

W. WITTNER.
TELESCOPING INSIDE GAUGE AND INDICATOR.
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Patented Oct. 10, 1922.

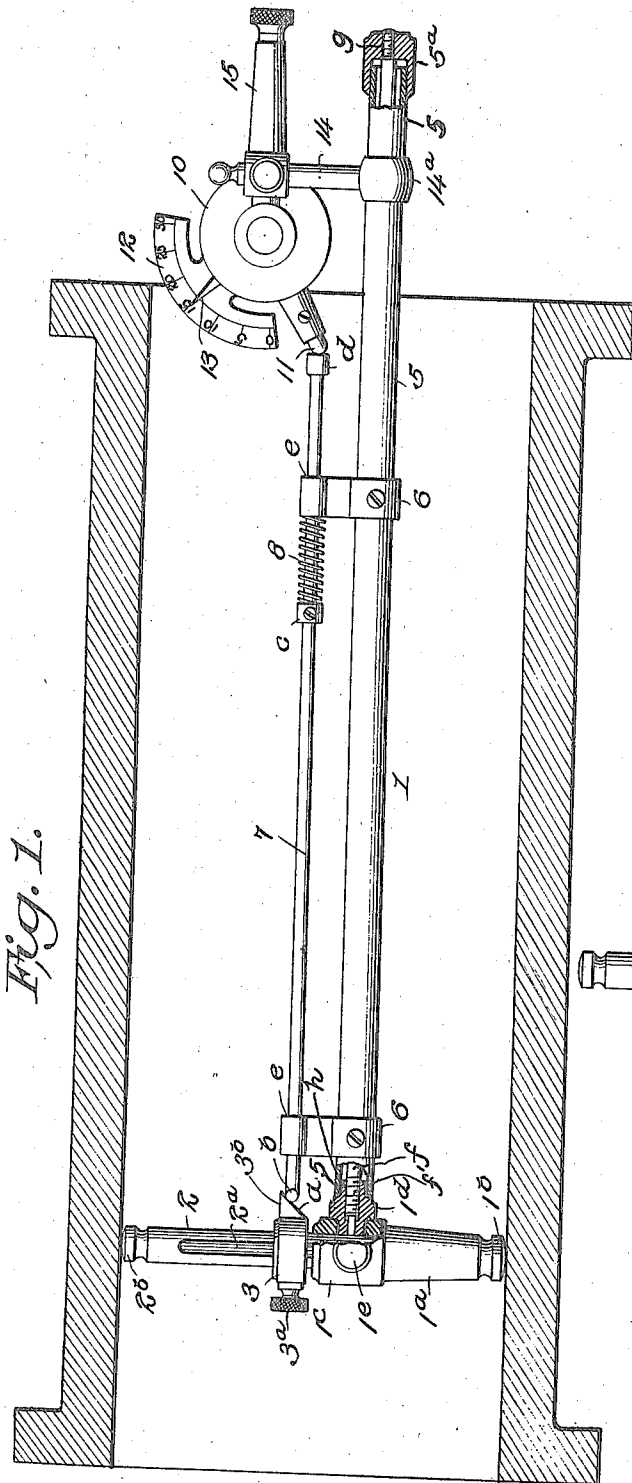


Fig. 3.

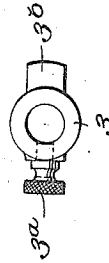
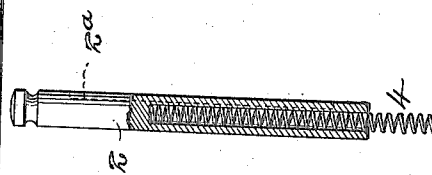


Fig. 2.



Inventor
William Wittner
By E. B. Clark
Attorney

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UNITED STATES PATENT OFFICE.

WILLIAM WITTNER, OF JERSEY CITY, NEW JERSEY.

TELESCOPING INSIDE GAUGE AND INDICATOR.

Application filed December 22, 1921. Serial No. 524,249.

To all whom it may concern:

Be it known that I, WILLIAM WITTNER, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Telescoping Inside Gauges and Indicators, of which the following is a specification.

This invention relates to a telescoping gauge, having a test indicator attachment, adapted for taking inside measurements.

