

(No Model.)

H. KROGSTED & A. SVANSON.  
TRY SQUARE.

No. 466,871.

Patented Jan. 12, 1892.

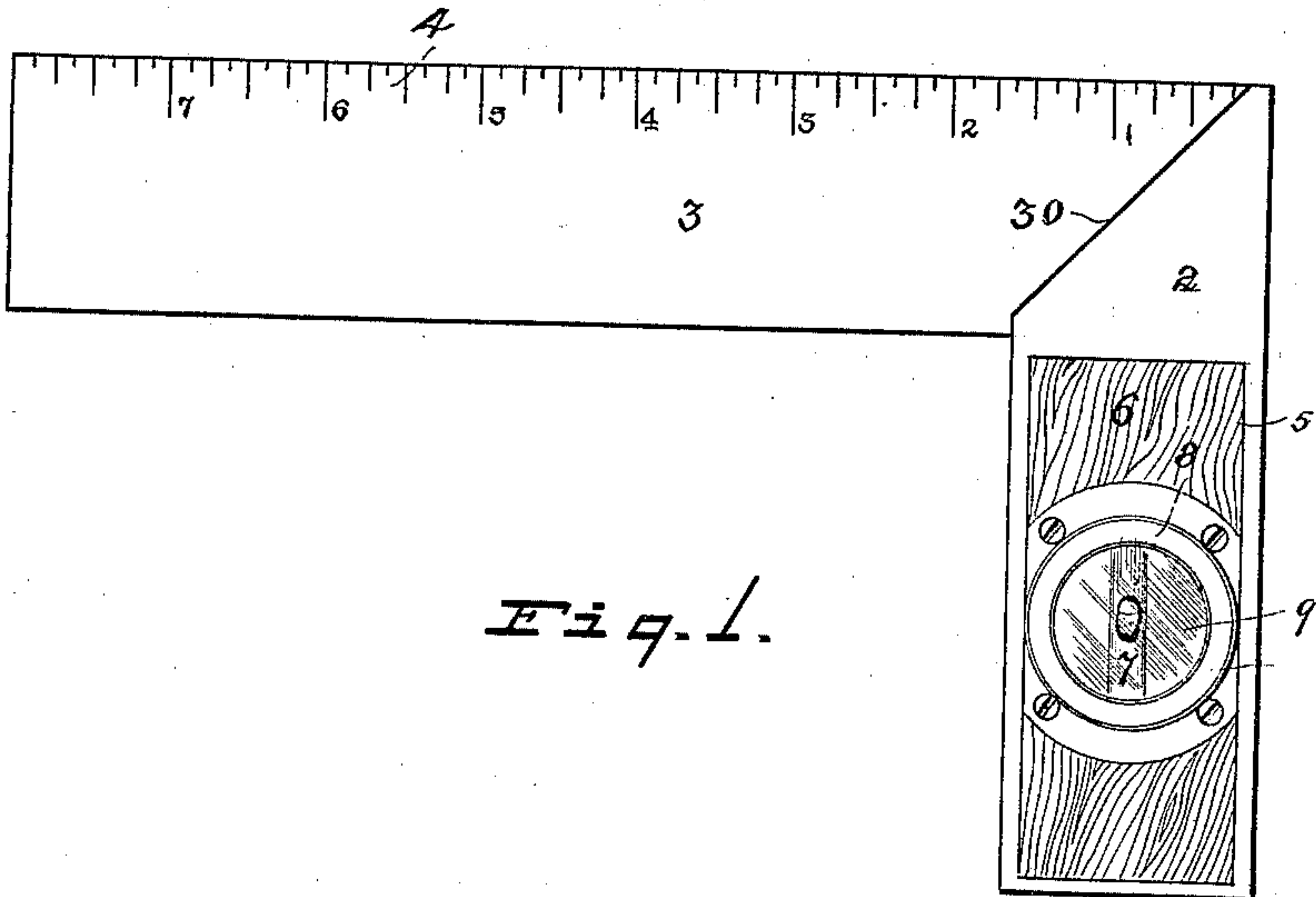


Fig. 1.

