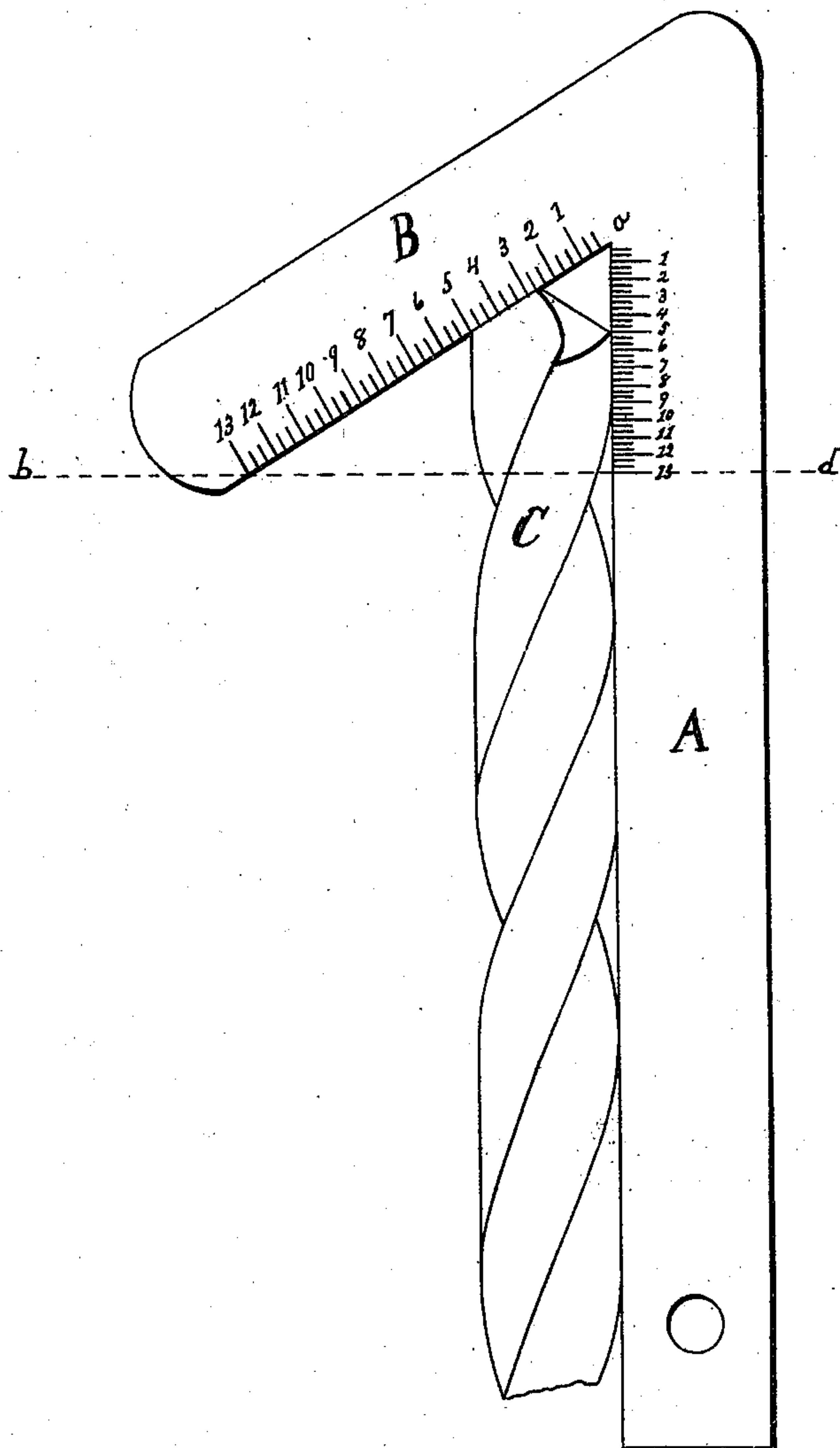


G. MACK.
TWIST DRILL GAGE.
APPLICATION FILED FEB. 26, 1910.

989,857.

Patented Apr. 18, 1911.



WITNESSES:

H. P. Parnelle
Augustus Boulton

Geo Mack.
INVENTOR.

UNITED STATES PATENT OFFICE.

GEORGE MACK, OF ELLISTON, MONTANA.

TWIST-DRILL GAGE.

989,857.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed February 25, 1910. Serial No. 546,022.

To all whom it may concern:

Be it known that I, GEORGE MACK, a citizen of the United States, residing at Elliston, in the county of Powell and State of Montana, have invented certain new and useful Improvements in Twist-Drill Gages, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention is intended to supply a cheap, reliable and quickly available gage for twist drills. The gages now in use are either inconvenient through a complexity of parts or are limited in use. My gage is immediately available and accurate, without adjustment, for any drill within the range of ordinary use.

My invention is fully shown in the accompanying drawing, in which the figure represents a plan view of the instrument, with a drill in place.

Similar letters refer to similar parts in the drawing.

The gage is preferably made of a flat piece of sheet steel, having a main or upright arm A and an oblique arm B. The included angle is that customary for twist drills, preferably an angle of fifty nine (59) degrees. Upon the oblique arm, graduation marks 1 to 13, as shown, or more, are made, numbering from the point of the angle. These marks may be the ordinary fractions of an inch or the measurements of the metric system, or of purely arbitrary but uniform graduation. The main or upright arm is also graduated with marks 1 to 13 as shown, or more, starting from the point of the included angle. These graduations are smaller than those upon the oblique arm, each mark being the same distance from the point of the included angle as is the mark of the corresponding number on the oblique arm, measured perpendicularly. Thus the graduation marks numbered 1, 2, 3, etc., or any specific one of the minor subdivisions on the oblique arm B and the corresponding mark on the main or upright arm A, are on the same perpendicular to the arm A; as shown by the graduation marks numbered 13, 13, on the dotted line *b d*.

C is a drill inserted in the angle of the tool.

There are two requisites for a twist drill, to enable it to do its work properly. Both lips of the drill must have the same angle to the axis and both must be of equal length, within the same planes perpendicular to the axis; *i. e.* be of equal height. My gage enables the operator to see quickly, when it is applied to the drill, whether these conditions exist. When a drill has been ground, it is then tested by placing it in the angle of the gage, one side being pressed close to the main or upright arm A and one lip against the oblique arm B. If the angle of the lip adjacent to the oblique arm B is out of true it will appear at once, and the lip is then ground until it is true. Then the other lip is trued up, in the same way. When the angle of each lip has been trued, if, then, the lower point of each lip comes to the same numbered graduation mark on each arm, the drill is true. If it does not, it must be reground until such a result is reached.

This gage is very simple and inexpensive in its construction, and equally simple in its use. There are no adjustable parts to get out of order. The gage can be made, in the first instance, large enough to test all drills of ordinary use.

What I claim and desire to secure by Letters-Patent is:

A gage for twist drills, consisting of two arms having inner straight edges, one main or upright arm, the other oblique thereto and integral therewith and including an acute angle, preferably of fifty-nine degrees, the angle customary for such drills, each arm being graduated with marks on the inner edges in such manner that the same numbered mark, counting from the apex of the included angle, shall be in the same perpendicular to the inner straight edge of the upright arm, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE MACK.

Witnesses:

CHARLES W. HELMICK,
EDWARD C. RUSSEL.