

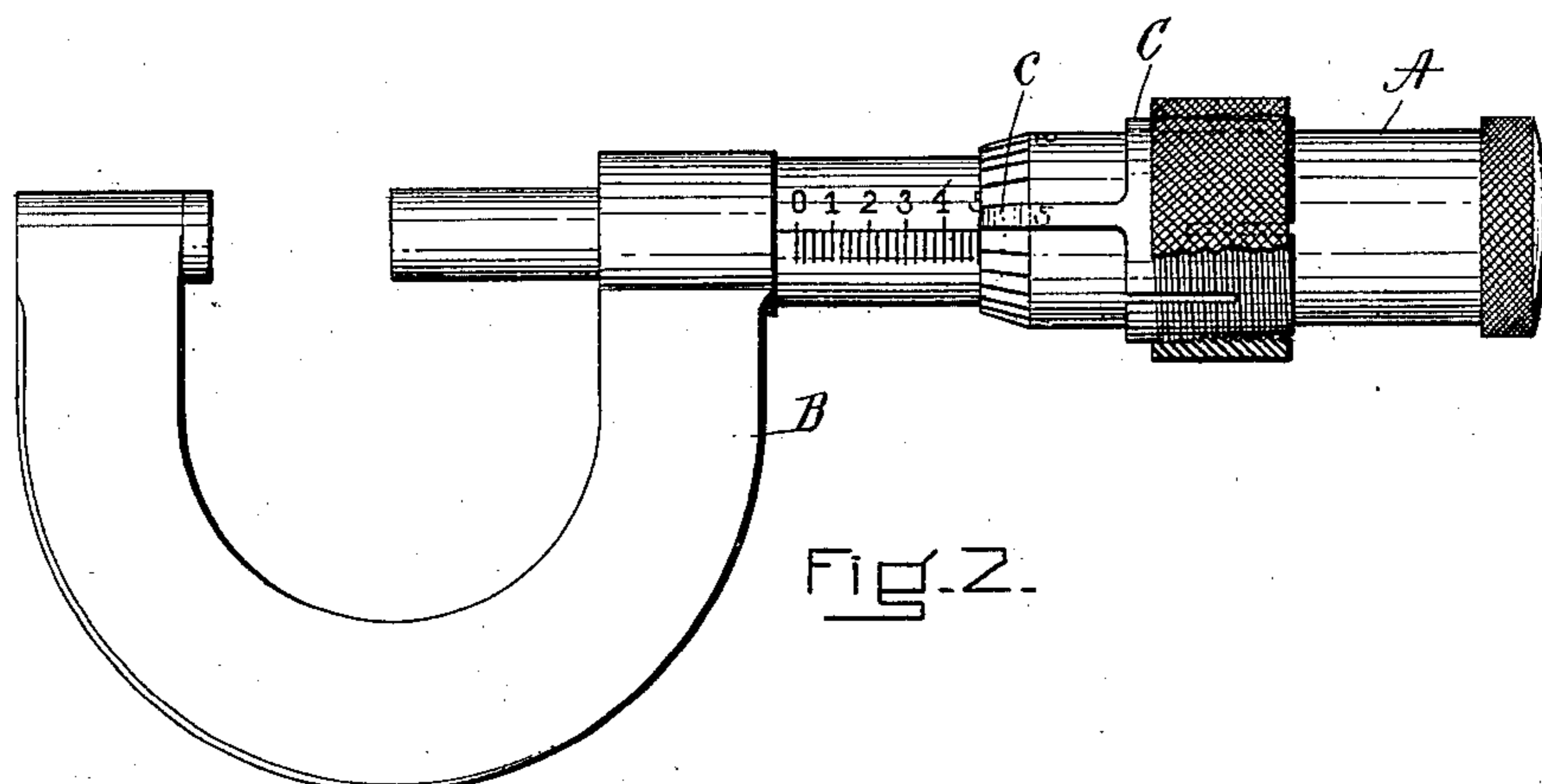
