Sept. 29, 1942. H. B. STRANG 2,297,373

STENCILING MACHINE

Filed March 30, 1942 2 Sheets-Sheet 1

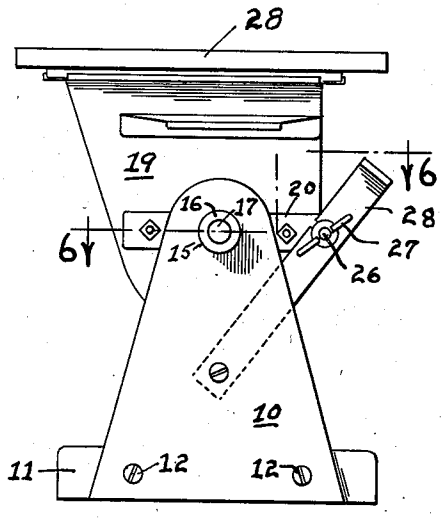

Fig. 1.

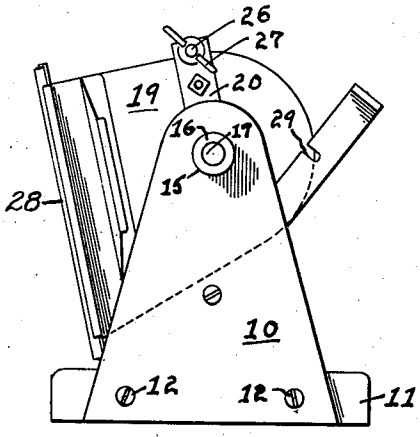

Fig. 2.

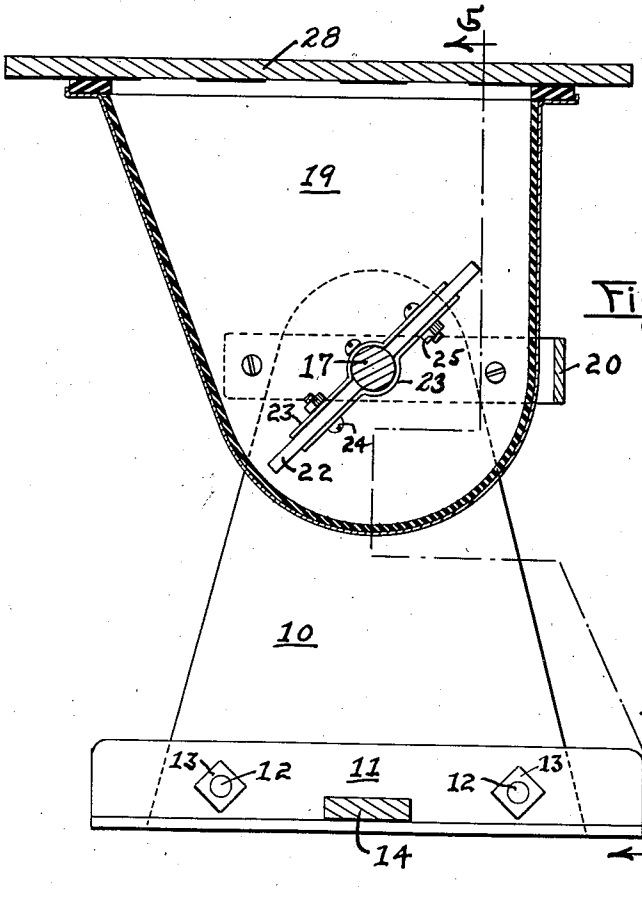

Fig. 3.

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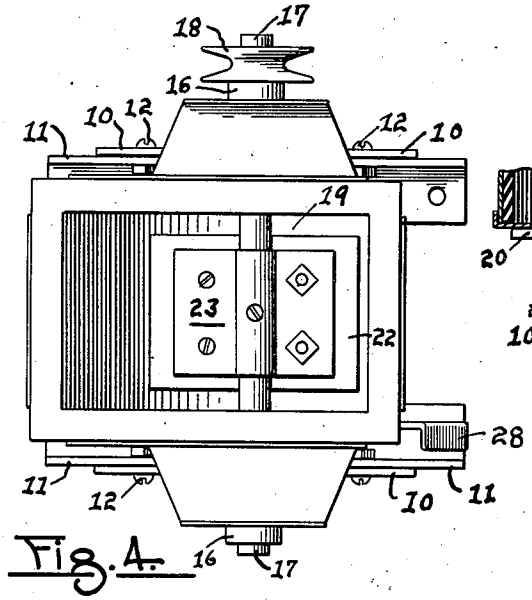

Fig. 4.

