

No. 611,697.

Patented Oct. 4, 1898.

R. W. LUNDY.
DRAWING BOARD.

(Application filed Dec. 20, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

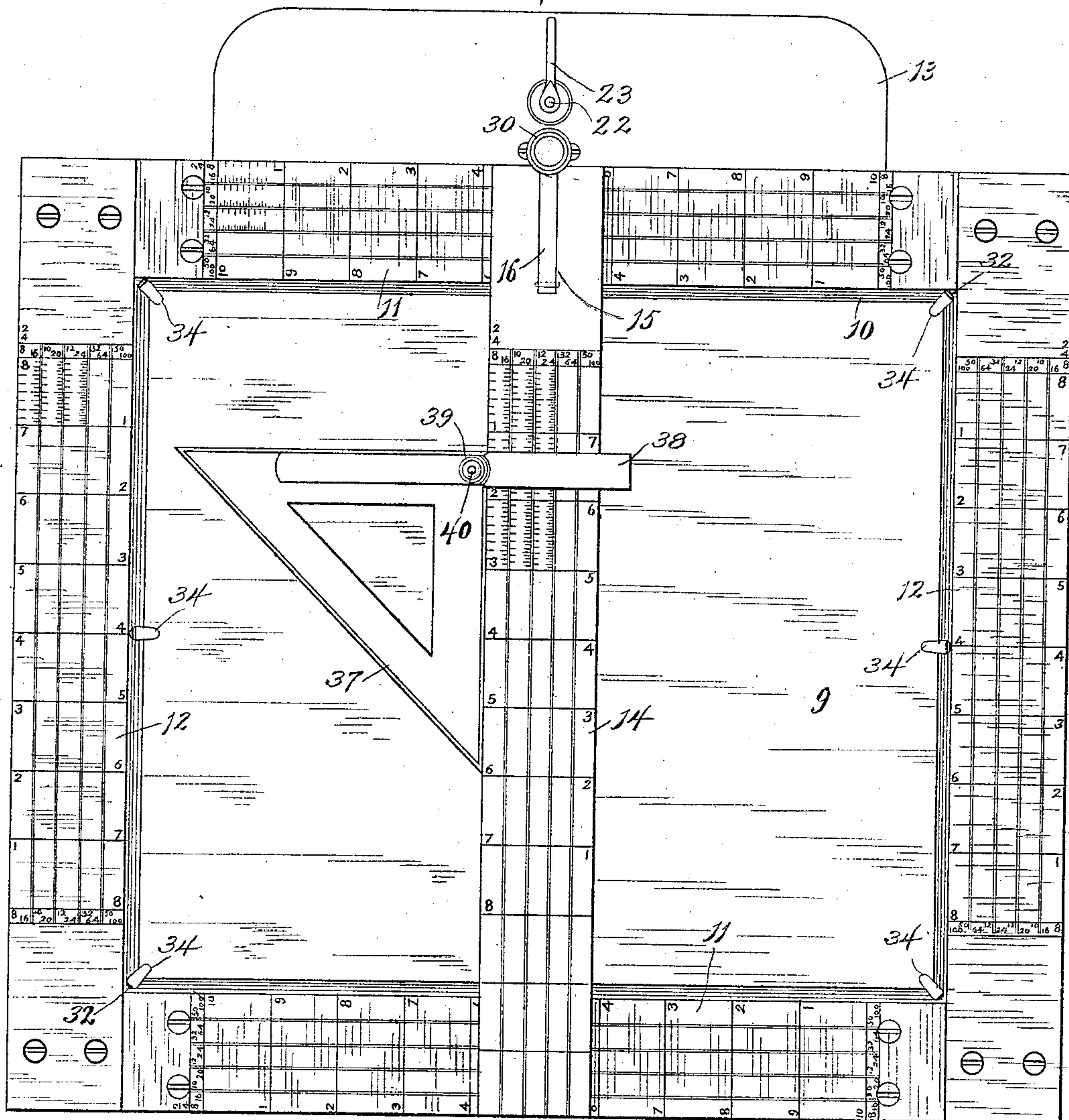
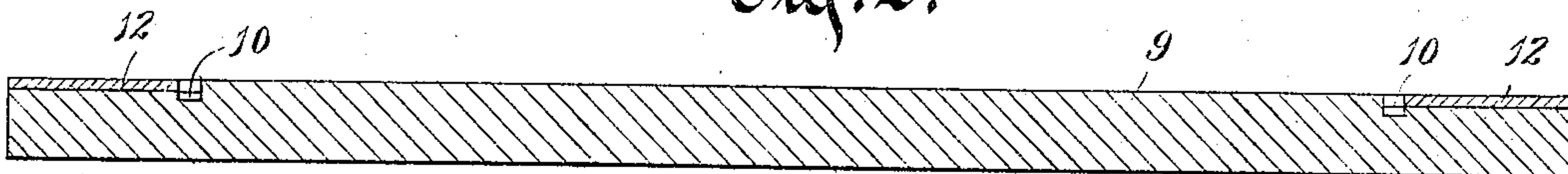


