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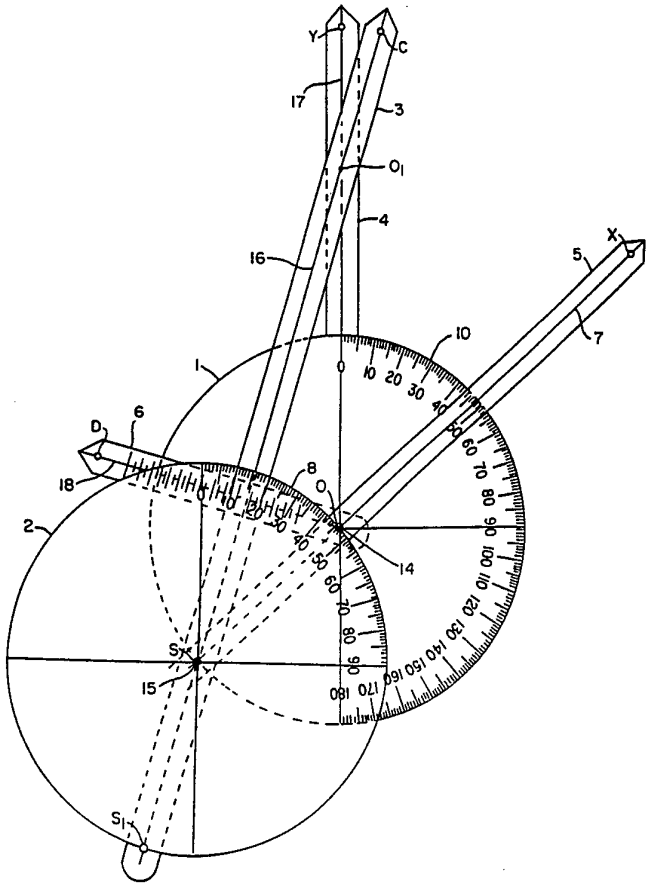
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Published
With international search report.

(54) Title: TRISECTOR

(57) Abstract

A trisecting instrument for trisecting an angle has two circular-shaped plates (1, 2) of equal diameter. The two plates are rotatable connected by a first pointer (5) at their centers (14, 15), such that the center of one circular plates rotate about the circumference of the other circular plate. The first pointer (5) defines a first side of the angle, and a second pointer (4) connected to the plate (1) defines a second side of the angle. Graduated markings (8, 10) are provided on the plates for indicating the angle trisection.



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TRISECTOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The application for PCT international is to link with the serial number 07/934,279 on the 25th of August, 1992 at the United States Department of Commerce, Patent and Trademark Office. The patent is to describe or protect the character, function, and operation of the new trisector.

2. Description of the Prior Art

For centuries, in the history of Euclidean Geometry, we could divide any angle into two equal angles easily, but, we had a very difficult time dividing an angle into three equal angles. This problem has persisted for over two thousand years.

Originally, as shown in FIG. 1, Archimedes(ca. 287-212 B.C.) constructed the problem by taking as the center apex S of the angle ASB to be trisected The process is to draw a circle of a radius r on the edge of a paper strip and placing the edge on the point B. In such manner that it passes through B and the end point on the circle with the other point Q(outside of the circle) of the extension of AS, then the angle PQS is one third of the given angle ASB. Obviously, the trisection process was unable to define the point P exactly. The invention is not to define the point P directly, it is to define the point M first(FIG.2). Here, the point M is the middle point of QS, and PM must perpendicular to QS. The new discovery is to discuss how to define the point P and Q because triangle PQS and triangle PSB are issoceles triangles. Thus, the point P is on the line of perpendicularity of line QS. Similary, the point S is on the line of perpendicularity and bisecting PB as shown in FIG.2.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a prior art method for determining the trisection of an angle.

FIG. 2 is the new method according to the invention for determining the trisection of an angle.

FIG. 3 is a plan view of an embodiment for using the method of the present invention.

FIG. 4 is a bottom view of the instrument.

FIG. 5 shows the instrument in use for finding the trisection of an angle.

FIG. 6 is a simplified representation of FIG. 5.

