

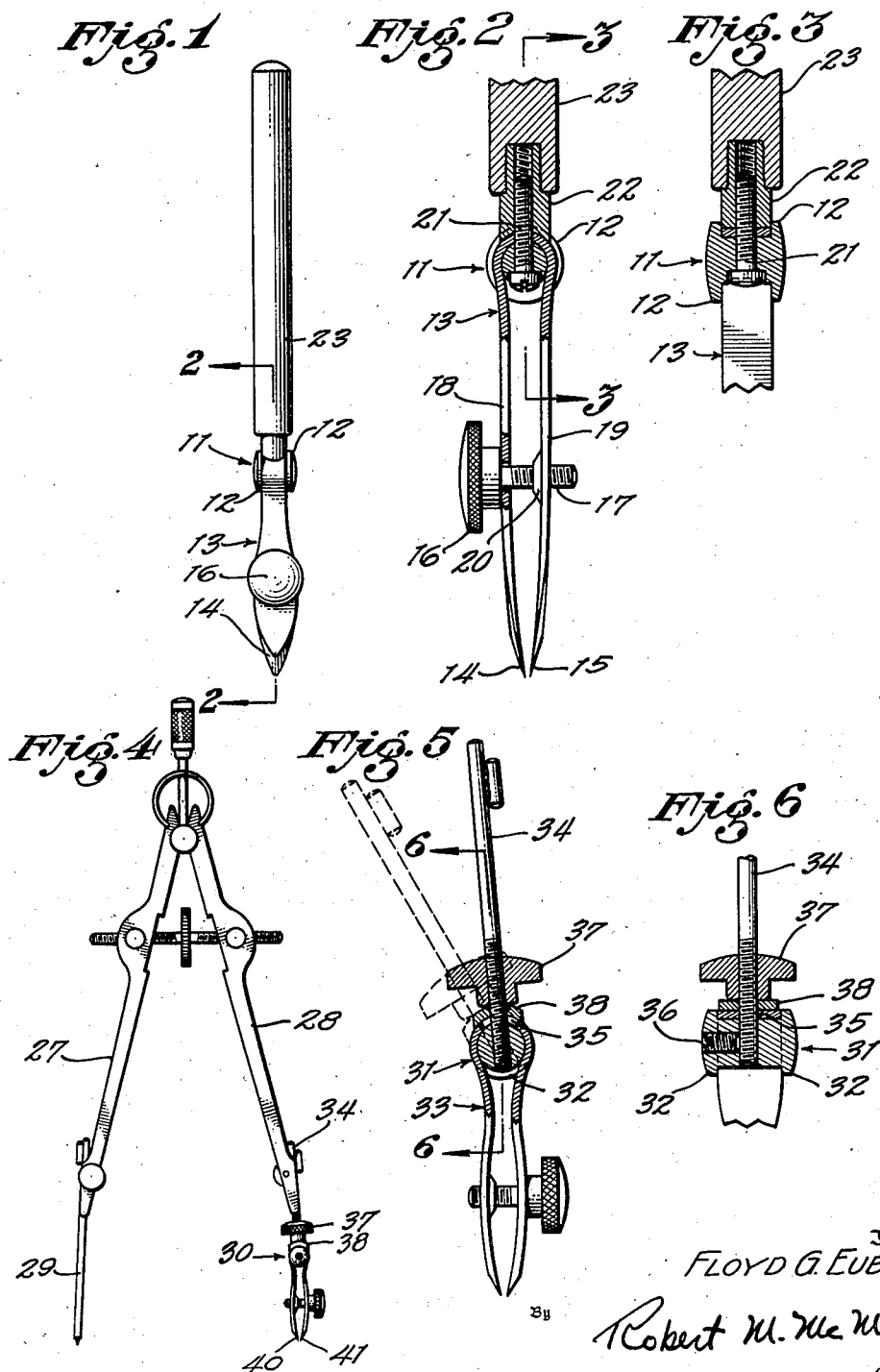
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F. G. EUBANKS

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DRAFTING PEN

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Inventor,
FLOYD G. EUBANKS
Robert M. McManigal
Attorney

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DRAFTING PEN

Floyd G. Eubanks, Pasadena, Calif., assignor, by direct and mesne assignments, of thirty-one and one-half per cent to Francis E. Vaughan, Pasadena, five per cent to Robert M. McManigal, South Pasadena, Calif., six per cent to Edward Floyd Eubanks, six per cent to Philip Robert Eubanks, six per cent to Patricia Rose Eubanks, eight per cent to Edward Uner Vaughan, and eight per cent to Philip Alfred Vaughan, all of Pasadena, Calif.

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4 Claims. (Cl. 120—109.5)

My invention relates to new and useful improvements in drafting pens. For the purpose of illustration, I disclose a drafting pen comprising a strip of sheet steel looped about a spool, the end portions being shaped to constitute the blades; said blades being provided with means for controlling their separation.

The object of my invention is to provide a drafting pen with blades which can easily be constructed of high quality material.

Another object of my invention is to so construct the blades of the pen that they can be widely separated to facilitate the cleaning of their points or nibs.

Another object of my invention is to provide a pen for a compass, said pen having means for locking it in a position normal to the drawing surface.

My invention has other objects which will be evident from a study of the following specification read in connection with the accompanying drawing.

Referring to the drawing:

Figure 1 is a front view of a ruling pen embodying the features of my invention.

Figure 2 is a section taken on the line 2—2 of Figure 1.