Fig. 2.



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2 Sheets—Sheet 2.

Fig. 3.

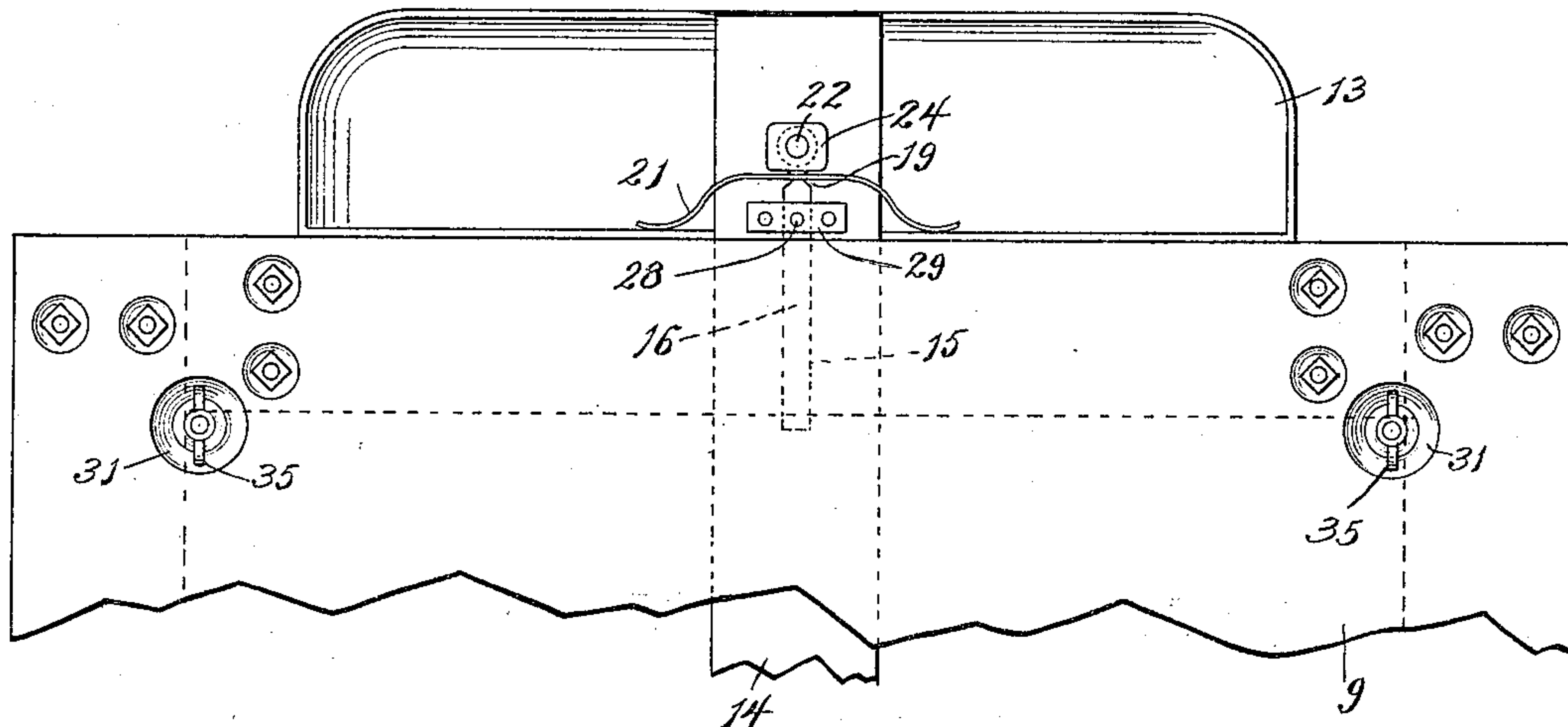


Fig. 4.

