

C. F. GOLDEN,
COMPASS.

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1,266,010.

Patented May 14, 1918.

Fig. 1.

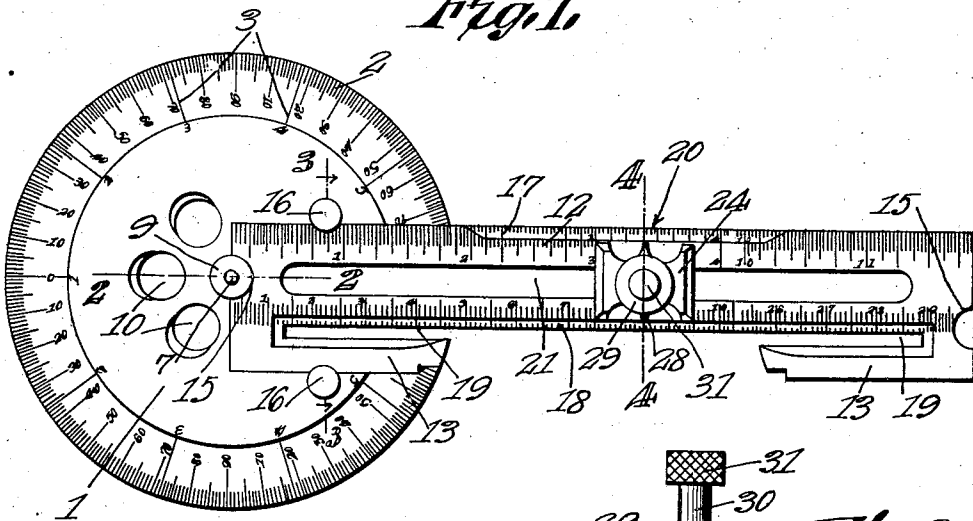


Fig. 2.

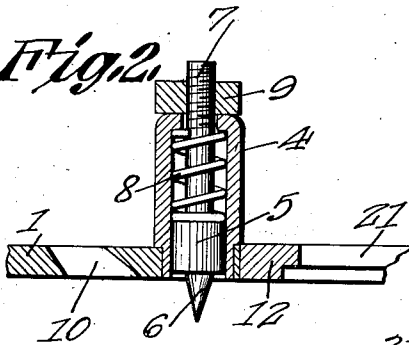


Fig. 3.

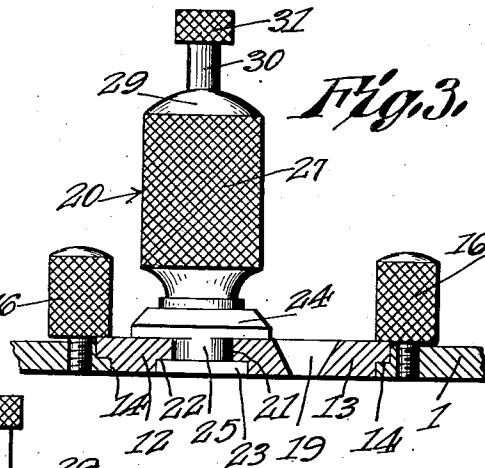
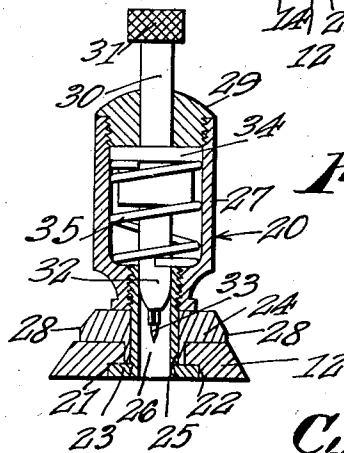


Fig. 4.



Witness

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COMPASS.

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To all whom it may concern:

Be it known that I, CHARLES F. GOLDEN, a citizen of the United States, residing at Chili, in the county of Miami and State of Indiana, have invented a new and useful Compass, of which the following is a specification.

The present invention appertains to instruments of precision, and aims to provide an instrument for use in drafting or designing, and which can be used as a compass, ruler, and the like by various artisans.

One of the objects of the invention is the provision of the novel assemblage of the protractor and arm or blade.

Another object of the invention is the provision of novel means carried by the protractor for pivoting the instrument on the surface.

A still further object of the invention is to provide a novel slide movable along the arm, and having means for tightening it in any adjusted position, and also having a marking element to be brought into engagement with the underlying surface for scribing an arc or circle around the pivot at different distances therefrom.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a plan view of the instrument.

Figs. 2, 3, and 4 are enlarged sectional details on the lines 2—2, 3—3 and 4—4 of Fig. 1.

