No. 647,728. Patented Apr. 17, 1900.

S. G. SCANLAN.

DRAWING PEN.

(Application filed Jan. 8, 1900.)

(No Model.)

Fig. 1.

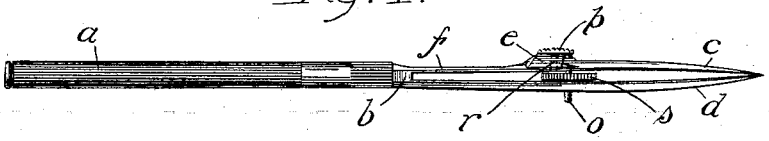


Fig. 2.

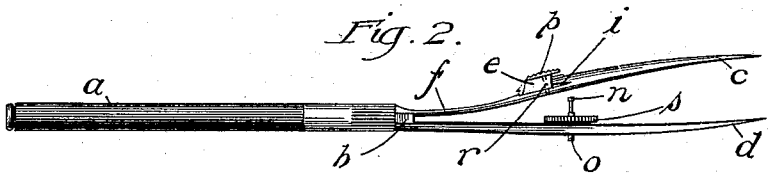


Fig. 3.

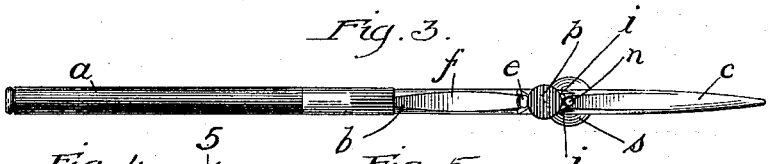


Fig. 4.

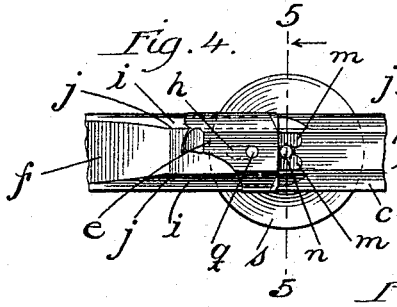


Fig. 5.

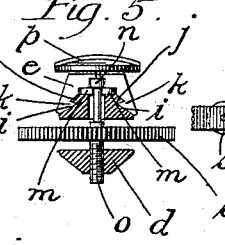


Fig. 6.

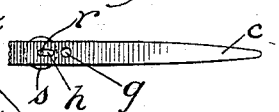


Fig. 7

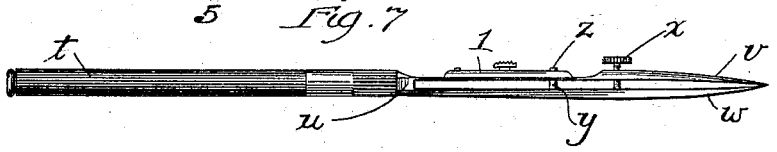
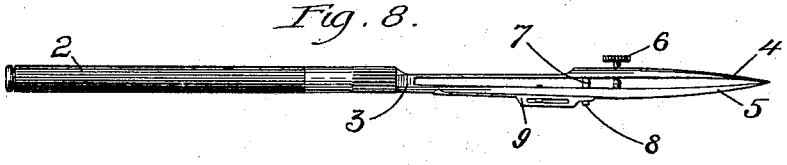


Fig. 8.



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UNITED STATES PATENT OFFICE.

SAM GWYN SCANLAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE EUGENE DIETZGEN COMPANY, OF ILLINOIS.

DRAWING-PEN.

SPECIFICATION forming part of Letters Patent No. 647,728, dated April 17, 1900.

Application filed January 8, 1900. Serial No. 654. (No model.)

To all whom it may concern:

Be it known that I, SAM GWYN SCANLAN, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Drawing-Pens, of which the following is a specification.

