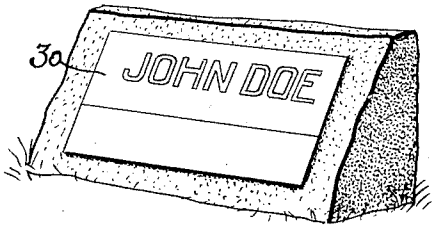


Fig. 7



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UNITED STATES PATENT OFFICE.

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METHOD FOR PRODUCING DESIGNS UPON STONES.

Application filed February 16, 1925. Serial No. 9,459.

This invention relates to a method of and to apparatus for producing characters, such as lettering, designs and the like, upon stones and particularly monumental stones.

The invention has for an object to provide a novel method and apparatus by which designs, characters such as lettering and the like may be produced and preferably cut in monumental stones in a simple, convenient and inexpensive manner, and in a manner such that an improved and accurate formation of the lettering, design or characters is insured.

To this end the invention consists in the method and apparatus hereinafter described and particularly defined in the claims at the end of this specification.

In the drawing illustrating the preferred embodiment of the invention, Figure 1 is a plan of a frame for holding preformed component parts of the design, and particularly characters or letters used in practicing the present method; Fig. 2 is a view similar to Fig. 1, showing a paper or like fibrous sheet applied over the characters or letters held by the frame and illustrating the transfer of the outlines of the characters or letters to the fibrous sheet; Fig. 3 is a sectional view on the line 3—3 of Fig. 1; Fig. 4 a section on the line 4—4 of Fig. 1; Fig. 5 is a perspective with a portion broken away of one of the plates provided with the raised outline of one of the letters on its surface; Fig. 6 is an elevation with a portion in section illustrating a tool which may conveniently be used in transferring the letters, characters, or design to the fibrous sheet; and Fig. 7 illustrates a monumental stone with the fibrous sheet bearing the outline of the characters applied to the surface of the stone and in a position preparatory to cutting the outline of the letters in the surface of the stone.

In general the improved method contemplates first the transfer of the characters or letters upon a thin sheet, and preferably a paper sheet, from preformed raised outlines of the characters or the letters themselves or other component elements or parts of the design. The preformed letters or characters may comprise metal plates bearing the raised outlines, and the plates may and preferably will be clamped in a frame, and the transfer of the characters or letters to the paper sheet accomplished by rubbing graphite or other suitable coloring substance over the surface of the paper sheet. After the letters or characters have been thus transferred to the paper sheet, the latter is, in accordance with the present method, temporarily affixed to the surface of the monumental stone and the outlines of the letters or characters are then cut or checked in the surface of the stone by the stone cutter, using any of the usual stone cutting tools for this purpose. Thereafter the paper sheet may be washed off or removed from the stone and the cutting of the letters or characters completed in the manner now commonly practiced in cutting letters in stone.

Referring to the drawing, in practice it is preferred to form the raised outlines of all of the different characters including the individual letters of the alphabet upon separate metal plates 10 to permit different plates to be associated to form the desired inscription or lettering.

The metal plates 10 are preferably of rectangular shape to be capable of being arranged side by side and to be clamped in a frame comprising as herein shown a stationary member 13 and a movable member 14 adapted to be moved into a position to hold or clamp a plurality of the plates 10, bearing the raised outlines of the letters or characters which it is desired to apply to or cut in the monumental stone. The movable member 14 is arranged to slide upon cross-pieces 16, 17, secured to the under side of the stationary member 13, each provided with a slot 18 through which a clamping bolt 19 extends to guide the member 14 in its movement toward and away from the stationary member 13. The clamping bolt 19 is preferably provided with a wing nut 20 on the threaded end thereof by which the movable member 14 may be clamped in fixed relation to the stationary member 13 in any desired adjusted position. The metal plates 10 are, as stated above, preferably rectangular in shape and are molded with the letters or characters upon the surface thereof in the manner illustrated in Fig. 5 to present a raised outline of the letter upstanding above the surface of the plate.

The adjacent edges of the members 13, 14 of the frame are cut to form supporting shelves 22, 23 on which the metal plates 10 may rest, as illustrated in Fig. 1, and one of the supports 22 is preferably provided with a wearing strip or wall 24 of metal and the other shelf 23 is provided with a

cushion strip or yielding wall 25 preferably of rubber. With this construction, the operator in using the present frame and plates in the practice of the present method, will first adjust the movable member 14 of the frame to engage and clamp two of the plates, such as those bearing the letters J and D illustrated in Fig. 1. Thereafter the remaining metal plates bearing the other letters forming the inscription or lettering which it is desired to cut in the stone, may be snapped into position, the lower edges of the plates being easily forced down onto the shelf 23, which is permitted by the yielding cushion strip or wall 25. In this manner the different letters may be quickly and easily arranged to provide the proper spacing between the letters and to form the lettering or inscription desired. The depth of the metal plates and the raised outlines thereon are such as to present the raised outlines of the lettering above the plane of the surfaces of the members 13, 14 of the frame.

The next step in the method contemplates the application of a thin sheet 30, preferably of paper, over the letters, and as illustrated in Fig. 2 the paper sheet may be secured to the supporting members 13, 14 by thumb tacks 26 or in any other convenient manner, and in order to transfer the outlines of the letters to the paper sheet, graphite or other suitable coloring material is rubbed over the surface of the sheet. For this purpose a graphite block 40 may be secured in a suitable holder 42 having a handle 43 to permit the operator to conveniently rub the graphite over those portions of the upper surface of the sheet whose lower surface contacts with said raised portions and thereby cause the outlines of the letters to be transferred in color to the upper surface of the sheet. After the letters have thus been transferred, the sheet is removed from the frame and may be applied to the surface of the stone. In practice the sheet may be pasted or otherwise adhesively affixed to the stone and the outlines of the letters checked in the stone by means of a stone cutting tool of the usual construction. After the outlines of the letters have been checked in the stone, the paper sheet may be washed off or removed in any other convenient manner, and the cutting operations in forming the letters may be completed.

At the present time it is the practice to employ skilled draftsmen to draw the lettering or inscriptions upon paper sheets for use by the stone cutters. This, in addition to the time consumed, necessitates the employment of skilled help, and in addition the character of the lettering is not always uniform and satisfactory. The present method, it will be observed, insures uniform formation of the letters upon the transfer sheet, and at the same time enables the stone cutters to produce the lettering upon the paper transfer sheet without requiring the services of skilled draftsmen. Also the spacing of the letters may be accurately determined in advance.

It is to be understood that the metal plates 10 may be provided with different characters, such as letters, numerals, ornamental figures and the like, which may form a word or a design, and as used throughout the following claims the word "letters" is intended to include such characters.

While the preferred form of apparatus has been illustrated, it will also be understood that the different features of the invention may be embodied in other forms within the scope of the following claims.

We claim:

1. The method of forming a design in stone, which consists in first arranging individual preformed members having raised outlines of portions of the design to form the latter, placing a thin sheet over the members thus assembled, transferring by rubbing the outlines of the design to said sheet, then affixing the sheet to the stone, and cutting the design in the stone.

2. The method of lettering stone, which consists in first arranging individual preformed members having raised outlines of the letters to form the lettering, placing a thin sheet over the letters, transferring by rubbing the outlines of the letters to the sheet, then temporarily affixing the sheet to the stone, checking in the surface of the stone the outline of the lettering, and thereafter completing the cutting of the lettering in the surface of the stone.

In testimony whereof, we have signed our names to this specification.

GEORGE DI BONA.
TIMOTHY JELLOW.