Figure 3 is a section taken on the line 3—3 of Figure 2.

Figure 4 shows another embodiment of my invention in which the pen is attached to a compass.

Figure 5 is an enlarged fragmentary section showing the details of construction of the pen shown in Figure 4.

Figure 6 is a section taken on the line 6—6 of Figure 5.

Referring to Figures 1, 2 and 3, the numeral 11 indicates a spool having flanges 12, and about which is looped the sheet steel strip 13. The sheet steel strip 13 can readily be punched from sheet steel stock and then formed in a die to the desired shape. The ends of the metal strip 13 are ground to form the nibs 14 and 15. The thumb screw with thumb piece 16 and screw 17 controls the separation of the nibs 14 and 15. The screw 17 passes through a clearance hole in the blade 18 and is screwed through the blade 19. A small bushing 20 is electrically welded into the blade 19 to afford additional thickness in order to engage the threads on the screw 17. The screw 21, passing through the spool 11 and through a hole in the metal strip 13, is screwed into the pen support 22, thus firmly holding the pen to the support. Since the screw 21 passes through both the spool 11 and the metal strip 13, it effectively pre-

vents said metal strip 13 from slipping about said spool 11. The pen support 22 may be press-fitted securely into the handle 23 which can be of metal, plastic, fiber, wood, or other suitable material.

The metal strip 13 is formed in such a manner that the spring pressure tends to separate the nibs 14 and 15. The thumb screw 16, 17, holds the nibs 14, 15, close together as desired, the proximity of the nibs to each other controlling the breadth of the line being ruled by the pen.

Although the blades may be formed of any suitable metal strip, I prefer to use sheet spring steel of high quality and thereby provide a pen of excellent performance and durability. The blades are adapted to be widely separated, as clearly shown in Figure 2 of the drawing.

Figures 4, 5 and 6 show a modification of my invention adapted to be used on a compass. In this modification the sheet steel strip comprising the blades is adjustably mounted on the spool so that the pen can be set in a position normal to the drawing surface and a locking means is provided to hold the blades in any adjusted position.

As an instance of this arrangement, the parts 27 and 28 are limbs of a compass to which, respectively, extension point 29 and pen 30 are adapted to be attached. The numeral 31 indicates a spool with flanges 32, about which is looped a sheet steel strip 33. The upper part of a supporting rod 34 is clamped in the compass limb 28 in the same manner as a pencil lead is held. The lower part of the supporting rod 34 is threaded and passes through a hole 35 in the steel strip 33 and through a hole in the spool 31, being firmly held in the latter by means of a set screw 36. A thumb screw 37 is screwed upon the threaded portion of the supporting rod 34. Below this thumb screw 37 is a curved lock plate 38, through which also passes the supporting rod 34.

When the thumb screw 37 is loose above the lock plate 38, the sheet steel strip 33 is released and, since the hole 35 is elongated somewhat about the periphery of the spool, the sheet steel strip can be slipped about the spool through a small arc and thus adjusted so that the axis of the pen is perpendicular to the drawing surface. When the thumb screw 37 is screwed downward it presses upon the lock plate 38 and thus firmly holds the steel strip 33 in the position to which it is adjusted in order to be perpendicular to the drawing surface as the compass legs 27 and 28 are closed or spread to describe small or large circles. The method by which the pen can be adjusted perpendicularly to the drawing surface

is shown in Figure 5, in which the position of the supporting rod 34 is shown in dotted lines as the instrument is used in describing large circles.

The nibs 40 and 41 should be set perpendicular to the line determined by the tip of the extension point 29 and the point of the pen so that the pen will draw tangentially. In order to make this adjustment the set screw 36 can be released and the spool rotated axially about the supporting rod 34 and into the proper position. The set screw 36 is then tightened.

Figure 6 shows how the compass pen can be adjusted to follow in the direction of the desired circle.

Other advantages and the use and operation of the drafting pen of my invention will be readily understood by those skilled in the art to which the invention appertains. While I have described the form of my invention which I now consider to be the best embodiment thereof, I desire to have it understood that the form shown is merely illustrative and that the invention is not to be limited to the details disclosed herein, but is to be accorded the full scope of the appended claims.

I claim:

1. In a ruling pen, a strip of sheet steel looped about a cylindrical member and tapered at the ends to provide the nibs of said pen, a handle, said strip and said cylindrical member being held together and to the pen handle by means of a screw passed through them and threaded into said handle.

2. A pen for drafting compasses comprising a strip of sheet metal looped at its mid-portion about a cylindrical member and tapered at its ends to provide nibs, a support extending from said cylindrical member through an opening in the looped mid-portion of said strip, said strip being adjustable about the axis of said cylindrical member, and means on said support for locking said strip against movement about said cylindrical member.

3. A drafting pen comprising a strip of sheet metal tapered at its ends to provide nibs and being of substantially uniform thickness throughout the remainder of its length, a cylindrical spool having peripheral flanges at its ends, said strip having its mid-portion looped about said spool between said flanges, adjustable means intermediate said spool and said nibs for controlling the spacing of said nibs, a handle, and means for retaining said spool within the loop of said strip and securing said strip to said handle.

4. A drafting pen comprising a strip of sheet metal looped at its mid-portion about a cylindrical member and tapered at its ends to provide nibs, said strip being of substantially uniform thickness throughout the remainder of its length, and a handle including fastening means extending through an opening in the looped mid-portion of said strip and into said cylindrical member.

FLOYD G. EUBANKS.