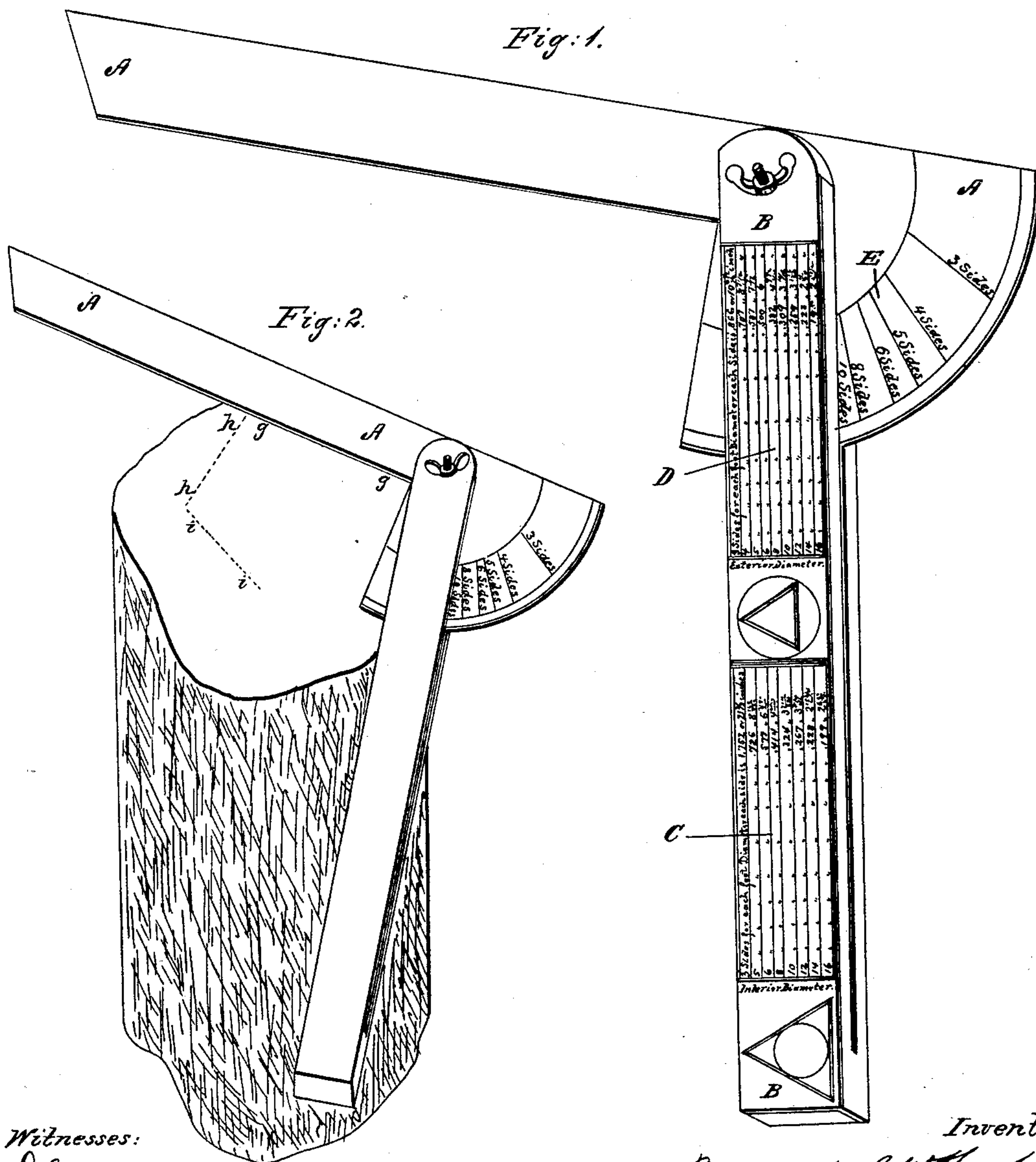


M. J. THOMPSON.

Miter Gage.

No. 21,784.

Patented Oct. 12, 1858.



Witnesses:  
 D. C. Wallace  
 Jas. A. News.

Inventor:  
 Meredith J. Thompson.