DETAILED DESCRIPTION

The trisection according to the present invention as seen in FIGS.3-5 comprises a first circular plate 1 and a second circular plate 2 of equal diameter and four elongated pointers 3, 4, 5, and 6.

The pointer 4 would be integrated into the body of the circular plate 1. The reference means 17 or OY in the central part of the point 4 is to reference the vertical Y-axis on a coordinated plane for defining on one side of a given angle XOY. The numeral 10 is a protractor of a circular plate 1, the degrees from 0 to 180 for defining a given angle XOY.

The pointer 3 is rotated about the center 15 or the point S of the circular plate 2 to meet the point 4 for the trisecting an angle XOY. At the same time, the pointer 6 is rotated about the center 14 or the point O of the circular plate 1 to meet the pointer 3 and to permit the reference means 18 or OD in the pointer 6 and the reference means 16 or SC or S_1SC in the pointer 3 to be adjusted perpendicular to each other. The acute angle OO_1S would be one-third of the given angle XOY. The point O_1 is the intersecting point of the reference means 16 and 17

In order to find the measurement of the angle OO_1S, the numeral 8 is a protractor of the circular plate 2, having degree ranging from 0 to 90 for indicating the angle OS_1S on the FIG. 6 which is one third the angle XOY, through the intersection of reference means 16 and protractor 8.

SUMMARY

The invention is a new instrument to find an angle equal to one-third of a given angle. The main body of the trisector has two equal circular plates and four pointers. The four pointers are not joined at the same rotating point. One pointer is integral to the body of one of the plates. The other three pointers can be rotated at the two centers of the circular plates. Two pointers can be used to define a given angle of the measurement between 0 and 180. The other two pointers can be used to find the one-third of the given angle when two of the pointers are perpendicular each other.

CLAIM

I claim:

1. A trisecting instrument for trisecting an angle having two circular-shaped members of equal diameter; said two plates are rotatably connected by a long first pointer at the centers of the two circular plates; such that the centers of said first and second plates rotate about the circumference of said second and first plates respectively; said first pointer defining one side of said angle; a second pointer rotatably connected to the center of the second plate, a third pointer rotatably connected to the center of the first plate; and reference means for defining the other side of said angle.

2. The instrument of claim 1 wherein said first and second plates have graduated markings thereon for determining said trisection.

3. The instrument of claim 1 wherein said reference means comprise a fourth pointer fixed to said first plate

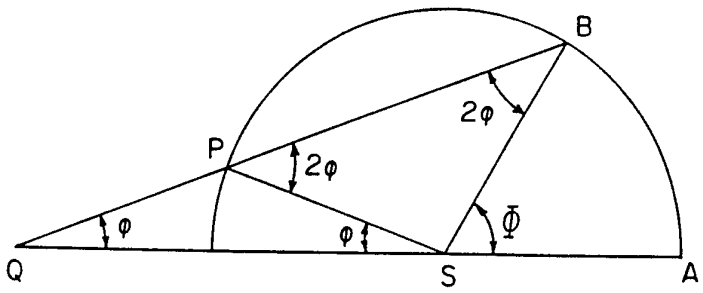


FIG. 1
(PRIOR ART)