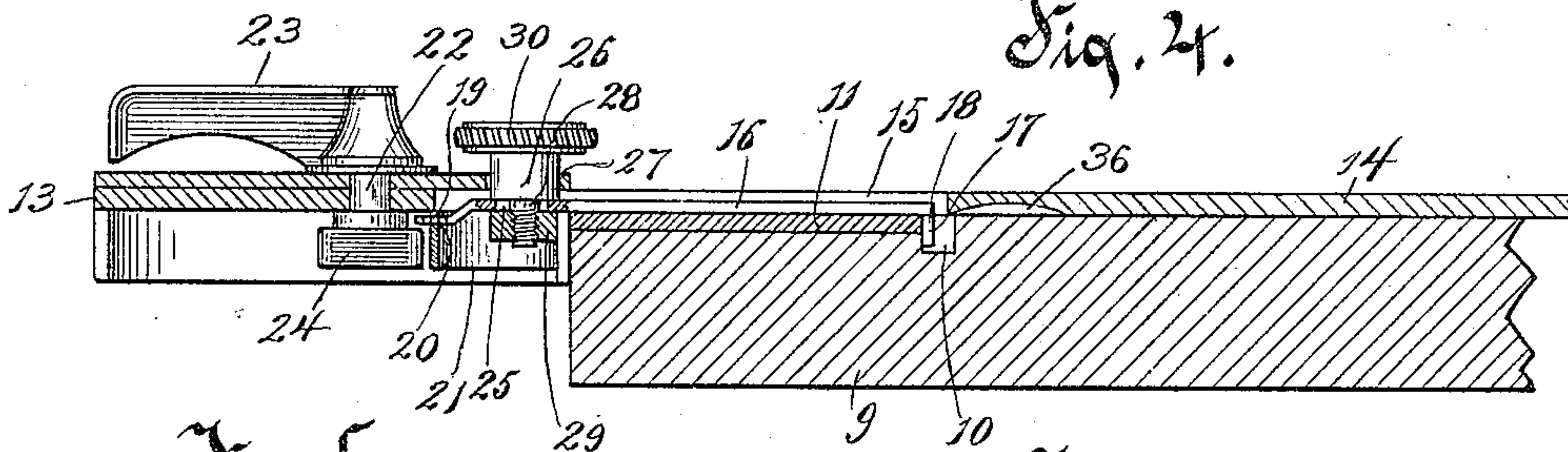


Fig. 5.

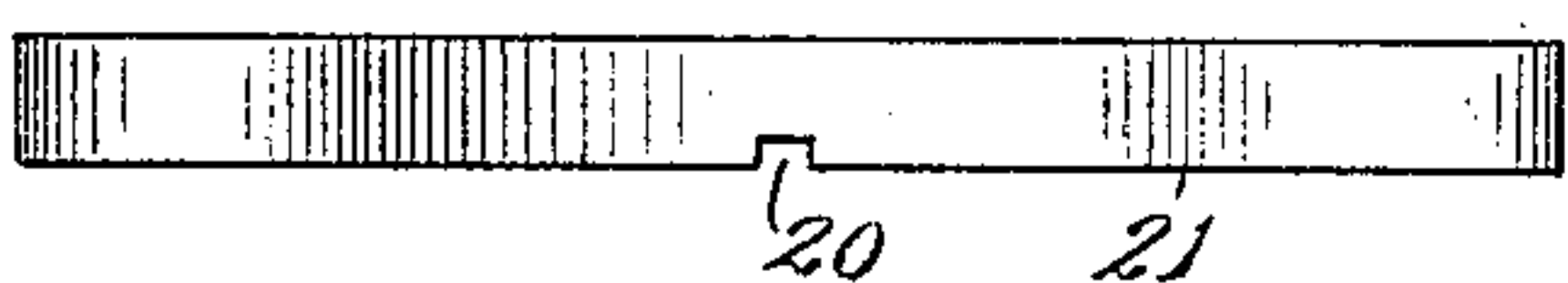


Fig. 7.

