March 18, 1952 H. J. ABSHER 2,589,525

LAYOUT SPACER OR INSTRUMENT

Filed Jan. 14, 1946

FIG. 1.

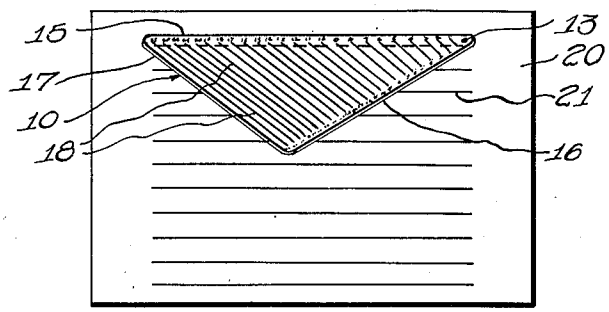
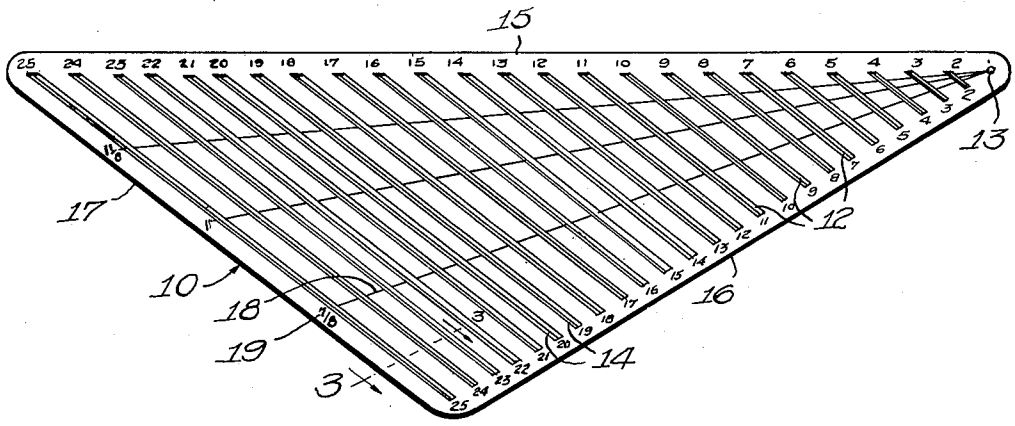


FIG. 2.



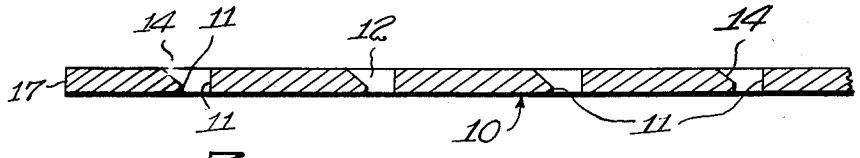


FIG. 3.

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LAYOUT SPACER OR INSTRUMENT

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1 Claim. (Cl. 33—104)

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This invention relates to a layout spacer or instrument primarily for use as a precision tool in sub-dividing a line or space equally, although it is capable of employment in dividing a line or space with equal spaces of a given approximate dimension.

An important object is to attain the ends stated by providing a novel device having a plurality of parallel surfaces, edges, slots or the equivalent which coact with the line or space being subdivided, through rotational adjustment.

Another prime object is to provide such a novel device as uses the parallel media oblique to a line radial with respect to the axis of rotation of the spacer.

A third object is to provide a device of the character stated wherein the parallel media are oblique to an edge disposed approximately radial to the axis of rotation of the spacer.

A fourth object is to provide a form of the invention using a triangular body wherein the media are parallel to one edge thereof and are oblique to the remaining edges.

A fifth object is to provide an article of the character stated which is capable of use generally by engineers, draftsmen, mechanics and machinists, and for instance by tool makers, aircraft template makers, by commercial sheet metal mechanics, in the experimental department of aircraft factories, and on the aeroplane by assembly mechanics for repair work and modifications.

Various additional objects and advantages will be pointed out and otherwise become apparent from a consideration of the description hereinafter following, taken in connection with accompanying drawing illustrating one embodiment of the invention by way of example.

In said drawing:

Figure 1 is a plan view showing one form of the invention in operative association with a sheet or the equivalent,

Figure 2 is a plan view of the invention alone, and

Figure 3 is a fragmentary cross-sectional view on an enlarged scale taken on the line 3—3 of Figure 2.

Referring specifically to the drawing wherein reference characters designate like or similar parts throughout the different views, the invention is preferably made as a flat element or member generally designated 10. No limitation however is to be implied since it may be manufactured from any suitable material, of any desired dimensions, size and shape. For instance, element 10 may be of transparent or other plastic material and triangular as shown.