The protractor embodies a disk or circular plate 1 of suitable material, having clamped or otherwise provided on its upper surface and around its margin, the protractor or degree graduations 2, which are divided, as at 3, into angles of one-tenth of a circle, for convenience.

In order to provide a pivot at the center of the disk 1, an upstanding tubular stud 4 has its lower end riveted or otherwise engaged within a central aperture of the disk 1, and a plunger 5 is slidable vertically

within the stud 4, being provided with a depending point or spur at the center of the disk 1, and constituting the pivot. The plunger 5 has an upwardly projecting stem 7 projecting upwardly out of the stud 4, the upper end of said stud being contracted to form a shoulder, and a coiled wire expansion spring 8 surrounds the stem 7 within the stud 4 and is confined between the shoulder or upper end thereof and the plunger to yieldably depress said plunger and its point 6. A nut 9 or other retaining element and finger piece is threaded or otherwise engaged upon the upper end of the stem 7, to limit the downward movement of the plunger 5, and to enable said plunger to be retracted by the fingers. The disk 1 is provided adjacent to the stud 4 with openings 10 rendering the point 6 visible from above, whereby the point 6 can be placed at the desired position on the paper or underlying surface. By looking at an angle through one of the openings 10, the point 6 can be seen, and therefore can be placed over the particular point of the surface to accurately pivot the instrument for rotation around the desired point. When the point 6 is placed on the surface, and the disk 1 pressed downwardly, the plunger 5 can yield into the stud 4, and the spring 8 will press the point into the surface, to prevent the displacement of the instrument when turned about the pivot.

The disk or plate 1 is provided with an angular radial recess 11 extending from its central portion and stud 4 for the reception and attachment of the arm or blade 12, which is also constructed of metal or other suitable material. This arm 12 is reversible, in that either end thereof can be attached to the disk 1, each end of the arm 12 being widened at one side, as at 13, to fit snugly in the recess 11. The edges of the arm 12 adjacent to the ends thereof, and edges of the disk 1 along the opening 11 are rabbeted as at 14, to fit snugly together, with one end portion or the other of the arm bearing downwardly on the rabbeted portions of the disk. Each end of the arm has a notch 15 for accommodating the central portion and stud 4 of the disk, whereby to bring either end of the arm into register with the center of the disk. A pair of screws 16 is threaded downwardly into the disk 1 at opposite sides of the recess 11 and their heads overhang the rabbets of the disk,

whereby to rest on the arm 12 and clamp it in place on the rabbets of the disk. When the screws 16 are loosened, the arm and disk can be separated, and the arm can be reversed. The widened portions 13 are at the same edge of the arm, and can be brought to either side of the arm by reversing it. The opposite edges of the arm 12 are provided with linear graduations 17 and 18, which may be of two scales, such as inches and centimeters. The enlargements or widened portions 13 have slots 19 extending longitudinally along the graduated edge 18 of the arm 12 and terminating short of the ends of the arm but opening at their adjacent ends for the reception of a pencil or other marking element moved along the graduated edge 18, and also serving to expose the underlying surface along said edge.

A slide 20 is movable along the arm 12, said arm being provided between its edges with a longitudinal slot 21 for accommodating the slide, and the arm also having lower longitudinal rabbets 22 along the edges of said slot. The slide embodies a member 23 sliding within the rabbets 22, and a second clamping member 24 is slidable upon the arm above the slot 21. The member 24 has an elongated rib 25 working within the slot 21, to prevent the rotation of said member 24, and the member 23 has attached thereto, the lower end of an upstanding sleeve 26 which projects upwardly through an aperture in the member 24. An upstanding tubular finger piece 27 has its lower end threaded upon the sleeve 26 and bears upon the member 24, whereby when the finger piece 27 is tightened, this will draw the sleeve 26 and member 23 upwardly, and force the member 24 downwardly, thereby clamping the arm between said members, and holding the slide in its adjusted position. When the finger piece 27 is loosened, the slide can be readily moved along the arm. The member 24 is provided at opposite sides with pointers 28 coöperating with the graduations 17 and 18 to set the slide to the desired position along the arm.

The slide also carries a marking element, and for this purpose, an apertured plug 29 is threaded or otherwise detachably engaged within the upper end of the finger piece or tubular member 27, and a stem 30 is slidable vertically through the plug 29, being provided at its upper end with a knob 31 threaded or otherwise engaged thereon. The lower portion of the stem 30 has a receptacle 32 for holding a lead or other marking element 33, the receptacle 32 being slidable within the sleeve 26. The stem 30 has a collar 34, and a coiled wire expansion spring 35 surrounds the stem within the finger piece 27 and is confined between the sleeve 26 and collar 34 to normally raise the

stem 30 and retract the marking element 33. By depressing the knob 31, the marking element is thus moved downwardly onto the underlying surface at the point corresponding with the graduations of the arm with which the pointers 28 register.