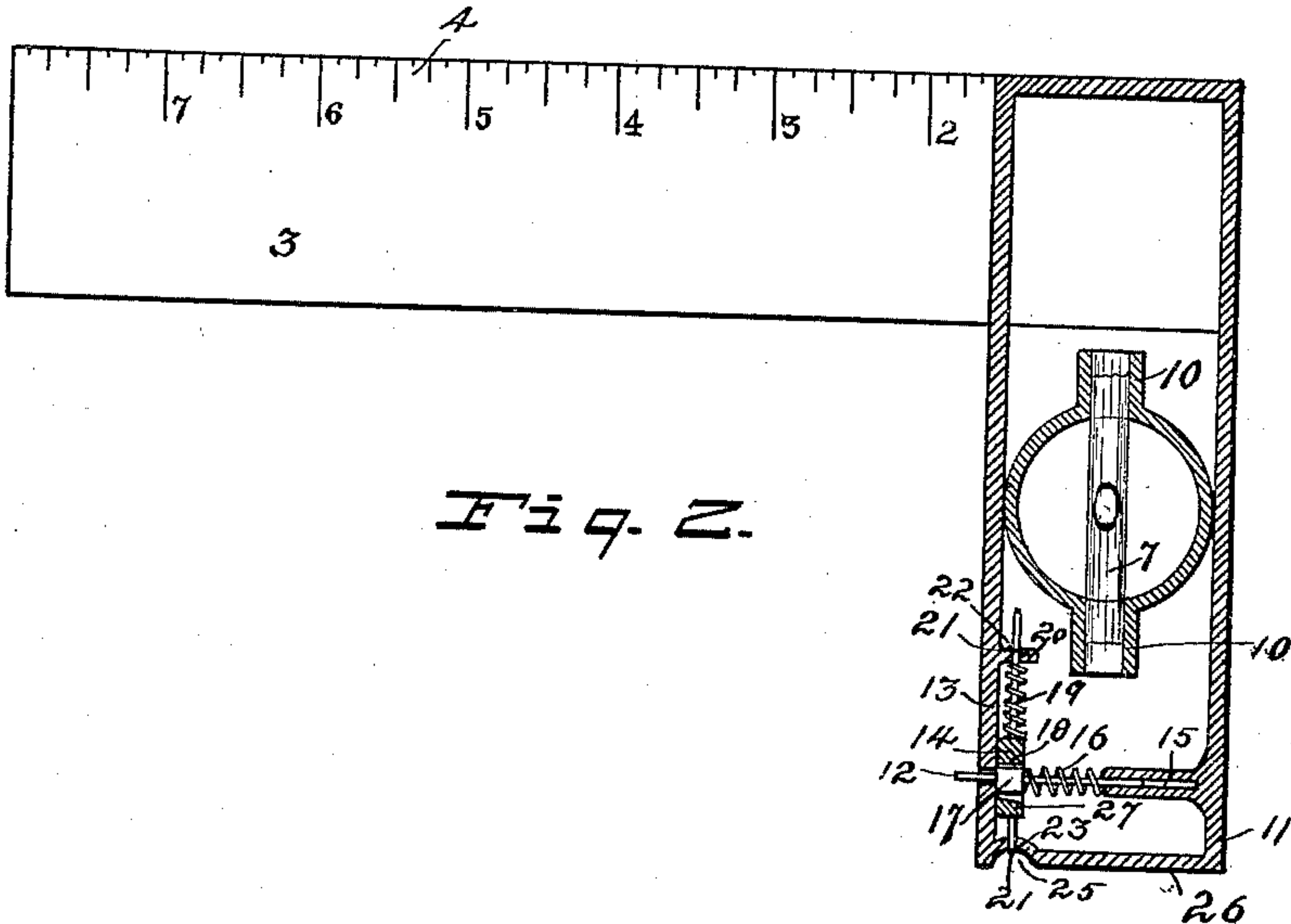


Fig. 2.

Witnesses.

