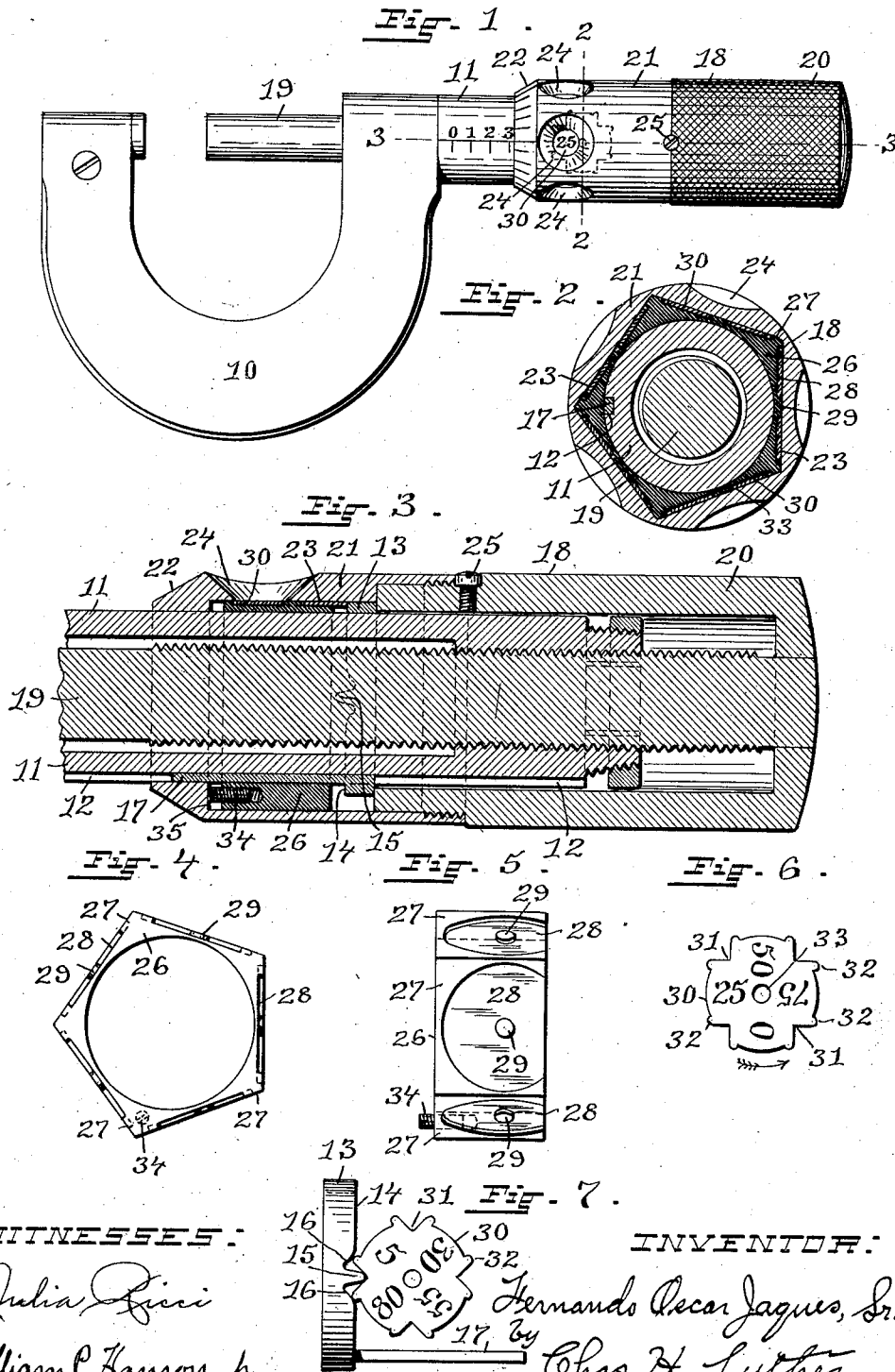


F. O. JAQUES, Sr.
MICROMETER CALIPERS.
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1,021,680.

Patented Mar. 26, 1912.



