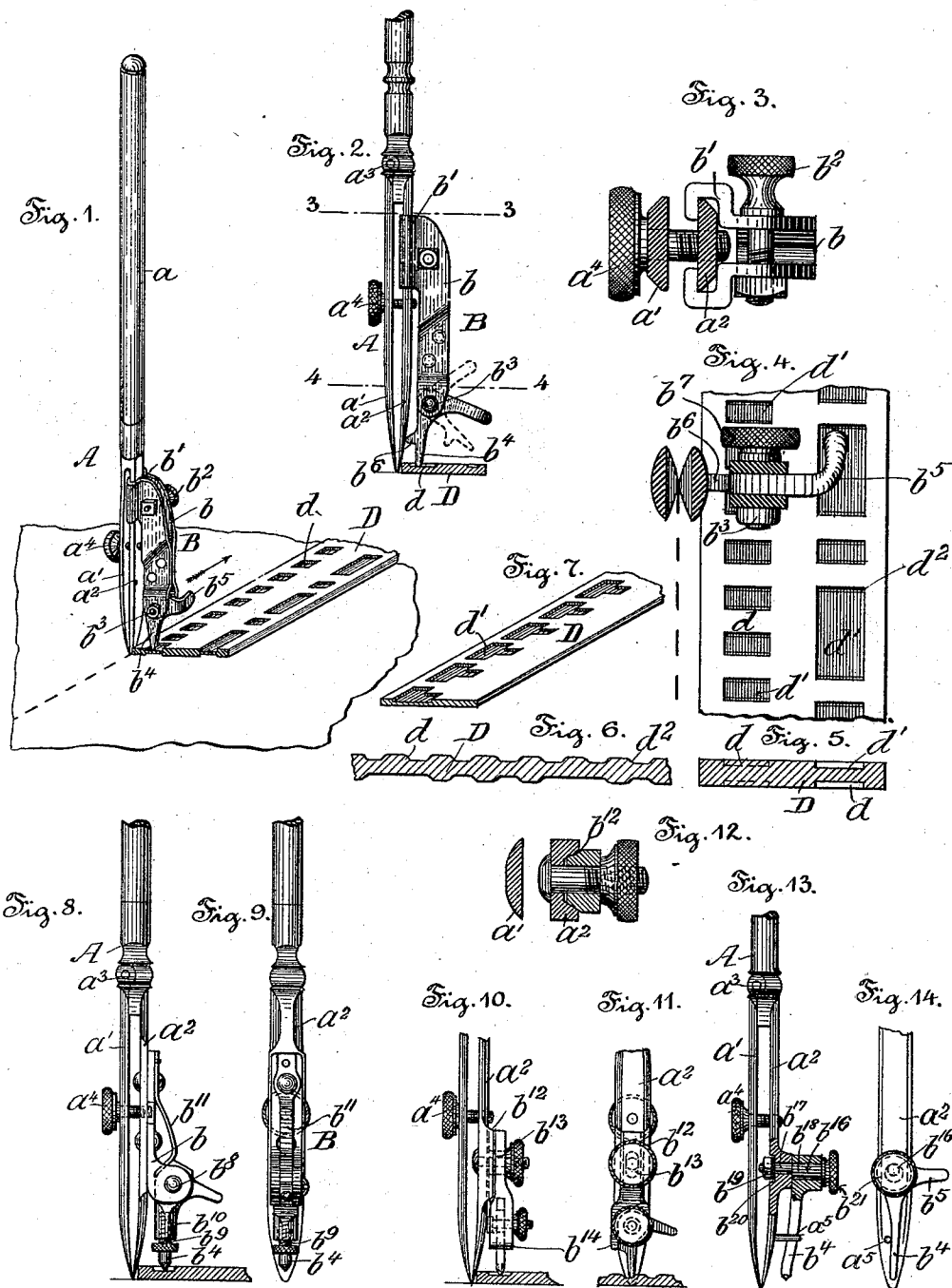


(No Model.)

B. HAUG & F. HOLLER.
DRAWING PEN.

No. 519,155.

Patented May 1, 1894.



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UNITED STATES PATENT OFFICE.

BERNHARDT HAUG AND FRANK HOLLER, OF PHILADELPHIA, PENNSYLVANIA.

DRAWING-PEN.

SPECIFICATION forming part of Letters Patent No. 519,155, dated May 1, 1894.

Application filed August 1, 1893. Serial No. 482,132. (No model.)

To all whom it may concern:

Be it known that we, BERNHARDT HAUG, a citizen of the United States, and FRANK HOLLER, a subject of the Emperor of Germany, but who has declared his intention of becoming a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Drawing-Pens, of which the following is a specification.

Our invention relates to drawing pens in general and more particularly to pens by which dotted or broken lines may be drawn with exactness and dispatch.

