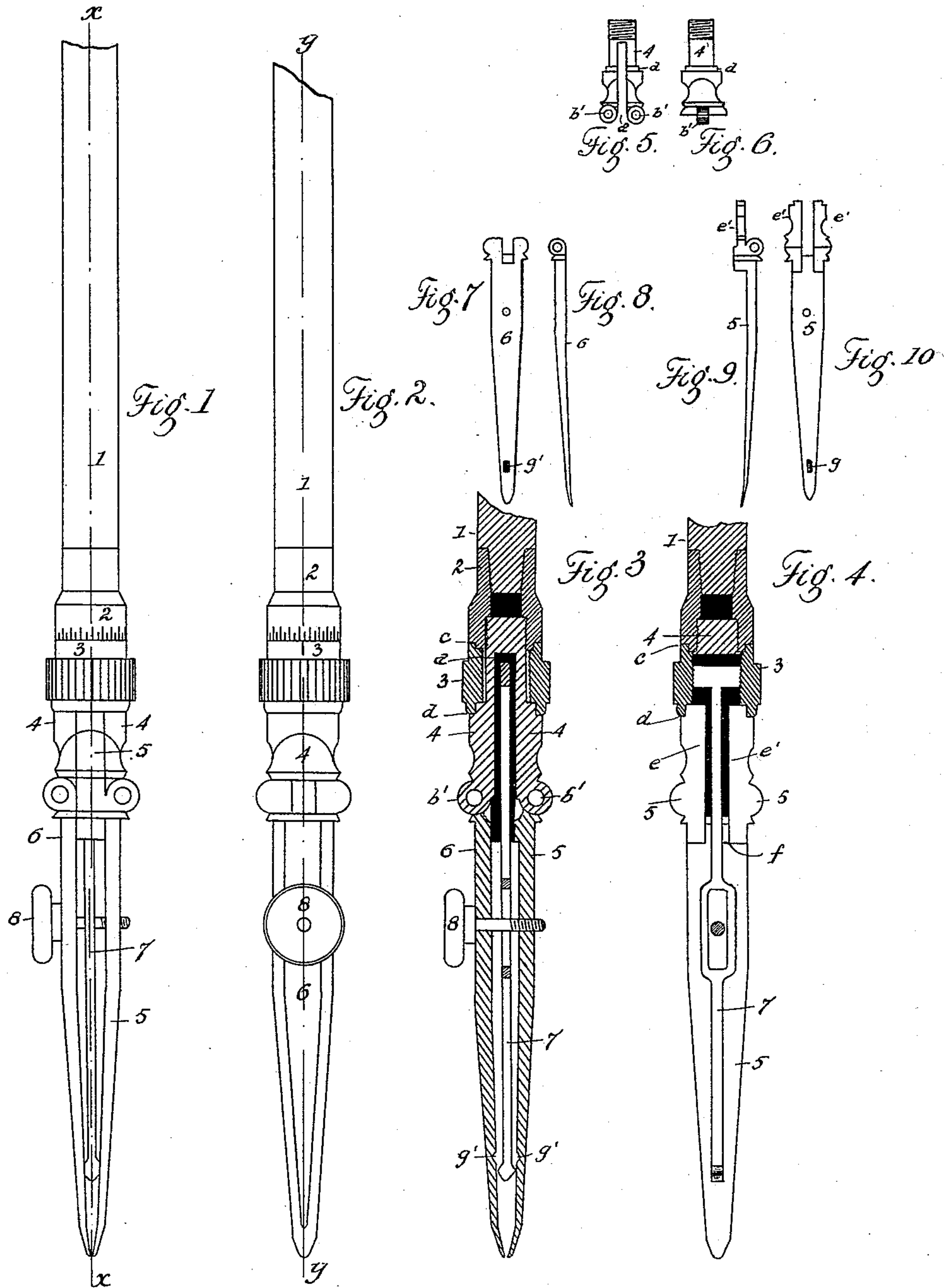


(No Model.)

C. T. FINLAYSON
DRAWING PEN.

No. 450,227.

Patented Apr. 14, 1891.



WITNESSES:

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CHRISTOPHER T. FINLAYSON, OF DENVER, COLORADO.

DRAWING-PEN.

SPECIFICATION forming part of Letters Patent No. 450,227, dated April 14, 1891.

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To all whom it may concern:

Be it known that I, CHRISTOPHER T. FINLAYSON, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Drawing-Pens; and I do 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in drawing-pens of the class having two adjustable blades, and is designed for the use of draftsmen and others who may have occasion to use a pen forming neat and even or uniform lines.

Draftsmen of all classes and others accustomed to the use of the ordinary drawing-pen are familiar with the fact that it is difficult to preserve uniformity in a projected line by reason of the variation in the bending or springing of the blade in contact with the ruler, this variation resulting from the unequal pressure of the blade upon the ruler in forming the different parts of the line. Of course the more skilled the draftsman the less will be the difficulty experienced in overcoming this natural tendency, since skill in all lines of business overcomes to some extent inherent defects in the tools or instruments used.

