

(No Model.)

F. A. ALTENEDER.
DRAWING PEN.

No. 538,811.

Patented May 7, 1895.

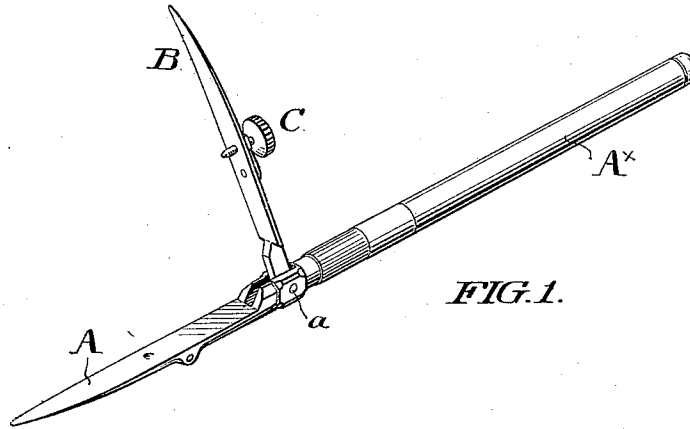


FIG. 1.

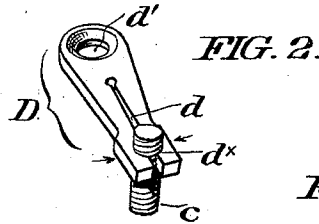


FIG. 2.

FIG. 3.

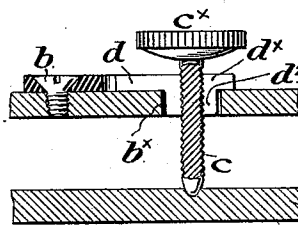


FIG. 4.

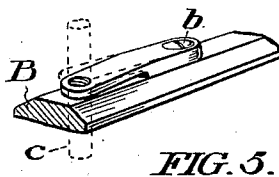
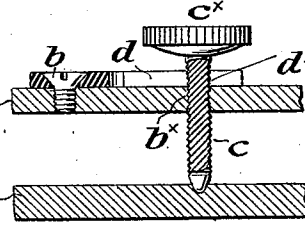
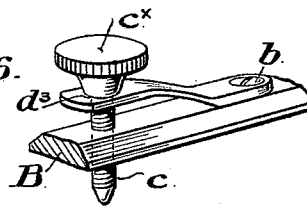


FIG. 5.

FIG. 6.



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UNITED STATES PATENT OFFICE.

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TO THEODORE ALTENEDER & SONS, OF SAME PLACE.

DRAWING-PEN.

SPECIFICATION forming part of Letters Patent No. 538,811, dated May 7, 1895.

Application filed February 21, 1894. Serial No. 501,057. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND A. ALTENEDER, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Drawing-Pens, of which the following is a specification.

This invention,—while applicable to drawing-pens, bow-pens, compass-pens, and similar instruments, in general,—is yet especially designed for embodiment in that class of drawing-pens in which the nibs or blades are normally adapted to approach and make contact with each other, but are held apart at a predetermined distance by means of an adjusting screw applied to and carried by one of the blades and acting as an adjustable stop to make contact with the opposing face of the other blade to limit the further mutual approach.

The invention is, moreover, especially designed to be applied in connection with drawing-pens of a type invented by me and patented to me in and by United States Letters Patent No. 480,541, dated August 9, 1892,—in which one of the blades is pivoted and under the control of a spring which occasions both its approach to and normal contact with the other blade and also its maintenance when moved away therefrom,—and in which one of the blades carries a set-screw threaded through it and adapted as to its extremity to make contact with the inner face of the other blade to limit the approach of the blades.

In pens of the type of my patented pen referred to in which the blades are made relatively separable to facilitate cleaning, it almost invariably occurs that in the separation of the blades or in their handling during the operation of cleaning, the adjusting screw is slightly rotated and disturbed in its set, with the result that, after cleaning, the instrument requires re-adjustment.

It is the object of my invention to guard against the accidental mis-adjustment of the set-screw by providing means combined with the blade to which said screw is applied, for exercising upon the screw such delicate frictional tension as will obviate the possibility of its accidental rotation.

A drawing-pen embodying my patented improvements referred to, and also my present improvements, is represented in the accompanying drawings, and hereinafter described, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 represents in perspective a drawing-pen the pivoted blade of which has been sprung open for cleaning. Fig. 2 is a perspective view of a screw-tensional device embodying my improvements in the form of a spring-keeper for the adjusting-screw, shown as removed from the blade to which it is normally applied, the view also illustrating a portion of the shank of the screw. Figs. 3 and 4 are central, vertical, longitudinal, sectional, and elevational details through portions of the blades of a drawing-pen embodying my improvements, Fig. 4 representing the spring-keeper shown in Fig. 2, and Fig. 3 a modified form of said keeper. Figs. 5 and 6 are fragmentary perspective details of modifications or types of variation of the screw-tensional devices which my invention comprehends.

In the drawings, A^x represents the handle, and A the fixed blade of a drawing-pen.

