May 7, 1940. J. H. BEHEE 2,199,980

METHOD OF PREPARING STONE FOR TREATMENT BY SANDBLASTING

Filed March 24, 1938

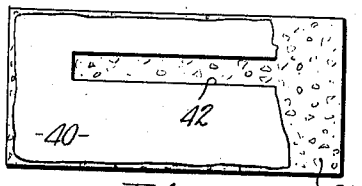


Fig. 1.

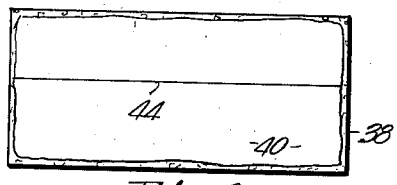


Fig. 8.

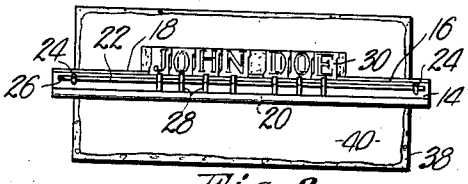


Fig. 2.

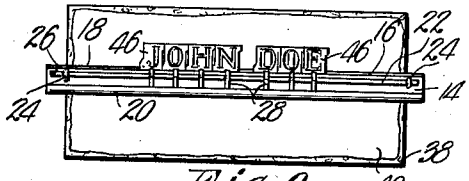


Fig. 9.

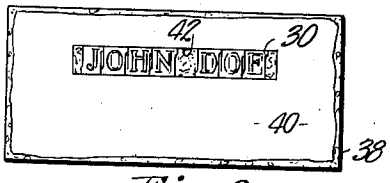


Fig. 3.

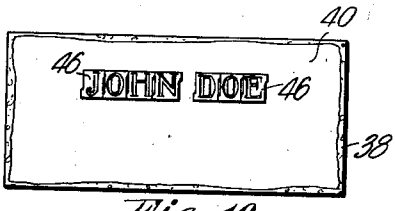


Fig. 10.

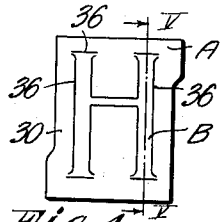


Fig. 4.

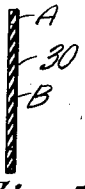


Fig. 5.

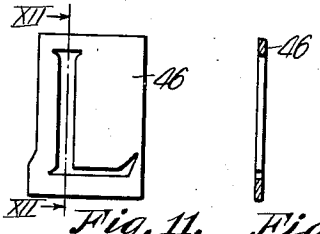


Fig. 11.

Fig. 12.

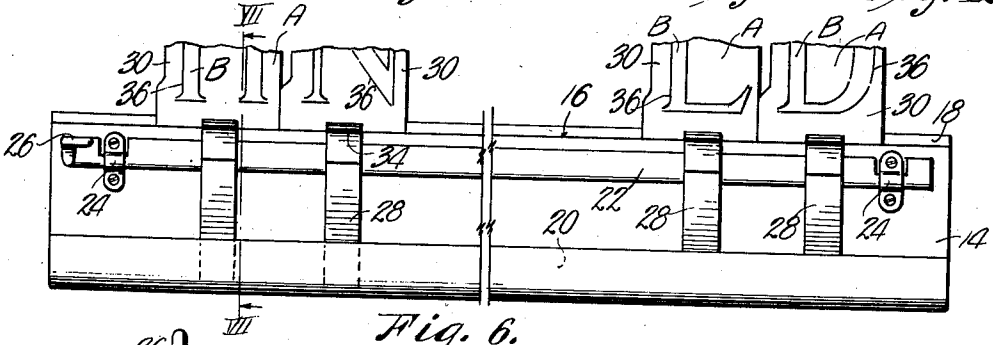


Fig. 6.

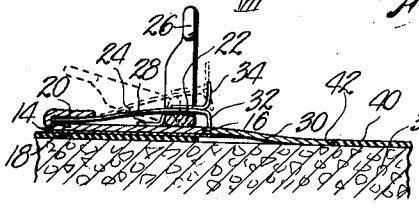


Fig. 7.