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# UNITED STATES PATENT OFFICE.

HANS KROGSTED AND ANDREW SVANSON, OF MINNEAPOLIS, MINNESOTA.

## TRY-SQUARE.

SPECIFICATION forming part of Letters Patent No. 466,871, dated January 12, 1892.

Application filed May 15, 1891. Serial No. 392,876. (No model.)

*To all whom it may concern:*

Be it known that we, HANS KROGSTED and ANDREW SVANSON, both of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Try-Squares, of which the following is a specification.

Our invention relates to try-squares and means whereby the use thereof is made more accurate.

The object of the invention is to provide a try-square which may be held flat upon the surface and which may also be used as a level; and our invention consists in various constructions and combinations hereinafter described, and particularly pointed out in the claims.

Our invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a view showing a try-square embodying our invention. Fig. 2 is a sectional view thereof, showing the inner section of the try-square handle.

As shown in the drawings, the try-square handle 2 is secured at right angles to the blade 3, provided with ordinary scale 4. This blade is thin and is notched into the head or handle. The handle is provided with the large slot 5, of a rectangular form, adapted to receive a wooden block 6, provided with the level 7, secured in the bearings thereon by the side and guard pieces 8, having glass portions 9, through which to observe the position of the level. This frame 8 for the level is shown in Fig. 2, and has sleeves 10, adapted to receive the ends of the spirit-tube 7. When using the level upon its side, with the blade upon the board, it is necessary and convenient to support the end 11 of the head or handle. This we accomplish by providing the pin 12 of the same thickness as the blade 3 and centrally located in the edge of the handle, whereby the same, being rested upon the top of the board or the top of the surfaces to be tried, the try-square is held in place without additional support from the hand of the user. This pin may be pushed back so that the end thereof is flush with

the inner edge 13 of the handle and is held back in that position by the snap-plate 14. (Shown in Fig. 2.) The outer end of the pin 12 is held in the sleeve 15, and the pin is normally pressed out by the coiled spring 16, bearing against the enlarged portion or shoulder 17 on the pin. The inner side of this shoulder is engaged by a shoulder 18 of the plate 14 when the pin 12 is pushed back, at which time the plate is pushed into engagement with the shoulder on the pin by the coiled spring 19, acting against the shoulder 20. The plate is provided with lugs 21, supported in the bearings 22 and 23, as indicated, and adapted to hold the same in position. The thumb or finger recess 25 is provided in the end of the handle, whereby the lug 21 may be pushed back out of the way, and whereby it is made unnecessary for the lug 21 to extend beyond the end 26 of the try-square. The plate 14 may be pushed back, so as to disengage the pin 12, and is provided with the beveled inner shoulder 27, whereby the disengagement of the pin 12 is insured. These parts of the try-square may be secured in the wooden block 6 or may be formed directly in connection with the iron lugs extending from the sides of the slot 5, the block 6 being hollowed out to accommodate the same.

In Fig. 1 the head is shown beveled at 30, whereby the same may be used as an angle-square, while in Fig. 2 the head is shown to extend out flush with the edge of the blade.

The wooden block 6 may be replaced by suitable iron plates.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, in a try-square, of the blade 3, with the handle 2, the slot 5, provided therein, a level arranged to be inserted therein longitudinally with respect to the handle, the pin 12, normally held out, and a snap-plate 14, adapted to engage a shoulder on said pin to hold the same back, substantially as described.

2. The combination, with the blade 3 and handle 2, of a slot 5, provided in said handle,



a wooden block 6, arranged with a level 7, fixed in guards 8, provided with glass 9, the pin 12, having the shoulder 17, the sleeve 15 for retaining the outer end of the pin, the  
5 spiral spring 16, the recess 25, and the plate 14, having lugs 21 and normally held in engagement with said shoulder 17 by the coiled spring 19, substantially as described.

In testimony whereof we have hereunto set our hands this 11th day of May, 1891.

HANS KROGSTED.  
ANDREW SVANSON.

In presence of—  
C. G. HAWLEY,  
FRED S. LYON.