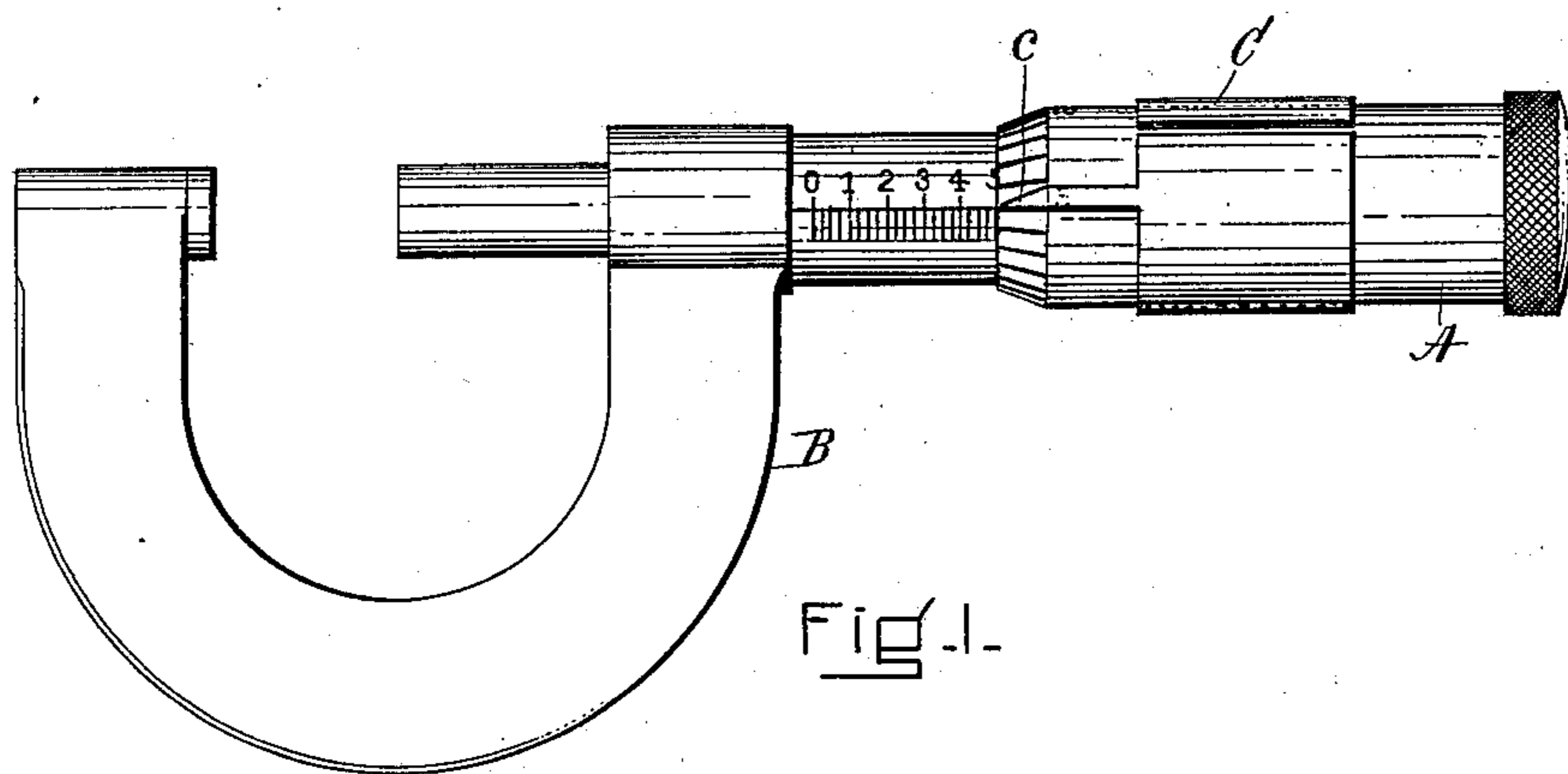
No. 754,106.