BY

INVENTOR.
Joseph H. Behee
Howry & Hamilton
ATTORNEYS

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METHOD OF PREPARING STONE FOR TREATMENT BY SANDBLASTING

Joseph H. Behee, Independence, Mo., assignor of one-half to Rolly Johnson, Independence, Mo.

Application March 24, 1938, Serial No. 197,876

6 Claims. (Cl. 41—39)

This invention relates to the art of stone cutting and particularly, the steps and apparatus employed in preparing a tablet of stone or the like, so that it might be subjected to the conventional sandblasting machine to countersink a pattern therein.

One of the primary objects of the invention is to provide a unique holder for a plurality of units, which units are specially formed and combined to create a complete pattern, or such portion thereof as is desired to be countersunk, at one particular time.

Another object of this invention is the provision of a method of preparing stone or the like, which comprises a number of steps performed in proper sequence so that the prepared stone may be submitted to the sandblasting operation after the preparation thereof has been completed in a relatively short time, and through the use of desirable structure and a number of method steps which contribute to the speed and efficiency of the "make ready" operation.

Another important aim of this invention is to provide a specially formed unit that has at least a portion of a pattern provided therein, which pattern forming portion may be manipulated and removed at the proper time and through the exercise of special steps, all to the end that the preparation of the tablet or stone is completed expeditiously and with accuracy.

Specific details with respect to the steps of the method contemplated and with regard to the structural nature of the holder, constitute minor objects of the invention and the same will appear during the course of the following specification, referring to the accompanying drawing wherein:

Figure 1 is a face view of a stone tablet showing its condition after completing the first step of the method contemplated by this invention.

Fig. 2 is a similar view illustrating the stone tablet after it has been treated in accordance with the next step of the method.

Fig. 3 is a similar view of the stone tablet showing the third step.

Fig. 4 is an enlarged plan view of one of the gelatinous pattern forming units.

Fig. 5 is a cross sectional view through the unit taken on line V—V of Fig. 4.

Fig. 6 is a condensed top plan view of the unit holder made in accordance with this invention and showing a number of units associated therewith.

Fig. 7 is a fragmentary sectional view through the stone tablet and holder taken on line VII—VII of Fig. 6.

Figs. 8, 9 and 10 are plan views respectively of the stone tablet illustrating its surface condition after the first, second and third steps respectively, of another method of preparing the stone have been completed.

Fig. 11 is a plan view of another type of unit from that illustrated in Fig. 4; and,

Fig. 12 is a sectional view through the unit shown in Fig. 11 taken on line XII—XII thereof.

Heretofore stone tablets or the like, have been prepared for the sandblasting operation by coating one face thereof with a glue or gelatinous substance, upon which is drawn a pattern to be cut into the stone. Spacing of the letters for assembly, forming parts of the complete pattern, presented a problem and the most common method employed at the present time, constitutes the use of a number of metallic plates upon which the letters are formed by outlining ridges. These metallic plates are assembled in a frame, spaced the proper distance apart, and then overlayed with a piece of carbon paper, the coated side of which is opposite to the side in engagement with the ridges of the plates. Upon this carbon paper is superimposed a sheet of material, such as tracing paper or the like, and then the impression of the ridges which form the letter outlined, is made upon the tracing paper by rubbing the two sheets of paper against the ridges of the aforesaid plates. The reversed impression made upon the underside of the tracing paper is then transferred to the surface of the gelatinous or glue-like coating over the stone tablet. After this is done, an instrument is used to cut away that part of the gelatinous coating which is to be subjected to the sandblasting operation. Obviously, this portion of the coating is the part outlined by the substance which was originally on the carbon paper and which was transferred to one side of the tracing paper and thence to the face of the coating. The skill of the operator is brought into play when following the lines of the letters or pattern takes place, and if a slip occurs, a ragged edge is presented and oftentimes the entire operation, including recoating the stone becomes necessary.