In drawing dotted or broken lines, the pen has to be lifted out of contact with the paper or drawing material at certain and regular intervals, and to produce such dotted lines of neat appearance, requires much time and experience if done by hand. The lifting of the pen according to our invention is facilitated mechanically by a finger secured to a pen and riding over a rack on a straight edge.

The object of our invention is to produce a dotting pen, which is composed of an ordinary drawing pen and an attachment, which is easily adjustable thereon, thrown into and out of operation and capable of producing together with a rack dotted or broken lines of different pitch and various appearance.

Our invention consists of an attachment secured to an ordinary drawing pen and comprising a guide or finger and a rule or straight edge provided with depressions or as it may be called with one or more corrugated or toothed strips laid in or formed on a common straight edge, T-square, triangle, curve, &c.

Our invention further consists of an adjustable attachment to an ordinary drawing pen comprising an adjustable finger or pawl, in combination with a rack or corrugated strip laid in or formed on a straight edge, and which adjustable finger or pawl may conveniently be thrown into or out of operation, to produce either dotted, broken or full lines as may be desired.

Our invention further consists of the improvements hereinafter more fully described and pointed out in the claims.

The invention will be more fully understood

taken in connection with the accompanying drawings forming part hereof and in which—

Figure 1 is a perspective view showing a common drawing pen, with our attachment for producing dotted or broken lines in application. Fig. 2, is an elevation of the attachment applied to an ordinary drawing pen. Fig. 3, is a section on line 3—3 of Fig. 2 showing the device for fastening the attachment to a drawing pen. Fig. 4, is a section on the line 4—4 of Fig. 2 to illustrate the mounting of the adjustable pawl or finger on the attachment, and also showing a portion of a ruler or straight edge. Figs. 5 and 6, show cross and longitudinal sections of a straight edge to be used with our dotting pen. Fig. 7, is a perspective view of a modified form of straight edge. Figs. 8 and 9 show an adjustable attachment secured rigidly to a common drawing pen. Figs. 10, 11 and 12, show a slightly modified form of a dotting attachment, and Figs. 13, and 14 show another modified form of adjustably holding a finger or attachment to a drawing pen.

Referring now to the drawings for a further description of our invention, and more particularly to Figs. 1 to 6, inclusive, A is a drawing pen of common construction comprising the handle a , blades a' and a'' , which may or may not be hinged together at a^3 , and a thumb screw a^4 .

The attachment B comprises a stock b made of two pieces of sheet metal stamped, bent and riveted or otherwise secured together, to form at its upper end the clamping socket b' for the reception of the blade a^2 and provided with a thumb screw b^2 to clamp the attachment B in place on the pen A. In the lower end of the stock b is journaled at b^3 , a finger or detent b^4 provided with a handle b^5 , and a projection b^6 to contact with the blade a^2 when the finger or detent is brought manually into operation, and the pointed or rounded off end of the finger or detent is in position in or above the rack d of the straight edge D; the blade a^2 contacting with the edge of the ruler, straight edge or other guide in the act of drawing. The finger or detent b^4 may be held tightly in such position on the stock b by the thumb screw b^7 , and it may be held in the bifurcated portion of the stock by sufficient

friction, produced between the respective parts to hold it in position and yet be rotated about its pivot by the operator's or draftsman's hand or finger pressing upon one or the other side of the handle b^5 and rendering the finger b^4 either operative or inoperative with the straight edge or guide D as may be desired. The lower point of the finger b^4 may be adjusted with relation to the point of the pen A and the thickness of the straight edge D by raising or lowering the stock b on the pen blade a^2 .

The straight edge or guide D may be made in various ways and be composed of wood, metal, rubber, glass, horn, celluloid, or any other suitable material, in which depressions or corrugations d' , comprising the rack d may be formed, or racks d of metal or other hard substance may be made separately and inlaid in the said straight edge or guide D. Such racks d may be obtained by filling or otherwise forming the cavities or depressions in solid bars, or they may be made of sheet metal, suitably corrugated or punched and then inlaid in suitable straight edges or guides.

In Figs. 4, 5 and 6 a straight edge or guide D is shown, in which the racks d are formed by rolling, *i. e.*, the strips of suitable material from which the straight edge D and racks d are to be made, are passed between rolls and receive impressions or indentations therefrom to form the cavities or depressions d' , and the edges d^2 of the latter may be chamfered to enhance an easy gliding motion of the finger b^4 over the said rack d . If desired the cavities or depressions d' constituting one rack may be located close to the cavities d' constituting another rack, as shown in Fig. 7, in which case the finger b^4 is adjusted by hand to contact with one or the other of the said racks, and produce lines of various appearance, without removing, turning or changing the position of the straight edge or guide D. Preference however is given to a straight edge D having at each of its four edges one rack d as indicated in Fig. 5, and the cavities or depressions forming such racks are of such form and pitch, as to produce four different lines with the same straight edge or guide.

