

K. DOUGAN.
T-SQUARE CLAMP.
APPLICATION FILED NOV. 23, 1904.

Fig. 1.

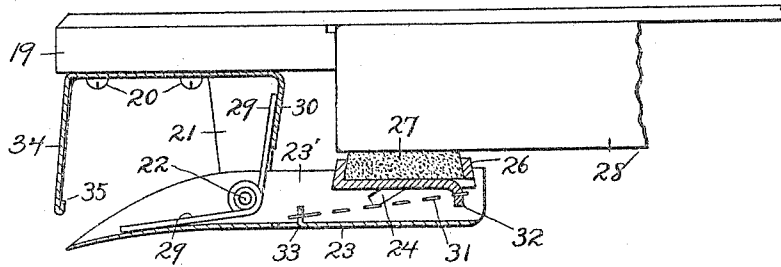


Fig. 2.

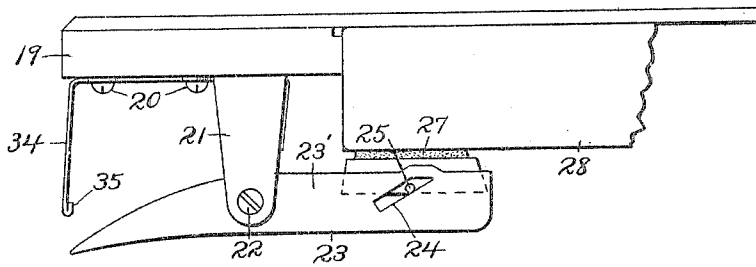


Fig. 3.

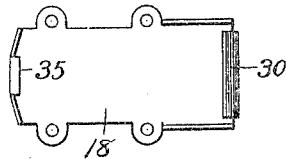


Fig. 5.

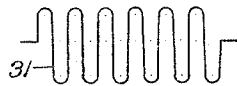
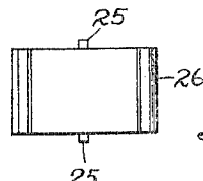


Fig. 4.

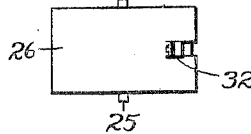


Fig. 6.

Witnesses:

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H. Vertz

Inventor,

Kennedy Dougan,
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2 SHEETS—SHEET 2.

Fig. 7.

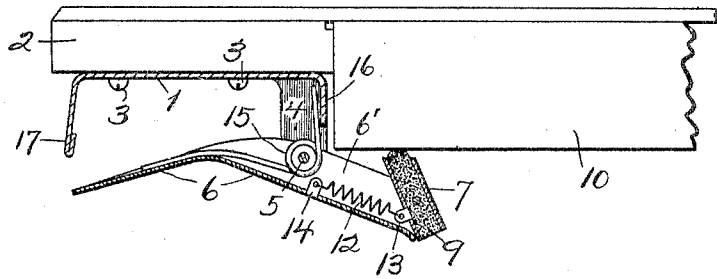


Fig. 8.

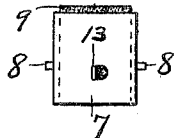
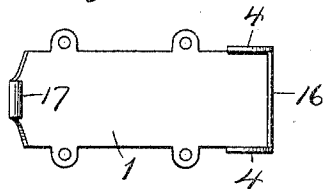


Fig. 9.

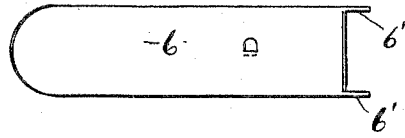


Fig. 10.

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UNITED STATES PATENT OFFICE.

KENNEDY DOUGAN, OF MINNEAPOLIS, MINNESOTA.

T-SQUARE CLAMP.

No. 802,202.

Specification of Letters Patent.

Patented Oct. 17, 1905.

Application filed November 23, 1904. Serial No. 234,055.

To all whom it may concern:

Be it known that I, KENNEDY DOUGAN, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in T-Square Clamps, of which the following is a specification.

This invention relates to devices for holding draftsmen's T-squares in any normal position upon the drawing-board, thus enabling the draftsman to handle his triangle and other instruments with his left hand instead of having to hold the T-square in position with the left hand.

The object of this invention is to provide a simple and automatic device for the purpose which is fully operative without the attachment of anything—such as guides, rods, &c.—to the drawing-board.

In the drawings, Figure 1 is a sectional side elevation or longitudinal section of the preferred embodiment of my invention. Fig. 2 is a full side elevation of the same. Fig. 3 is a bottom plan view of the frame detached. Fig. 4 is a plan view of the secondary spring detached. Fig. 5 is a top plan of the gripping-block detached. Fig. 6 is a bottom plan of the same. Fig. 7 is a longitudinal section of a modification. Figs. 8, 9, and 10 are details of said modification.