It is known in this art that after the pattern is cut through the gelatinous coating, the stone is subjected to the sandblasting operation for a desired period of time so as to countersink the pattern in the stone. The portion of the gelatinous coating which remains on the stone protects

all except the pattern receiving area from the abrasive effect of the sandblast.

Since the two desirable methods contemplated by this invention use the novel holder, illustrated in Figs. 6 and 7, its nature will be made apparent.

This holder comprises a plate 14 of suitable length, one longitudinal edge 16 of which presents a shoulder after a relatively thin plate 18 has been affixed to the underside of plate 14 so that one of its longitudinal marginal edges projects beyond edge or shoulder 16. A slot 20 is formed along the other longitudinal edge of plate 14 by rebending a portion of plate 14 upon itself.

A cam bar 22 is journaled in bearings 24 carried by the upper face of plate 14. A suitable handle 26 integral with cam bar 22 permits the operator to rotate this bar 22 within bearings 24 when resilient clips 28 are to be lifted from engagement with the underlying unit 30. Clips 28 are entirely separate from bar 14 and may be removed therefrom as desired. Any number of clips 28 may be employed to hold units 30 in place and their resiliency permits the lifting of one end thereof by cam bar 22 when it is necessary to simultaneously release all of units 30.

A laterally extending portion 32 is formed on each clip 28 and an ear 34 extends laterally from clip 28 to the opposite side thereof from portion 32. Clip 28 is longitudinally arched and should be made of spring metal so that it will assume the form illustrated in Fig. 7 when in the operative position with respect to units 30. Each clip 28 is maintained in position by a frictional engagement with the opposite sides of plate 14 which form slot 20.

In the method partially illustrated in Figs. 1 to 3 inclusive, a special type of pattern forming unit is employed. This unit may be made of sheet material such as paper, cardboard, or the gelatinous or glue-like substance which is employed as a protective coating over the face of the stone tablet.

Letters have been employed to illustrate the specific nature of the pattern and when letters are cut into the units 30, they are outlined by a plurality of slits 36, which when joined, present a continuous slit outlining the letter or pattern. By using an interrupted slit, or a number of slits 36, the area of unit 30 which makes up the body of the pattern, is held in place until unit 30 is actually affixed to the face of the stone. When units 30 are made of a gelatinous or glue-like substance, the area surrounded by slits 36 is merely lifted from place as slits 36 are joined by cutting the material between the ends of slits 36 with a knife.

The method of quickly preparing a stone tablet for the sandblasting operation through the use of gelatinous units 30 will now be described.

One face of stone 38 is covered with a coating 40 of adhesive composition in the nature of glue. This gelatinous substance is commercially known and obtainable on the market. After the coating 40 has set to the proper degree, an opening 42 is cut therethrough to expose an area of stone 38 which is to receive the pattern. Holder 14 is next brought into play and the complete pattern arranged thereon through the use of the aforesaid clips 28. Units 30 are assembled in side by side relation, the distance between the letters being governed by the formation of the abutting edges of units 30. When the letters of the name or pattern have been assembled as desired, the straight edge of holder 14 is placed along a straight line drawn on the surface of coating 40 and the several units lowered into opening 42 against the surface of tablet 38. The several units are caused to adhere to the surface of the tablet either through the employment of a material which is brushed on the exposed surface of the tablet or through the employment of an adhesive on the backs of units 30. Units 30 are dropped into opening 42 and appear as illustrated in Fig. 3. The gelatinous coating 40 is then completed by filling such interstices as may be presented between units 30 and the edges of opening 42. Slits 36 in units 30 are then joined and the pattern or letter portion of the units is lifted out to expose the underlying stone tablet. The stone tablet thereafter is sent directly to the sandblasting room where the pattern or name is countersunk in the regular fashion.

In practicing the method contemplated through the employment of units 30 which are made of paper, cardboard, or substances other than gelatinous material, the steps illustrated in Figs. 8 to 10 should be followed.