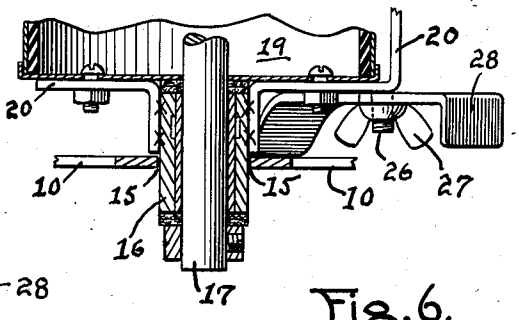

Fig. 6.

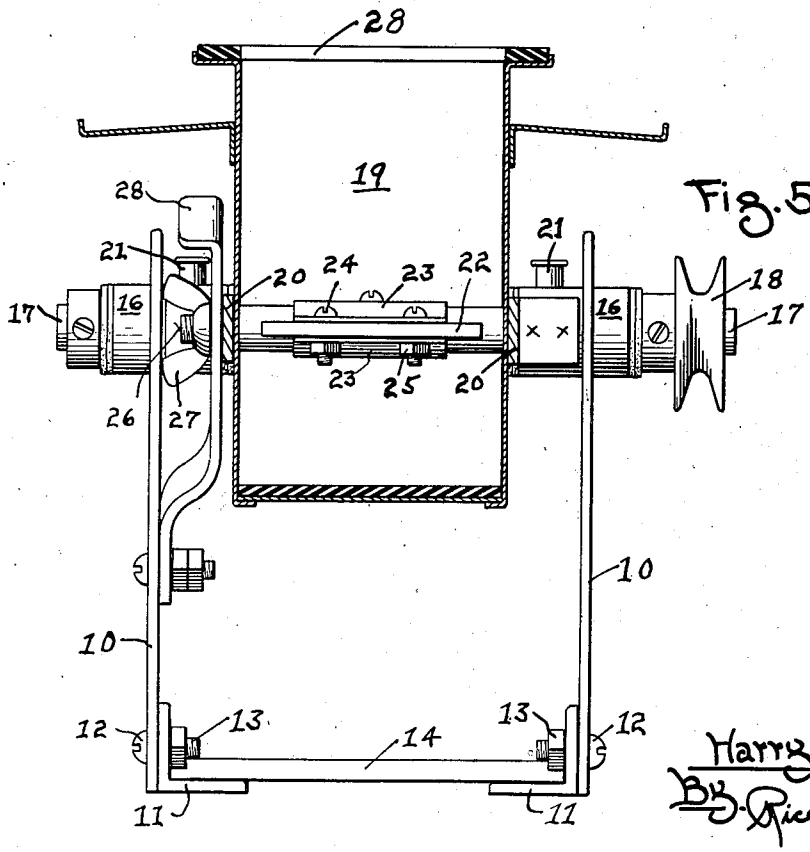

Fig. 5.

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Patented Sept. 29, 1942 2,297,373

UNITED STATES PATENT OFFICE

2,297,373

STENCILING MACHINE

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Application March 30, 1942, Serial No. 436,820

3 Claims. (Cl. 51—9)

The present invention relates to stenciling machines and more particularly to stenciling machines of the sand blasting type.

The primary objects of the instant invention are to provide a machine of the general character above indicated whereby signs, name plates, house numbers, ornamental articles and the like may be readily made; to provide such a machine whereby such articles made of glass, metal, wood, plastic and the like may be economically produced; to provide such a machine whose cutting medium is thrown by centrifugal force rather than by compressed air; to provide such a machine whose cutting medium is retained therein until it is manually dumped, thereby making the cutting medium available for re-use over a considerable period of time; to provide such a machine which is highly efficient in use; and, to provide such a machine which is economical in manufacture.

An illustrative embodiment of the invention is shown in the accompanying drawings, wherein:

Figure 1 is a side elevational view of the stenciling machine;

Figure 2 is a view similar to Figure 1 but showing the hopper which holds the cutting medium in its rotated position for emptying the contents thereof;

Figure 3 is an enlarged vertical sectional view of the machine;

Figure 4 is a top plan view thereof;

Figure 5 is a sectional view on line 5—5 of Figure 3; and

Figure 6 is an enlarged sectional view on line 6—6 of Figure 1.

Referring then to the drawings wherein like parts of the structure shown are all designated by the same numerals in the several views, the sand blasting machine is provided with a pair of spaced vertically disposed standards 10, preferably of sheet metal and here shown as triangular in shape. Each standard is provided with a foot 11 on its inner side, preferably of angle metal and each is here shown as secured to its standard by bolts 12 and their nuts 13. A metal stretcher 14 is disposed between the standards 10 and is secured to the feet 11 medially of their lengths in any suitable manner as by spot welding to give strength and rigidity to the standards.

