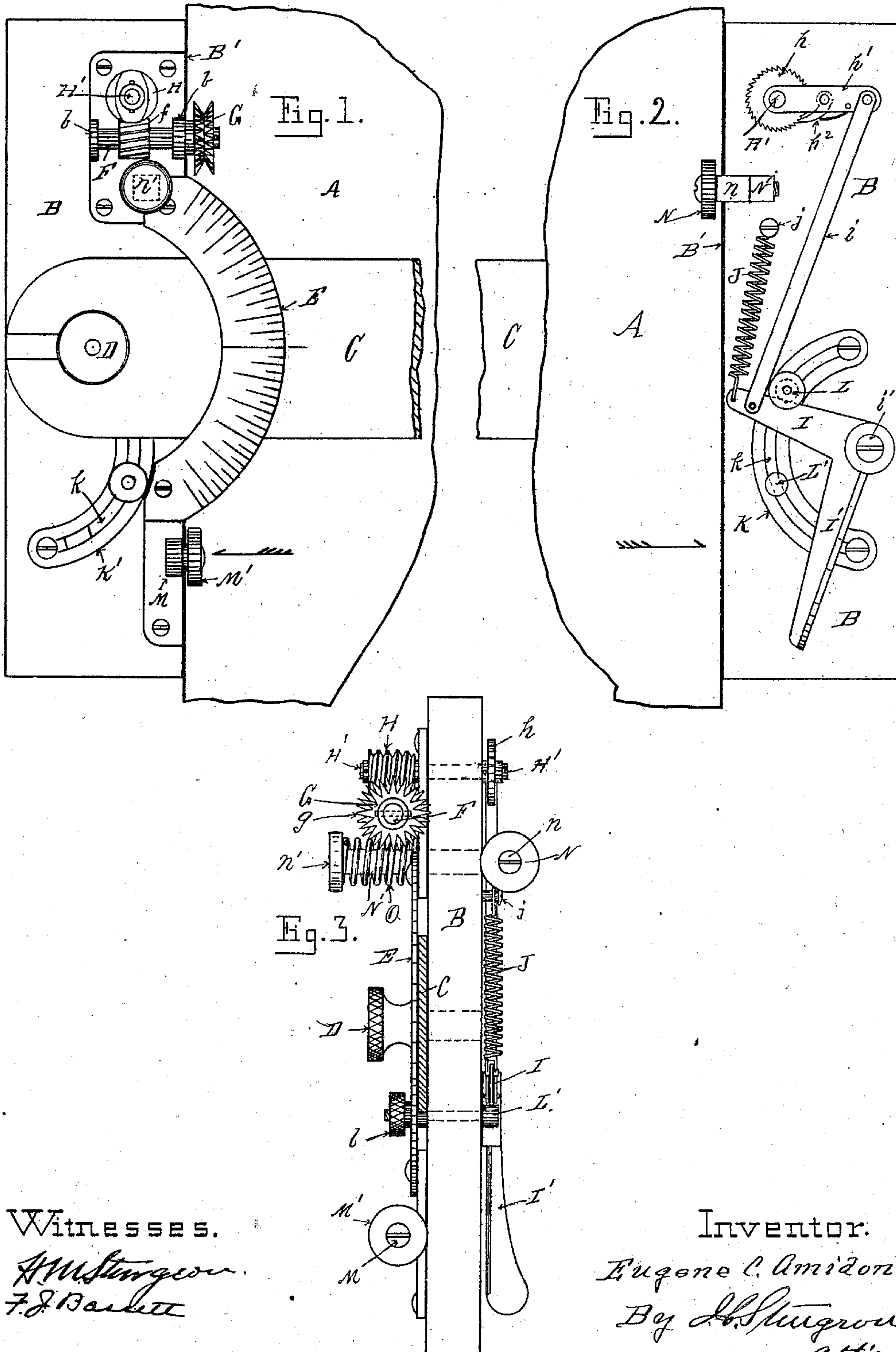


No. 725,532.

PATENTED APR. 14, 1903.

E. C. AMIDON.
DRAFTSMAN'S T-SQUARE.
APPLICATION FILED MAR. 28, 1902.

NO MODEL.



Witnesses.

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UNITED STATES PATENT OFFICE.

EUGENE C. AMIDON, OF CORRY, PENNSYLVANIA.

DRAFTSMAN'S T-SQUARE.

SPECIFICATION forming part of Letters Patent No. 725,532, dated April 14, 1903.

Application filed March 28, 1902. Serial No. 100,445. (No model.)

To all whom it may concern:

Be it known that I, EUGENE C. AMIDON, a citizen of the United States, residing at Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Draftsmen's T-Squares; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to improvements in draftsmen's T-squares; and it consists substantially in mechanism on the head of the square, whereby the square is adapted to operate on a drawing-board both as a T-square and as a section-liner, and has for its object the construction of a T-square with driving mechanism on the head thereof adapted to travel on the edge of a drawing-board and be adjusted to intermittently move the square thereon any desired distance at each intermittent movement of the driving mechanism as the operator may desire.

This invention and the operation thereof are fully set forth and described hereinafter, and illustrated in the accompanying drawings, in which—

Figure 1 is a top or plan view of a section of a drawing-board with my improved T-square thereon. Fig. 2 is a view of the under side of the same. Fig. 3 is an edgewise view of the square-head looking in the direction of the arrows in Figs. 1 and 2.