The gelatinous coating 40 is placed upon stone tablet 38 as aforesaid and a guide line 44 provided thereon. Holder 14 is supplied with units 46 in the nature of those illustrated in Figs. 11 and 12. These units are next secured to the face of coating 40 and holder 14 released therefrom. When paper units 46 are employed, they serve as guides for the knife which must be used to cut away the portion of the gelatinous coating 40 which forms the pattern. This pattern form is manifestly that which is outlined by the letters or units 46, and care must be taken to cut through coating 40 so that the letters or other pattern may be removed from the face of the stone.

When the pattern has been formed in the coating 40 by cutting away a portion thereof, the stone is then ready for subjection to the sandblasting operation. In this instance, the paper units 46 fall away and become no part of the protecting coat as the sandblasting operation occurs.

The nature of units 46 may be either as illustrated in Figs. 11 and 12 or as illustrated in Figs. 4 and 5. In Fig. 11 the form of units 46 is a stencil-like member around the inner edges of which the knife is intended to travel. The paper or cardboard units may be provided with an outlining interrupted slit so that their appearance is precisely the same as illustrated in Fig. 4. When such a unit is used as a knife guide upon the face of coating 40 (Figs. 9 and 10) the knife follows slit 36 and is thereby provided with a guide on each side so that slipping or objectionably mutilating coating 40 is prevented. It is preferable when creating units 30 or 36 to leave the actual letter area in place through the employment of an interrupted slit. Not only is it difficult to manufacture a unit with well defined corners, but the limp nature of units 30 and 36 after the actual letter portion thereof has been removed renders them less durable and susceptible to destruction during handling.

Manifestly the employment of methods above set down will shorten the work required to condition a stone for the sandblasting operation, and while but the preferred employment of the holder has been illustrated and described, and but two methods have been explained, it is obvious to one skilled in the art that changes and modifications might be made without departing from the spirit of the invention or scope of the appended claims.

Having thus described the invention, what is

claimed as new and desired to be secured by Letters Patent is:

1. The method of preparing stone or the like for treatment by sandblasting to countersink a pattern therein which consists of assembling a plurality of units, having the pattern provided therethrough; simultaneously affixing the units to a selected area on the stone; and fusing a substance with the units to secure the same together and to cover the remaining portion of the stone.

2. The method of preparing stone or the like for treatment by sandblasting to countersink a pattern therein which consists of applying on the face of the stone a coating of gelatinous substance; creating an opening through the coating to expose an area on the stone; and affixing a unit of the gelatinous substance, having the pattern previously provided therethrough, to the exposed area.

3. The method of preparing stone or the like for treatment by sandblasting to countersink a pattern therein which consists of applying on the face of the stone a coating of gelatinous substance; creating an opening through the coating to expose an area on the stone; assembling a plurality of gelatinous units, having the pattern provided therethrough, in a holder; affixing the units to the exposed area on the stone and in the opening through said coating; and flowing gelatinous substance over any portion of the stone left exposed through the opening after the units are in place.

4. The method of preparing stone or the like for treatment by sandblasting to countersink a pattern therein which consists of applying on the face of the stone, a coating of gelatinous substance; assembling a plurality of units having interrupted slits formed therethrough to outline the pattern; affixing the units in place over a selected area of the stone; cutting the units to join the slits; and removing the portions of the units forming the pattern.

5. The method of preparing stone or the like for treatment by sandblasting to countersink a pattern therein which consists of applying on the face of the stone a coating of gelatinous substance; assembling a plurality of units having interrupted slits formed therethrough to outline the pattern; affixing the units in place over a selected area of the coating; cutting through the coating beneath the slits; cutting the units and the coating to join the slits; and removing the portions of the units and the coating therebeneath which form the pattern.

6. The method of preparing stone or the like for treatment by sandblasting to countersink a pattern therein which consists of applying on the face of the stone, a coating of gelatinous substance; assembling in a holder a plurality of units, having the pattern provided therethrough; affixing the units to a selected area of the coating; removing the holder from the units; and removing that portion of the coating beneath the units which is exposed by the pattern therethrough.

JOSEPH H. BEHEE.