

(No Model.)

2 Sheets—Sheet 1.

J. W. BEAMAN.  
DIVIDERS.

No. 472,977.

Patented Apr. 19, 1892.

FIG. 1.

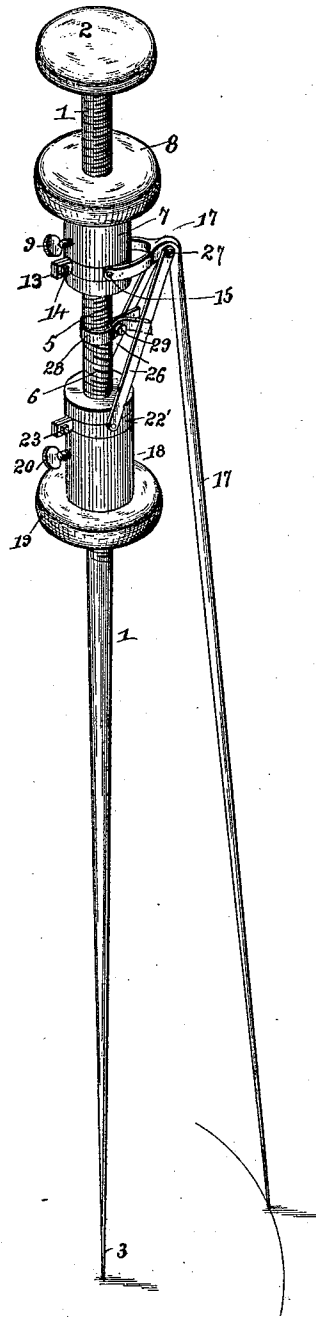


FIG. 3.

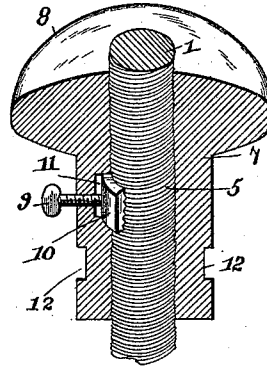


FIG. 4.

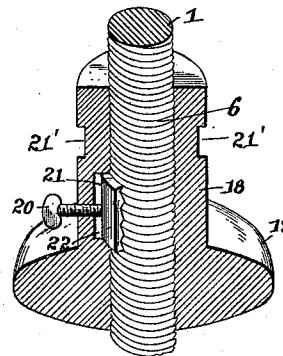
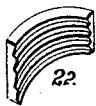


FIG. 7.



Witnesses:

