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E. G. HEATHCOTE.

T-SQUARE.

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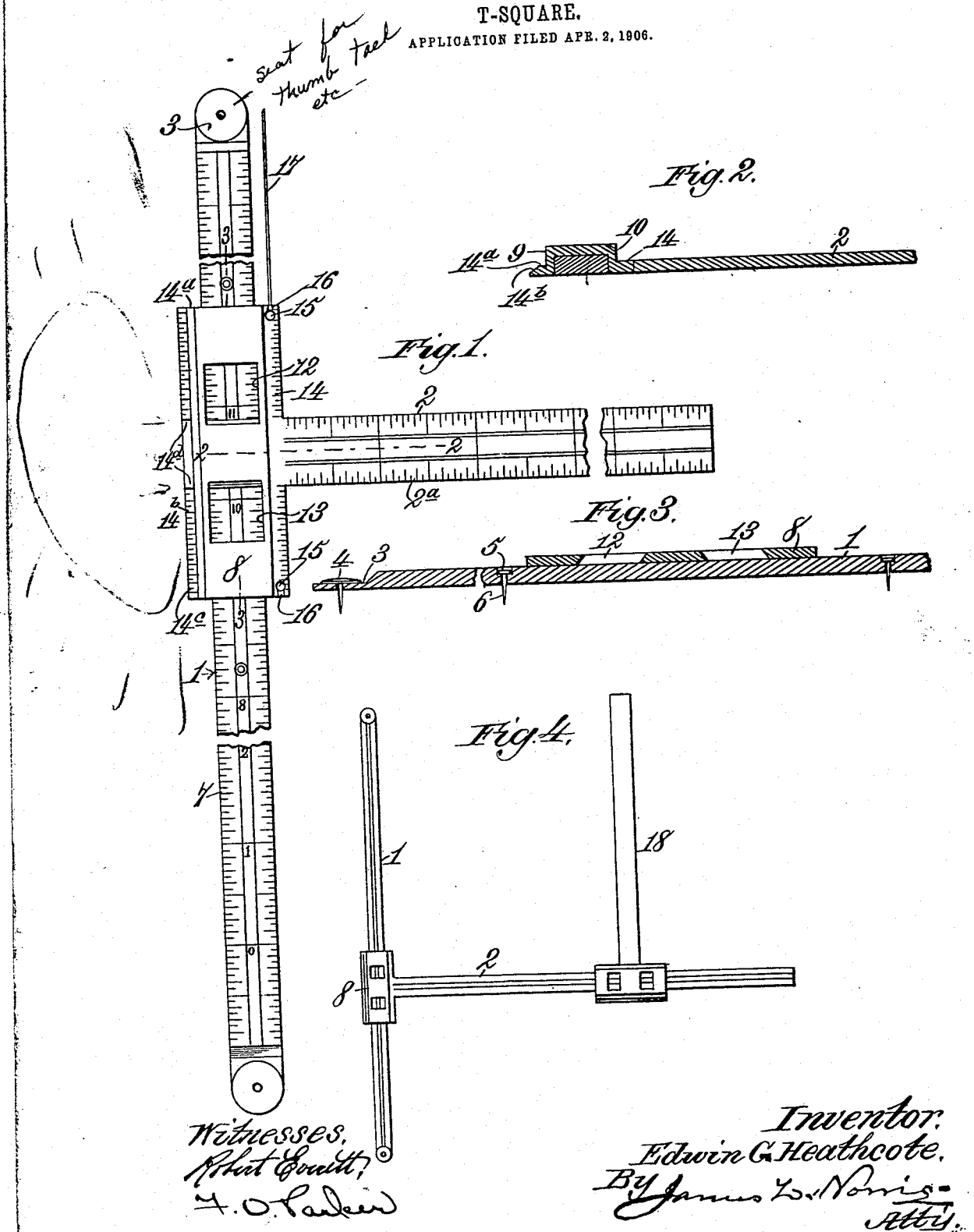

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T-SQUARE.

No. 826,425. Specification of Letters Patent. Patented July 17, 1906.

Application filed April 2, 1906. Serial No. 309,392.

To all whom it may concern:

Be it known that I, EDWIN G. HEATHCOTE, a citizen of the United States, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented new and useful Improvements in T-Squares, of which the following is a specification.