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MICROMETER-CALIPERS.

1,021,680.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FERNANDO OSCAR JAKUES, Sr., a citizen of the United States, residing at Cranston, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Micrometer-Calipers, of which the following is a specification.

This invention has reference to an improvement in micrometer-calipers and more particularly to an improvement in the micrometer-caliper patented to me April 25, 1911, No. 990,665.

The object of my invention is to improve the construction of the said micrometer-caliper, whereby the indicating disks are pivotally secured in their operative positions independent of the thimble and the barrel, the openings in the thimble through which the numerals on the indicating disks are read, greatly enlarged, thereby eliminating shadows on the disks, the operation of assembling materially simplified, and the cost of construction greatly reduced.

My invention consists in the peculiar and novel construction of means for rotatably securing the indicating disks, independent of the thimble or barrel and other details of construction in an easy reading micrometer-caliper, as will be more fully set forth hereinafter and claimed.

Figure 1. is a face view of my improved micrometer-caliper showing the same reading three hundred and twenty-five one thousandths of an inch. Fig. 2. is an enlarged transverse sectional view taken on line 2. 2. of Fig. 1. Fig. 3. is an enlarged longitudinal detail sectional view taken on line 3. 3. of Fig. 1. Fig. 4. is an enlarged end view of the disk holding member. Fig. 5. is an enlarged side view of the disk holding member. Fig. 6. is an enlarged face view of one of the indicating disks, and Fig. 7. is an enlarged side view of the disk operating member, looking from the opposite side and showing a disk in its turning position.

In the drawings, 10. indicates the U shape frame of the caliper having an outwardly extending internally screw-threaded barrel 11. which has an outer longitudinal slot 12, and is graduated on its surface by transverse lines into tenths of an inch, with an indicating numeral for each line, as shown in Fig. 1. A ring 13 surrounds the barrel 11. on which it has a sliding fit and

is constructed to have a flat edge 14, and outwardly projecting tooth 15, with indentures 16, 16, at each side of the tooth and an outwardly extending spline 17. which has a sliding fit in the slot 12 in the barrel 11. A thimble 18. forms a part of or is secured to an externally screw-threaded spindle 19. which extends through and is in screw-threaded engagement with the barrel 11, as shown in Fig. 3. The thimble 18 surrounds the barrel 11 and is constructed in two parts, a part 20. being on the spindle 19. and screwing into a forward part 21. which has a beveled end 22. graduated by long and short lines into twenty-five equal parts, each graduation equaling one one-thousandth of an inch, a series of five flattened faces 23. 23. on the inner circumference of the part 21, an opening 24 extending from each flattened face 23 outward, and a screw 25 at the intersection of the parts 20 and 21. to prevent separation of the same.

A disk holding member 26. constructed to have a sliding fit on the barrel 11. a series of five flattened outer faces 27. 27. corresponding to and fitting the faces 23. 23., in the thimble, each of said faces 27. 27. having a circular depression 28. a central stud 29. in each depression forming a pivot for an indicating disk, and an adjusting screw 34. screw-threaded into the end of the disk holding member, the head of the screw abutting against an internal annular shoulder 35 in the thimble member 21., as shown in Fig. 3. A series of five indicating disks 30. 30. are each constructed to have four equally disposed V shape notches 31. 31. in their periphery, the edges of each notch extending outward into rounded projections 32. 32. and a central pivot hole 33. for a stud 29., and each disk is rotatably secured in the depression 28. 28. on the studs 29. 29. of the member 26, one for each depression, at right angles to the axis of the thimble, as shown in Figs. 2 and 3. The indicating disks 30. 30., each have four numerals on their outer faces between the notches and are positioned in the thimble from left to right, Number 1. disk is numbered 0. 25. 50. 75. as shown in Fig. 6. number 2. disk, 5. 30. 55. 80. as shown in Fig. 7. Number 3. disk, 10. 35. 60. 85., number 4. disk 15. 40. 65. 90. and number 5. disk, 20. 45. 70. 95., each number indicating thousandths of an inch by fifths. Number 3. 4. and 5. disks are not shown.