My improvement is designed to overcome the difficulties mentioned, and it is believed will be recognized by all from the most skillful professional to the less artistic amateur as a valuable acquisition to his instruments.

My improved drawing-pen is provided with a tongue longitudinally adjustable between the blades and terminates at its lower extremity in an arrow-shaped enlargement. At a suitable distance from the point the blades of the pen are provided with two oppositely-disposed shallow recesses, one being formed on the inner surface of each blade. These recesses are adapted to engage the arrow-shaped head of the tongue, which in this position permits the blades to close or engage each other at the point. The upper extremity of the

tongue is T-shaped in side elevation and consists of a flattered enlargement threaded on its edges and engaging a female screw or suitable nut, which is stationary longitudinally, but permitted to turn freely, its function being to adjust the tongue longitudinally.

My improvement will be understood in detail by reference to the accompanying drawings, wherein is illustrated an embodiment of the invention.

In the drawings, Figure 1 is an elevation of my improved pen on an enlarged scale. This view shows the edges of the blades and therefore exposes the tongue lying between them. Fig. 2 is an elevation of the device in another position and as seen after giving the same a quarter-turn from the position shown in Fig. 1. Fig. 3 is a longitudinal section taken on the line *yy*, Fig. 2. Fig. 4 is a similar section taken on the line *xx*, Fig. 1. Figs. 5, 6, 7, 8, 9, and 10 illustrate details of the mechanism, the connection and operation of which will now be fully explained.

In the following description similar reference-characters indicate corresponding parts in the several views.

Let the numeral 1 indicate the handle or shaft of the pen, which may be constructed of any suitable material, as ivory, wood, &c.

Let 4 designate the central body portion of the device, which forms the connection between the blades and the handle. The upper extremity of part 4 and the lower extremity of the handle are suitably threaded and connected by means of a ferrule 2, which is interiorly threaded to correspond with the adjacent extremities of parts 1 and 4, which it engages. Part 4 is provided with a central longitudinal slot *a*, which extends the greater portion of its length, while its lower extremity is provided with the lugs *b' b'*, located on opposite sides, each lug being provided with an aperture *b³*.

The blades 5 and 6 are shaped exactly alike with the exception of their upper portions. Part 6 is provided with a short slot *b³* in its upper extremity for the reception of a lug *b'* of part 4, to which the blade is hinged by means of a suitable pivot, pin, or rivet *b⁴*, which passes through aperture *b³*, formed in the blade on either side of the slot *b³*. The upper extremity of blade 5 is fashioned like

blade 6, just described, and is further provided with the extensions $e' e'$ above the apertures b^5 on each side of a slot f , which corresponds with slot b^3 in blade 6, except that the former is longer than the latter. Blade 5 is secured to part 4 in the same manner as blade 6, except that the former is rigidly secured, as will be readily observed, by reason of the changed construction of its upper portion, extremities $e' e'$ being secured within a slot a of part 4, while blade 6 is so hinged or pivoted that it may be turned back upon its pivot or pin whenever this action may be necessary or desirable, as while cleaning the pen.

Located between blades 5 and 6, and extending up through slot a in part 4, is the tongue 7, provided with the arrow-shaped lower extremity $7'$, the T-shaped threaded upper extremity 7^2 , and the central slotted extremity 7^3 . The T-shaped upper extremity of the tongue is located in the upper portion of slot a above the extensions $e' e'$ of blade 5, and is allowed sufficient longitudinal movement within said slot to permit it to carry out its functions of adjusting the blades of the pen. Surrounding part 4, just below ferrule 2, is the milled adjusting-nut 5, which is interiorly threaded to correspond with the threaded edges of the T-shaped upper extremity of the tongue, being of sufficient length to permit the required vertical or longitudinal adjustment of the tongue. The nut 3 is nicely fitted between ferrule 2 and part 4 at points c and d , the connection being made by forming oppositely-disposed shoulders on the engaging parts. This nut, as before stated, is allowed perfect freedom of rotation, its threads engaging the threaded edges of the upper extremity of the tongue. It will be observed that the portion of part 4 surrounded by the nut is not threaded, it being necessary that part 4 should remain stationary relatively to the tongue 7, which moves freely within slot a when the nut is rotated. The blades 5 and 6 are normally held in the closed position—that is to say, with their points in contact—by the use of a small set-screw 8, which passes through both blades and the central slot of tongue 7. This slot is of sufficient length to permit the required movement of the tongue during adjustment.