Referring first to Figs. 1, 2, 3, 4, 5, and 6, 18 34 21 designate a fixed frame which is secured to the head 19 of the T-square with screws 20. Between the downwardly-bent ears 21 of said frame extends a pin or screw 22, on which is pivoted a lever 23, which is formed of sheet metal, having a bottom portion 23 and upwardly-bent sides 23'. Cut in the sides 23' of lever 23 are two parallel inclined slots 24. These slots receive two studs, pins, or pivots 25, projecting laterally from a stamped metal holder 26 and preferably integral therewith. Mounted in the holder 26 is a block or pad 27, preferably formed of rubber; but other materials may be employed. This pad or block is pressed against the lower face of the drawing-board 28 by a spring 29 or its equivalent. As shown, said spring is held in position by the pin or screw 22. Its upper leg bears against a downwardly-bent portion 30 of the frame 18, and its lower leg bears downwardly upon the outer end of the lever 23. The holder 26 when not in contact with the drafting-board is pressed inwardly and upwardly by a light spring of any suit-

able kind. The spring 31 shown is of a sinuous form and is laid horizontally below the holder, with one of its ends inserted through a lug 32 of the holder and its other end inserted through a lug 33 of the lever 23. The outer end portion 34 of the frame 18 is bent downwardly, then upwardly upon itself, thereby forming a catch 35, which stands in position to engage the handle of the lever 23 when it is desired to slide the square freely without using the clamp. Preferably the holder 26 is made in "dovetail" section, as shown, which is well adapted to the retention of the block or pad 27. Hereinafter by the term "gripping member" I mean the block or pad 27 or its equivalent, together with the metallic holder thereof. The block 27 may be made of metal, and its upper face may be serrated or roughened, whereby the necessary friction between itself and the board would be obtained.

The operation is as follows: When the square is detached from the board, the studs 25 are held at the top of the slots 24 by the action of spring 31. When the clamp is applied to the board, there may be a slight upward motion of the inner end of lever 23 relative to pad 27, owing to the compression of pad 27 or the sinking of the serrations into the drawing-board. The pressure of the spring 29 causes the slot portion of part 23 to press on the pivots 25, thereby forcing pad 27 against the drafting-board, and should the head of the T-square be moved slightly away from the drafting-board while clamped thereon it will be pulled back against the board by the action of part 23 on parts 25, as spring 31 is much weaker than spring 29, it being made only strong enough to raise part 26 to highest position when the square is detached. Part 27 will slip on the drafting-board when direct force is applied, but will not be slipped by the action of spring 29 alone, owing to the angle of slots 24 and the high coefficient of friction of the pad.

Figs. 7, 8, 9, and 10 illustrate a modification in which the holder 7 is arranged in a substantially vertical instead of in a horizontal position, so that the comparatively narrow end of the pad 9 is presented to the drawing-board. The studs or pins 8 of the gripping member turn in circular holes punched in the ears 4, and the lower end of the gripping member is drawn to the left by a light tension-spring 12. The operation of this clamp is precisely the same as that of the preferred

form above described, and the construction of the two forms is very similar. In both of them a gripping member is pivotally attached to or carried by the lever.

5 It will be noted that it is the common feature of all forms of the device illustrated that the clamping device in the act of clamping the blade of the T-square to the drawing-board
10 also draws inward on the T-square and forces the head thereof edgewise against the edge of the drawing-board. This action is very important to the practical operation of the clamping device, and I believe the same to be broadly
15 new, and hence desire to claim the construction broadly, regardless of the details of construction by which it is accomplished. It will also be noted that the clamp yieldingly holds the inner edge of the head of the T-square against the edge of the drawing-board in such
20 manner that if the blade of the T-square is to be moved, thereby forcing one end of the head of the T-square away from the edge of the drawing-board, as soon as the disturbing force is removed the said clamping device will
25 serve to automatically draw the head of the T-square into true engagement with the edge of the board. This is also an important feature, because it sometimes happens that the blade of the T-square will be inadvertently
30 moved from its set position.

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

35 1. In a device of the kind described, a frame adapted to be attached to the head of a T-square, a spring-actuated lever fulcrumed on

said frame, a gripping member pivotally carried by said lever, and a spring which acts upon the gripping member for restoring the same to normal position. 40

2. In a device of the kind described, a frame adapted to be attached to the head of a T-square, a spring-actuated lever fulcrumed thereon, a gripping member provided with lateral studs, said lever being provided with
45 slots for guiding said studs, and a spring for restoring the gripping member to its normal position.

3. In a device of the kind described, a frame adapted to be attached to the head of a T-square, a spring-actuated lever fulcrumed on
50 said frame, said lever having upright sides which are provided with inclined slots, a gripping member having lateral studs which enter said slots, and a spring for restoring said grip-
55 ping member to its normal position.

4. In a device of the kind described, a frame adapted to be attached to the head of a T-square, a spring-actuated lever fulcrumed
60 thereon, a gripping member provided with lateral studs, said gripping member comprising a pad of rubber or the like and a holder for said pad, said lever being provided with
65 slots for guiding said studs, and a spring for restoring the gripping member to its normal position.

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

KENNEDY DOUGAN.

Witnesses:

K. M. IMBODEN,
K. VERTZ.