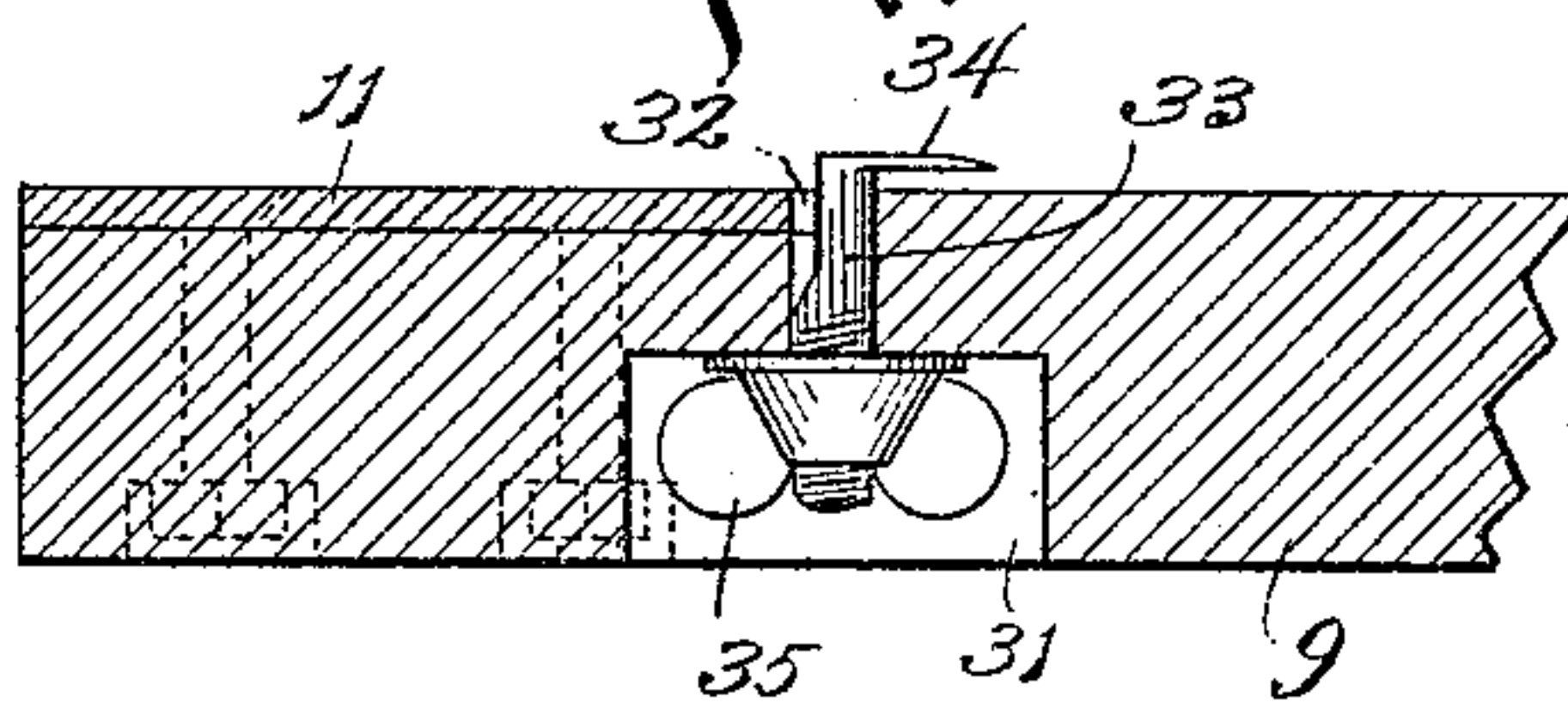


Fig. 6.