In the drawings, A is a section of an ordinary drawing-board, B the head of a T-square, and C the tongue or blade of the square, preferably secured to the head by means of a thumb-screw D, so that the blade C can be adjusted at any angle desired and so that longer or shorter blades can be used with the head B when desired. Secured to the head B is also a semicircular scale E, by means whereof the angle at which the blade C is adjusted can be determined. In bearings *b b* on the top of the head B, I mount a shaft F, the outer end of which projects some distance beyond the face B' of the head B, where it is provided with a driving-wheel G,

preferably provided with teeth *g*, adapted to engage the upper surface of the board A and travel thereon, as illustrated in Fig. 1. On the shaft F there is a pinion *f*, adapted to engage and intermesh with a screw H on the shaft H', which is mounted in and extends down through the head B, and on the lower end of this shaft H', I secure a ratchet-wheel *h*, and on the shaft H', I also mount a lever *h'*, carrying a spring-actuated dog *h²*, engaging the ratchet-wheel *h*. On the under surface of the opposite end of the head B, I pivot a bell-crank lever I I', and to the arm I of this lever I pivot a link *i*, which extends to and is pivoted to the lever *h'*. The arm I of the bell-crank lever is also provided with a retracting-spring J, one end of which is secured to the under surface of the head B by means of a stud *j*. In the under side of the head B under the bell-crank lever I I' there is a slotted arc K, concentric with the axis *i'* of the bell-crank lever, and in this slotted arc there are adjustable stops L and L', which extend outward from the under surface of the head B, so as to engage the edges of the lever-arm I and limit the movement thereof. The stop L slides in the slot *k* in the arc K and is adapted to be moved therein and secured in place by a thumb-nut on the outer end thereof, (see Fig. 2,) and the other stop, L', passes through the slot *k* and up through a like slot in the head B and is provided on its lower end with a head and on its upper end with a thumb-nut *l*, whereby it can be secured at any point desired. On the upper surface of the end of the head B, opposite to the driving-wheel G, I secure a bearing M, on which is mounted a roller M', which overhangs the face B' of the head B, so that the roller travels on the edge of the drawing-board A, as illustrated in Fig. 1. On the head B, adjacent to the driving-wheel G; I mount a vertically-yielding roller N, the bearing *n* of which extends from the lower surface of the head B beyond the face B' of the head, so that it will engage and travel on the under surface of the edge of the drawing-board A, as illustrated in Fig. 2. I preferably secure the bearing *n* to a rectangular post N', which extends up through the head B and is provided on its upper end with a thumb-piece *n'*, between which and the upper surface of the head B there is a spiral

spring O, which operates to retain the roller N firmly against the undersurface of the board A and permits it to adjust itself to drawing-boards of different thicknesses and also permits the roller N to be depressed when it is desired to place the square upon the board or remove it therefrom.

In operation the roller N is depressed by the thumb of the operator, and the square-head B is then placed against the edge of the drawing-board A in the usual manner, with the driving-wheel G and the roller M' resting upon the top of the edge of the drawing-board, as illustrated in Fig. 1, and the roller N resting firmly against the under surface of the edge of the board, as illustrated in Fig. 2. The blade C being then adjusted to the angle with the head B desired, the operator grasps the head B of the square so that the ends of his fingers engage the arm I' of the bell-crank lever I I', by means whereof he is enabled to operate the ratchet mechanism so as to rotate the driving-wheel G upon the edge of the board at each movement of the bell-crank lever, which operates to intermittently move the square the desired distance on the board A, this distance being determined by the adjustment of the stops L L', which limit the movement of the bell-crank lever I I'. I believe I have so described this invention and its operation that its functions and utility are clearly obvious to draftsmen and those skilled in the art to which it appertains and that, therefore, further description thereof is unnecessary.

I have thus shown and described a convenient mechanism embodying my invention, which will enable others to construct and use the same; but it is obvious that the mechanism herein shown and described may be considerably varied without departing from the spirit of my invention. Therefore I do not limit myself to the exact construction and arrangement of mechanism herein shown and described, as

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination in a T-square, of a

square-head and blade, a driving-wheel shaft mounted on the square-head, a driving-wheel thereon adapted to travel upon the top of the edge of a drawing-board, a worm-wheel on said driving-shaft, a worm-shaft mounted in the square-head, a worm thereon engaging the worm-wheel on the driving-wheel shaft, ratchet-and-lever mechanism operating said worm-shaft, and adjustable stops for limiting the movement of the lever mechanism, substantially as set forth.

2. The combination in a T-square, of a square-head and blade, a driving-wheel mounted on the upper side of the square-head so as to engage and travel upon the top of the edge of the drawing-board, screw-gear mechanism for rotating said driving-wheel, a ratchet-wheel, dog-and-lever mechanism on the shaft of said screw-gear, a bell-crank lever mounted on the under side of said head, a link connecting one arm of said lever with the dog-lever mounted on the screw-gear shaft, a retracting-spring on said bell-crank lever, and adjustable stops mounted in said head for limiting the travel of the bell-crank lever, substantially as set forth.

3. The combination in a T-square, of a square-head, a blade mounted thereon so as to be adjusted at different angles to the face of the square-head, a driving-wheel mounted on the upper side of the square-head near one end thereof so as to travel upon the top of the edge of a drawing-board, mechanism mounted on said head for intermittently actuating said driving-wheel, a roller mounted on the upper side of the square-head so as to travel upon the top of the edge of a drawing-board, and a yielding roller mounted on said head and extending from the under side thereof so as to engage and travel upon the under surface of the edge of a drawing-board, substantially as set forth.

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

EUGENE C. AMIDON.

Witnesses:

J. J. DESMOND,
R. O. ELY.