Aug. 8, 1933. J. C. SOMMER 1,921,892

DRAWING INSTRUMENT AND ADJUNCTIVE PARTS THEREOF

Filed Nov. 1, 1930

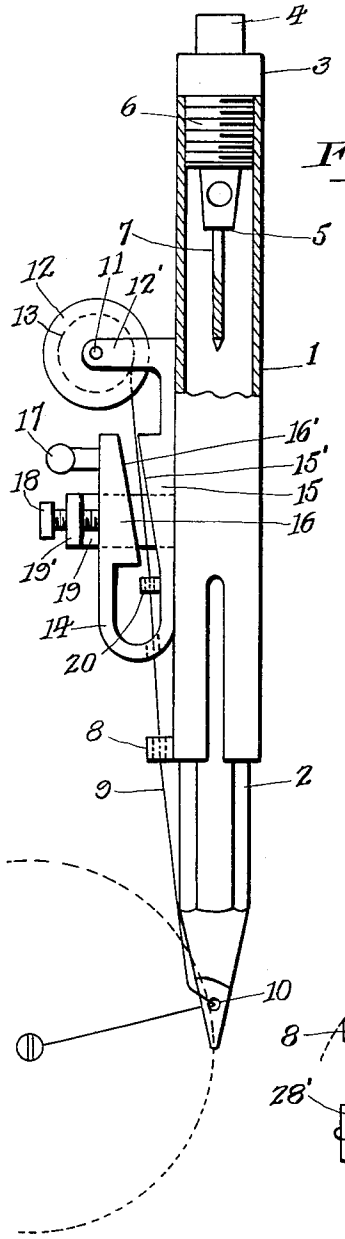


Fig. 1.

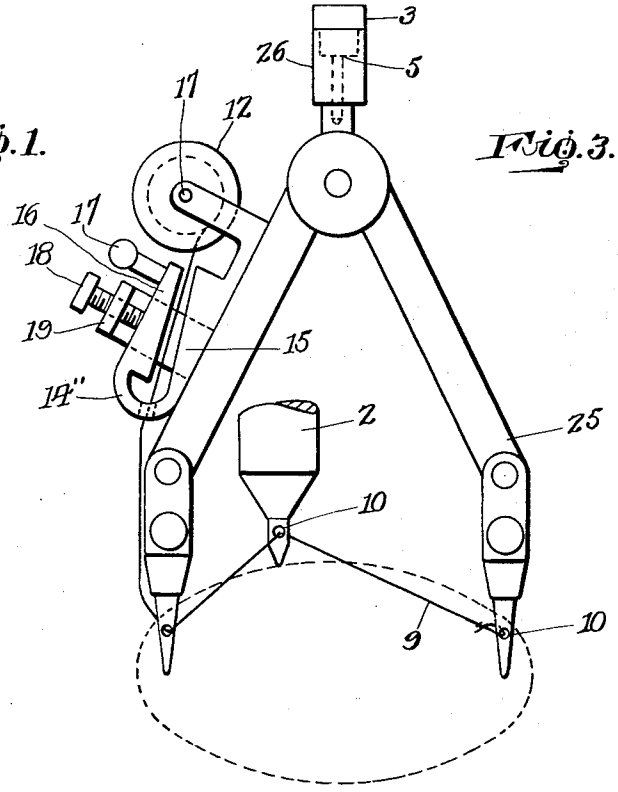


Fig. 3.

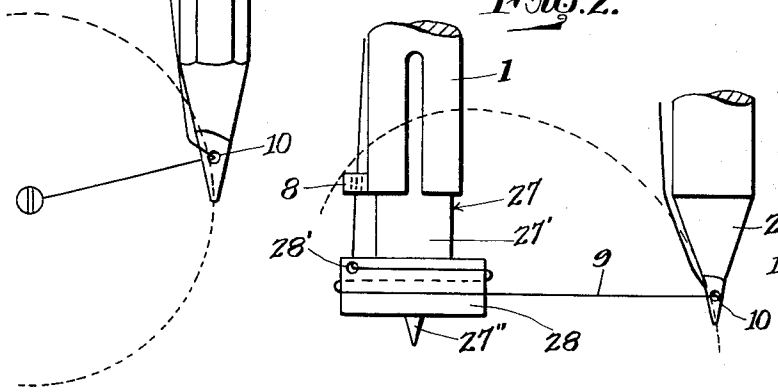


Fig. 2.

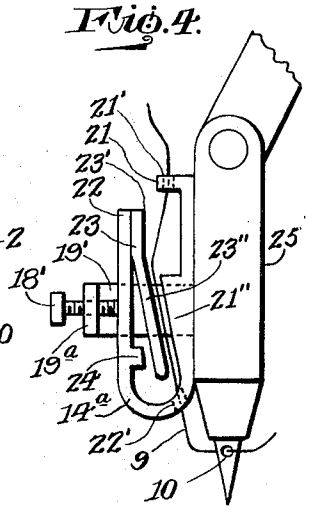


Fig. 4.

