

R. ATKINSON.

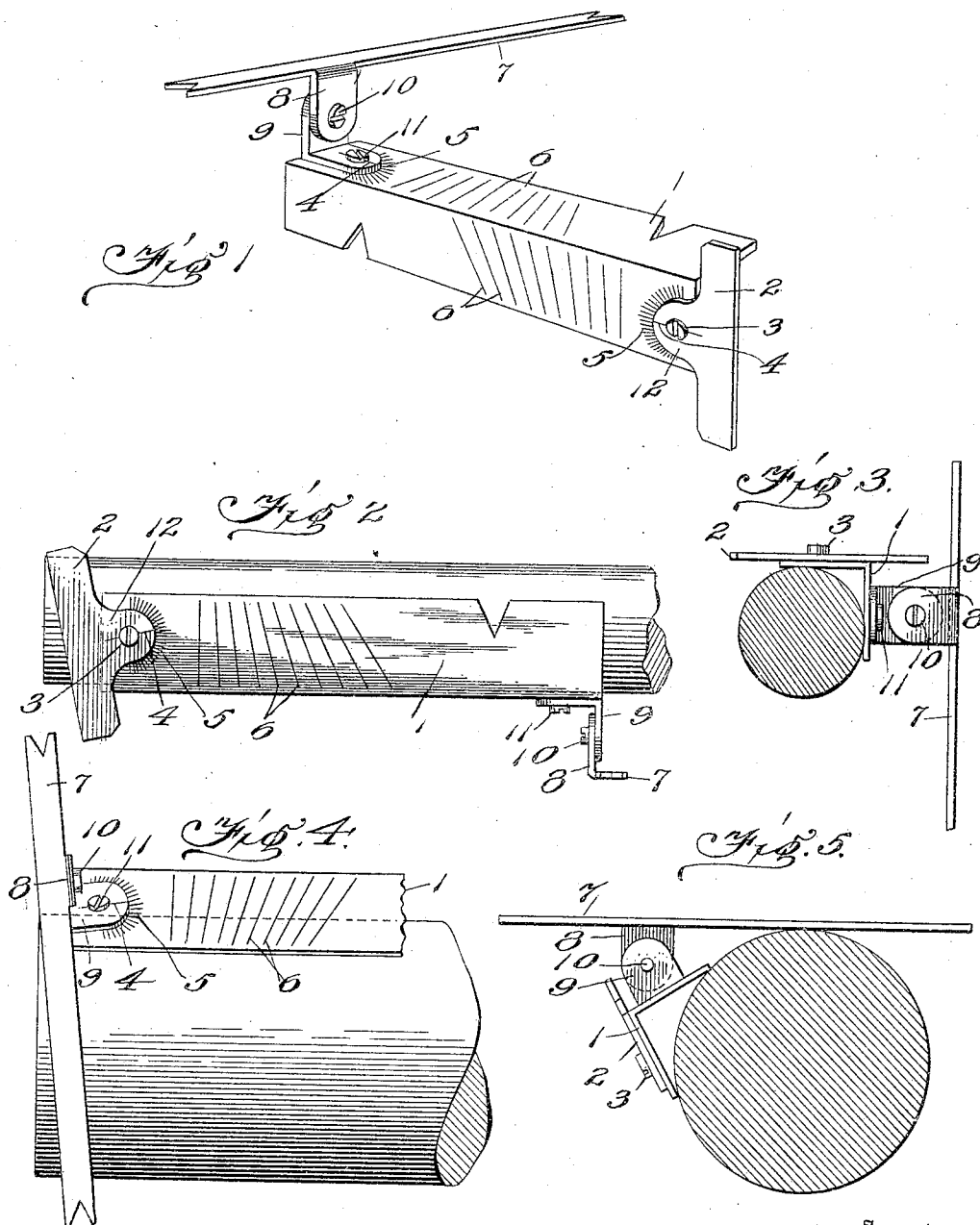
GAGE.

APPLICATION FILED FEB. 19, 1909.

941,843.

Patented Nov. 30, 1909.

2 SHEETS—SHEET 1.



Witnesses  
J. L. Thompson  
Harold Meyers

Inventor  
Richard Atkinson.

