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L. H. CARUFEL

SAND BLASTING SCREEN

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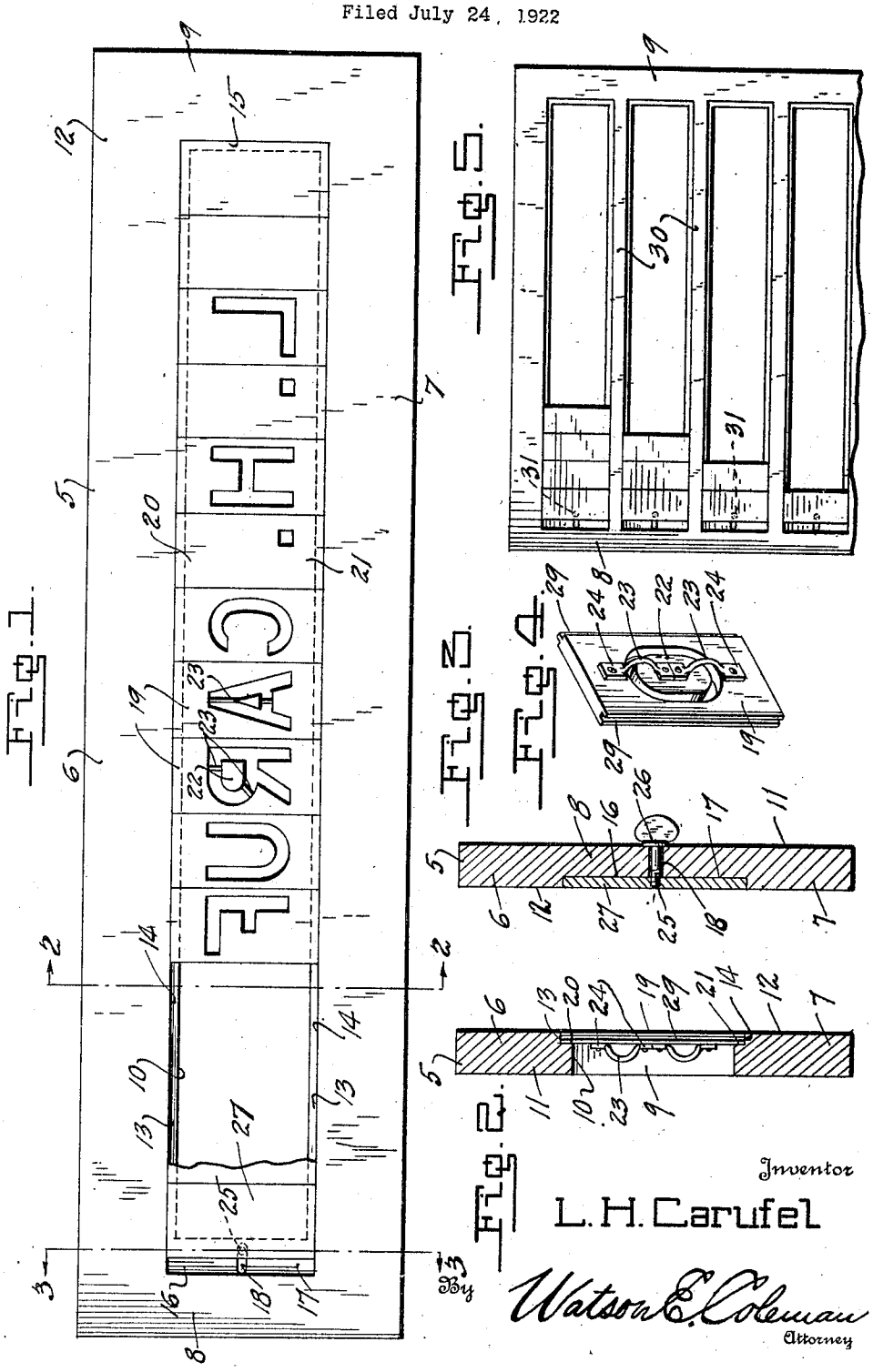


Fig. 1.

Fig. 5.

Fig. 4.

Fig. 2.

Fig. 3.

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SAND-BLASTING SCREEN.

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To all whom it may concern:

Be it known that I, LOUIS H. CARUFEL, a citizen of the United States, residing at Bismarck, in the county of Burleigh and State of North Dakota, have invented certain new and useful Improvements in Sand-Blasting Screens, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to sand blasting screens, and has for its object to provide a screen of this character arranged to hold a number of stencils containing initials, letters, or other characters to be sand blasted on an object.