The upper end of each standard 10 is provided with a journal bearing receiving aperture 15 within each of which is disposed a journal bearing 16 projecting laterally from the opposite sides of its standard and rotatable within its receiving aperture 15. A horizontally disposed shaft 17 having a pulley wheel 18 at one end thereof adapted to carry a motor driven belt, not shown, is rotatable within the spaced journal bearings 16.

A hopper 19 adapted to hold the cutting medium such as sand or the like is supported by brackets 20 affixed on opposite sides of each journal bearing 16, each of which is preferably provided with a vertically disposed oil cup 21 whereby the shaft 17 may be lubricated. A vane 22 for centrifugally throwing the cutting medium, preferably of flexible material such as rubber, is secured to opposite sides of the shaft 17 within the hopper 19 by plates 23 disposed on its opposite sides and secured together by nuts 25 and their bolts 24.

One side of the hopper 19 is provided with a projecting screw threaded bolt shank 26 carrying a wing nut 27 and an arm 28 pivotally mounted at one of its ends to the inner side of one of the standards 10 is provided with a bolt shank receiving notch 29 intermediate its length adapted to receive the bolt shank 26 whereby the hopper may be maintained in upright position as shown in Figure 1 in instances wherein the wing nut 27 is tightened on its bolt shank 26 or the hopper may be rotated to its position shown in Figure 2 when the wing nut is loosened and the arm 28 is dropped in instances wherein it is desired to dump the cutting medium and replenish the hopper with a fresh cutting medium.

Operation

In operation, the article 28 to be sand blasted to form a sign, name plate, house number or the like from glass, metal, wood, plastic or the like is first prepared by covering one surface thereof with cut-out letters, figures or characters, preferably of adhesive tape or adhesive tape may be first applied to one surface of the article to be stenciled and the letters, numbers or characters thereafter cut therefrom.

The article thus prepared is placed on the upper surface of the hopper 19 whereupon the motor whose belt is carried by the pulley wheel 18 is started, rotating the vane 22 on its shaft 17 in a counterclockwise direction as seen in Figure 3, preferably at a speed of not less than 3600 R. P. M.

The cutting medium is thus thrown against the under surface of the article by the vane, sand blasting the letters, numbers or other characters in a relatively short period of time.

The cutting medium may thus be used over and over for a considerable period of time and the work should be preferably manually moved over the top of the hopper during the sand blast cutting to insure an even cut on all parts thereof. After the cut has been made to the desired depth, the tape may be removed, leaving an attractive sign, name plate, ornamental article or the like.

It will thus be seen that the stenciling machine herein illustrated and described is efficient in its intended use and economical in manufacture and while but one specific embodiment of the invention has been herein shown and described, it will be understood that certain details of the construction shown may be altered or omitted without departing from the spirit of the invention as the same is defined by the following claims.

1. A stenciling machine having a pair of spaced vertically disposed standards, each having a journal bearing receiving aperture in aligned relationship, a journal bearing rotatable within each aperture, a hopper disposed between the standards whose side walls are supported upon the journal bearings, a rotatable shaft disposed within the journal bearings, and a vane carried by the shaft within the hopper and above the floor thereof adapted to throw a cutting medium within the hopper upwardly by centrifugal force against an article supported thereon upon rotation of the shaft.

2. A stenciling machine having a pair of spaced vertically disposed standards, each having a journal bearing receiving aperture in aligned relationship, a journal bearing rotatable within each aperture, a hopper disposed between the standards whose side walls are supported upon the journal bearings, a rotatable shaft disposed within the journal bearings, a vane carried by the shaft within the hopper and above the floor thereof adapted to throw a cutting medium within the hopper upwardly by centrifugal force against an article supported thereon upon rotation of the shaft, and means for maintaining the hopper in upright position.

3. A stenciling machine having a pair of spaced vertically disposed standards, each having a journal bearing receiving aperture in aligned relationship, a journal bearing rotatable within each aperture, a hopper disposed between the standards whose side walls are supported upon the journal bearings, a rotatable shaft disposed within the journal bearings, a vane carried by the shaft within the hopper and above the floor thereof adapted to throw a cutting medium within the hopper upwardly by centrifugal force against an article supported thereon upon rotation of the shaft, and means for maintaining the hopper in upright position comprising an arm pivotally secured at one end thereof to one standard and locking means on the hopper for detachably securing the other end of the arm.

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