In Figs. 8 and 9, we have shown the stock b of the attachment B rigidly secured to the pen blade a^2 , and the finger b^4 is fulcrumed to the said stock at b^8 ; the adjusting of the finger point in relation with the pen point is here accomplished, by a screw b^9 formed on the socket b^{10} and the said finger b^4 ; by turning the point of the finger in one or the other direction, the said point is either raised or lowered, to suit the different thicknesses of the straight edge, guide or curve in use. The socket b^{10} is diamond pointed at its top or above its fulcrum, and one edge of the diamond point is always in contact with a spring b^{11} , to hold the finger b^4 either in operative or

inoperative position, as will be readily understood.

In Figs. 10 to 12, is shown an attachment, in which the stock b is held in a wedge shaped guideway b^{12} on the pen blade a^2 , and the finger point is adjusted with reference to the pen point by the slotted screw connection b^{13} . In this instance the finger b^4 , is journaled to the stock b , so as to swing in a line parallel with the pen blade a^2 and toward one side of its fulcrum, being prevented from swinging toward the opposite side by the projection b^{14} .

In Figs. 13 and 14, we have shown an attachment for a pen similar to those hereinbefore described, with the exception, that the finger or detent b^4 is adjustably mounted on the blade a^2 of the pen A by an eccentric stud b^{16} , the portion b^{17} being eccentric with the portion b^{18} , is held in a boss cast or formed on the blade a^2 and is provided with a screw thread and nut b^{19} . A spring washer b^{20} is inserted between this nut b^{19} and the blade a^2 , and serves to regulate the friction of the stud b^{16} with the blade a^2 ; the shoulder formed by the two eccentric portions being held against the outside of the blade a^2 . To adjust the relative position of the finger point with the pen point, it is only necessary to turn the stud b^{16} by the knob b^{21} in one or the other direction. The finger b^4 is also provided with a handle b^5 , and when the pen is in operation the former is kept in position by a pin a^5 , secured in the blade a^2 .

It will be understood, that many modifications in the construction and arrangement of the attachment may be made, for instance, the parts constituting our attachment may be cast or otherwise formed, and a vertically moving rod in a sleeve fixed to one of the blades as a^2 may be provided, without departing from the spirit of our invention.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A device for producing dotted lines comprising a pen provided with a finger and a straight edge or guide having depressions or cavities, substantially as and for the purposes set forth.

2. A drawing instrument for producing dotted or broken lines, comprising a pen having a finger or detent, in combination with a straight edge having indentations, substantially as and for the purposes set forth.

3. A drawing instrument for producing dotted or broken lines comprising a pen provided with an adjustable finger or detent, in combination with a straight edge in which indentations or cavities have been formed, substantially as and for the purposes set forth.

4. A drawing instrument for producing dotted lines, comprising a drawing pen an attachment adjustably secured thereto and bearing a finger, a straight edge with one or more racks, said finger adapted to be thrown into or out of the path of the rack of the said

straight edge, substantially as and for the purposes set forth.

5. In a drawing instrument for producing dotted lines, a drawing pen, an attachment adjustably secured thereto and comprising a stock provided at its upper extremity with a socket and a clamping screw, and at its lower extremity with a bifurcated portion and a hinged finger or pawl in said portion, substantially as and for the purposes set forth.

6. In a drawing instrument for producing dotted lines, a drawing pen, an attachment adjustably secured thereto and comprising a stock provided at its upper extremity with a socket and clamping screw, and at its lower extremity with a bifurcated portion, a hinged finger in said portion and a handle on said finger, substantially as and for the purposes set forth.

7. A drawing instrument for producing dotted lines comprising a guide, one or more racks formed on said guide, a drawing pen and an attachment, the latter comprising a stock adjustably clamped with its upper end to the said pen, and a finger hinged to the lower end of the said stock, substantially as and for the purposes set forth.

8. A drawing instrument for producing dotted lines, comprising a guide or straight edge one or more racks formed near the edges thereon, a drawing pen, and an attachment comprising a stock secured to the said pen and a finger adapted to be thrown into or out of the path of the said racks, substantially as and for the purposes set forth.

9. A drawing instrument for producing dotted lines comprising a straight edge one or more racks of different pitch formed thereon and placed edge to edge, a drawing pen, and an adjustable finger held to said pen, substantially as and for the purposes set forth.

10. In combination with a drawing pen a straight edge or guide provided with one or more racks of different pitch, substantially as and for the purposes set forth.

In witness whereof we have hereunto set our signatures in the presence of two subscribing witnesses.

BERNHARDT HAUG.
FRANK HOILER.

Witnesses:

HERMANN BORMANN,
HARRY J. FRANZ.