It is another object of the invention to provide a screen of this character adapted to hold a plurality of stencils, the stencils being positioned so that the face of the screen adjacent the stencils, and the stencils, may be firmly engaged with the object to be sand blasted, to prevent leakage of the sand blasting material beneath the frame or the stencils.

It is a further object of the invention to provide a screen of this character wherein the opening in the screen is bridged by stencils secured in the screen and held in engagement with each other by means carried by the screen.

With these and other objects in view, the invention consists in the improved construction and arrangement of parts to be hereinafter more particularly described, fully claimed and illustrated in the accompanying drawings, in which:—

Figure 1 is a bottom plan view of a sand blasting screen constructed in accordance with an embodiment of the invention;

Figure 2 is a section taken on the line 2—2 of Figure 1;

Figure 3 is a section taken on the line 3—3 of Figure 1;

Figure 4 is a perspective view of one of the stencils, showing the brackets for holding the center pieces of the stencils; and

Figure 5 is a fragmentary bottom plan view of another form of the invention.

The method previously used to sand blast characters on an object required the application of a composition to the object, waiting a considerable length of time for the composition to dry, and then carving out the letters or characters to be sand blasted on the object. After the sand blasting the composition had to be removed and the surface of the object cleaned. All of this requires considerable time and great skill. With the present invention this disadvantage is overcome by the provision of a novel form of screen capable of being used indefinitely for sand blasting designs, letters, figures, characters, etc., without requiring the application of a composition to the object to be sand blasted. The sand blasting operation may be started immediately upon application of a screen to the object or work.

The device above referred to embodies a screen or frame 5 including side members 6 and 7 and end members 8 and 9, said members being relatively broad so as to provide a broad surface to protect the object on which the screen is used. This frame may be made of any desired material. The material, however, must be of a nature to prevent the passage of sand particles therethrough in the sand blasting operation.

The end and side members of the frame are made relatively thick, although not as thick as they are broad, so as to render the frame substantial. The end and side members cooperate to provide a frame having a central opening 10, an upper face 11, and a lower face 12. It is of course obvious that the end and side members may be made in various lengths to increase or decrease the size of the opening 10, according to the size of the stencils and the character to be sand blasted. The inner edge of the lower face 12 of each of the side members 6 and 7 is reduced to provide a groove 13, the distance between the wall 14 of each groove corresponding to the length of a stencil, so that the grooves 13 cooperate to provide a guide. The end member 9 has the inner edge of its lower face 12 reduced to provide a groove 15, said groove registering with the end portions of the grooves 13. The end member 8 has its lower face 12 reduced to provide a relatively large groove or recess 16, the bottom 17 of the groove being provided with a slot 18.

By the cooperation of the grooves 13, 15 and 16, a supplemental frame is substantially provided at the inner edge of the lower face 12 of the main frame. The purpose of the reduced edges is to permit the stencils to lie flush with the lower face 12 of the screen, and eliminate as far as possible all

projecting parts or obstructions which would tend to raise the frame or stencils from the object to be sand blasted.

In connection with the frame 5, a plurality of stencils 19 are provided. Said stencils may be made as wide as desired, but of a length corresponding to the distance between the recesses of the side members 6 and 7. The end portions 20 and 21 of the stencils are intended to engage the bottoms of the grooves so as to bridge the opening 10. The stencils may be provided with any desired characters, such as initials, numbers, symbols, etc., the characters desired being cut out in such a manner as to permit the passage of sand through the portions removed. In the formation of stencils having center pieces which are not connected to the remaining portions of the stencils, for instance. such as the letters O, A, P, etc., the central portion 22 of the stencil not connected to any other portion of the stencil in the usual manner, is positioned centrally of the cut away portion by means of brackets 23, each bracket being substantially U-shaped and having feet 24, one foot of the bracket being connected to the center piece 22 and the opposite foot to the body of the stencil, the U-shaped portion of the bracket bridging the opening of the character. Two of these brackets may be used for securing each center piece, the bracket being formed of wire of narrow gauge so as not to interfere with the sand blasting operation by preventing the particles of the sand from reaching the portions of the stencil beneath the brackets.

