No. 658,072. Patented Sept. 18, 1900.

G. K. RICH.

DRAWING BOARD.

(Application filed June 21, 1900.)

(No Model.)

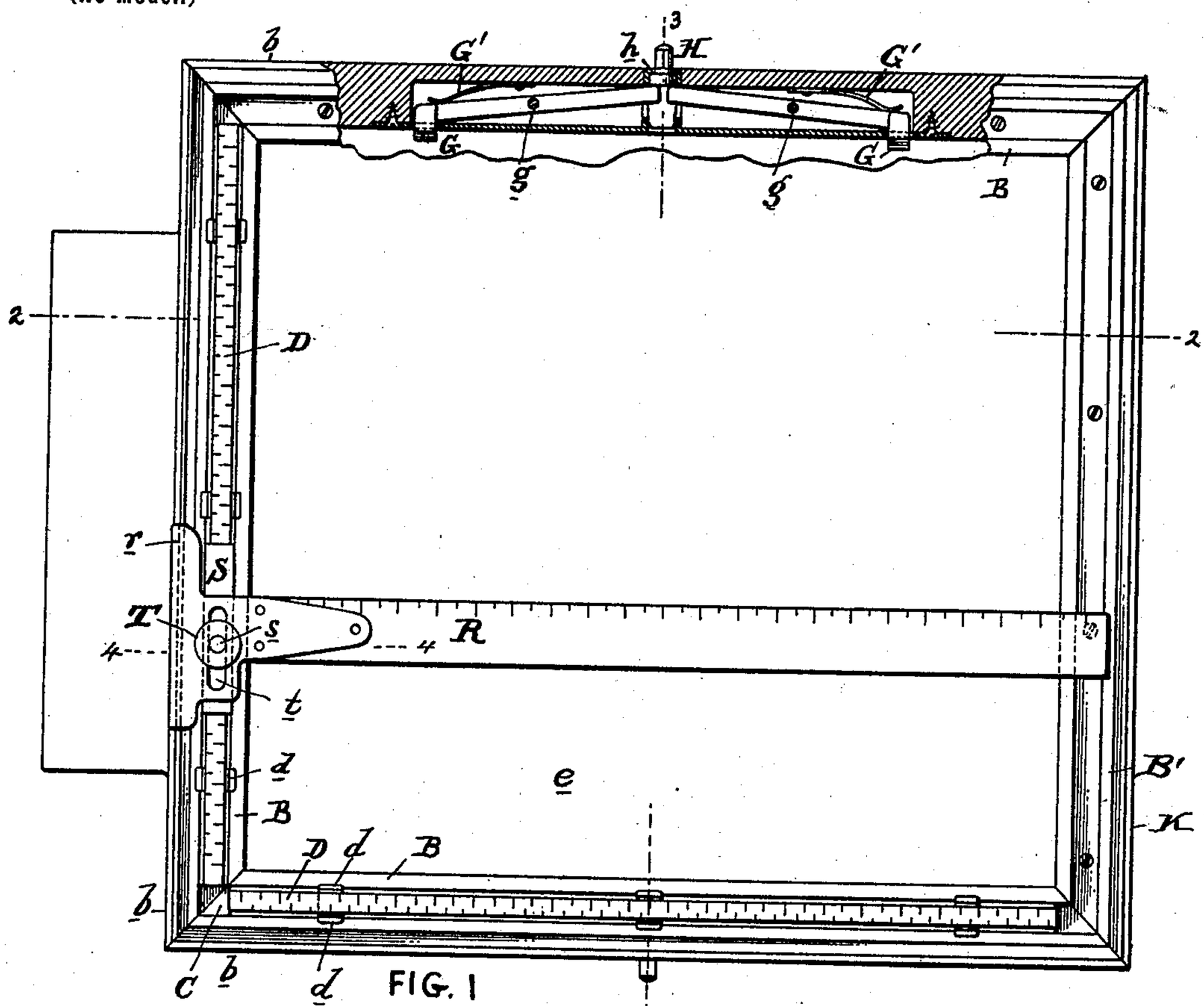

FIG. 1