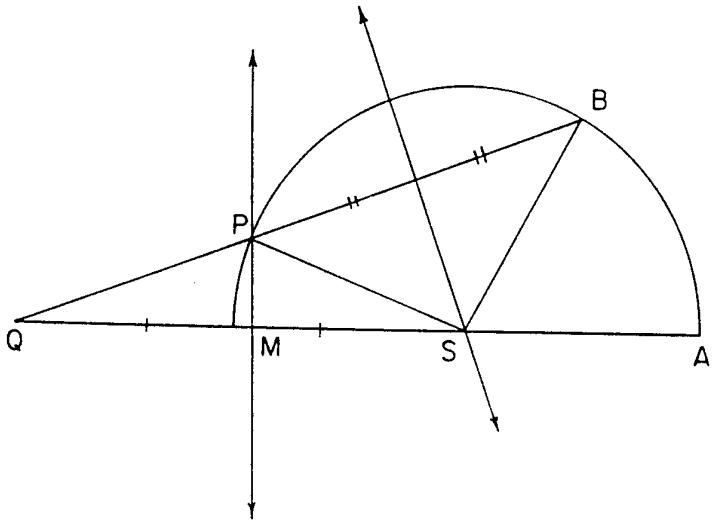


FIG. 2

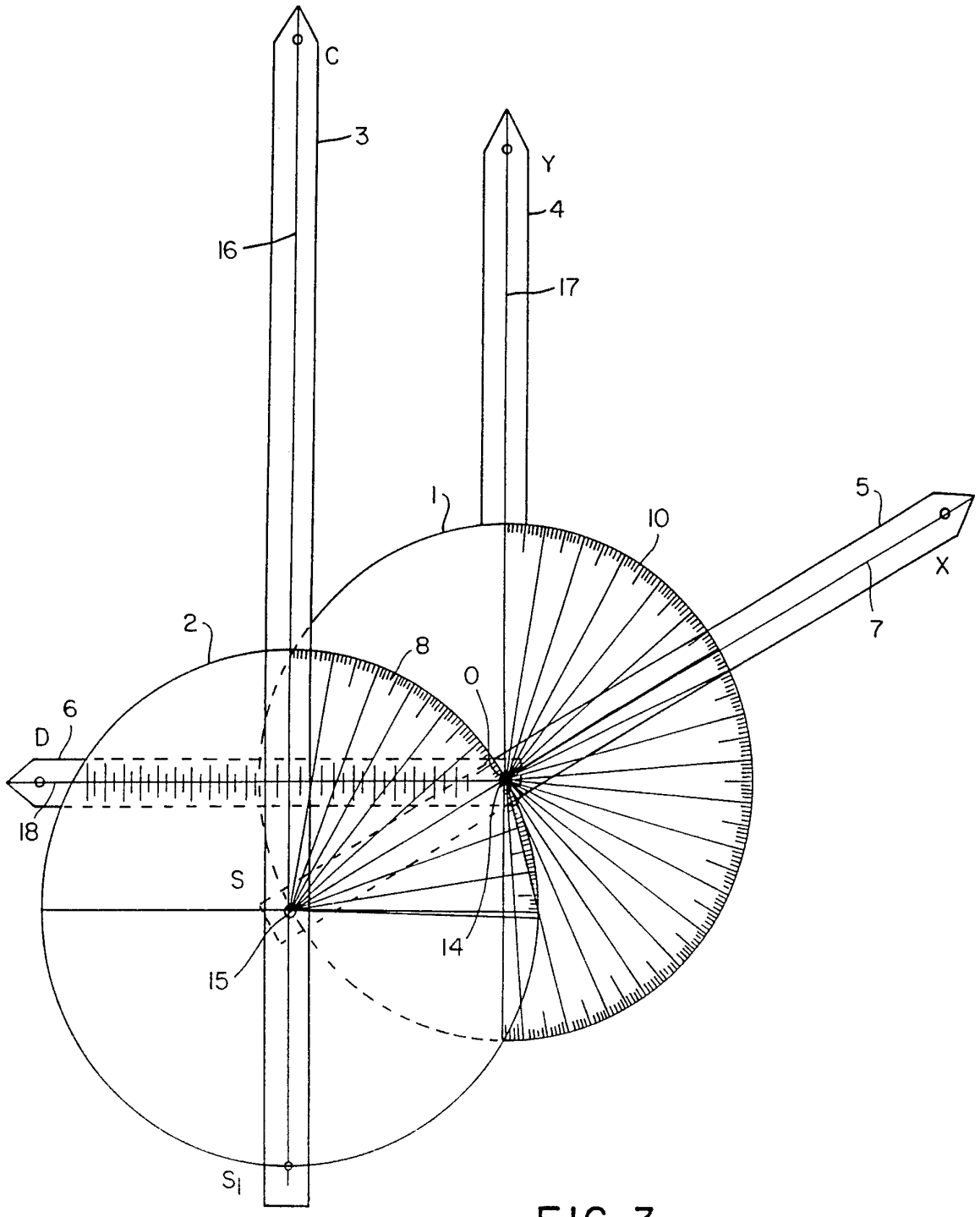


FIG. 3