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In carrying out the invention I provide a multiplicity of substantially straight parallel spaced surfaces, edges or the equivalent as at 11 and advantageously such surfaces or edges are produced by forming element 10 with elongated slots 12 therethrough. Any number of such surfaces or slots are utilized and it will be noted that they are equi-distant and are crossed by a line or lines radial with respect to a point 13, which may be a hole extending through the element so that a pencil point, stylus or the like may pass therethrough and engage a sheet or other work about which the element or spacer 10 is turned in operation. The upper edge of one of the longitudinal walls defining each slot 12 is beveled or chamfered as at 14, optionally, in order to guide a pencil or other marker through the slots for contact with the sheet or work being marked.

It will be noted also that the marker or body 10 has a straight marginal edge at 15 and that the lines 11 are oblique with respect thereto. Also, lines 11 are oblique to the opposite edge 16 of the body or marker 10. Further, such edges or surfaces 11 are parallel to the remaining straight edge 17 of the body 10.

Preferably the parallel surfaces 11 or slots 12 are formed at spaced intervals progressively from the pivotal point or opening 13 adjacent to the edges 15 and 16 as shown.

In addition, for linear measurement purposes, lines are delineated at 18 along the body radial with respect to the opening 13 to facilitate approximate linear measurement and adjacent to the edge 10, indications in inches are delineated on the body or marker according to the approximate measuring accomplished with the aid thereof, such marking being shown as at 19.

In the specification and claims, the "slot field" refers to the portion of the scaler inside of the marginal edge contour of the triangular scaler, the triangle of the scaler and of the slot field being of the scalene triangle type; the dimensional contour of the "slot field" is represented by the slot adjacent side 10 and the respective ends of the intermediate slots, said slot ends defining the inner boundary of the marginal zone 16 of the scaler, although the material between adjacent slots is integral with that of the marginal zone; the included angle of the slot field presented by the corner angle of the marginal zone is defined as an "apical zone" of the slot field, since the field presents an "apex" at each of the field corners, the adjacent corners of the

periphery of the marginal zone being indicated as rounded.

The use of the marker is suggested in Figure 1 wherein the same is superposed on a sheet or other piece of work as at 20 and which may contain one or more lines 21, which or the adjacent spaces are to be equally sub-divided or approximately linearly measured in inches or fractions of inches according to the arrangement of the particular lines 18 provided. In order to divide any of the lines 21 into a given number of spaces, for instance 15 spaces for a rivet pattern of 16 rivets, the spacer is placed as in Figure 1, with opening 13 at the right hand end of such line. The spacer is then rotated on the axis indicated by said opening 13, and in this connection if desired, to facilitate rotation and provide a center, a pencil point, stylus or the like may be passed through opening 13 and engaged with the work 12, actually penetrating same, if the work is of a material like wood, paper, or fiber. The rotation of the spacer is thereupon effected manually in the necessary direction to bring about the intersection of one of the surfaces 11 of that slot 12 formed along the longer edge 15 of the spacer. If for example, the subdivision is to be in 16 equal spaces, the rotation from the center mentioned would be carried out until one of the edges or surfaces 11 of that slot 12 numbered 17 intersects the left hand end of the line 21 in question.

In addition to the precision use of the tool or spacer as described, the same operation may be carried out in dividing either line 21 or any equivalent into approximately equal linear parts, this result being brought about by rotating the spacer on a center as described, until edges 11 intersect the line 21 in question coincident with the lines 18, according to whether the division is to be in inch spacing or fractional inch spacing, dependent upon the specific line or lines 18 provided.

Since the spacer or tool may be made of transparent or translucent material, as one example, it will be realized that the precision placing of the spacer with respect to a line, space or the equivalent is readily observable and that such feature facilitates the application of a pencil, stylus or other marker into the slot 12 for engaging and marking the sheet or other work 20.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

What is claimed is:

A spacer of the character described comprising a triangular body having an axis opening formed through one end thereof, said body having a plurality of equally spaced, parallel slots formed therethrough, the longitudinal axis of said slots intersecting and being oblique to the two edges of said triangular body adjacent said axis opening, each of said slots being numbered from said axis opening in consecutive and ascending order, and a plurality of radial lines extending from said axis opening and intersecting said slots, said lines being so radially spaced that the distance between slot edges measured on such lines is a commonly used multiple of a given unit of linear measurement and said distance being marked on said lines, whereby any given work line to which the spacer may be applied may be divided into the number of equal parts closest to a selected, commonly used spacing interval.

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