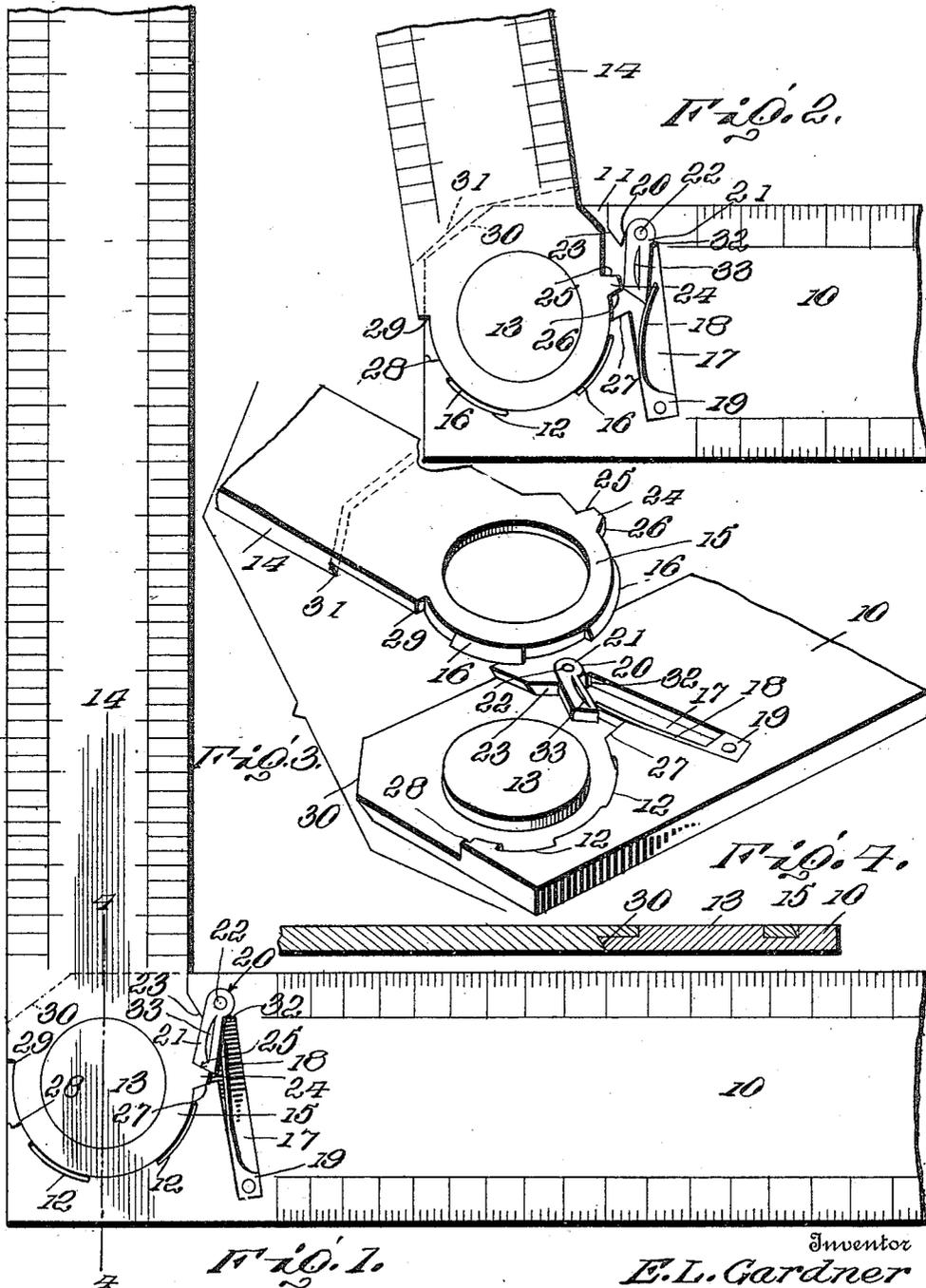


E. L. GARDNER.  
 TAKE-DOWN SQUARE.  
 APPLICATION FILED JUNE 4, 1910.

994,148.

Patented June 6, 1911.



Witnesses  
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Fig. 1.

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# UNITED STATES PATENT OFFICE.

ERNEST L. GARDNER, OF PORTSMOUTH, NEW HAMPSHIRE.

TAKE-DOWN SQUARE.

994,148.

Specification of Letters Patent. Patented June 6, 1911.

Application filed June 4, 1910. Serial No. 565,140.

*To all whom it may concern:*

Be it known that I, ERNEST L. GARDNER, citizen of the United States, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Take-Down Squares, of which the following is a specification.

This invention relates to measuring instruments and refers particularly to an improved square.

An object of this invention is to so form a square that it can be taken apart and folded into a comparatively small space to fit in tool boxes, and the like.

The invention has for another object the provision of an improved locking means in conjunction with the operable parts of the square whereby a comparatively simple device is produced which will rigidly interlock and hold the detachable members accurately in the predetermined angle.

