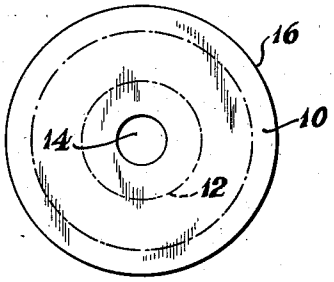
Feb. 5, 1946. A. E. RAWALD 2,394,404

SCRIBER

Filed July 16, 1943

FIG. 1



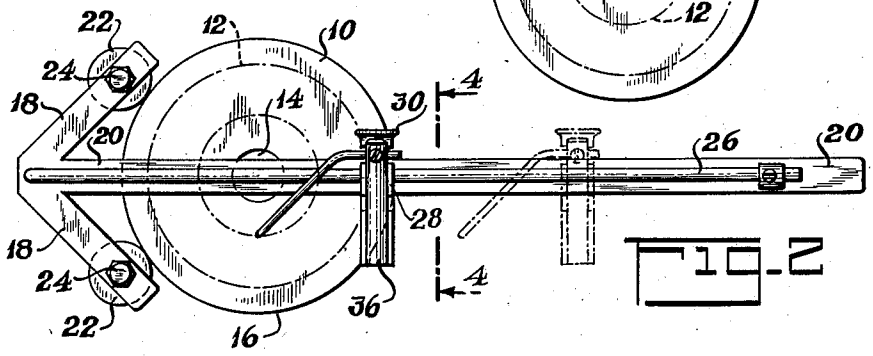


FIG. 2

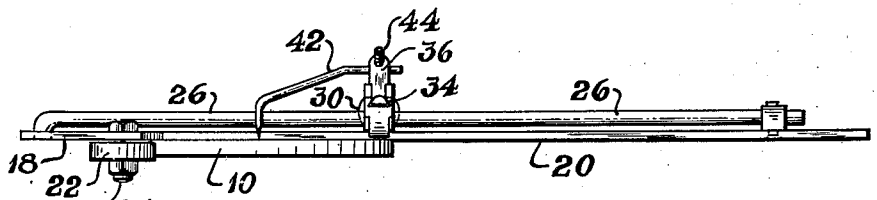


FIG. 3

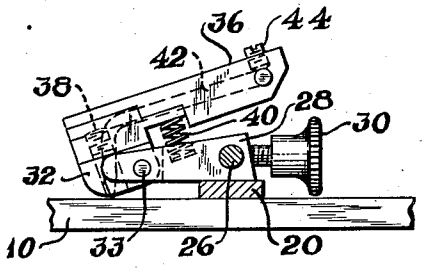


FIG. 4

INVENTOR
AUGUST E. RAWALD.
BY
ATTORNEY

Patented Feb. 5, 1946 2,394,404

UNITED STATES PATENT OFFICE

2,394,404

SCRIBER

August E. Rawald, Midland Park, N. J., assignor to Wright Aeronautical Corporation, a corporation of New York

Application July 16, 1943, Serial No. 495,006

2 Claims. (Cl. 33—42)

This invention relates to a marker or scriber for drawing circles and is particularly useful for drawing circles on a face of an annular shaped object.

In the past when it was desired to draw a circle about an opening, for example, in order to provide a marking circle for machining operations it was the practice to support the article in a lathe in order to scribe the desired circle. Obviously, conventional compasses could not be used for this purpose because of the absence of material at the center of the circle. It is an object of this invention to provide a simple tool adapted to mark or scribe a circle on the face of an annular object. It is a further object of this invention to provide a tool for marking or scribing a circle without the need of a pivot point at the center of the circle.

Specifically, the circle scriber of this invention comprises a tool having a pair of diverging arms and an intermediate arm adapted to lie across the surface upon which the circle is to be drawn. The intermediate arm is arranged to adjustably support a scriber or marking element and the diverging arms are adapted to engage the periphery of the object upon which the circle is to be drawn.

Other objects of this invention will become apparent in reading the annexed detailed description in connection with the drawing in which:

Fig. 1 is a plan view of an annular object upon which a circle is to be drawn,

Fig. 2 is a plan view of the object with the tool embodying this invention in position thereon for drawing a circle,

Fig. 3 is a side elevation of Fig. 2, and

Fig. 4 is an enlarged section on line 4—4 of Fig. 1.