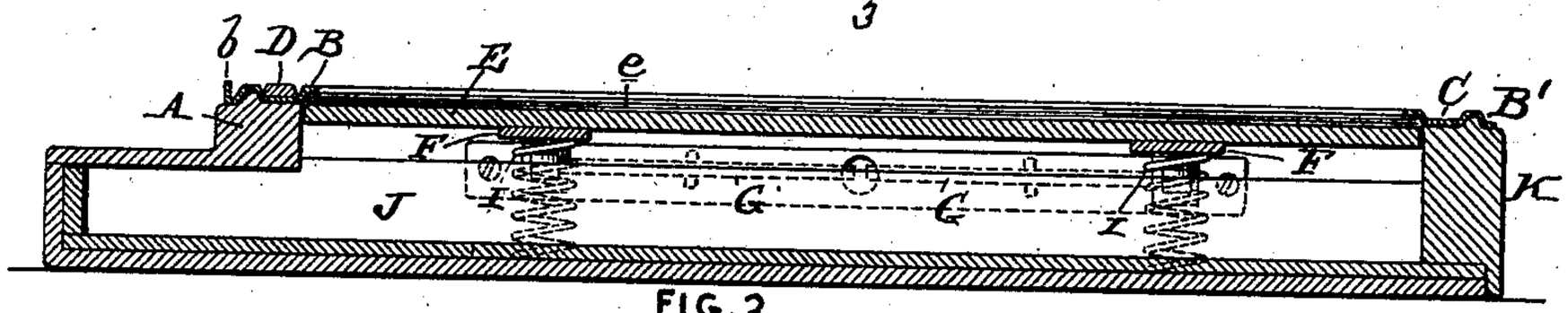

FIG. 2

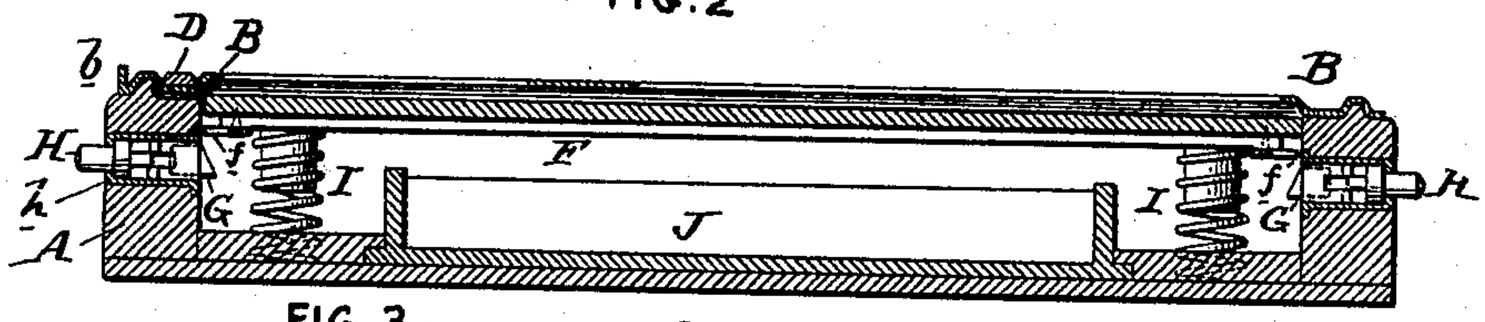

FIG. 3

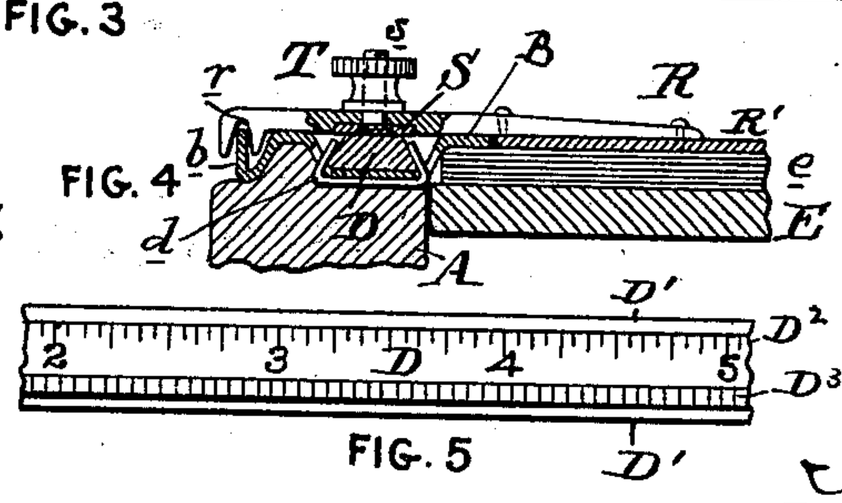

FIG. 4

FIG. 5

WITNESSES.