# UNITED STATES PATENT OFFICE.

MERIWETHER JEFF. THOMPSON, OF ST. JOSEPH, MISSOURI.

## RULE FOR DESCRIBING POLYGONAL FORMS.

Specification of Letters Patent No. 21,784, dated October 12, 1858.

*To all whom it may concern:*

Be it known that I, MERIWETHER JEFF. THOMPSON, of St. Joseph, county of Buchanan, State of Missouri, have invented a new and useful Instrument for Gaging Miterers and Bevels for Various Polygonal Frames and Figures; and I hereby declare the following is a clear, full, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification.

The nature of my invention consists in constructing a miter gage or bevel, in such a manner as that any desired size and form of polygonal figure, can be readily obtained, simply by the immediate or direct application of the instrument, without first requiring the double operation of ascertaining the diameter and length of lines, by the several separate calculations, and measurements usually resorted to.

The better however to demonstrate the principles of my invention, I will herewith proceed to describe the same as follows, viz.

In Figure 1, A A, represent a movable limb with a butt end part formed in shape of an arc of a circle as at E, whereon may be indicated dots, lines, graduations, or angles 3, 4, 5, 6, 8, 10. This movable limb is inserted into the end of a slotted stock or handle part B, B of suitable length and size, having a tightening screw and nut F similar to an ordinary bevel. On one side of this stock or handle, are indicated, various tabular, graduated calculations for interior diameters, as at C, while on the opposite side of the stock if desired, similar calculations are indicated for the sides, or lineal extents of any desired polygon; and the diameters of such forms, whether internal or external, are obtained by simply multiplying, or dividing the number given by the diameter required. For instance, if a ten sided figure is required, to inclose a circle of five feet diameter, the edge of the back of the stock or handle A, A must be adjusted, and set at the lines indicated by 10, which will give the proper miter angle

or side of polygon; while the measurement in table C, corresponding to 10 sides is  $13\frac{14\frac{1}{2}}{16}$  inches, which multiplied by 5 feet, gives  $19\frac{7}{8}$  inches, the length, or lineal measure of the inner side of each piece. Or, should a ten sided figure be required to fit in a circle five feet diameter, the gage or stock part of the instrument being adjusted as before to the proper line of indication on the arc E, the line or miter will be given and the number in table D, corresponding to 10 sides, will be found to be  $3\frac{11\frac{1}{2}}{16}$ , which multiplied by 5 feet, gives  $18\frac{1}{2}$  inches, the length of the outer side of each piece.

In devices generally employed for ascertaining and determining polygonal forms, it is required to first ascertain the diameter, then describe the circle thereof, and stepping it off with dividers into equal sections, all of which, in order to be arrived at, is attended with repeated manipulation, and requires much time and a certain amount of calculation. But by the aid of my instrument, one simple adjustment of the movable limb A A, and its mere direct application, will enable most readily the production of the desired polygonal form. For instance in Fig. 2, the end of an irregular shape piece of wood is delineated with the instrument applied thereon, A, A, being the movable limb set so as to obtain the line of the required polygon, and by running a scribing point or pencil along the edge of the limb, as at *g, g*, the lineal extent of the side of the required polygon is obtained. Then place the inner edge of the stock or handle part B B, in parallel contact with the line *g, g*, and a second line of required length is described, or marked along in the direction of the dots *h, h*, and at *i i*. In this manner of applying the instrument, all the sides of any polygonal shape can most readily be obtained.

Having described the nature construction, and application of my invention, and being fully aware that instruments have been employed formed with segments of circles, and



arc, having graduation degrees, and semi  
degrees described by radial lines proceeding  
from one common center, therefore such  
graduations, calculations and arrangements  
5 of lines and figures I do not claim, but

What I claim and desire to secure by Let-  
ters Patent of the United States, is—

The construction, use and application of a  
miter bevel gage, formed with an arc of a  
10 circle, whereon are described, various given  
tabular members, so as to indicate, by fixed

lines, angles, or dots, any required miter  
line, indicating its respective polygonal  
shape and measurement, (without describ-  
ing and subdividing a circumference) but 15  
through means of corresponding tabular  
numbers substantially in the manner herein  
set forth and described.

MERIWETHER JEFF. THOMPSON.

Witnesses:

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JAS. A. HEWS.