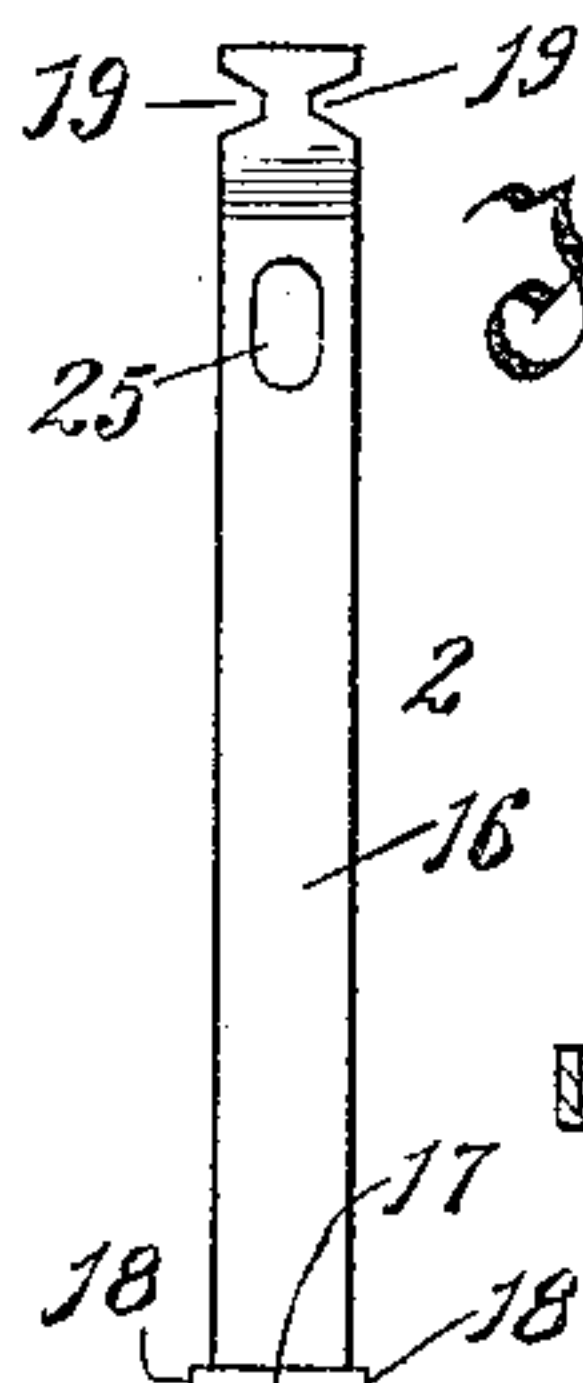
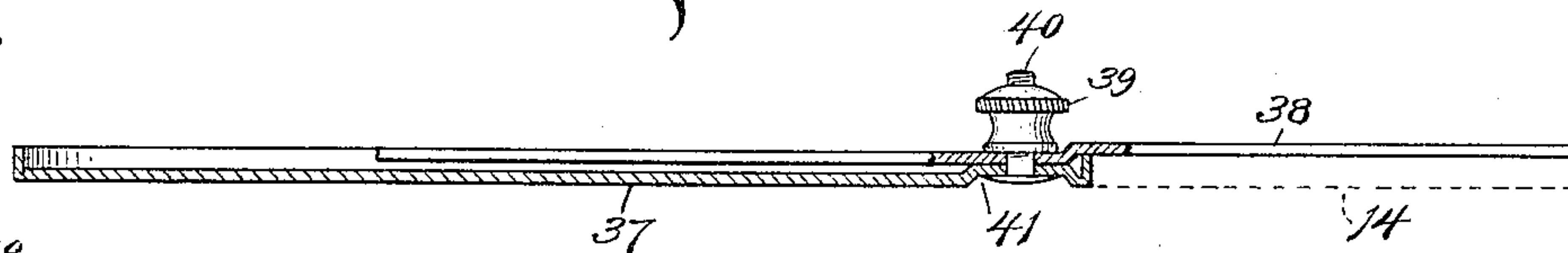


Fig. 8.