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Inventor

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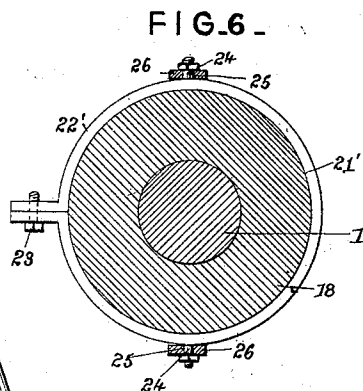
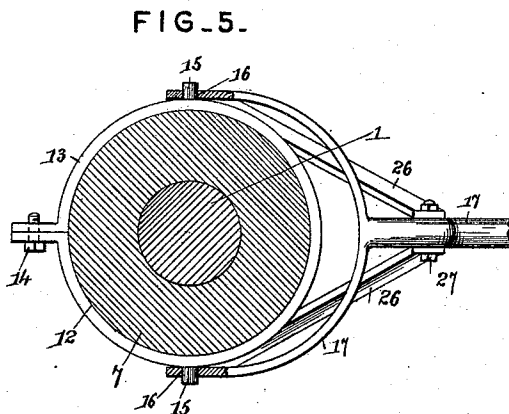
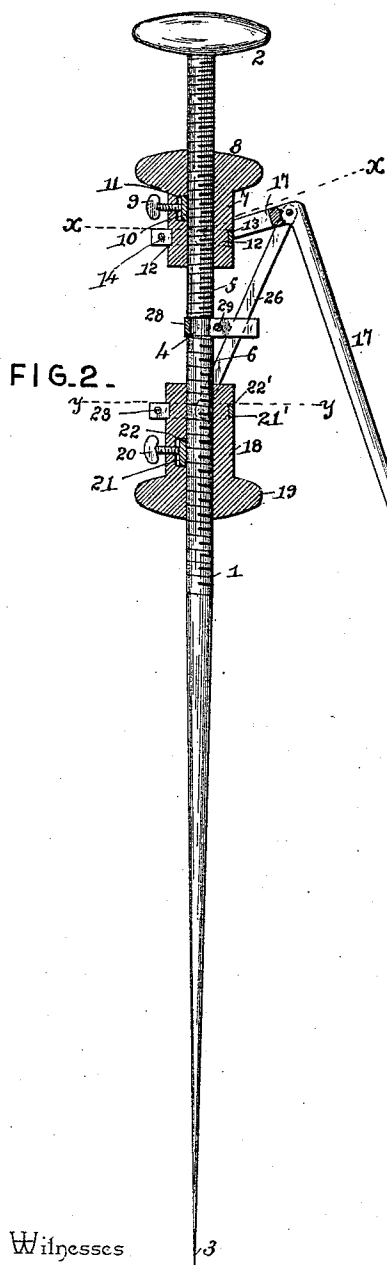
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2 Sheets—Sheet 2.

J. W. BEAMAN.  
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No. 472,977.

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Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN W. BEAMAN, OF MOUNT AYR, IOWA.

## DIVIDERS.

SPECIFICATION forming part of Letters Patent No. 472,977, dated April 19, 1892.

Application filed July 17, 1891. Serial No. 399,841. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN W. BEAMAN, a citizen of the United States, residing at Mount Ayr, in the county of Ringgold and State of Iowa, have invented new and useful Dividers, of which the following is a specification.

This invention relates to improvements in dividers or compasses, the objects in view being to provide an instrument of this class in which fine adjustments may be readily obtained and when so obtained may be retained, and, furthermore, to so construct the instrument as to adapt it for scribing large and small circles, or, in other words, circles of various diameters.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of an instrument constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section of the same, said instrument being adjusted for scribing larger circles than as shown in Fig. 1. Fig. 3 is a detail in perspective and partial section of the upper sleeve. Fig. 4 is a similar view of the lower sleeve. Fig. 5 is a transverse section on the line  $x x$  of Fig. 2. Fig. 6 is a similar view on the line  $y y$  of Fig. 2. Fig. 7 is a detail in perspective of one of the clamping-plates.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the main member or leg of the dividers, which, as shown, is provided at its upper end with a head or knob 2, adapted to afford a proper hand-hold, and at its lower end is reduced and tapered to form a point 3. At a suitable distance below the knob or handle 2 an annular reduced bearing 4 is formed on the member or leg 1, and above the same said member or leg is provided with a right-hand thread 5, (preferably about "No. 6,") while below said annular bearing a left-hand thread 6 is formed, (preferably about "No. 12," or twice as coarse as the threads 5.) Upon the upper threads 5 there is mounted an internally bored and threaded sleeve 7, which at its upper end is provided with an enlarged annular head or knob 8, adapted to be grasped. Below the knob the sleeve is