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DRAWING-BOARD.

SPECIFICATION forming part of Letters Patent No. 658,072, dated September 18, 1900.

Application filed June 21, 1900. Serial No. 21,057. (No model.)

To all whom it may concern:

Be it known that I, GEORGE K. RICH, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Drawing-Boards, of which the following is a specification.

My invention has reference to drawing-boards; and it consists of certain improvements fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

My present invention relates to improvements upon the class of drawing-boards set out in Letters Patent No. 634,836, dated October 10, 1899, and granted to me.

The object of my present invention is to provide suitable means, more especially adapted to large boards, to facilitate the insertion and removal of the paper, and also the means for adjusting the T-square relatively to the scale-markings of the apparatus in the act of drawing.

In carrying out my invention I combine the movable supporting-board, upon which the paper is placed, with means adapted to support said board in a lowered position, so that the paper may be freely removed from said board or inserted thereupon below the inwardly-directed clamping edges of the overhanging shoulders of the guide-plates, the construction being such that after the proper adjustment of the paper the supporting-board may be raised so as to positively clamp the paper in position and bring it substantially on a level with the surface of the guides to enable the T-square to pass directly or closely over it. The scales are suitably attached to the upper side and end edges of the drawing-board, and the T-square, which is adapted to the guide edges of the guide-plates, is provided with an adjustable guide located immediately above the said scales and adapted to have its adjustable edge set nearer to or farther from the T-square, so that with the T-square set on any given line of the drawing-board said guiding edge may be adjusted to a given part of the scale to facilitate the drawing of a subsequent series of parallel lines equally spaced apart.

My invention also comprehends details of construction, which, together with the above features, will be better understood by reference to the drawings, in which—

Figure 1 is a plan view of a drawing-board embodying my invention. Fig. 2 is a longituding sectional elevation of same on line 2 2. Fig. 3 is a transverse sectional elevation of same on line 3 3. Fig. 4 is a cross-section of same on line 4 4, and Fig. 5 is an enlarged plan view of a portion of one of the scales.

A is the main frame and is made box-shaped for convenience and to provide a casing into which a suitable drawer J may be placed, said drawer being adapted to hold the drawing instruments and T-square when not in use. The said main frame A is closed on three sides, but its lower side corresponding to the front end K of the drawer is left open to facilitate the insertion and removal of the paper. The upper edges of the three closed parts of the frame A are provided with plates B, which have inwardly-directed and overhanging shoulders, against the under side of which the paper *e* is clamped by the supporting-board E. The plates B are recessed, as at C, and into said recesses are placed the longitudinal scales D, which may be supported adjustably or fixedly in said grooves in any suitable manner desired. While these scales D are preferably so held as to be capable of adjustment, they are normally stationary while the T-square is being moved over them in the act of drawing. The outer edges of the plates B are each provided with an upwardly-extending guide edge *b*, which is received in the groove *r* on the head of the T-square R. This upwardly-extending guide edge *b* is also adapted to guide any ordinary T-square, if so desired. By this construction the top or end and two sides of the drawing-board are provided with overhanging clamping-shoulders and guiding edges for the T-square, and two of said parts—namely, the top and one of the sides—are provided with scales D, it being unnecessary that the scale should be placed also in the other side.

As shown, the scales D are made with beveled side edges D′ and spring-clips *d* and have their edges passed through apertures in the plates B and sprung over the beveled edges of the scales, as clearly shown in Figs. 1 and 4. In this manner the scales may be held

firmly in position under normal conditions, but will, if desired, permit said scales to be adjusted in their grooves C. Owing to the difficulty of readily reading the scale, which has subdivisions to a thirty-second of an inch, I provide the marking of my scales in the manner shown in Fig. 5, in which one edge of the scale is marked with the usual subdivisions of inches and sixteenths of inches, as indicated at D^2, and the opposite edge also divided into sixteenths, but with the said marking shifted out of alinement with the markings on the other edge to the extent of one thirty-second of an inch, as shown at D^3. As the part S of the T-square has its upper edge movable over both of these markings, it is possible to readily adjust the T-square to anything up to a thirty-second of an inch.