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UNITED STATES PATENT OFFICE.

RICHARD W. LUNDY, OF SOUTH BEND, INDIANA.

DRAWING-BOARD.

SPECIFICATION forming part of Letters Patent No. 611,697, dated October 4, 1898.

Application filed December 20, 1897. Serial No. 662,552. (No model.)

To all whom it may concern:

Be it known that I, RICHARD W. LUNDY, of South Bend, in the county of St. Joseph and State of Indiana, have invented a new and useful Improvement in Draftsmen's Appliances, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in draftsmen's appliances.

Among the objects are to provide an improved form of T-square and drawing-board, to provide a combination drawing-board and T-square, the combination being such that the T-square may be held releasably in adjusted position to the board, and, finally, an improved form of right-angled triangle to be used in connection with the drawing-board and T-square.

With the above primary objects in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan view of the complete device, showing the drawing-board, the T-square, and the right-angled triangle. Fig. 2 is a cross-section of the drawing-board only. Fig. 3 is a view of a fragment of the drawing-board and T-square, showing the reverse side to that shown in Fig. 1. Fig. 4 is a central section through Fig. 3. Fig. 5 is a detail of the clamping-spring. Fig. 6 is a detail of the holding-strip. Fig. 7 is a section of a fragment of the board, showing the device for holding the paper, which device is adapted to be used in lieu of the ordinary thumb-tacks; and Fig. 8 is an edge view of the right-angled triangle, a part broken away and a part in section.

Referring to the drawings, the numeral 9 indicates a drawing-board the upper surface of which is provided with a rectangular channel 10, the sides of said channel being arranged at a desirable distance inwardly from the edges of the board. The upper surface of the board is also shown as provided around its four edges with scales of measurement, the top and bottom scales being indicated by the numerals 11 11 and the side scales by the numerals 12 12. Four of these scales are preferably provided, as shown in the drawings; but the scales may be arranged at

but three or two of the edges, if desired. The scales are advisably delineated on steel strips, or, if desired, they could be made on strips of any other desirable metal or on suitable well-seasoned wood. These strips are seated in suitable recesses therefor in the drawing-board, and the inner edges of the strips form the outer edges of the channels 10. The scale-strips 12 12 are shown as extending the entire length of the sides of the board, while the scale-strips 11 11 terminate at the inner edges of the opposite ends of the plates 12 12. Of course the scales could be delineated on a rectangular frame; but the construction shown and just described is preferred, inasmuch as it provides for shrinkage and expansion of the board.

In the present illustration of my invention the measurements are shown on a scale of one-half inch to the inch. Each side scale 12 has an outer line of figures denoting inches, and these figures read upwardly from next to the lowest horizontal divisional line of the scale, which line is numbered "1," to the upper horizontal division-line numbered "8." Each side scale is also, preferably, provided with an inner line of inch designations which read from next to the top horizontal divisional line, which is numbered "1," downwardly to the lower horizontal divisional line numbered "8." The inch designations of the upper and lower scales are arranged in the same manner—that is to say, the outer line of figures begin with the second divisional line at the left hand of Fig. 1, which line is numbered "1," and ends with the last intersecting divisional line, which is numbered "10," while the inner line of figures of these scales commence with the figure "1" at the second intersecting divisional line at the right hand of Fig. 1 and terminate with the figure "10" at the last intersecting divisional line to the left hand of Fig. 1. By this arrangement a border of one inch may be made merely by adjusting the T-square to the terminal line of any scale, and yet at the same time proper scale measurements may be made either upwardly or downwardly or from left to right, or vice versa, within this border. The inch measurements of the scales are of course divided throughout the length of the scales into fractional parts of inches, as shown at the left-hand end of

the upper scale 11 and at the upper end of the left-hand side scale 12.

The numeral 13 indicates the head of the T-square, and 14 the arm thereof. The arm 14 is also provided with a scale of measurements, the divisional lines of which are in line with the divisional lines of the scales of the drawing-board, and is provided with two lines of digits, one line commencing with the figure "1" at the upper end of the arm, corresponding to the same divisional line numbered "1" on the side scale 12, and the other line of digits reading upwardly from the next to the lowest divisional line of the arm, which divisional line is on a plane with the line to which the numerals "1" and "7" are applied in the side scales 12 12.