perforated to receive a set-screw 9, the inner end of which terminates against a threaded curved clamping-block 10, set into a recess 11, formed in the internal face of the sleeve, the threads of the block forming a continuation of those of the sleeve. By tightening the screw upon the block the latter is made to clamp the threads 5 of the main member or leg 1 without injury to the said threads, and thus the sleeve is made fast upon said member or leg, while by loosening the screw the sleeve is adapted to rotate upon the leg or the latter within the sleeve. An annular bearing or depression 12 is formed in the sleeve 7 near its lower end, and in said bearing there is mounted a spring-collar 13, the ends of which are outwardly bent and connected by a clamping-screw 14, by which the collar can be clamped in the bearing or loosened so as to move independent of the sleeve. The opposite sides of the sleeve are provided with trunnions 15, which take bearing in perforations 16, formed in the upper bifurcated ends of the secondary member or leg 17, the upper end of said leg being bent at a right angle, as shown, to the lower portion. A second sleeve 18 is interiorly bored, threaded, and mounted upon the lower threads 6, and at its lower end is provided with an enlarged annular head 19. Above the head in a perforation formed in the sleeve 18 there is threaded a set-screw 20, the inner end of which terminates in a recess 21, formed in the interior of the sleeve 18, said recess receiving a clamping-block 22, the face of which is threaded to agree with the internal threads of the sleeve 18. By tightening the screw 20 the threads 6 are clamped upon by the block, so that the sleeve 18 is rigid upon the main member or leg 1, and by loosening said screw the sleeve is independent of the member and will move thereupon or said member move therein. Above the screw 20 an annular reduced bearing 21' is formed in the sleeve 18, and in the same a spring collar or clamp 22' is seated, the ends of the collar or clamp being connected together by a clamping-screw 23. At diametrically-opposite sides the collar is provided with trunnions 24, and the same pass through bearing-openings 25, formed in the lower ends of a pair of fulcrum-straps 26, the upper ends of which are pivoted by a pin

27 to the angle or bent portion of the supplemental member or leg 17.

28 designates a clamping-collar, which encircles the bearing 4 of the main member and has its terminals connected by a clamping-screw 29, beyond which said terminals project between the straps 26.

From the foregoing description, considered in connection with the accompanying drawings, it will be seen that I have provided dividers or compasses which are readily adapted for both fine and coarse adjustments and for scribing circles of various diameters.

Having described my invention, what I claim is—

1. In an instrument of the class described, the combination, with the main member provided with a thread, an upper sleeve, and a lower sleeve upon the thread, of a secondary member pivoted and swiveled at its upper end to the upper sleeve, and fulcrum-straps pivoted to the lower member and pivoted and swiveled to and upon the lower sleeve, substantially as specified.

2. In an instrument of the class described, the combination, with the main member terminating at its upper end in a head and below the same provided with right and left hand screw-threads, a sleeve mounted upon each of these threads and provided with an internal recess, clamping-blocks mounted in the recesses and having threads coinciding with those of the sleeves, and set-screws passing through the sleeves and terminating against the clamping-blocks, of a secondary member or leg pivoted at its upper end to the upper sleeve and straps pivoted to the secondary leg and at their lower ends to the lower sleeve, substantially as specified.

3. In an instrument of the class described, the combination, with the main leg provided with right and left hand threads and terminating at its upper end in a head, and the upper and lower adjustable sleeves mounted on the threads of the main leg and provided with annular bearings, of the clamping-collars mounted in the bearings of the sleeves, clamping-screws for connecting the ends of the same, a secondary leg pivoted to the upper clamping-collar, and fulcrum-straps pivoted to the leg and lower collar, substantially as specified.

4. In an instrument of the class described, the main leg 1, having the right and left hand threads, and the intermediate reduced bearing, in combination with the upper and lower adjustable sleeves having annular bearings, the clamping-collars mounted thereon and provided with opposite trunnions and clamping-screws, the secondary member bifurcated at its upper end to embrace the upper collar and perforated to receive the trunnions thereof, and the pair of fulcrum-straps mounted at their lower ends upon the trunnions of the lower collar and pivoted at their upper ends to the secondary leg in rear of its bifurcation, and the collar 28, mounted upon the reduced bearing of the member 1 and extending rearwardly between the straps and the clamping-screw for the same, substantially as specified.

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

JOHN W. BEAMAN.

Witnesses:

T. D. McQUIGG,  
W. A. BAIRD.