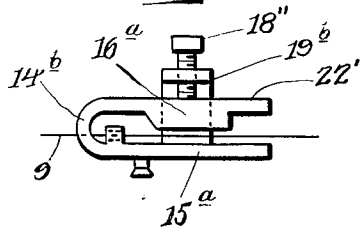


Fig. 5.

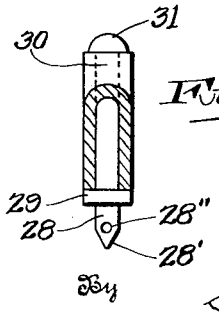


Fig. 6.

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Patented Aug. 8, 1933

1,921,892

# UNITED STATES PATENT OFFICE

1,921,892

## DRAWING INSTRUMENT AND ADJUNCTIVE PARTS THEREOF

John C. Sommer, St. Louis, Mo.

Application November 1, 1930. Serial No. 492,699

6 Claims. (Cl. 33—27)

The invention relates to drawing instruments.

The essential objects of my invention are to provide, in a manner as hereinafter set forth, point pieces for the instrument having means for engagement with a flexible, adjustable guide for a scribing or marker element; point pieces capable of being rotated when connected to the instrument, with a device adapted to be fixed to the instrument and functioning for adjusting, clamping and carrying the scribing element guide; a drilling element for forming an opening in a point piece for the passage of the guide; and to attain these ends by a strong, durable and comparatively inexpensive means.

In the drawing wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a front elevation partly in section illustrating the adaptation of the elements of the invention to a pencil and arranged to draw circles.

Figure 2 is a fragmentary view in front elevation showing certain of the elements of the invention in connection with a scribing element and guide for the latter and arranged to draw spirals.

Figure 3 is a front elevation of a compass showing the adaptation of the elements of the invention therewith and with respect to a scribing element and guide for the latter and arranged for drawing ellipses and elliptic curves.

Figure 4 is a front elevation illustrating a modified form of clamp device for the scribing element guide.

Figure 5 is a side elevation of a modified form of guide clamp device.

Figure 6 is a sectional elevation of a rotatable point piece.

In the drawing, 1 indicates a tubular, split end resilient member mounted upon and frictionally engaging with a pencil 2 which projects from member 1 and is formed with a point provided with an opening 10 for the passage of an adjustable, flexible, windable guide 9 adapted to have an end thereof anchored at a point which is to constitute the axis of a circle to be drawn by the pencil.

The other end of member 1 carries an end cap 3 provided with an eraser 4. The cap 3 has peripheral threads 6 for engagement with the inner face of member 1. The cap 3 carries on its inner end attaching means 5 for a drill 7. The latter is to be employed for drilling an opening in a point piece for the passage of guide 9. With reference to Figure 1 the point piece is formed by the pointed end of pencil 2. The split end of member 1 is formed with a laterally directed eye 8 for slidably connecting guide 9 therewith.

Fixedly secured to member 1, lengthwise of the latter is a combined carrier, adjuster, clamp and winder device for the guide 9. The device includes a thumb shiftable winding reel 12 provided with a hub 11 which is journaled in the bifurcated end 12' of a stationary clamping part 15 having a part of its outer face bevelled, as at 15'. The part 15 terminates into a U-shape resilient part 14 which supports an upstanding shiftable clamping part 16 having a portion of its inner face bevelled, as at 16', and which opposes the bevelled portion 15' of the outer face of part 15. The device includes an angle shaped bracket 19 having an angularly disposed outer arm 19' opposing in spaced relation and disposed transversely of the outer face of part 16. Carried by the arm 19' is a clamping screw 18 which coacts with the part 16 for the purpose of clamping the guide 9, at the desired point thereof between the bevelled portions of the parts 15, 16. The part 16 has extended therefrom a thumb piece 17 for normally shifting part 16 towards part 15 to yieldingly retain the guide 9 between said bevelled portions. The part 16 is arranged below the reel 12. The part 14 is apertured, as at 14', for the passage of guide 9, and such aperture is arranged below an eye 20 formed on the part 15 below the bevelled portion 15' of the latter. The eye 20 is for the passage of guide 9. The part 15 has its rear face fixedly secured to the member 1.

Instead of attaching pencil 2 to the member 1, a point piece 27 can be substituted and which consists of a shank 27' for extension into member 1. The shank has its outer end pointed, as at 27'', and carried by the shank is a cylindrical enlargement 28 upon which the guide 9 encompasses. The enlargement has an opening 28' for guide 9, the latter extends into the enlargement 28, passes outwardly through the opening 28', encompasses the enlargement 28, passes through opening 10 in pencil 2 and is anchored at the desired point. The arrangement in Figure 2 is for drawing spirals.

With reference to Figure 3 a compass 25 is illustrated carrying a pair of apertured point pieces and also a combined carrier, adjuster, clamp and winder for the guide 9, the latter extending through the point pieces and also through opening 10 in pencil 2. The guide carrier is fixed to one of the arms of the compass. The finger piece 26 of the compass carries end cap 3 provided with drill 5. The parts are arranged in Figure 3 for drawing ellipses and elliptic curves.

The form of combined carrier, adjuster, clamp and winder device shown in Figure 3 is the same as that illustrated in Figure 1 with this exception, the resilient part 14'' is of less length than such part shown in Figure 1 and the eye 20 dispensed with.

