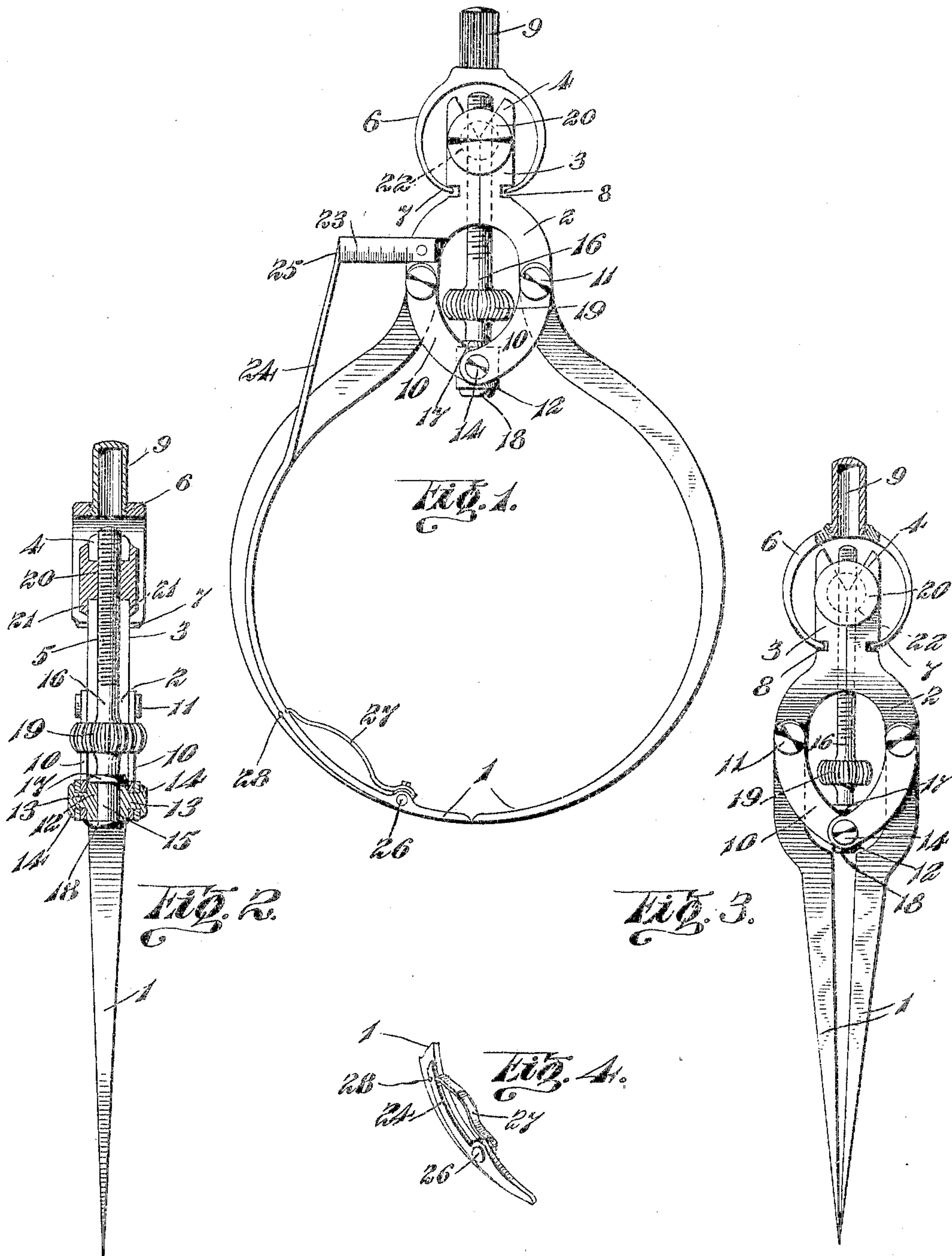


No. 794,094.

PATENTED JULY 4, 1905.

T. S. GLOVER.
CALIPERS.

APPLICATION FILED OCT. 6, 1904.



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CALIPERS.

SPECIFICATION forming part of Letters Patent No. 794,094, dated July 4, 1905.

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To all whom it may concern:

Be it known that I, THEODORE S. GLOVER, a citizen of the United States, residing at East Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Calipers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to calipers and similar tools; and one of the objects of the same is to provide improved means for adjusting the legs of tools of this character.

Another object is to provide means which will secure quick and accurate adjustment and which will hold the legs firmly in adjusted position.

Still another object is to provide a tool of this character in which the adjusting means will be located between the legs of the instrument out of the way and which will add to the general efficiency and proper poise of the tool.

These and other objects are attained by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of an instrument made in accordance with my invention. Fig. 2 is a central vertical section of a pair of dividers, showing my improved adjusting device thereon. Fig. 3 is a front elevation of the same, and Fig. 4 is a detail perspective view showing the manner of connecting the pointer to one leg of the calipers.