When assembled, the disk holding mem-

ber 26. is held between the barrel 11. and thimble 18. in the part 21. with the indicating disks under the openings 24. 24., the ring 13. is held between the disk holding member 26. and the inner end of the thimble member 20., the ring 13. has a longitudinal movement with the thimble 18. but is held from rotation on the barrel 11. by the spline 17. in the slot 12. in the barrel 11. as shown in Figs. 2. and 3.

In the operation of my improved micrometer-caliper the indicating disks 30. 30. revolve with the disk holding member 26. and the thimble 18. around the axis of the spindle, but are prevented from revolving on their own axis or studs 29. 29., by the rounded projections 32. 32. on the periphery of the disks engaging with the flat edge 14., of the ring 13. until the tooth 15. on the ring engages with a notch 31. in a disk and revolves the disk one quarter of a revolution. Starting with the reading of zero, the indicating disks are positioned consecutively from left to right on the disk holding member 26. with the 0. showing through an opening 24. which is on a line with the numerals on the barrel 11., the reading always being taken through an opening in this position. One fifth of a revolution of the thimble 18. to the left brings the tooth 15. on the ring 13. into a notch 31. in the indicating disk No. 2., as shown in Fig. 7., and rotates the disk one quarter of a revolution in the direction of the arrow in Fig. 6. and brings the numeral 5. on the disk under an opening 24. The reading would now be five one-thousandths of an inch. The next fifth turn would revolve disk No. 3., each fifth of a revolution of the thimble operating a disk and bringing up the correct number on a line with the numerals on the barrel. After the thimble 18. has been revolved to the left thirteen complete turns, the reading would be three hundred and twenty-five one thousandths of an inch, as shown in Fig. 1. The operation is the same whether the thimble is turned to the left or right, the numerals on the disks always showing the correct reading in either direction.

By the peculiar and novel construction of the disk holding member 26. the old pivot studs for the disks which heretofore extended through the thimble and limited the size of the openings 24. 24., are eliminated, and wear in the disk operating mechanism is compensated for, by adjusting the screw 34. to move the disk holding member and disks toward the ring 13.

Having thus described my invention I

claim as new and desire to secure by Letters Patent:—

1. A micrometer-caliper comprising a barrel, a thimble rotatably surrounding the barrel, a disk holding member intermediate the barrel and the thimble, a series of indicating disks, means on the disk holding member for rotatably holding the disks in their operative positions and means for revolving the indicating disks, whereby the disks are rotated on their axis upon revolution of the thimble.

2. In a micrometer-caliper having a barrel and a thimble, a disk holding member having a sliding fit on the barrel and a series of flat sides, each side having a circular depression and a central stud for rotatably supporting an indicating disk.

3. In a micrometer-caliper having a barrel and a thimble, a disk holding member intermediate the barrel and the thimble, said disk holding member having a series of flat sides, each side having a circular depression and a central stud for rotatably supporting an indicating disk, and means for longitudinally adjusting the disk holding member, relatively to the thimble.

4. In a micrometer-caliper having a barrel, a thimble and a series of indicating disks, a disk holding member having a sliding fit on the barrel and a series of flat sides, each side having a circular depression, and a central stud in the depression for rotatably supporting an indicating disk, and a screw for adjusting the position of the disk holding member relative to the thimble.

5. A micrometer-caliper comprising a barrel, a two part thimble surrounding the barrel, one of the thimble parts having a series of comparatively large openings, means for securing the two parts of the thimble against separation, a series of indicating disks, a disk holding member having a sliding fit on the barrel, and a series of flat sides, each side having a circular depression and a central stud in the depression for rotatably supporting an indicating disk under an opening in the thimble, a screw for adjusting the position of the disk holding member relative to the thimble, and means for intermittently revolving the indicating disks as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

FERNANDO OSCAR JAQUES, SR.

Witnesses:

JOHN H. McNULTY,
CHAS. H. LUTHER.