Disposed in the slot 18 of the groove 17 is a set screw 25, said set screw being movable longitudinally of the slot and having a head 26 adapted to engage the upper face 11 of the end portion 8 of the frame. The shank of the screw is threaded into a plate 27 which is disposed in the guides and grooves 17. This plate is intended to be moved longitudinally of the guides so as to urge the stencils into binding engagement with each other and with the opposite end portion of the frame to permit the frame to be moved about without danger of the stencils falling from the frame. To prevent the passage of sand between the stencils in the sand blasting operation, the side portion 28 of each stencil is provided with a tongue, while the side portion 29 is provided with a groove, the tongue of one stencil being adapted to enter the groove of an adjacent stencil. In this way it is impossible for any sand to pass between the stencils so that there is no danger of marks not desired being blasted on the work. By the novel arrangement of the grooves 13, 15 and 17, the lower faces of each stencil may be firmly engaged with the object to be sand blasted as well as the lower face 12 of the frame, so that it is impossible for any sand to pass beneath the stencil or the frame. At the same time, in view of the thickness of the end and side members of the frame, a trough is substantially provided into which the sand is discharged and upon the stencils. In arranging the characters to be sand blasted, the frame is inverted, that is, the lower face is disposed uppermost so as to position the guides toward the operator. The stencils may then be placed within the opening 10 and arranged as desired. In view of the trough, mentioned above, it is possible for the brackets 23 to extend into said trough during arrangement of the screen, without causing the stencils to be raised above the screen.

After the stencils have been arranged as desired and the blank stencils applied to close the undesired portion of the opening 10, the plate 27 is moved into engagement with the end-most stencils so as to force the remaining stencils toward the end portion 9 of the frame and the set screw tightened to lock the stencils in the frame. The frame may then be turned over to position the stencils on the object to be sand blasted. The frame is firmly clamped to the object by any suitable means to prevent movement of the frame during the sand blasting operation.

In Figure 5, another form of the invention is shown. This form consists in making the end members 8 and 9 relatively long and disposing bars 30 between the end members, each bar having the longitudinal edges of its lower face grooved similar to the side members 6 and 7 so that the space between each bar provides a separate frame for the reception of the stencils, portions of each of the end members between said bars being provided with set screws 31 similar to the end members 8. In this way any amount of lettering or figures may be blasted on a pane of glass or like object. An important feature of this invention is that the lower face of the frame and the lower face of the stencils are permitted to lie flush so that they can evenly engage the object to be sand blasted, and provide as tight a connection as the composition previously used.

From the foregoing it will be readily seen that this invention provides a novel form of said blasting screen, the novel arrangement of which permits the same to be used for the purpose of decorating glass, and particularly for the purpose of blasting names, initials, numbers or characters on the windshields or like glass parts of automobiles.

What is claimed is:

1. A sand blasting screen comprising a frame having an elongated opening therein, the edges of the opening being rabbetted, a plurality of stencils located within the opening and engaging upon said rabbets, a

clamping plate movably mounted within the opening and seating upon the rabbets, and a screw threaded into said plate, the frame being provided with an elongated slot for the reception of said screw whereby said plate may be moved into clamping engagement with the stencils for holding the latter in engagement with one another and with the opposite end of the frame.

2. A sand blasting screen comprising a frame, the inner edges of said frame being grooved to provide guide means, stencil plates and stencil blanks having their ends disposed in the grooves and bridging the opening in the frame, and screw means carried by the frame for holding the stencils and blanks in engagement with each other and the frame.

3. A sand blasting screen comprising a frame including end and side members, the inner edges of one face of each of the side and end members being reduced to substantially provide a supplemental frame, stencil plates and stencil blanks disposed in the supplemental frame and bridging the opening of the frame, said stencils being positioned flush with the lower face of the frame, an adjusting plate carried by the frame and bridging the opening thereof, and a set screw adjustably mounted in one of the end members of the frame and operatively connected to said plate for holding the stencils in binding engagement with each other and the frame.

4. A sand blasting screen comprising a frame including end and side members, the inner edges of one face of each of the side and end members being reduced to substantially provide a supplemental frame, stencil plates and stencil blanks disposed in the supplemental frame and bridging the opening of the frame, said stencils being positioned flush with the lower face of the frame, one side of each stencil being provided with a tongue, the opposite side of each stencil having a groove, the tongue of one stencil being adapted to extend into the groove of an adjacent stencil to render the stencils leak-proof, an adjusting plate slidable in the supplemental frame adjacent one end of the frame, said end of the frame having an elongated slot, and a set screw movable in said slot and mounted on the adjusting plate, said adjusting plate being adapted to hold the stencils in clamped interfitting engagement with one another and within the frame.

In testimony whereof I hereunto affix my signature.

LOUIS H. CARUFEL.