Referring to the drawing, the tool hereinafter described is adapted to draw concentric circles of various diameters on the face end of annular objects of various sizes, for example, the article or plate 10 illustrated in Fig. 1. If a plurality of circumferentially spaced holes are to be drilled in the plate 10 on the circle 12 concentric with the bore 14 and periphery 16 it is necessary to scribe or otherwise mark the circle 12 on the face of the plate 10. Obviously, because of the annular nature of the plate 10 it is impossible to use conventional compasses for this purpose. In the past it has been customary to rotate the plate 10 in a lathe in order to draw such a circle.

The circle-marking instrument of this invention comprises a pair of diverging arms 18 and an elongated intermediate arm 20 preferably bisecting the angle between the arms 18. Each of the arms 18 is provided with a roller 22 pivotally mounted thereon by a shaft or bolt 24. Suitable bearing means may be provided between each shaft 24 and its associated roller to take up all clearance and provide for free rolling action. When the rollers 22 are placed in contact with the outer circular periphery 16 of the annular plate 10 all points on the intermediate arm 20 are always at the same distance from the center of the circular periphery 16 regardless of the location of the diverging arms 18 about this periphery. Therefore, any point on the intermediate arm 20, offset from the center of the annular plate, will describe a circle about this center as the arms 18 are rotated about and in contact with the outer periphery 16 of the plate 10.

In order to mount a scriber or marker on the arm 20 an elongated rod 26 is suitably supported above the surface of the arm 20 and parallel thereto. A bracket member 28 is adjustably supported along this rod by means of a set screw 30. This bracket 28 is provided with a flat under surface adapted to slidably engage the flat upper surface of the elongated arm 20, thereby preventing any turning movement of the bracket 28 about the rod 26. The free end of the bracket 28 is bifurcated and a supporting lever 32 is pivoted at 33 between the bifurcated ends of the bracket 28. A dovetail slot 34 is provided in the upper portion of the lever 32 for receiving a marker or scriber carrying arm 36. A set screw 38 rigidly secures the arm 36 within the dovetail slot 34 and a spring 40 is disposed between the bracket 28 and the arm 36 to upwardly bias the free end of the arm 36. A scriber or marker 42 having a pointed marking end is adjustably secured to the arm 36 by a set screw 44.

As illustrated in Fig. 4 the pointed end of the marker or scriber 42 is disposed to the left of the pivotal support 33 whereby the spring 40 urges the marking point into contact with the surface of the point 10. In this way the scriber element is resiliently supported in contact with the surface of the plate 10 when the circle-scribing instrument is in operative position relative to the plate. For marking purposes the surface of the plate 10 may be coated with a suitable ink which is adapted to be removed by the sharp point of the scriber element. Upon relative rotation of the plate 10 and the circle-marking instrument the pointed marking element 42 will describe a circle on the plate 10 of a diameter correspond-

ing to the adjustment of the bracket 28 along the rod 26. If there are any irregularities in the surface of the plate 10 the resilience of the spring 40 will permit the pointed end of the marker to ride over these irregularities without digging into the surface of the plate 10. The intermediate arm 20 preferably not only has a flat upper side but also has a flat lower side engaging the surface of the plate 10 to help maintain the surface of the plate 10 in parallelism with the circle-describing instrument while the instrument is rotating relative to the plate for marking a desired circle.

The circle-marking instrument herein described is quite simple and can be used as easily as conventional compasses. This novel circle-marking instrument is particularly useful for marking concentric circles on the surface of an annular object. The instrument is adjustable for marking circles of various diameters and obviously is adapted for use with annular objects of various sizes.

While I have described my invention in detail in its present embodiment, it will be obvious to those skilled in the art, after understanding my invention, that various changes and modifications may be made therein without departing from the spirit or scope thereof. I aim in the appended claims to cover all such modifications and changes.

I claim as my invention:

1. An instrument for drawing circles upon a flat surfaced object having a circular periphery, said instrument comprising a pair of divergent arms, the free ends of said arms being provided with bearing means for engagement with said circular periphery, an intermediate arm secured to said divergent arms, said intermediate arm having a flat side adapted to lie across and in contact with the flat surface of said object with said bearing means in engagement with said circular periphery, a scriber member mounted for adjustment along said intermediate arm, and spring means operative to resiliently urge said scriber element into contact with said surface when said intermediate arm is disposed in contact therewith.

2. An instrument for marking on the surface of an object, said instrument comprising a pair of diverging arms adapted to engage the periphery of said object, an intermediate arm fixed to said pair of arms and having a flat side adapted to lie across said surface, a member mounted on said intermediate arm for pivotal movement relatively thereto and for adjustment therealong, a scriber element carried by said member, and spring means urging pivotal movement of said member for maintaining said scriber element in contact with said surface in the operative position of said instrument.

AUGUST E. RAWALD.