PATENTED MAR. 8, 1904.

W. D. TURNER.  
MICROMETER CALIPER ATTACHMENT.

APPLICATION FILED JUNE 9, 1902.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM D. TURNER, OF PROVIDENCE, RHODE ISLAND.

## MICROMETER-CALIPER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 754,106, dated March 8, 1904.

Application filed June 9, 1902. Serial No. 110,833. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM D. TURNER, a citizen of the United States, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Micrometer-Caliper Attachments, of which the following is a specification.

My invention relates to "micrometer-calipers," so called, and particularly to that class of those instruments in which the reading is done by means of a graduated thimble or sleeve adapted to be rotated around the graduated frame; and its object is to facilitate the reading of the instrument.

According to my improvement I form a band or ring adapted to be mounted upon the graduated sleeve or thimble, this band or ring being provided with an index or indicator which may be sufficiently narrow or pointed to mark any given graduation upon the sleeve to the exclusion of the rest, or it may be made of a width of a given number of thousandths or other fractions of an inch for a purpose that will be hereinafter set forth. This band or ring is made revoluble around the thimble or sleeve of the caliper, so as to be thereby set to cover a desired point on its graduation. It is also, preferably, provided with means for locking it in place when so set, so as to prevent accidental displacement.

In the accompanying drawings I have shown a micrometer-caliper of ordinary construction, having its sleeve or thimble A and its frame B.

C represents a band or ring surrounding the graduated sleeve of the caliper and provided with an index *c*, which may by rotating the ring be brought to coincide with any one of the graduation-lines engraved on said sleeve. When made in this form, the ring carrying the index is preferably split along one side and formed with such an internal diameter as to clasp the sleeve of the caliper with a pressure due to the spring of the split ring.

With the form of the invention shown in Fig. 2 the split ring referred to above may have its external diameter tapered, threaded, and provided with a nut, by turning which

the sleeve may be compressed upon the frame of the caliper and accidental displacement in this way rendered less liable. The index *c* is also represented as having a definite width as distinguished from the pointed form shown in Fig. 1.

The purpose of the index on the split ring is to indicate to the workman using the caliper the exact line on the graduated sleeve which must register with the zero-line on the frame when the caliper is set for any given size.

This invention will be found of value when a workman is sizing a piece or a number of pieces, either by filing in a lathe or in a grinding-machine by successive passages of the wheel over the work, the caliper being applied to the work from time to time to determine when the same is of the required size. Suppose, for example, it is required that a piece shall be reduced by grinding to the exact diameter of five hundred and five thousandths of one inch, (.505"). The index would in this case be adjusted to register with the graduated line on the sleeve marked "5" and the work reduced by successive applications of the grinding-wheel until when the calipers closed upon the work the index is found to register or be in line with the zero-line on the frame of the caliper.

When duplicate parts are being manufactured, it is customary to allow a certain limited amount of variation to exist between the several pieces when finished. To return to the example given above, suppose a number of pieces are to be made approximately five hundred and five thousandths of one inch (.505") in diameter; but one-half thousandth variation above or below the exact size is allowable. In this case the index may have a width exactly equal to the space occupied by one of the divisions of the graduated sleeve, it being understood that this division corresponds to a difference of one-thousandth in the relative position of the measuring-screw of the caliper. Now when the ring is adjusted so that the index is over and central with the proper line on the sleeve it is only necessary that when the caliper is applied to the work the zero-line on the frame shall be in line with

any part of the width of the index to insure that the work is within the given limits of variation.

5 A caliper provided with an index of definite width will be found of especial value when inspecting finished parts which must be within a given variation of size. It is not necessary that the exact reading of the caliper should be noted. It is only necessary to note whether  
10 the zero-line on frame comes within the limits of the width of the index.

I claim—

1. The combination with the graduated sleeve of a micrometer-caliper, of a ring or  
15 band revolubly mounted upon said sleeve and provided with an index or indicator adapted to distinguish any selected graduation on said sleeve from the other graduations thereon.

2. The combination with the graduated  
20 sleeve of a micrometer-caliper, of an index or indicator adjustably mounted on said sleeve and adapted to distinguish any selected graduation thereon from the other graduations.

3. The combination with the graduated

sleeve of a micrometer-caliper, of a ring or  
25 band revolubly mounted upon said sleeve and provided with an index or indicator adapted to distinguish any selected graduation on said sleeve from the other graduations thereon, and means for locking said ring or band against  
30 movement on said sleeve.

4. The combination with the graduated sleeve of a micrometer-caliper, of an index or indicator adjustably mounted on said sleeve and adapted to extend longitudinally of the  
5 sleeve and to distinguish any selected graduation thereon from the other graduations, said index or indicator having a definite width corresponding to the limit of permissible variation in the thickness between duplicate parts  
40 measured by the caliper.

In testimony whereof I have hereunto subscribed my name this 24th day of May, 1902.

WILLIAM D. TURNER.

Witnesses:

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ELLEN B. TOMLINSON.