Referring to the construction of the T-square R, adapted to this board, the head is provided with the downwardly-directed V-groove *r*, before referred to, which enables it to readily adapt itself to the upper guiding edge *b* of the guide-plates and at the same time permits the quick and easy placing of the T-square in operative position. The head of the T-square is provided on its under side with a guide-groove transversely to the length of the T-square and in which a sliding plate S fits. The said sliding plate has an upwardly-extending stud *s*, which passes through a slot *t* in the head of the T-square and receives a milled clamping-nut T, as clearly shown in Figs. 1 and 4. The upper edge of the plate S is made straight and parallel to the drawing edge of the T-square and is adapted to move over the scales D. By loosening the nut T the guide-plate S may be adjusted to the scale without moving the T-square, and when clamped again in position it will move with the T-square for the purpose of drawing parallel lines of definite distances apart from any given place on the scale. This obviates the necessity of shifting the entire scale to adjust it to a guide edge on the T-square as employed in my other patented device. The present method is far simpler, more correct, and more quickly manipulated.

By an examination of Fig. 4 it will be observed that in my preferred form of T-square the guiding-head, which is of metal, fits down flat upon the upper surface of the guide-plate B, and the drawing or wooden blade R′ is fastened to the under part of the head and substantially fits down below the upper surface of the guiding-plate, so as to rest directly upon the paper.

In large frames and especially where loose sheets of paper are to be clamped in position it is difficult and unhandy to insert or remove the same where no provision is made for holding the supporting-board temporarily in a depressed condition. I overcome this difficulty by providing suitable means for lowering the supporting-board E and holding it in a lowered position while adjusting the paper sheets *e*. As shown, the board F is provided at two opposite edges with locking-plates *f*, which when the board is depressed snap under spring-bolts G. These spring-bolts are pressed inward into locking position by springs G′ and are made in the form of levers pivoted at *g* and adapted to be oscillated by push-buttons H, held in suitable guides *h* in the sides of the main frame A. The general construction of these spring-bolts is shown in Fig. 1, where it will be seen that a single push-button H is adapted to withdraw both bolts at one side of the frame. The same construction is employed on the opposite side of the drawing-frame, as shown in Fig. 3. The supporting-board F is normally pressed upwardly by suitable springs I; but when it is desired to loosen the clamping action on the paper the entire board is depressed or, if desired, one side first and then the other side until the plates *f* lock below the spring-bolts G. In this lowered position of the supporting-board the paper sheets *e* may be inserted or removed at will. After the proper insertion of the paper the push-button H may be depressed and the supporting-board thereby liberated. It is advisable in making this adjustment to retain the edge of the board being liberated by a slight downward pressure at the time of pushing in the push-buttons to readily withdraw the bolts and release the board, which may then be permitted to rise into clamping position without disturbing the paper.

I do not limit myself to any special construction for the means for lowering or raising the supporting-board, as it is evident that numerous ways of sustaining and operating this board may readily be adapted to my improvements; but the construction which I have shown I have found excellently adapted to the purpose in the practical embodiment of my invention in use.

The lower part or end K of the drawer is provided on its upper edge with a plate B′ similar to the plates B, with the omission of the outer guiding edge *b*, if so desired, the object being to provide an additional shoulder at the lower part which may also act to retain the free edges of the paper and prevent any possibility of accidental tearing or rupturing of the said edges. Furthermore this construction imparts a finish and fine effect to the drawing-board as a whole, and in addition thereto makes a tight and dust-proof joint at the lower part to keep dust out of the drawer.

While I prefer the constructions shown, I do not limit myself to the minor details thereof, as these may be modified in various ways without departing from the spirit of the invention.

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

1. In a drawing-board, the combination of a main frame having inwardly-directed overhanging shoulders, a vertically-adjustable paper-supporting board adapted to support and press the paper upward against the overhanging shoulders, and hand-controlled devices

for retaining the board in a depressed condition so as to permit easy insertion or removal of the paper.