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Attorney

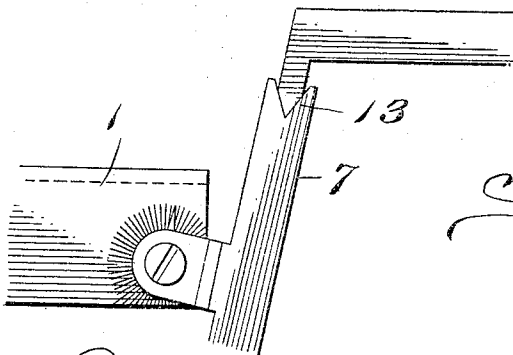
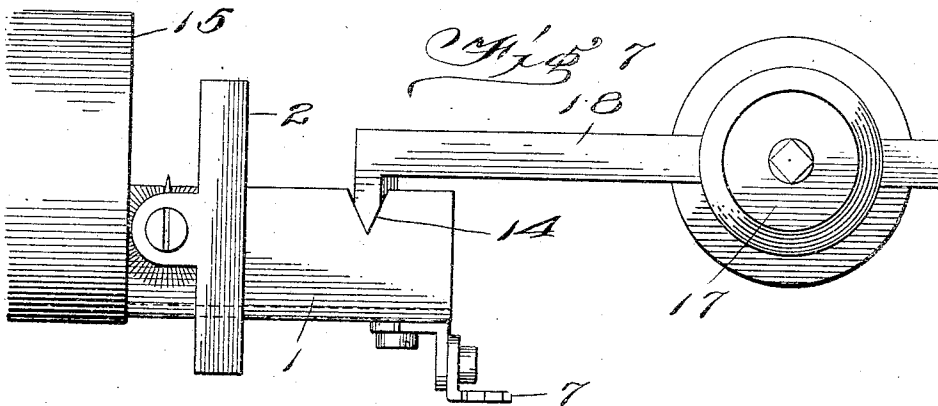
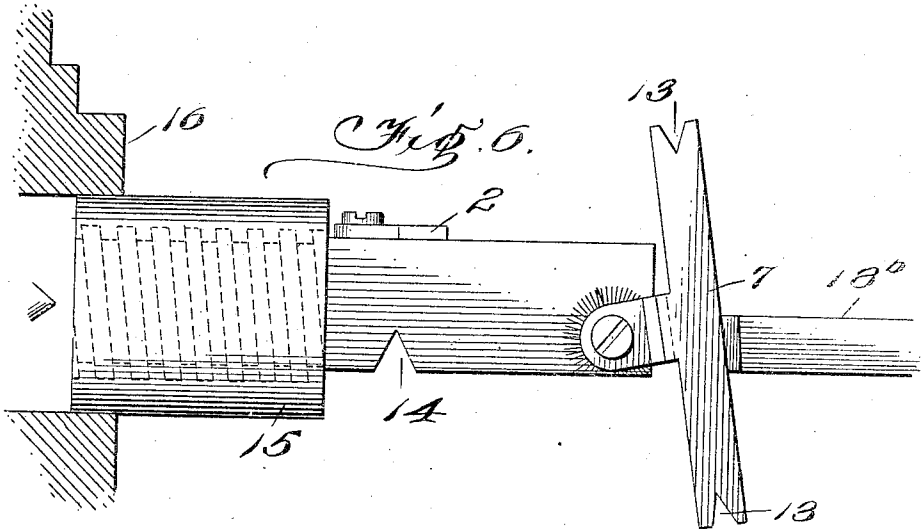
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*Geo. L. Thom*  
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# UNITED STATES PATENT OFFICE.

RICHARD ATKINSON, OF CLEVELAND, OHIO.

GAGE.

941,843.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed February 19, 1909. Serial No. 478,808.

*To all whom it may concern:*

Be it known that I, RICHARD ATKINSON, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Gages, of which the following is a specification.

This invention is a gage for use in screw-threading, and has for its object to provide improved means for fixing or indicating the degree of inclination of the thread-cutting tool with respect to the axis of the blank to be threaded, whereby the tool may be set to cut a thread of the required pitch.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a perspective view of the gage; Fig. 2 is a top view thereof applied to small sized work; Fig. 3 is an end view of the same; Fig. 4 is a top view of the gage as applied to large sized work; Fig. 5 is an end view of the same. Figs. 6, 7 and 8 are elevations illustrating the use of the tool in cutting internal threads.