The disk 1 enables the instrument to be used as a protractor, while the arm 12 can be used, especially when detached from the disk, as a ruler, straight edge, and the like. When the arm and disk are attached, they can be used as a compass, the point or spur 6 serving as a pivot, as above explained, and the slide being readily adjusted to various distances from the pivot, and held in place by tightening the finger piece 27. Then, by holding the nut or knob 9 by the fingers of one hand, and holding the knob 31 by the fingers of the other hand, and pressing the knob 31 downwardly, the marking element will be brought onto the surface and will scribe an arc or circle of the desired diameter. By loosening the finger piece 27, the slide is readily adjusted, and by removing said finger piece, the members 23 and 24 can be separated and removed from the arm, the stem 30 and marking elements remaining assembled with the finger piece 27. By removing the plug 29, the stem 30 and marking elements can be removed from the finger piece. The foregoing and other uses of the instrument render it particularly desirable by a draftsman and other artisans.

Having thus described the invention, what is claimed as new is:

1. An instrument of the nature indicated embodying a plate, an arm attached to said plate, an adjustable marking element carried by said arm, and a yieldable pivot point carried by said plate and projecting downwardly therefrom, said plate having an opening adjacent to said pivot point for exposing it from above.

2. An instrument of the character described, embodying a plate having an upstanding stud, a pivot member movable vertically within said stud and having a yieldable point projectible below the plate, an arm attached to said plate, a marking element movable along said arm, said plate having an opening adjacent to said stud exposing said point from above.

3. An instrument of the character described, embodying a plate having an upstanding stud and a recess extending from said stud, a plunger movable vertically within the stud and having a pivot point at its lower end, and an arm adapted to fit in said recess and having a notch to accommodate said stud.

4. An instrument of the character described, embodying a plate, an arm attached to said plate, an upstanding tubular stud having its lower end attached to the plate and having its upper end contracted, a plun-

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ger movable within the stud having a stem projecting upwardly therefrom, a knob on said stem above the stud, the plunger having a pivot point projectible from said plate, and a spring within said stud for depressing the plunger.

5. An instrument of the character described, embodying a plate having a recess with rabbets along the edges thereof, an arm adapted to fit said recess and having rabbets to interfit the aforesaid rabbets, and means carried by the plate for clamping said arm on the first mentioned rabbets.

6. An instrument of the character described, embodying a plate having a recess with rabbets along the edges thereof, an arm adapted to fit said recess and having rabbets to interfit the aforesaid rabbets, and screws carried by said plate at opposite sides of said recess to bear on said arm and clamp it on the first mentioned rabbets.

7. An instrument of the character described, embodying a plate having a recess, an arm having a widened portion at one end to fit in said recess, said widened portion having an open slot extending along one edge of the arm.

8. An instrument of the character described, embodying a plate having a recess, an arm having a widened portion at each end to fit in said recess, the arm being reversible end for end, and means carried by the plate for clamping the arm within said recess, said widened portions each having an open slot extending along one edge of the arm.

9. An instrument of the character described, embodying an arm, and a slide movable along the arm and constructed to clamp it, said slide having a finger piece operable for clamping and loosening the slide, and a spring raised marking element carried by said finger piece and movable vertically therein.

10. An instrument of the character described, embodying an arm having a slot, a slide movable along said arm embodying clamping members to clamp the arm therebetween, and means connecting said members and extending through said slot for clamping said members together, said means in-

cluding a finger piece for tightening and loosening said members, and a slidable member within said means including a marking element.

11. An instrument of the character described, embodying an arm having a slot, a slide embodying a pair of clamping members moving along the arm, one of said members having a tubular portion extending through the other, a finger piece upon said tubular portion for clamping said members to the arm, and a marking element slidable within said tubular portion.

12. An instrument of the character described, embodying an arm having a slot, a slide movable along the arm embodying a pair of clamping members to clamp the arm between them, one of said members having a tubular portion extending through the other arm, a finger piece threaded upon the tubular portion for clamping said members together, and a spring pressed member carried by the finger piece and slidable within said tubular portion, the last mentioned member having a marking element projectible from said tubular portion.

13. An instrument of the character described, embodying an arm having a slot and lower rabbets along said slot, a clamping member movable in said rabbets, a second clamping member movable on the arm, the first mentioned member having an upstanding sleeve projecting through the second mentioned member, a tubular finger piece threaded on said sleeve to clamp said members to the arm, a plug attached to the upper end of said finger piece, a stem slidable through said plug and within said sleeve, said stem having a marking element at its lower end, and a spring between said sleeve and stem for yieldably raising the latter.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES F. GOLDEN.

Witnesses:

NOBLE B. HUNT,
FLORENCE BOWEN.