This invention relates to T-squares, and aims to provide in a manner as hereinafter set forth a drafting instrument of such class to facilitate and form parallel lines without the necessity of employing a square-edge support for the material upon which the lines are made, and is particularly adapted for use by traveling draftsmen or architects, so as not to place them to the necessity of obtaining or using a square-edge support for the material upon which the lines are made, as when using a T-square in accordance with this invention it is not necessary to associate the edge of the support for the material with the T-square when drafting.

Although the invention is particularly designed for use by traveling draftsmen and architects, so as not to place them to the inconvenience of always using square-edge supports for the material, yet it is also designed for use by any persons that find it applicable for their profession.

The invention further aims to provide a drafting instrument of the class referred to which shall be simple in its construction, strong, durable, efficient in its use, accurate, easily adjusted, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination, and arrangement of parts hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention; but it is to be understood that changes, variations, and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings, wherein like reference characters denote corresponding parts throughout the several views, Figure 1 is a top plan view of a T-square in accordance with this invention. Fig. 2 is a sectional detail on the line 2 2, Fig. 1. Fig. 3 is a sectional detail on the line 3 3, Fig. 1; and Fig. 4 is a view of a modification.

Referring to the drawings by reference characters, a T-square in accordance with this invention comprises a stationary member 1 and a reversible and slidably-adjustable member 2.

The stationary member 1 consists of a length of any suitable material having each end cut away, as at 3, so as to form a seat for the head of a holdfast device 4, which is shown, by way of example, as a thumb-tack. An opening is provided in each of the cut-away portions to permit of the passage of the holdfast device. The holdfast devices 4 are adapted to detachably secure the member 1 to the support for the material upon which is to be drawn the lines. In case the support is much narrower than the length of the member 1 it is essential to provide means to secure the member 1 in position, and such means consists of providing the member 1 at certain points through its length with countersunk openings 5, through which are adapted to extend the holdfast devices 6, the heads of said devices 6 being flush with the outer member 1. The holdfast devices 6 preferably are not employed when the stationary member is retained in position through the medium of the holdfast devices 4. The member 1 has its outer face provided with a scale with a double series of graduations, as at 7. The two series of graduations are employed owing to the fact that at times it is necessary to reverse the member 2, so that when said member 2 is reversed accurate measurement will be obtained. The side edges of the member 1 are square.

The member 2 is provided with a scale 2^a, similar to the scale upon the member 1, and is of any suitable length and constructed of any suitable material and terminates at one end in and centrally of a slide portion 8, superposed upon, straddles, and tightly but slidably fits the member 1. The slide 8 is slidably adjustable upon the member 1 and when adjusted toward one end or the other end of said member 1 carries the member 2 therewith. The slide 8 is formed of a pair of side walls 9 10, which project above the plane of the outer face of the member 1 and which terminate in a top wall 11, having a plurality of square openings 12 13, the inner wall of each of said openings being undercut, so as to form a bevel to enable the graduations upon the member 1 being seen very distinctly when moving the slide to the position desired upon the member 1, so as to properly position the member 2 with respect to the scale upon the member 1. The inner edge of the opening 12 is in longitudinal alinement with

the upper edge of the member 2, and the inner edge of the opening 13 is in longitudinal alinement with the lower edge of the member 2.

The function of providing the slide 8 with the two openings 12 and 13 is to enable the member 2 to be reversed, so as to project from the member 1 in a direction opposite to that which is shown in Fig. 1 and also to enable the accurate reading of the scale, owing to the fact that there are two series of graduations. The side wall 10 of the slide 8 has a laterally-extending flange 14, and with this flange the member 2 terminates. At each end of the flange 14 an opening 15 is provided, and extending from the edge of each of the openings 15 to the end edges of the flange 14 are the grooves 16 upon the lower face of the flange 14. The openings 15 and grooves are each adapted to receive a flexible member 17, to which is attached a counterbalance, (not shown,) and said member is adapted to extend over the support upon which the material is placed or over a suitable sheath, and the function of the member 17 and counterbalance is to prevent the slide slipping upon the member 2 when working upon a vertical or inclined support for the material. The side wall 9 of the slide 8 has a laterally-extending flange 14^a, which is of the same width as the flange 14. The flange 14, as well as the flange 14^a, has a beveled edge 14^b, and upon each of the said beveled edges 14^b a scale 14^c is provided. The flange 14^a is furthermore provided with a pair of indicating-marks 14^d in alinement with the edges of the member 2. The two flanges 14 14^a, as before stated, are of the same width on each side of the sleeve 8, so that when reversing from right to left or left to right any small prick-points made will not be covered by either flange, and the scale upon said beveled edges will be of use when transferring work from one side to the other.