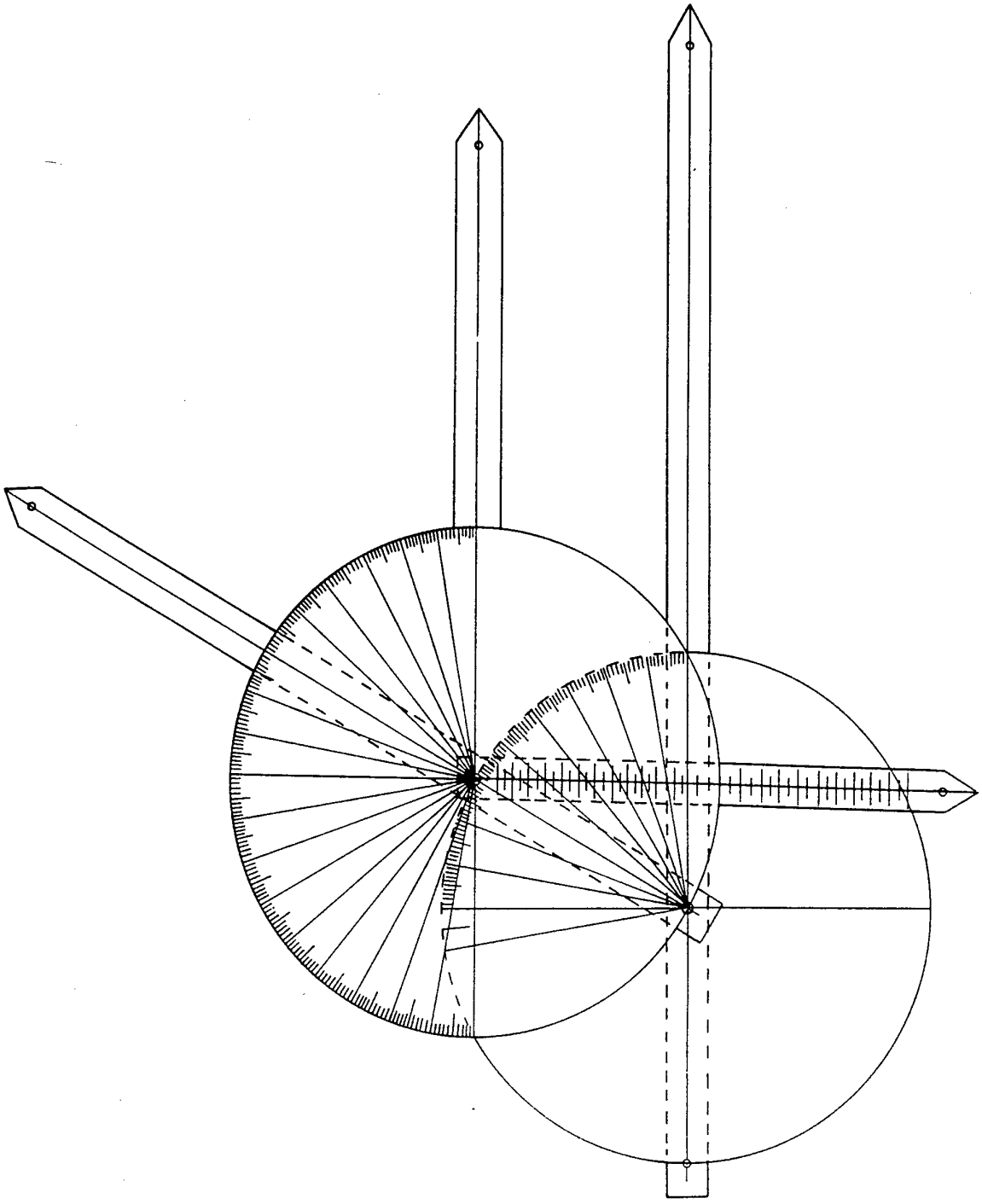


FIG. 4

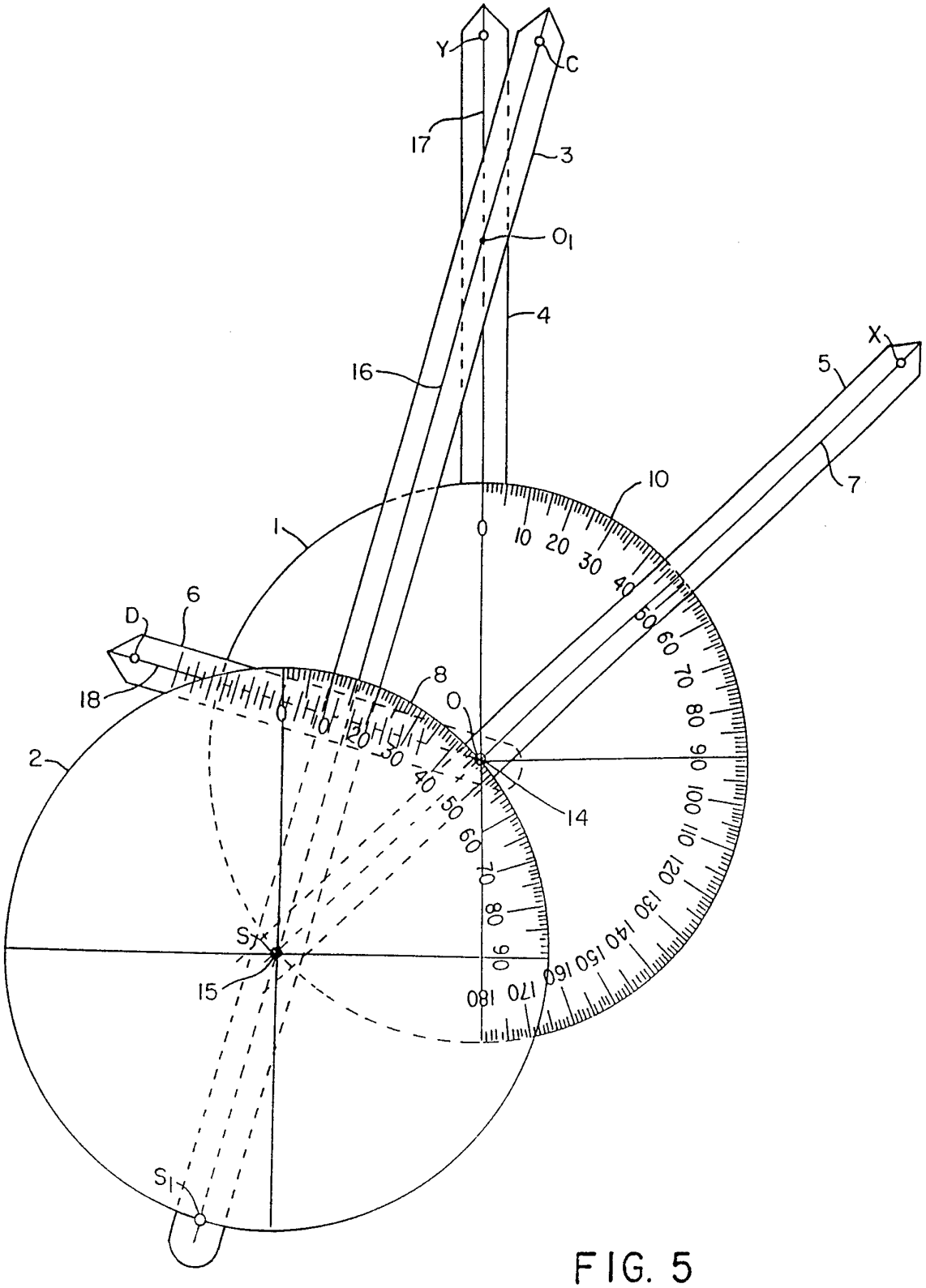

Y
C
17
3
O1
4
16
X
5
7
10
1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180
6
D
18
8
0
2
14
S2
15
S1