The arm 14 of the T-square is provided with an elongated slot 15, in which is fitted a strip 16, constituting a portion of the holding mechanism. The inner end of this strip is bent to form a downwardly-projecting lip 17, which fits in the angular channel 10 of the drawing-board. The lip is formed with lateral shoulders 18, which prevent the inner end of the strip from working or springing out of the elongated slot 15. The outer end of this strip projects beneath the head of the T-square and is formed with the notches 19. These notches are adapted to be engaged by the side edges of a notch 20, formed in a flat spring 21, said spring being bowed outwardly and having its free ends resting against the edge of the drawing-board.

Passing through the top of the head of the T-square is a spindle 22. This spindle is formed or provided at its outer end with an operating handle or lever 23 and at its inner end with a cam 24. The spring 21, engaging the strip 16 in the manner pointed out, acts to pull said strip outwardly and to thus draw the lip at the inner end of said strip firmly against the outer wall of the channel 10 of the drawing-board formed by the scale-strip and thus hold the head of the T-square firmly to the edge of the drawing-board. The inner edges of the scale-strips therefore form rigid straight edges for the lip to bear against. It will also be noticed that the strip 16 is provided near its outer end with an opening 25. A stud 26 passes through an opening 27 in the head of the T-square, and the end of this stud bears against the upper side of the strip 16. Said stud is formed with a projecting stem 28, which passes through the opening 25 of the strip 16, and the lower extremity of this stem is threaded and engages a threaded opening in a block 29, secured to the under side of the outer portion of the arm of the T-square, and which block is located directly beneath the strip 16. The outer end of the stud is provided with a milled head 30 for convenience in turning the same. When this stud is turned downwardly, it will securely clamp the strip 16 and thereby hold the strip, and consequently the T-square, in adjusted position. Under ordinary circumstances the

arch-shaped spring is quite sufficient for holding the T-square in adjusted position, and consequently when performing ordinary work on the drawing-board the stud need not be turned down tight enough to effect a clamping. Under these conditions when it is desired to adjust the T-square to a different position all that is necessary is to turn the cam by properly manipulating the lever 23 so that said cam is brought in engagement with the arch-shaped spring. As soon as the T-square is adjusted to the desired position the lever or operating-handle 23 is released, so as to instantly relieve the pressure of the cam on the spring, when of course the lip again bears against the wall of the groove. The clamping-stud is particularly intended for use in section lining or in other work that could be more conveniently accomplished by working from the scale on the T-square, for the reason that the spring 21 alone should not be depended upon to prevent deflection at the end of arm 14 should the draftsman accidentally exert too much pressure thereon. It will be obvious that when working from the side of the board the weight of the cam-actuating lever would always keep the lower corner of cam 24 in contact with spring 21, and consequently but a limited throw of the lever is necessary in order to bring the cam into action against the spring. It should therefore be clearly understood that when necessary to move the T-square from any point where it may be held by the spring (the stud 30 not being set) it is only necessary to exert a very slight pressure against the end of the lever 23 with either the first finger or thumb, when the square is instantly released and is again even more quickly made fast in its new position by merely removing the finger or thumb from the lever. Any change in the location or position of the square can be made as quickly and as conveniently as though no self-holding device were used.

From the above description it will be seen that my invention presents decided advantages and is of great convenience to draftsmen, especially when a drawing-board is used which is supported at an angle, as on an easel.

I also show in connection with my device means for holding the paper to the board, and which is adapted to be used in lieu of the ordinary thumb-tacks. This is shown more especially in Fig. 7 of the drawings. The underside of the drawing-board is formed with recesses 31, arranged at suitable distances apart, and from each of these recesses extends upwardly through the upper surface of the drawing-board an opening 32. The paper-holding device is indicated by the numeral 33 and consists of a shank portion extending through the opening 32 into the recess 31 and an upper angularly-projecting end 34. The lower extremity of each of the paper-holders is threaded to receive a wing-nut 35. The edges of the paper on which

the drawing is to be made are passed beneath the angularly upper bent end of the holding devices, and by turning the wing-nuts said angularly-bent ends may be drawn down into engagement with the paper, and thus firmly hold the paper to the board. This is a simple device and obviates entirely the necessity of puncturing the paper, as is now required in the case of thumb-tacks. The arm 14 of the T-square is provided on its under side with recesses 36, so as to accommodate the angularly-bent ends of the paper-holding devices when said arm of the T-square is adjusted above said angularly-bent ends.