The inner faces of the sides of the slide 8 are square and conform in contour to the side edges of the member 1, and by such an arrangement the slide can be adjusted vertically upon the member 1—for example, if the instrument is flat upon a support. This vertical adjustment is provided in case there are four or five sheets of material upon the support and the length of the material is such as not to extend to the member 1. It will be evident that the thickness of the three or four sheets of material will move the slide vertically upon the member 1 and which would not be the case if the inner faces of the side walls of the slide and the side edges of the member 1 were beveled. If the instrument is fixed upon a vertical support, it will be evident that the slide and member 2 would be adjusted outwardly, owing to the thickness of the plurality of sheets of material, and such adjustment will also be had in an outward direction if the support for the material is arranged in an inclined position. If the material is of such length as to extend under the member 1, there would be no adjustment in the manner as stated. If the material be of such length as to extend from both side edges of the member 1 and after drawing upon one side of the material and it is desired to draw upon the other side, all that is necessary to do is to reverse the slide, so that the opening 13 will be the upper of the pair of openings in the slide, and the member 2 will then extend in an opposite direction, as will be evident. This enables very readily an operator to continue in a convenient manner a line extending from both sides of the member 1 and also in a correct manner. The square edges of the member 1 permit of the ready shifting of the slide 8, so that parallel lines can be made upon the paper at various points thereof, the lines being very accurate, and owing to the fact that the member 1 can be attached to any flat support provided with any shaped edges it is not necessary for the operator to have a square-edge support so as to associate with the member 2, this function being performed by the side edges of the member 1. Oftentimes a traveling draftsman or architect finds it very inconvenient to obtain a support with a square edge or a drafting-board, and in some instances if the drafting-board is obtained the cost for its use is inclined to be expensive, so it is evident that a drafting instrument set up in a manner as stated will not require the draftsman or architect to be particular in regard to obtaining a support with square edges or a drafting-board, for the reason that there is no necessity of obtaining a square-edge support, as the member 1 performs the same function as the square edge of a support.

In Fig. 4 a modified instrument is shown and which consists in providing a third member, so as to enable the drawing of lines at an angle with respect to either the upper or lower edges of the member 2. The third member is indicated by the reference character 18 and is of the same construction as the member 2 and is mounted upon said member 2. The member 18 has also a scale similar to that of the members 1 and 2. The member 18 is slidably adjustable and reversible upon the member 2.

It will be evident from the foregoing construction of drafting instrument that the parts forming the same can be easily set up in operative relation with respect to each other and when disassembled can be formed into a small compact package.

If desired, the member 2 or 18 can be extensible, as it is obvious that such extensibility can be obtained by forming the said member 2 or the member 18 of a series of detachable or hinged sections, and therefore it is thought unnecessary to illustrate this modification.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. An instrument of the character referred to, comprising two members extending at an angle with respect to each other, one of said members provided with a slide detachably mounted upon the other of said members, said slide provided with a pair of openings, one of said openings having its inner wall in alinement with one of the elongated edges of that member provided with a slide and the other of said openings having its inner wall in alinement with the other elongated edge of that member provided with the slide.

2. An instrument of the character referred to, comprising a stationary member having a seat at each end to receive a holdfast device for retaining said member stationary, and a reversible and slidable adjusting member arranged in operative relation with respect to the stationary member and provided with a slide snugly and slidably engaging with said stationary member, each of said members provided with a scale, and said slide provided with a pair of openings for exposing the scale upon the stationary member, the inner wall of each of said openings having its edge in longitudinal alinement with one of the longitudinal edges of said adjusting member.

3. An instrument of the character described, comprising a stationary member provided with a scale near each side edge and extending in the direction of the length of said member, an adjustable and reversible slide straddling and snugly and slidably engaging the side edges of said member and provided with a pair of openings for exposing the said scales, and a member extending at right angles to said stationary member and formed integral with said slide and provided with a scale near each side edge, one of the openings in said slide associating with one of the longitudinally-extending edges of said adjusting member and the other of said openings associating with the other longitudinally-extending edge of said adjusting member.