For a full understanding of the invention reference is to be had to the following description and accompanying drawing, in which:—

Figure 1 is a plan view of the improved square, the ends of the same being broken away. Fig. 2 is a similar view disclosing the detachable arm semi-detached, and Fig. 3 is a detail perspective view of the interlocking ends of the arms detached one from the other.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

Referring to the drawing the numeral 10 designates the body arm or the base of the square. The arm 10 is recessed as at 11 at one side, terminating in the outer end of the arm and at the inner edge thereof. The inner wall of the recess is rounded and has its edge undercut or beveled inwardly throughout its entire length. The upper edge of the wall of the recess 11 is interrupted in spaced relation as at 12 to provide vertical or straight walls at such portions. The arm 10 carries a boss 13 within the recess and concentric to the rounded wall of the same.

A detachable arm 14 is employed which is formed with a rounded and apertured inner end to provide a ring 15 seating in the recess 11 and about the boss 13. The ring 15 rests snugly against the wall of the recess 11 and

is provided with spaced and inclined projections 16 engaging in the interrupted portions 12 of the wall. The projections 16 are enlarged at their lower ends to fit beneath the undercut wall of the recess 11.

The body arm 10 is provided with a pocket 17 which is arranged substantially at a tangent to the wall of the recess 11 and arranged transversely in the upper face of the arm 10. A leaf-spring 18 is disposed within the pocket 17 and provided at its inner end with a block 19 fitting snugly into the end of the pocket 17 to hold the leaf-spring 18 yieldably against one side of the pocket. The opposite end of the pocket is rounded as at 20 to receive the correspondingly formed inner end of a pawl 21. The arm 10 carries a pin 22 projecting upwardly within the rounded end of the pocket 17 and engaging loosely through the inner end of the pawl 21. The pocket 17 communicates at its end adjacent the pawl 21 with the recess 11 and the pawl 21 is limited in its side movement by a shoulder 23. The spring 18 rests at its outer end against the inner edge of the pawl 21 and normally holds the pawl against the shoulder 23. The ring 15 is provided at one side with a lug 24 having opposite beveled faces 25 and 26 adapted to respectively engage with the outer beveled end of the pawl 21 and the shoulder 23 formed between the pocket 17 and the recess 11. The body 10 is provided with a stop 28 formed by the abrupt termination of the curved wall defining the recess 11 which is adapted to seat within a notch 29 formed in the outer edge of the ring 15. The inner wall of the arm 10 is beveled as at 30 and has its edge undercut to engage within the corresponding undercut shoulder 31 formed in the underside of the arm 14. The projections 16 and the rounded undercut wall defining the recess 11, and the inclined undercut and beveled edge 30 in conjunction with the shoulder 31, form the main locking means to secure the two members 10 and 14 together. A shoulder 32 is formed within the inner end of the pockets 17 to receive the free end of the spring 18 when the pawl 21 is retracted.

When it is desired to assemble the parts of the square, the detachable arm 14 is placed in overlapping relation upon the body arm 10. The ring 15 registers over the boss 13 when the arm 14 is rotated about the boss

13 as its central axis, to register the projection 16 with the interrupted portions 12. The ring 15 now falls into the recess 11 when the arm 14 is rotated inwardly to engage the projection 16 beneath the undercut walls of the recess. The projections 16 prevent the raising of the ring 15 from the boss 13. During this movement the lug 24 engages with the pawl 21 and forces the same inwardly against the tension of the spring 18. As soon as the lug 24 passes the extremity of the pawl 21, the pawl 21 snaps against the edge of the ring and against the edge 25 of the lug to prevent the backward rotation of the swinging of the detachable arm 14. The arm 14 is held from further inward movement by the edge 26 engaging with the shoulder 27. The shoulder 27 is designed to be so formed and positioned that the arm 14 is held at right angles to the body arm 10 when the pawl 21 engages against the edge 25. At the same time the undercut shoulder 31 engages about the undercut and beveled edge 30 to form a solid joint between the separable members and to prevent the raising of the member 14 from the arm 10.

The pawl 21 is provided with a thumb slot 33 adapted to form a means for actuating

the pawl 21 to retract the same from the lug 24.

Having thus described the invention what is claimed as new is:—

A square including a body-arm having a recess in one side and adjacent to one end thereof, the body-arm having a boss concentric within the recess, a detachable arm having a rounded and open inner end engaging over the boss and within the recess, the adjacent meeting faces of the arms being inclined to interlock the arms, a locking pawl carried within the body-arm and arranged at a tangent to the lower portion of the detachable arm, a spring carried by the body-arm and bearing against the pawl to hold the same normally against said detachable arm, and a lug extending radially from the rounded portion of the detachable arm for engagement against the extremity of the pawl to interlock the arms.

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

ERNEST L. GARDNER. [L. s.]

Witnesses:

HARRIET S. CASWELL,  
HARRY W. PEYSER.