The present invention relates generally to the field of drafting accessories, and more particularly to a T-square holder by means of which a conventional T-square may be clamped in any desired position on a drafting board with complete assurance that the elongate rigid portion thereof projecting from the T-square head will at all times be in a truly normal position relative to that edge portion of the board slidably engaged by the head.

Although theoretically the elongate drafting edge portion of a T-square of the structure above mentioned is aligned normally disposed relative to the edge of the drafting board contacted by the head, in actual practice this is not always so. Frequently, and particularly if the T-square has an elongate straight edge defining member affixed to the head, relative movement between the head and this member occurs unless the T-square is unusually heavy. Also, occasionally during use the flat straight edge of the head is not in full abutting contact with an edge portion of the drafting board, and as a consequence he elongate portion of the T-square is inaccurately positioned relative to the drafting board whereby errors creep into the work on the board.

To eliminate the disadvantages of the T-square above described, drafting machines have been designed and marketed in the past wherein two rulers in normal juxtaposition to form an L are at all times maintained in parallel relationship to edge portions of the drafting board by a parallelogram linkage mechanism. However, while drafting machines of this type have been found quite satisfactory, they are expensive, heavy and cumbersome to use, and require the utmost care when removed from a drafting board and stored.

A major object of the present invention is to provide an inexpensive T-square holder that is inexpensively constructed and when removably mounted on a drafting board, will maintain a T-square in a true normal position relative to two edge portions of the drafting board between which the T-square extends, with the T-square and holder being adapted to be manually moved as an integral unit on the drafting board to any desired position thereon.

A further object of the present invention is to provide an improved T-square holder that is not only adapted to provide the operational advantages above mentioned, but which may be used with T-squares having elongate portions of varying thickness as well as being useable on drafting boards that likewise may be of any thickness within a predetermined range.

Still another object of the invention is to supply a T-square holder which may be actuated to clamp the T-square in a desired position by a simple flick of the finger, and the T-square can be released from the clamped position by substantially the same operation but in a reverse direction.

These and other objects and advantages of a preferred and certain alternate forms of the present invention will become apparent from the following description thereof, and from the accompanying drawings in which:

FIGURE 1 is a conventional drafting board on which a T-square is slidably mounted and held in a clamped position thereon by the use of the preferred form of the invention;

FIGURE 2 is a top plan view of the preferred form of the invention showing a portion of a T-square extending therethrough;
tion thereof is of non-circular configuration. A first end portion of the body 40 develops into a longitudinally projecting extension 42 that is pivotally disposed within the confines of slot 18. The outer end of extension 42 develops into the upwardly projecting handle G. The second end surface 44 of body 40 is flat and positioned normally relative to the longitudinal axis of the body. The second end surface 44 of body 40 slidably and rotatably engages the interior surface of the second end piece 16. At the junction thereof, extension 42 and body 40 define a generally annulus-shaped flat surface 45 that is in rotatable and slidable engagement with the interior surface of the first end piece 14, as best seen in FIGURE 2.

The use of the preferred form of the invention is extremely simple. Screws 26 are loosen, and the guide 32 slidably moves on flange 20 to a position where the upper surface of second leg 36 snugly and slidably contacts the lower surface of drafting board B, when the elongate portion F of T-square D resting on drafting board B is projected through opening 22, as shown in FIGURE 4. The head E of the T-square is placed in full smiling contact with the edge portion B' of the board B.

Screws 26 are then tightened to hold guide 32 in the position described above. Handle G is pivoted to the upwardly extending position shown in FIGURE 3, whereby the T-square D and holder A may be slid longitudinally along the drafting board to the desired position. Thereafter handle G may be moved manually in either of two possible directions to pivot the pressure-applying body 40 relative to housing 10. Due to the non-circular cross section of body 40, such pivotal movement forces housing 10, flange 20, and guide 32 upwardly relative to drafting board portion B', with the second leg 36 and body 40 pressure-engaging board B and T-square member F respectively with sufficient force to hold the T-square D in the desired position on board B.

When it is desired to move the T-square D on the board B, handle G is simply pivoted from the locking position shown in phantom line in FIGURE 3 to the upright position shown in solid line in the same figure. This movement of handle G permits housing 10 and second leg 36 to move downwardly sufficiently relative to drafting board B that no appreciable pressure is applied to T-square D or the under side of the drafting board whereby the T-square D and holder A can be slidably moved as an integral unit to a new position thereon. After placement of T-square D and holder A in the new position they may be re-locked in fixed position relative to the drafting board B by manually pivoting handle G into a substantially horizontal position as previously described.

A first alternate form of the invention is shown in FIGURES 6 and 7, which is utilized in the same manner as the preferred form and differs structurally therefrom only insofar as that portion thereof situated above the T-square D. Accordingly, the structural elements of the first alternate form of the invention below the T-square D are identical by the same numerals used in the description of the preferred form, but to which a prime has been added.

The first alternate form of the invention includes an inverted semi-cylindrical shell 50, the ends of which are closed by two identical end pieces 52 and 54. A transverse slot 56 is formed in the central upper portion of shell 50, as can best be seen in FIGURE 6. An elongate pressure-exerting member 58 is removably disposed within the confines of shell 50. Member 58 has two identical circular end surfaces 60 and 62 that are parallel and positioned adjacent the interior surfaces of end pieces 52 and 54 respectively, which are also in parallel relationship.