My invention relates to drawing-pens of the type known as "ruling" and "compass" pens; and the object of my invention is to provide means whereby the nibs or blades may be spread for cleansing or other purposes without altering the adjustment of said nibs or blades with respect to their distance from each other when closed. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a pen embodying my invention. In said figure the sliding catch is shown in engagement with the detent-spindle, and the pen-blades are closed. Fig. 2 is a side view of the pen, showing the sliding catch retracted and the pen-blades spread. Fig. 3 is a top view of the pen as shown in Fig. 2, the sliding catch being retracted and disengaged from the detent-spindle. Fig. 4 is a top view, on an enlarged scale, of a portion of the sliding catch and adjacent portions of the mechanism. Said catch is shown in a retracted position, and the milled thumb piece or cap which forms a part of said catch is removed. Fig. 5 is a view of the set-screw and adjacent parts on an enlarged scale, partly in section, taken on the line 5 5, Fig. 4, and looking in the direction of the arrow in said Fig. 4. Fig. 6 is a view of a portion of the inner face of the upper blade, showing the thumb-piece spindle and the slot in said blade wherein said spindle travels and whereby the travel of the sliding catch is limited. Fig. 7 is a side view of an alternative form of my invention, wherein the set-screw and the detent-spindle are differentiated, and said set-screw and the sliding catch are carried by the same blade. Fig. 8 is a side view of a second alternative form of my invention, wherein the set-screw and the detent-spindle are differentiated and said set-screw and the sliding catch are carried by different blades.

Similar letters and figures refer to similar parts throughout the several views.

In the form of pen shown in Figs. 1 to 6, inclusive, the handle *a* is secured to the pen-stock *b*. The upper blade *c* and the lower blade *d* are connected to and are preferably integral with said stock, so as to form one piece therewith. I prefer this solid or one-piece construction, as it simplifies the process of manufacture and also avoids the liability of the blades to become loosened by wear, as frequently happens when a pen-blade is hinged to its stock. Said lower blade *d* is substantially inflexible and is suitably apertured to receive and carry the detent-spindle, which latter in this form of my invention constitutes also an adjusting-screw, as hereinafter described.

The upper blade *c* is so constructed that its elasticity tends to raise it from the blade *d* a distance sufficient to permit cleaning or sharpening, and in order to decrease the amount of force necessary to close the blades and also for permitting the removal of the sliding catch *e* said blade *c* is partially cut away and thinned at its portion *f* near the said stock *b*. At a point approximately midway between the extremities of said blade *c* is the aperture *g* for receiving the detent-spindle hereinafter described. The slot *h*, located adjacently to said aperture *g*, extends longitudinally in said blade *c* and receives and limits the motion of the spindle of the thumb-piece hereinafter described. The parallel grooves or ways *i i* (shown on an enlarged scale in Figs. 4 and 5) extend longitudinally in said blade at a portion thereof adjacent to the said slot *h*. Said grooves lie in the upper surface of the blade *c* and are so placed as to form laterally-projecting ledges or flanges *j j* for the retention of the sliding catch *e*. Said flanges extend rearwardly a short distance toward the stock *b* and terminate at the thinned portion *f* of the blade *c*.

The sliding catch *e* consists of a short piece, preferably of metal, which is designed to occupy a position upon the upper or outer face of the pen-blade *c* and move longitudinally thereon. Said catch is provided near the lateral edges thereof with inwardly-projecting flanges *k k*, which are so placed and are of such configuration as to enter the grooves *i i* in the blade *c* and be held in engagement

with said blade by means of the said flanges *k k* thereon. At its forward extremity said catch *e* is slotted, so as to have formed thereon the prongs or fingers *m m*, adapted to engage the head *n*, formed upon the detent-spindle *o*.

The sliding catch *e* is operated by means of the thumb-piece *p* and has a threaded aperture *q* for receiving the correspondingly-threaded spindle *r* of said thumb-piece. The upper surface of said thumb-piece is roughened in order to be more easily engaged by the thumb or finger of the operator. When the slide *e* is in position upon the blade *c*, said thumb-piece may be screwed into said aperture *q* until the said spindle projects beyond said slide *e* and into the slot *h* in said blade. When screwed to a firm bearing against said slide *e*, said thumb-piece *p* becomes, in effect, a permanent part thereof. The longitudinal motion of said thumb-piece and catch is therefore limited to the length of the slot *h*, wherein said spindle *r* is confined.