At a suitable distance from the point of the blades the interior of each is provided with a niche or recess g , adapted to receive the opposite sides of the arrow-shaped enlargement forming the lower extremity of the tongue. These recesses are of sufficient depth to permit the closing of the blades at their points when the extremity of the tongue engages said recesses. Hence the recesses g should be preferably located at the upward limit of movement of the lower extremity of the tongue, since the blades of the pen are slightly bow-shaped, so that the space between them increases in width from the point upward

when the points of the blades are in contact. The ferrule 2 where it engages nut 3 is graduated from an initial point around its periphery, the spaces of said graduated part being suitably numbered. The nut 3 is provided with a suitable mark $3'$, which performs the office of an index or pointer, so that by starting with said mark opposite the initial point of the graduated part of the ferrule the blade of the pen may be accurately adjusted, and any particular line exactly duplicated by adjusting the nut without resorting to comparison, as is necessary in using the ordinary drawing-pen. The threads of the nut 3 and of the upper extremity of the tongue may be fine or coarse, as may be desired. They should preferably, however, be so formed that by making an entire revolution of the milled nut the blades of the pen may be adjusted so as to form every variety of line in ordinary work from the lightest to the heaviest or from the finest to the coarsest. However, the threads of the nut and tongue may be so adjusted as to require several rotations of the milled nut in passing from the top to the bottom, so to speak, of the scale of line variations.

In assembling the parts the ferrule is screwed upon the handle, and part 4, with the milled nut in place thereon, screwed into the ferrule. The T-shaped extremity of the tongue is then inserted in slot a to engagement with milled nut 3, and drawn into position by turning the nut. The blades are then placed in position and secured to part 4, and the set-screw 8 adjusted as described, when the instrument is ready for use.

The use of the device will be readily understood from the foregoing description. It must be remembered that set-screw 8 is not used in adjusting the blades of the pen in forming different lines, but only to retain them normally in the closed position at the point when not acted upon by the adjustable tongue or when the lower extremity of the tongue engages the recesses g . The adjustment of the blades in the formation of lines changing from light to heavy, or vice versa, is accomplished entirely by the adjustment of the tongue 7 by turning the milled nut 3, as before described. It will be observed that this is a positive adjustment, and the enlarged lower extremity of the tongue may be placed so near the point of the pen that the blade engaging the rule cannot possibly spring so as to vary the line, this being true regardless of the pressure of the blade upon the rule.

Having thus described my invention, what I claim is—

1. A drawing-pen provided with a device for adjusting the blades according to the thickness of the line required, said device consisting of a tongue located between the blades and provided with an enlargement at its lower extremity, its upper extremity being inclosed within a suitable socket formed in the body of the pen, and suitable means connected with

the upper extremity of the tongue, whereby the tongue is moved longitudinally between the blades and their distance apart regulated at will, substantially as and for the purpose set forth.

2. In a drawing-pen, a tongue placed between the blades and having its free extremity located at a suitable distance from the point of the blades, its upper extremity being retained within a socket formed in the body of the pen, and suitable means connected with the upper extremity of the tongue, whereby the tongue is moved longitudinally in either direction between the blades and their distance apart regulated according to the thickness of line required, substantially as and for the purpose set forth.

3. In a drawing-pen, a tongue located between the blades, its upper extremity being movably retained within the body of the pen and its lower or free extremity being provided with a suitable enlargement, a notch or recess formed on the interior of each blade at a suitable distance from the point, said recesses being adapted to receive the enlarged lower extremity of the tongue, whereby the points of the blades are permitted to engage each other, and suitable means for adjusting the tongue longitudinally between the blades, substantially as and for the purpose set forth.

4. In a drawing-pen, a tongue of suitable length placed longitudinally between the blades, its lower or free extremity being adapted to engage the blades on their interior surface, the upper extremity being T-shaped and threaded, a central body portion provided with a socket for the reception of the upper extremity of the tongue, and a milled nut surrounding the body portion and engaging the

threaded edges of the tongue, the nut being correspondingly threaded, whereby the tongue is adjusted by turning the nut, substantially as and for the purpose set forth.

5. In a drawing-pen, the combination, with the blades and handle, of a slotted body portion to which the handle and blades are suitably secured, a tongue located longitudinally between the blades, its upper extremity being fashioned to fit within the slot formed in the body portion, its exposed edges being threaded, and a milled nut interiorly threaded, surrounding the body portion and engaging the threaded end of the tongue, whereby the turning of the nut adjusts the tongue longitudinally, substantially as and for the purpose set forth.

6. In a drawing-pen, the combination, with the handle and blades, of a slotted body portion to which the handle and blades are secured, a tongue for adjusting the blades, said tongue being of suitable length and located between them, its upper extremity being fashioned to fit within the slot of the body portion, its exposed edges being threaded, a milled nut interiorly threaded, surrounding the body portion and engaging the end of the tongue within the slot, the body portion adjacent the nut being provided with a graduated scale and the nut with a suitable index or pointer, whereby the tongue may be accurately adjusted between the blades, substantially as and for the purpose set forth.

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

CHRISTOPHER T. FINLAYSON.

Witnesses:

FRED. W. FELDWISCH,
WM. MCCONNELL.