Figure 4 illustrates a clamp device for the guide 9 and which is shown attached to an arm of the compass 25, the latter being provided with a point piece having an aperture 10 for the passage of guide 9. The clamp device includes an outer and an inner clamping part 21, 22 respectively and with the former provided with an eye 21' for the passage of the guide 9. The parts 21, 22 are connected together in opposed spaced relation by a U-shape resilient part 14*a* provided with an opening 22' for the passage of guide 9. The device includes an angle shape bracket 19'' having an angularly disposed outer arm 19*a* which opposes in spaced relation and is disposed transversely with respect to the outer face of part 22. Carried by arm 19*a* is a clamping screw 18' performing the same function as screw 18. A resilient element or spring 23 of the leaf type is interposed between parts 21, 22. The element 23 includes a flat portion 23' and an inclined portion 23'' which opposes normally in spaced relation the bevelled portion 21'' of part 21. The portion 23 is fixedly secured to the upper portion of the inner face of part 22 and portion 23 projects away from the inner face of part 22, and the latter carries an abutment 24 for pressing on portion 23, when part 22 is shifted towards part 21 by screw 18', thus clamping the guide 9 yieldingly and by further tightening of screw 18' the guide 9 will be tightly clamped between element 23 and part 21.

The form of clamp device shown in Figure 5 includes a stationary clamping part 15*a*, a shiftable clamping part 16*a* provided with a finger piece 22'. The parts 15*a* and 16*a* are connected together by a resilient part 14*a*. The device includes an angle shaped bracket 19*b* carrying a clamping screw 18'' coacting with part 16*a* to clamp guide 9 between parts 15*a* and 16*a*. The part 14*a* is apertured for the passage of guide 9. The part 15*a* is provided with an eye 20' for the passage of guide 9.

Figure 6 illustrates a rotatable point piece element consisting of a stem 28 provided with a point 28' formed with an aperture 28''. Stem 28 is formed with an abutment 29 against which seats a sleeve 30 which encompasses stem 28. The shank 28 is provided with a head 31 and between the latter and abutment 29 is arranged sleeve 30. The shank is rotatable relative to the sleeve 30 when scribing. The sleeve 30 is for extension into member 1 to be frictionally coupled therewith.

What I claim is:

1. In a scribing element guide clamping attachment for a drawing instrument, a stationary and a shiftable clamping part, said parts having opposed beveled surfaces normally spaced from each other, means for resiliently connecting said parts together at one end thereof, an angle shaped bracket opposing one side of said parts and the outer face of the shiftable part, and a clamping screw carried by said bracket and coacting with said shiftable part for clamping the guide between said parts.

2. In a scribing element guide clamping attachment for a drawing instrument, a stationary and a shiftable clamping part, said parts opposing and normally spaced from each other, means for resiliently connecting said parts together at one end thereof and having an opening for the passage of the guide, an angle shaped bracket opposing one side of said parts and the outer face of the shiftable part, a clamping screw carried by said bracket and coacting with said shiftable part for clamping the guide between said parts, and an eye carried by said stationary part adjacent the connected end of the latter and extending towards the shiftable part for the passage of the guide.

3. In a scribing element guide clamping attachment for a drawing instrument, a stationary and a shiftable clamping part, said parts opposing and normally spaced from each other, means for resiliently connecting said parts together at one end thereof, the other ends of said parts being free with respect to each other, the free end of the stationary part extending beyond the free end of said other part, an angle shaped bracket opposing one side of said parts and the outer face of the shiftable part, a clamping screw carried by said bracket and coacting with said shiftable part for clamping the guide between said parts, and said means being apertured for the passage of the guide, and a guide winding reel supported from the free end of said stationary part and overhanging the free end of the shiftable part.

4. In an attachment for drawing instruments a point piece element including a rotatable shank having a pointed end provided with an opening for the passage of a scribing element guide, a sleeve encompassing said shank intermediate the ends thereof, said shank provided with means for confining the sleeve thereon.

5. In a drawing instrument, a supporting element, a point piece carried thereby and provided with an eye for the passage of a flexible guide, a pair of opposed clamping parts, one being stationary, fixed to said element and the other being shiftable, means for resiliently connecting one end of the shiftable part to one end of the stationary parts, said parts having normally spaced opposed beveled surfaces between which the guide is clamped, a bracket carried by the stationary part and overhanging said shiftable part, means carried by the bracket for adjusting the shiftable part relative to the stationary part to clamp the guide.

6. In a drawing instrument, a supporting element, a rotatable point piece carried thereby and provided with an eye for the passage of a flexible guide, a pair of opposed clamping parts, one being stationary, fixed to said element and the other being shiftable, means for resiliently connecting one end of the shiftable part to one end of the stationary parts, said parts having normally spaced opposed beveled surfaces between which the guide is clamped, a bracket carried by the stationary part and overhanging said shiftable part, means carried by the bracket for adjusting the shiftable part relative to the stationary part to clamp the guide, and a guide winding reel carried by said stationary part and overhanging the shiftable part.

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