The head *n* of the above-mentioned detent-spindle *o* is formed thereon at the extremity thereof nearest the upper pen-blade *c* and is of greater diameter than the adjacent portion of said spindle, thereby being adapted to be engaged by the prongs *m m* of the catch *e*. Said spindle *o* is threaded at a portion thereof opposite to said head *n*, said threaded portion screwing into the lower blade *d*. The location of said spindle upon the blade *d* is such that when said blades are caused to approach said spindle-head *n* will penetrate said blade *c* through the aperture *g* therein. Said spindle-head will then be in a position to be engaged by the said prongs *m m* when the catch *e* is in a forward position and released when said catch is retracted. The engagement of said spindle *o* by said catch *e* maintains the blades *c* and *d* in a closed position.

The spindle *o* is provided with a disk *s* and constitutes an adjusting set-screw for regulating the distance between said pen-blades when the latter are in a closed position. It is preferable that said disk be located upon said spindle so as to occupy a position between said blades and that the periphery of said disk be milled for convenience of operation.

As the blade *c* tends to spring away from the blade *d*, the fingers of the catch *e* will exert pressure upon the under surface of the head *n* of said spindle *o*, and the resulting friction tends to prevent the rotation of said spindle. The part *e* therefore constitutes both a retaining-catch and a friction catch or brake, and the advantage of this last-mentioned feature is important, for the thickness of the ordinary pen-blades is so small that space is afforded for but few threads or very fine threads for engagement with the set-screw spindle. If such threads are cut so as to bind sufficiently to guard against accidental rotation of the set-screw, the threads soon become worn out. By my construction the set-screw may be so constructed as to rotate freely when disengaged from the catch *e*, but will be guarded by said catch from accidental rotation when the pen-blades are closed.

In the operation of the pen above described when it is desired to close the pen-blades they are forced together until the head *n* of the spindle *o* protrudes beyond the upper blade *c*. The catch *e* is then moved forward, and the fingers *m m* thereof engage the said spindle-head *n*, and thereby hold said blades in proximity. The distance between the points of the pen-blades is adjusted by screwing the spindle *o* within the blade *d*.

The form of pen shown in Fig. 7 resembles the one above described and has the handle *t*, whereto the stock *u* is rigidly attached. The upper blade *v* and lower blade *w* are preferably of one piece with said stock, and said blade *v* is so constructed as to tend to spring to an open position away from the said blade *w*. The approach of the blade *v* to the blade *w* is limited by the set-screw *x*, which is of the ordinary pattern and carried by said blade *v*. Secured to the blade *w* at a point between the said set-screw *x* and the said stock *u* is the spindle *y*, having a head *z* for engagement with the sliding catch 1. The upper blade *v* is suitably apertured to afford a free passage for the said spindle *y*, said spindle being of such length that the head *z* thereof projects beyond said blade *v* when said blades are closed. The sliding catch 1 is mounted upon the upper or outer surface of the blade *v*, the latter being provided with suitable guides for permitting the longitudinal motion of said catch 1, but retaining the latter in position upon said blade. The parts are so constructed that when the pen-blades are in a closed position and the said catch 1 is moved forward upon the said blade *v* said catch engages the spindle *y* and holds said blades in close proximity.

In operation when the blades are to be closed for use the upper blade *v* is forced to approach the lower blade *w* and the sliding catch 1 is moved forward until it engages the head *z* of the pin *y*. The points of the pen-blades are then maintained in contact with each other, or nearly so. When the distance between the points of said blades is to be increased, the set-screw *x* is screwed farther into the upper blade *v* and caused to press against the inner face of the opposite blade *w*, thereby forcing the adjacent portions of said blades farther apart. As the distance between said blades remains unchanged at the spindle *y*, the spreading of the pointed extremities of said blades causes a flexure of the blade *v* about the said spindle *y* as a fulcrum. When the blades are to be opened or spread for cleaning or sharpening, the catch 1 is retracted, thereby releasing the spindle *y* and allowing the elasticity of the blade *v* to raise the latter from the blade *w*.