FIG. 5

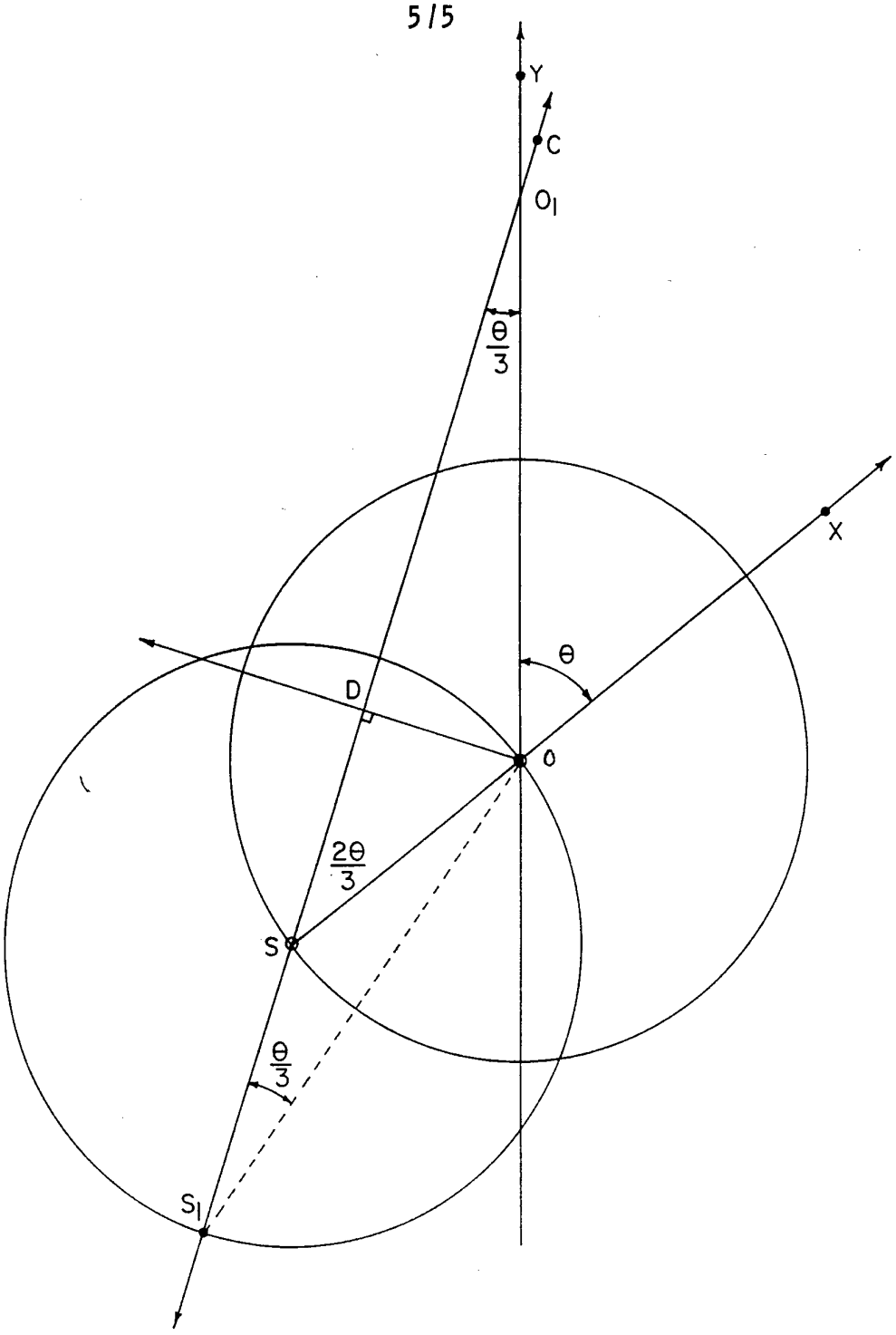


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US93/07480

A. CLASSIFICATION OF SUBJECT MATTER

IPC(5) :B43L 9/08
US CL : 33/1AP
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 33/1AP

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 3,906,638 (Romano) 23 September 1975	1-3
A	US, A, 2,222,853 (Neurohr) 26 November 1940	1-3
A	FR, A, 492,112 (Salamon) 28 June 1919.	1-3
A	AT, B, 41,541 (Eugene Zopf in Wien) 25 March 1910.	1-3
A	AT, B, 56,135, (Hermes in Danzig) 26 July 1890	1-3
A	US, A, 1,764,581 (Shibuya) 17 June 1930.	1-3
A	Yates, "The Trisection Problem", 1942, pp. 7-9, 29-30, 42-44.	1-3

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Date of the actual completion of the international search	Date of mailing of the international search report
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