April 7, 1953 H. V. MAY 2,633,644

LAY-OUT JIG

Filed June 26, 1951

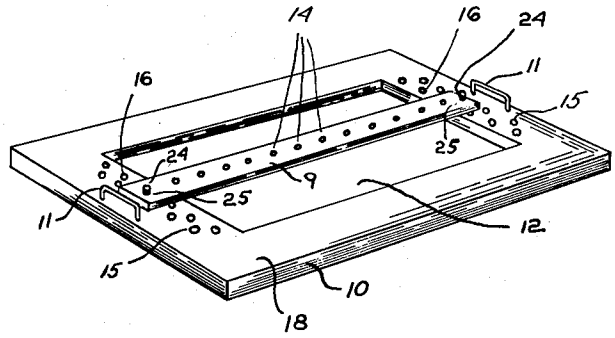


Fig 1

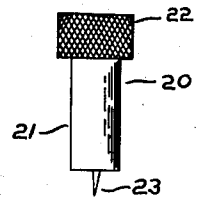


Fig 2

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Patented Apr. 7, 1953 2,633,644

UNITED STATES PATENT OFFICE

2,633,644

LAY-OUT JIG

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Application June 26, 1951, Serial No. 233,651

2 Claims. (Cl. 33—189)

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This invention relates to new and improved precision lay-out jigs for the formation of patterns from which screens used in stenciling ceramic dielectrics are manufactured.

A considerable problem has existed in the art of manufacturing such patterns because of the extreme accuracy required in the work. Errors of as much as .001 of an inch in the size of the final pattern have caused patterns to be rejected. The scope of this problem is more readily seen when it is realized that as many as 72 ceramic discs or plates are stenciled with molten silver through a screen measuring 3.500" x 3.200" in diameter. As long as 10 hours have frequently been required to form a satisfactory pattern from which a screen used in stenciling dielectrics could be produced. Men have not been able to work for long periods producing such patterns because of the eye strain caused by the small dimensions involved.

It is an object of this invention to produce a jig from which these patterns can be easily laid out in a relatively short period. It is a further object of this invention to produce a jig which can be used with the production of patterns for stenciling any different number of dielectric discs. Further objects become apparent from the annexed specification and claims.

Referring specifically to the drawings, Figure 1 shows an isometric view of the jig produced in accordance with this invention; and Figure 2 shows a stylus used with this jig.

In Figure 1, 10 designates the jig body preferably formed of ½" sheet steel having the sides ground smooth. Handles 11 are attached to the mid section of opposite sides of the jig in order to facilitate its removal. A rectangular center opening 12 is formed medially within the body 10 and is bridged by a guide bar 9 fastened by appropriate pins 24 to opposed, parallel, aligned holes 16 in the base 10. The guide bar 9 is furnished with a series of openings 14 medially throughout its length. It will be readily seen from the drawings that the bar 9 may be moved from location to location across the opening 12 by pulling the pins 24, moving the bar to the next set of holes 16 and then reinserting these pins.

The operation of the jig itself is quite simple. The jig body 10 is placed over a plastic or paper sheet (not shown), so that a portion of the sheet which is to contain the pattern is located within the opening 12. The weight of the body 10 is sufficient to hold it in position. The bar 9 is then placed in position as indicated across the

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opening. A stylus such as is shown in Figure 2 having a knurled handle 22, a central round portion 21, and a central pin point 23, is inserted through each of the holes 14 so as to make appropriate markings in the plastic or paper sheet by virtue of the pin point 23 engaging the sheet. The process is repeated with all the desirable positions of the bar 9 and the holes 14, so as to produce a series of points on the plastic or paper sheet from which individual ceramic patterns may be drawn.

A number of different sets of parallel, aligned holes besides those designated as 16 may be formed on the jig body 10. For convenience only one other series of holes 15 has been shown, but others may be used in conjunction with other bars (not shown) besides the bar 9 in order to produce any desired combination of marking points with the jig. All of the surfaces which bear against one another in the jig are ground flat. The openings 14 through which the stylus 20 projects are ground to a perfect fit with the cylindrical portion 21 of the stylus, so that there is no possibility of marking other than one designated spot when using the marker. The holes 25 through which the pegs 24 project into openings 15 and 16 in the base 10 are similarly ground to a perfect fit.

Patterns used in the production of screens for stenciling ceramics made with the described jig have an error of less than .0002 of an inch as compared with errors of .001 of an inch as previously encountered with this type of pattern. The time for laying out such patterns has been reduced from approximately 10 hours to 5 minutes.

Those skilled in the art will realize that various modifications of the invention besides those modifications indicated in the specification may be made. For example, the parts may be made of other materials besides steel. However, it is to be understood that the inventive concept involved is to be measured only by the scope of the appended claims.

What is claimed is:

1. A precision layout jig for the production of patterns used forming screens for the stenciling of ceramic plates which comprises, a rectangular steel plate defining a rectangular opening formed medially of said plate, handles on opposed sides of said plate, means defining series of parallel aligned openings on opposite edges of said rectangular opening, a guide bar having means defining end openings fastened to said plate across said rectangular opening by pins extending

through said end openings into two of said aligned openings on opposite edges of said rectangular opening, and means defining a series of regularly spaced holes across the central portion of said bar.

2. A jig as defined in claim 1 in which said bar and said plate are ground flat, and in which said aligned and end openings are ground to fit around said pins without noticeable play.

HAROLD V. MAY.

REFERENCES CITED

The following references are of record in the file of this patent:

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