Referring specifically to the drawings, 1 indicates an angle piece made of metal and comprising flanges which are preferably of equal width set at a right angle to each other with their outer edges parallel. Upon one end of this piece or "box square" is mounted a straight-edge 2, and upon the other edge thereof is mounted another straight edge 7. The former is pivotally attached to one flange of the angle piece by means of an ear 12 and set screw 3. The straight-edge 7 is connected to the other flange of the angle piece by means of an angle bracket 9, and screws 10 and 11. The screw 10 forms a pivotal connection between a depending ear 8 on the straight-edge 7 and the upstanding part of the angle bracket 9, and the set screw 11 forms a pivotal connection between the base of the bracket and the flange of the box square. The ear 12 and the base of the bracket 9 are each provided with an index mark 4 which indicates on a graduated segmental scale 5, thereby indicating the degree of inclination or slant of the respective straight edges with regard to the axis of the cylindrical work or blank to which the box square is applied. A graphic scale, as shown at 6, may be marked on each flange of the box square to indicate the diametrical and pitch relations or the like. These scales can be either printed or stamped, and, in practice, may have stamped or printed

in connection therewith designations of the various angles and their relative pitch with respect to various diameters. The scales are provided primarily for convenience, and when used in connection with the adoption of various angles therefrom, the angles are deduced by mathematical calculation.

In use, with respect to what is shown in Figs. 1 to 5 inclusive, and from which that shown in the remaining figures will be understood, the box square or angle piece 1 is placed on the blank or unthreaded stock, and readily adapts itself to a parallel relation with the axis of the same. The desired pitch is then ascertained by purely mathematical calculation, or by reference to the scales 6, and the straight edge used (either straight edge 2 or straight edge 7) is turned to the proper angle by means of the index mark 4 upon the segmental scale 5. Either the straight edge 2 or the straight edge 7, may be used, dependent upon the size of the work or blank, and in the case of the latter, it will be seen, that it can, by reason of its pivotal connection at 10, be swung up or down to contact with the surface of the blank.

The device will be found particularly useful where frequent changes in pitch are necessary in screw-threading.

Figs. 6, 7 and 8 illustrate particularly the use of the tool in internal thread cutting, and for this purpose each flange of the angle piece 1 is provided with a V-shaped notch 14, and each end of the straight edge 7 is provided with a V-shaped notch 13, these notches being cut to conform to standard sizes of threads, and they will be used in setting tools for cutting V-threads. The box square can be set on the end of the work by reversing the straight edge 2, or swinging it around within the end of the box square, and the notches of the straight edge 7 can then be used to set the cutting tool. Thus in Fig. 6, the gage is used in setting the tool 18<sup>b</sup>, by means of the straight edge 7 which is set at the desired angle and the tool is then applied thereto. In Fig. 7 the tool 18 is shown as being set in the notch 14 for cutting a V-thread, the tool being held by tool post 17. Fig. 8 shows the notch 13, in the end of the straight edge 7, being used for setting the tool 18<sup>a</sup> for cutting the threads. In these instances the end of the box square is shown placed against the work 15, held in chuck 16.

I claim:

1. A gage comprising a box square, a straight edge at one end thereof, connections between said straight edge and one flange of the square whereby to permit of movement of the former in a plane parallel to that of the latter, a straight edge at the opposite end of the square, and upon the opposite flange thereof, of greater proportions than the first named straight edge, and connections between said last named straight edge and its respective flange whereby to permit of movement of the former in planes parallel, and perpendicular, to the latter.
2. A gage comprising a box square, a

straight edge provided with an intermediate angularly bent ear, an angle bracket having one portion thereof pivotally connected to one flange of the box square, and a pivotal connection between the other portion of said angle bracket and the ear of said straight edge, whereby the latter may swing in planes parallel and perpendicular to the said flange.

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

RICHARD ATKINSON.

Witnesses:

JOHN A. BOMMhardt,  
ARCHIE F. SANDERSON.