2. In a drawing-board, the combination of a main frame having inwardly-directed overhanging shoulders, a vertically-adjustable paper-supporting board adapted to support and press the paper upward against the overhanging shoulders, hand-controlled devices acting on opposite edges of the board for retaining the board in a depressed condition so as to permit easy insertion or removal of the paper, and spring devices for pressing the board upward to clamp the paper when released from the hand-controlled retaining devices.

3. In a drawing-board, the combination of a main frame having inwardly-directed overhanging shoulders, a vertically-adjustable board for supporting the paper and pressing up against the overhanging shoulders, spring devices for moving the said board upward, spring-latches for locking the board in depressed condition, and projecting hand-controlled means for operating the spring-latches.

4. In a drawing-board, the combination of a main box-shaped frame open upon its upper central part and one end, guide-plates secured to the upper edges of the box-shaped frame and provided with overhanging shoulders extending inwardly on the two sides and one end of the frame, a vertically-adjustable supporting-board for the paper adapted to clamp the paper upward against the under parts of the overhanging shoulders, and an adjustable bottom end frame made upright and also furnished with an overhanging shoulder adapted to be moved into position on the main frame to close the open end thereof and to bring the overhanging shoulder above the paper at said open end.

5. In a drawing-board, the combination of a frame structure for supporting the paper and provided along one or more of its edges with a guide-plate having an upwardly-extending outer guide edge for a T-square, a longitudinal scale arranged in a recess in said guide-plate and having beveled side edges, and retaining spring-clips passed through apertures in the guide-plate and projecting over the bevel edges of the scale to hold it in position while permitting longitudinal adjustment.

6. The combination of a drawing-board having a guiding edge, a normally-stationary scale arranged on the drawing-board parallel to and close to its guiding edge, a T-square having a head adapted to the guiding edge of the drawing-board and also provided with a transverse guiding portion immediately over and parallel to the scale, a slide S adapted to said guiding portion of the T-square and having an upwardly-directed adjusting edge arranged immediately above the scale of the drawing-board, and an adjustable clamp for holding the slide firmly to the T-square, whereby the T-square and the adjustable slide are adjustable relatively to the board and over the scale thereon and the slide is relatively adjustable also to the drawing edge of the T-square.

7. In a drawing-board, the combination of the main frame, a guide-plate secured to the upper edge of the main frame and provided with an overhanging shoulder at one side and an upwardly-directed guide edge at the other, means to clamp the paper against the under edge of the overhanging shoulder, and a T-square having a head guided upon the surface of the guide-plate and provided with an extended inverted-V groove *r* adapted to receive the upwardly-extending guide edge of the guide-plate.

8. A drawing-board having a guiding edge and a scale close to said guiding edge, combined with a T-square adapted to said guiding edge and having close to its head a guiding-groove transversely to the drawing edge of the T-square, a slide S adapted to said guide-groove of the T-square so as to move only at right angles to the drawing edge of the T-square and provided with an upper guide edge parallel to the drawing edge of the T-square, and a clamping device between the slide and the T-square for holding the slide in adjustable position upon the T-square.

9. A drawing-board having a guiding edge and a scale close to said guiding edge, combined with a T-square adapted to said guiding edge and having close to its head a guiding groove and slot transversely to the drawing edge of the T-square, a slide S adapted to said guide-groove of the T-square so as to move only at right angles to the drawing edge of the T-square and provided with an upper guide edge parallel to the drawing edge of the T-square, and a clamping device consisting of a clamping stud and nut secured to and movable with the slide for adjusting it and extending through the slot in the T-square.

10. In a drawing-board, the combination of a rectangular frame having overhanging shoulders on the inner edges and also a guiding edge, a longitudinal scale along one of its sides, a clamping-board for removably clamping paper against the under side of the overhanging shoulders, a T-square having a metallic head and a long flexible wooden ruling extension, a slide adjustably clamped on the head and guided transversely to the length of the wooden extension and so located on the T-square as to come immediately over the longitudinal scale in the frame of the drawing-board, and means carried by the slide for adjustably clamping it upon the T-square.

In testimony of which invention I have hereunto set my hand.

GEORGE K. RICH.

Witnesses:
R. M. HUNTER,
R. M. KELLY.