Referring to the drawings for a more particular description of my invention, the numeral 1 denotes the legs of a pair of calipers, compasses, or a similar instrument, said legs being of identical shape and size and each leg having an enlarged or outwardly-curved portion 2 and a straight upper end portion or arm 3, provided with a beveled terminal end 4 and a grooved inner surface 5. A tension-spring 6, having its lower ends 7 seated in recesses 8 in the sides of the arms 3, is provided at its upper end with a tubular extension 9 to accommodate the projecting upper end of the adjusting-screw when the legs 1 are separated.

Curved toggle-levers 10 are pivoted at their

upper ends, one upon each side of each leg 1, by means of headed pins or rivets 11, said toggles being connected to the arms 1 at points nearly central to the enlarged or curved portions 2. The lower ends of the toggles 10 are pivoted upon a stud-block 12, having oppositely-extending shanks 13 and heads 14. The block 12 is thus swiveled to the lower ends of the toggle-levers. Seated in a central opening in the stud-block 12 is the lower end 15 of the adjusting-screw 16, and said lower end is provided with a stop-shoulder 17 and a head 18 to connect the adjusting-screw to the block. Formed with or rigidly connected to the adjusting-screw 16 is a milled thumb-nut 19, which occupies a position between the toggle-levers 10 and the enlarged or curved portions 2 of the legs 1. The upper screw-threaded end of the adjusting-screw extends through a hole formed centrally in a spool-shaped nut 20, provided with a smooth body portion and end enlargements or heads 21. The grooves 5 in the inner faces of the arms 3 loosely surround the adjusting-screw 16, said arms being provided with opposite recesses 22 for engaging the smooth body portion of the nut 20.

Projecting laterally from one of the legs 1 of the instrument is a plate or bar 23, provided with a graduated scale upon its face. An indicator hand or pointer 24, provided with an index-finger 25 at its upper end, designed to traverse the scale-plate 23, is pivoted at 26 to one of the legs 1 of the instrument. The pointer is curved intermediate its ends to conform to the curvature of the leg 1. A spring 27, connected at one end to the caliper-leg, is adapted to bear at its opposite end upon the inner edge of the pointer 24 to hold it in relative position with the leg 1, and a stop-pin 28 prevents the outward movement of the pointer.

When the calipers are passed over a piece of work, the points must touch the work hard enough to move the pointer to one of the marks on the scale 23. If a note is then made of this mark, another piece of work may be cut of exactly the same size. In this way measurements may be transferred with accuracy, as the pointer is arranged to multiply twenty or more times. The calipers may be

set with a vernier-gage and then used on work where a micrometer or vernier-gage could not be used.

The construction and operation of my invention will be readily understood from the preceding description and accompanying drawings without a more extended explanation.

From the foregoing it will be obvious that my improved adjusting means may be applied to various types of bipod measuring instruments—such as compasses, dividers, drawing instruments, and all kind of calipering-tools—and that any adjustments made are positive, accurate, and not liable to accidental movement. The adjusting devices are out of the way and the tool is properly balanced and easily handled owing to the central disposition of the adjusting-nut.

Various changes in the shape, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A measuring instrument comprising legs toggle-levers pivoted at one of their ends to the opposite legs of the instrument, a stud-block to which the opposite ends of said toggles are pivoted, an adjusting-screw swiveled in the stud-block, a spool-shaped nut through which the adjusting-screw passes, the instrument-legs, said legs having recesses at their upper ends to engage said nut, and a spring for holding said legs together, substantially as described.

2. A bipod instrument comprising legs having outwardly-curved upper portions and straight upper ends, said ends having grooved and recessed inner faces and beveled terminal ends, curved toggle-levers pivoted to the opposite sides of the legs at their curved upper portions, a stud-block pivotally connecting the inner ends of said toggle-levers, an adjusting-screw swiveled in said stud-block and extending up between the grooved upper ends of the legs, a nut seated in the recesses in said legs, the screw passing through the nut, a bowed spring spanning the legs and connected thereto, and a tubular extension on the spring to accommodate the projecting upper end of the adjusting-screw, substantially as described.

3. The herein-described caliper, comprising the legs, the toggle-levers pivoted to said legs, the stud-block to which the opposite ends of said toggle-levers are pivoted, an adjusting-screw, said legs having recessed upper ends, a spool-shaped nut engaged by said recessed upper ends of the legs, and said adjusting-screw passing through said nut, an indicator-plate projecting laterally from one of the legs, a pointer pivoted to one of the legs and provided with an index-finger adapted to traverse said plate, a spring secured to one of the legs and bearing upon the pointer, and a stop for said pointer, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THEODORE S. GLOVER.

Witnesses:

MYRON G. OSBORN,
SPENCER S. ADAMS.