The improved form of right-angled triangle is shown in Fig. 1 as applied to the arm of the T-square and as resting on the drawing-board and is shown in detail in Fig. 8. This right-angled triangle is designated by the numeral 37. It is provided with an adjustable finger 38, which is secured at the angle of the right angle. The finger is held in adjusted position to the main portion of the triangle by means of a thumb-nut 39, which engages the threaded upper end of a stud 40, the lower headed end of said stud being received in a recess 41 therefor, formed in the under side of the end of the triangle. Fig. 1 shows how the triangle may be applied to the arm of the T-square. From this it will be seen that when the angle is in use the adjustable finger extends across the face of the graduated T-square and is in exact line with the edge of the angle, thereby greatly facilitating its use in conjunction with the scale of the arm of the T-square. The scale on the arm of the T-square therefore is quite convenient for use in connection with this right-angled triangle, or, in fact, with other angles and implements. The finger of the right-angled triangle can be adjusted by loosening the thumb-nut 39, so as to be adjustable to either edge of the right angle of the triangle.

What I claim as my invention is—

1. In combination with a drawing-board having in its top surface a depression along one or more of its sides, and a channel adjacent to the inner edge of each depression, of a graduated scale-strip fitting in each depression, the inner edge of said scale-strip forming the outer edge of the channel.

2. The combination, of a drawing-board having in its top surface a depression along one or more of its sides and a channel adjacent to the inner edge of each depression, a graduated scale-strip fitting in each depression, the inner edge of said scale-strip forming the outer edge of the channel, a T-square, a lip depending from the T-square and adapted to engage the channel, means for holding the lip firmly in engagement with the outer edge of the channel formed by the inner edge of the graduated scale-strip, and means for

throwing the lip out of engagement therewith in order to permit of the adjustment of the T-square.

3. The combination of a T-square provided with an elongated slot, a strip fitting in said slot and provided at its inner end with a depending lip, a spring engaging the strip, and a stud passing through the T-square, and provided at one end with an operating-handle and at its opposite end with a cam adapted to be turned into or out of engagement with the spring.

4. The combination, of a drawing-board having a channel in one or more of its sides, a T-square, having the arm thereof provided with an elongated slot, a strip fitting in said slot provided at its inner end with a depending lip adapted to fit the channel of the board, means engaging the outer end of the strip, so as to hold the inner lip thereof in engagement with the channel, and means adapted to draw said lip out of engagement with the channel to allow for an adjustment of the T-square.

5. The combination, of a drawing-board having a channel in one or more of its sides, a T-square provided with an elongated slot, a strip fitting the slot and provided at its inner end with a depending lip adapted to engage the channel of the board, a spring engaging the outer end of the strip, and mechanism adapted to compress said spring.

6. The combination, of a drawing-board having a channel in one or more of the sides thereof, a T-square provided with an elongated slot, a strip fitting in said slot and having a depending finger adapted to engage the channel of the board, a spring engaging the outer end of the strip, and a cam adapted to compress the spring so as to act on the strip and permit of an adjustment of the T-square.

7. The combination, of a drawing-board having a channel in one or more of the sides thereof, a T-square provided with an elongated slot, a strip fitting said slot and provided at its inner end with a depending lip adapted to fit the channel of the board, and a stud bearing against the outer end of the strip and provided with a projecting stem passing through an opening in the strip, and the threaded extremity of said stem engaging a threaded opening in a block.

8. The combination, with a right-angle triangle, of a finger extending from the angle of the right angle, and adjustable so as to be adjusted in line with either edge of the right angle of the triangle.

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

RICHARD W. LUNDY.

Witnesses:

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ANNA V. FAUST.