4. An instrument of the character described, comprising a member, countersunk holdfast devices disposed throughout the length of said member for retaining it stationary, an adjustable and reversible slide snugly and slidably engaging the said member and having each side thereof provided with a lateral flange of a length equal to the length of the slide, and a member formed integral with one of said flanges and extending at right angles with respect to said stationary member, said slide provided with a pair of openings, the upper one of said openings in said slide associating with the upper of the longitudinally-extending edges of said adjustable member and the lower one of said openings associating with the lower of the longitudinally-extending edge of said adjustable member.

5. An instrument of the character described, comprising a stationary member provided with a scale, a reversible and adjustable slide snugly and slidably engaging said member and provided with a pair of openings for exposing said scale, each of said openings having the inner wall thereof inwardly beveled and the outer wall thereof outwardly beveled, and a member having a scale similar to the scale upon the stationary member and terminating in and carried by said slide and extending at right angles with respect to said stationary member, said adjustable member having the upper one of its longitudinal edges associating with one of said openings and the other longitudinal edge associating with the lower of said openings.

6. An instrument of the character described, comprising a member, means for detachably securing said member to a support, a reversible and adjustable slide straddling and snugly and slidably engaging said stationary member and provided with a pair of laterally-extending flanges, a member terminating in and carried by said slide and extending at an angle with respect to said stationary member, and said slide provided with a pair of openings with the inner walls thereof in alinement with the longitudinal edges of said adjustable member and the said members and flanges provided with a scale.

7. An instrument of the character described, comprising a member provided at each end with a seat below the plane of the upper face of said member, a holdfast device mounted against said seat for retaining said member stationary, said member provided with a scale, a reversible and adjustable slide straddling and snugly and slidably engaging said stationary member and provided with a pair of openings for exposing said scale and further provided with a pair of laterally-extending flanges, and a member formed integral with one of said flanges, extending at right angles with respect to said stationary member and provided with a scale similar to the scale upon the stationary member, said adjustable member having the upper of its longitudinal edges associating with the upper one of said openings and the lower of its longitudinal edges associating with the lower one of said openings.

8. An instrument of the character described, comprising a member provided at each end with a seat below the plane of the upper face of said member, a holdfast device mounted against said seat for retaining said member stationary, said member provided with a scale, a reversible and adjustable slide straddling and snugly and slidably engaging said stationary member and provided with a pair of openings for exposing said scale and

further provided with a pair of laterally-extending flanges, and a member formed integral with one of said flanges, extending at right angles with respect to said straddling member and provided with a scale similar to the scale upon the stationary member, said adjustable member having the upper of its longitudinal edges associating with the upper one of said openings and the lower of its longitudinal edges associating with the lower one of said openings, one of said flanges provided with an opening at each end to permit of attaching a counterbalanced means thereto and further having its inner face grooved at each end, said grooves terminating in the openings of the flange.

9. An instrument of the character described, comprising a member provided at each end with a seat below the plane of the upper face of said member, a holdfast device mounted against said seat for retaining said member stationary, said member provided with a scale, a reversible and adjustable slide straddling and snugly and slidably engaging said stationary member and provided with a pair of openings for exposing said scale and further provided with a pair of laterally-extending flanges, a member formed integral with one of said flanges, extending at right angles with respect to said stationary member and provided with a scale similar to the scale upon the stationary member, said adjustable member having the upper of its longitudinal edges associating with the upper one of said openings and the lower of its longitudinal edges associating with the lower one of said openings, and a countersunk means disposed throughout the length of said stationary member and independent of the holdfast means for securing the stationary member to a support.

10. An instrument of the character described, comprising a member provided at each end with a seat, a holdfast device mounted against said seat for retaining said member stationary, said member provided with a scale, a reversible and adjustable slide straddling and snugly and slidably engaging said stationary member and provided with a pair of openings for exposing said scale, said slide having at each side a laterally-extending flange, each of said flanges having a beveled edge provided with a scale, and a member terminating in one of said flanges and provided with a scale similar to the scale upon the stationary member and extending at right angles with respect to said stationary member, said adjustable member having its longitudinal edges in alinement with the inner walls of said openings.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDWIN G. HEATHCOTE.

Witnesses:
F. H. ABBOTT,
H. W. BROWN.