The form of pen shown in Fig. 8 closely resembles the form shown in Fig. 7 and hereinabove described. In the form shown in Fig. 8 the pen-handle 2 is securely attached to the stock 3, and to said stock are attached the upper blade 4 and lower blade 5, said stock and blades being preferably constructed of a single piece of metal. The upper blade 4 is provided with a set-screw 6 of the ordinary pattern. Securely attached to said upper blade 4 and extending in the direction of said blade 5 is the spindle 7, having a head 8, which projects through a suitable aperture in the blade 5 when the pen is closed. The sliding catch 9 is mounted upon the lower or outer surface of the blade 5, in which position it is maintained by means of suitable guides and permitted to travel upon said blade lengthwise thereof. Said catch 9 is adapted to engage the said head 8 of the spindle 7 when said head projects through said blade 5. Said spindle 7 and catch 9 are located between the stock 3 and the set-screw 6, and the adjustment of the points of the pen-blades is effected by means of said set-screw 6 in the manner described in connection with the form of pen shown in Fig. 7. The spreading of the blades is permitted by retracting the catch 9, and the proximity of said blades is maintained by projecting said catch in the manner of operation of the pens above described.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a drawing-pen, the combination of a part projecting from one of the pen-blades and a catch sliding longitudinally upon the other of said blades for engaging said projecting part, thereby maintaining said blades in a closed position.

2. In a drawing-pen, the combination of a spindle attached to one of the pen-blades, and extending therefrom toward the second of said blades; a head upon said spindle; a detaining-catch attached to and sliding upon the second of said blades, and means upon said catch for engaging said spindle-head.

3. In a drawing-pen, the combination of a spindle carried by one of the pen-blades, and extending therefrom toward the second of said blades; an aperture in the second of said blades for receiving said spindle; a sliding catch mounted upon the upper or outer face of said second blade, and means of connection between said catch and said spindle at a portion of the latter which protrudes through said aperture in said second blade when said blades are in proximity.

4. In a drawing-pen, the combination of a spindle carried by one of the pen-blades, and extending therefrom toward the second of said blades; a head upon said spindle; an aperture in the second of said blades affording a passage for said spindle-head; a catch mounted upon the upper or outer face of said second blade, and fingers upon the said catch for engaging and detaining the said spindle-head.

5. In a drawing-pen, the blades whereof tend to spread, the combination of a spindle carried by one of said blades, and extending toward the second of said blades; a head formed upon said spindle; an aperture in said second blade affording a passage for said spindle-head through said blade; a catch mounted upon the outer face of said second blade; means for guiding said catch longitudinally upon said second blade, and fingers upon said catch whereby said spindle-head may be engaged when said pen-blades are in proximity.

6. In a drawing-pen, the combination of a catch mounted upon one of the pen-blades, and a spindle carried by the second of said blades and adapted to be engaged by said catch; and means whereby said spindle may be adjusted in said second blade.

7. In a drawing-pen, the combination of a spindle carried by one of the pen-blades, a catch having means for engaging said spindle, grooves in the second of said pen-blades for guiding said catch, and flanges upon said catch for entering said grooves.

8. In a drawing-pen, the combination of a spindle carried by one of the pen-blades, a catch mounted upon the second of said blades and having means for engaging said spindle, and a thumb-piece for operating said catch.

9. In a drawing-pen, the combination of a spindle attached to one of the pen-blades; a catch slidingly mounted upon the second of said blades and having means of engagement with said spindle; a slot in said second blade for limiting the travel of said catch, and a part projecting from said catch into said slot, and thereby limiting the travel of said catch.

10. In a drawing-pen the combination of a spindle composed of a set-screw adjustably carried by one of the pen-blades; a head formed upon said spindle; and a sliding catch carried by the second of said blades and adapted to bear against a surface of said spindle-head, thereby detaining said spindle, and increasing the frictional resistance to the rotation thereof.

11. In a drawing-pen, the combination of a set-screw spindle carried by one of the pen-blades and having a head formed thereon; an aperture in the second of said blades for affording a passage for said spindle; a sliding catch adapted to engage said spindle-head, flanges upon said catch for holding the same in position; grooves upon said second blade wherein said flanges are slidingly engaged; a slot in said second blade for limiting the sliding motion of said catch; a thumb-piece for operating said catch; and a spindle upon said thumb-piece, said last-mentioned spindle affording means of attachment of said thumb-piece to said catch, and said spindle projecting beyond said catch into said slot in said second blade, and thereby limiting the motion of said catch.

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