B is a movable blade pivoted to the fixed blade at *a*, and assumed to be under the control of a spring, as set forth in my patent referred to.

C is a blade-adjusting set-screw, shown as applied to the movable blade, the frictional control of which against undesired rotary movement it is the object of my invention to effectuate by, as stated, providing in combination with one of the blades of the pens and with the set-screw a screw-tensional device for limiting undue rotary movement of said set-screw.

The screw-tensional or frictional devices which I resort to, preferably derive their efficiency from utilizing the pressure of a spring against the screw, without regard to whether such pressure be applied in a diametric or a longitudinal direction. In fact, in the first four figures of the drawings the devices which embody my invention operate diametrically against the threaded shank of the screw, while the device of Fig. 5 operates longitudinally

against the threads, and that of Fig. 6 longitudinally against the head of the screw.

In the embodiment represented in Figs. 1, 2, and 4, the threaded shank *c* of the set-screw is engaged within a threaded bearing formed for it in what I term a spring-keeper *D*, conveniently of the form represented in Fig. 2, and constituted by a plate of metal vertically split in the direction of its longitudinal axis as at *d*, and conveniently provided at its rear end portion with a screw-hole *d'* by means of which it is adapted to be secured, preferably by means of a screw *b*, to one of the blades, usually the movable blade, of the pen, in such manner that its axis is in parallelism with the axis of the blade.

The front extremity of the keeper is centrally and vertically bored through the split, and the bore is threaded to form a split or spring, nut-bearing *d^x* for the shank of the screw,—the spring action being due to the compressive force exerted by the side portions of the split-keeper, when, as in practice is the case, the diameter of the threaded nut-bearing is normally a shade less than that of the threaded shank of the screw, to the end that when the screw is screwed through the bearing it may slightly expand the latter against its tendency to remain of its normal diameter.

The blade of the pen to which the screw is applied, is, of course, provided with a shank aperture *b^x* through which the shank of the screw is adapted to be passed, and which may be of the diameter of the shank and threaded to receive it, as shown in Fig. 4; or, as shown in Fig. 3, of a diameter in excess of that of the shank and even sufficient to admit of the seating within it of a threaded split boss *d²* which is in effect but a split nut-bearing of greater depth than the bearing shown in Figs. 2 and 4, which latter is only of the depth or thickness of the keeper.

In the device represented in Fig. 5 the nut-bearing of the spring-keeper represented, instead of being a split bearing, is a continuous cylindrical threaded bearing, which is bored and threaded when the free extremity of the keeper,—which, as shown, overhangs and does not make contact with the outer face of the blade,—has been slightly bent down toward the blade in the position represented in full lines in said figure, as opposed to a cylindrical bearing which is bored and threaded when the free extremity of the keeper occupies the position indicated in dotted lines or is in parallelism with the blade. In this construction, the adjusting screw, being entered through the bearing in the keeper and through a threaded shank-aperture in the blade, is maintained against rotation by the frictional binding together of the threads of the nut-bearing of the keeper, of the shank, and of the shank-aperture in the blade, which results from the resilient quality of the metal of the keeper in the tendency of the free end of the

latter to re-assume its normal parallelism with the blade.

In the type of variation represented in Fig. 6, the spring-keeper is normally sprung up in the form represented in said figure, and exerts its frictional action beneath the head *c^x* of the screw, the shank of which passes through an unthreaded aperture in the free end portion of the keeper.

As already explained, the adjusting screw and screw-tensional devices may be applied to either blade of the pen, while the pen itself is not necessarily of the type of my patented pen referred to.

The mode by which the spring-keeper may be applied to or formed upon or within a blade and the form of said keeper, are not, moreover, of the essence of the invention. In fact, modifications may be made in the mechanical detail of the component devices, without departing from the principle or sacrificing the advantages of the invention.

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

1. The combination, in a drawing pen, of relatively separable blades,—an adjusting set screw applied to one of said blades for limiting its approach to the other, but permitting the free separation of the blades, and a spring tensional device mounted upon and carried by the blade which carries the screw and adapted to prevent accidental rotation of said screw, said spring tensional device consisting of a plate of metal split for a portion of its length, the opposing sides of the split or division being rounded and screw-threaded to adapt them to receive and engage with the threaded shank of the set screw, substantially as set forth.

2. A drawing instrument provided with a handle or staff in which is mounted a blade embodying a recess or seat for a complementary blade,—a complementary blade pivoted in said recess or seat, an adjusting screw extending through one of said blades, and a split clamping device engaging the screw-threaded stem of said screw, substantially as and for the purposes set forth.

3. A drawing instrument provided with a handle or staff having a seat or socket for a complementary blade,—a complementary blade pivoted to said seat, socket or recess, an adjusting screw extending through one of said blades and engaging in a recess formed in the other of said blades,—and a split clamping device engaging the stem of said screw, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 2d day of February, A. D. 1894.

FERDINAND A. ALTENEDER.

In presence of—

H. C. HECKENDORN,
J. BONSALE TAYLOR.