A boss 64 extends upwardly from member 58 through slot 56. Boss 64 is slidably movable in slot 56 to permit axial pivotal movement of member 58 within shell 50. A tapped bore 66 extends downwardly in boss 64 and is threadedly engaged by a screw 68 which has a head 70 of greater diameter than the width of slot 56, and thereby prevents member 58 from slipping therefrom.

Member 58 is formed with two diametrically opposed, longitudinally extending, convex curved exterior cam surfaces 58a and 58b that slidably and rotatably engage the upper surface of T-square D and the interior surface of shell 50 when member 58 is pivoted. This pivotal movement of member 58 applies a downward force to T-square D and exerts an upwardly directed force on the lower surface of drafting board B through second leg 32' to the extent that the T-square D is removably locked at a desired position on the board.

The second alternate form of the invention shown in FIGURES 8 and 9 is structurally the same as the preferred form below that thereof through which the T-square D extends. The elements comprising the lower structural portion of the second alternate form of the invention are accordingly identified by the same numerals used in designating corresponding parts of the preferred form but to which a double prime has been added.

In FIGURES 8 and 9 it will be seen that an inverted semi-cylindrical housing 70 is provided that is defined by a shell 72 which is closed by identical end pieces 74 and 76. When this second alternate form of the invention is used housing 70 is located above the edge portion B' of the drafting board B. The outer longitudinally extending edge portion of housing 70 is joined to, or formed as an integral part of flange 20'. A central downwardly extending tapped bore 78 is formed in shell 72. A screw 80 having a large knurled head 82, threaded shank 84, and downwardly extending unthreaded extension 85 is rotatably supported in bore 78.

In FIGURES 8 and 9 it will be seen that an elongate pressure applying member 86 is provided that has a curved exterior longitudinal surface. Member 86 has two identical parallel end surfaces 88 and 90 that are positioned adjacent interior parallel surfaces of the end pieces 74 and 76 respectively. A centrally disposed recess 92 is formed in member 86 that is engaged by extension 85. When screw 80 is rotated to cause extension 85 to move downwardly relative to housing 70, a downwardly directed force is applied to T-square D by the member 86, and an upwardly directed force is exerted against the lower surface of drafting board B by the second leg 32". The lower portion of the member 86 being removably clamped to the drafting board B in the same manner as in the preferred and first alternate forms of the invention.

It will be obvious to those skilled in the art that various changes may be made in my invention without departing from the spirit and scope thereof, and therefore the invention is not limited by that which is shown in the drawings and described in the specification, but only as indicated in the appended claims.

I claim:

1. A camping device for holding a T-square having a head from which an elongate rigid member projects at a desired position on a drafting board having first and second laterally separated parallel edge portions, comprising: an elongate concave shell; first and second parallel end pieces that close the ends of said shell, and fixed first end piece having a slot extending outwardly therefrom a flange that depends from the outer surface of said shell, which flange has an opening formed therein that is slightly wider than the width of said elongate member to permit a part of said elongate member to extend therethrough and slightly thicker than the depth of said elongate member; an elongate guide of L-shaped transverse cross section; means for adjustably positioning said guide from said flange; an elongate pressure-applying member of generally elliptical transverse cross section that has first and second flat parallel end portions that...
are disposable adjacent the interior surfaces of said first and second end pieces when said pressure-applying member is situated in said shell; said pressure applying member having an extension that projects through said slot in said first end piece and is rotatable relative thereto; and means rigidly connected to said extension and disposed exteriorly of said shell that is operable by the hand of a user when resting on said shell for pivoting said pressure-applying member in said shell to a position where said elongate member of said T-square and second board edge portion are frictionally gripped between said pressure-applying member and said guide to prevent movement of said T-square relative to said board until said hand-operated means is actuated to pivot said pressure-applying member to a position where said elongate member and second board edge portion are not frictionally gripped.

2. A clamping device as defined in claim 1 wherein said hand-operated means is an elongate handle that extends outwardly from said extension and normal thereto.

3. A clamping device for holding a T-square having a head from which an elongate rigid member projects at a desired position on a drafting board having first and second laterally separated parallel edge portions, comprising: an inverted elongate concave shell; first and second parallel end pieces that close the ends of said shell, a flange that depends from the outer side portion of said shell, which flange has an opening formed therein that is slightly wider than the width of said elongate member and slightly deeper than the thickness of said elongate member to permit a part of said elongate member to extend therethrough an elongate guide of L-shaped transverse cross section; means for adjustably supporting said guide from said flange; an elongate pressure-applying member of generally elliptical transverse cross section that has first and second flat parallel end portions that are disposable adjacent the interior surfaces of said first and second end pieces when said pressure-applying member is situated in said shell; hand-operated means extending upwardly from said pressure-applying member through a transversely disposed slot formed in the upper portion of said shell for rotating said pressure applying member in said shell.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION


Casey E. Bowen

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 59, for "camping" read -- clamping --.

Signed and sealed this 19th day of December 1961.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents
USCOMM-DC