The object of my invention is to provide an instrument for conveniently taking exact inside measurements of cylinders, holes, slots, key ways and other openings, or between walls of structures, and for showing inequalities in opposed surfaces.

A special object is to immediately show variations in dimensions at the exterior of a deep or long opening into which the measuring part of the instrument is inserted.

The matter constituting my invention will be defined in the claims.

I will now describe the details of construction of my improved gauge by reference to the accompanying drawings, in which:

Figure 1 represents an elevation of the instrument, with parts in section, in position in a cylinder to be gaged.

Fig. 2 represents a sectional elevation of an extension plunger.

Fig. 3 represents a top plan view of a detail.

The telescoping inside gauge 1 is constructed with a tubular case or socket 1^a, having a lower curved head or knob 1^b and a collar or enlarged portion 1^c at the top provided with an internally screw threaded socket 1^d, which is also externally screw threaded at *h* for receiving the handle 5. The telescoping extension plunger 2 is made hollow and of a diameter to slide freely in the holder socket 1^a, and of a length to project the desired distance beyond the upper end of part 1^a, as shown in Fig. 1. The plunger 2 has a longitudinal groove or slot 2^a to form a guide way for a screw 1^e; and a rounded contact knob 2^b. Within the hollow of the plunger 2 is placed a helical spring adapted to extend beyond the open end when not compressed, as shown in Fig. 2. The plunger and spring are seated in the case 1^a. Upon the plunger is secured a collar 3, having an adjusting thumb screw 3^a and a beveled contact lug 3^b, having a beveled under face *a*. The elongated hollow handle 5 has

a screw threaded inner end *h* adapted to engage the socket 1^d and at its lower end a knurled head 5^a. This knurled head has a longitudinal threaded opening *g* and is hollowed at its inner end to fit loosely and turn upon a reduced portion of the handle 5. Within the handle 5 is mounted a rod *f* engaging at its outer end with the threaded opening *g*, and having a screw threaded inner end *f'* which passes through the threaded opening of socket 1^d, so as to bear at its inner end upon the plunger 2, as shown in Fig. 1, and hold said plunger in a fixed position, or serve for releasing the same after the instrument has been inserted in a hole or bore of a cylinder. Mounted upon the handle 5 are two guide way collars 6, secured by screws and having upward extensions provided with openings *e*. The push rod 7 is provided at its inner end with a contact knob *b* and at its outer end with a knob *d*, and near the middle with a collar *c* as a bearing for a coiled spring 8, which bears at its opposite end on the collar 6. The spring acts to lightly push the rod against the beveled face of lug 3^b. The knob *d* of rod 7 is in position to make contact with a contact pin 11 in an indicator.

In connection with this gauge I preferably use my test indicator 10, which may be mounted in any convenient position on the handle 5, and preferably by means of a post 14 secured by a collar 14^a on the handle. To the post is secured a holder bar 15 on the indicator. The indicator has a contact pin and knob 11 working in a tubular stem and connecting with the interior lever mechanism for operating the pointer 13, which is adapted to traverse the graduated scale on the arc 12. The test indicator 10 is the subject of a separate application for patent, and is adapted to show variations in dimensions of a thousandth of an inch or less.

The operation or manipulation of the device will be readily understood by those skilled in metal working arts. It may be used for taking the exact size of shrink, close or loose fits varying in thousandths of an inch or less; these variations can be and measured. To measure a hole or interior of a cylinder the instrument may be used as follows: Compress the telescoping plunger and lock it by a slight turn of the head 5^a, insert the case and plunger inside the hole or cylinder, as illustrated in Fig. 1, then set the indicator pointer at zero, release

the lock or rod *f* and then slide in from front to back of the opening, then swing the handle up and down and the indicator will show any variations in dimensions and whether the hole or bore is straight, also the size of the hole or bore. The spring 4 will press the extension plunger against the surface of the hole and permit depression, carrying with it the collar and beveled contact lug 3^b, which, bearing on the push rod 7, will transmit movement to the contact pin 11 and thus to the pointer arm 13, which will show the variations on the scale in thousandths of an inch.

15 The gauge may be made from one and a half inches to six inches or more and with a handle up to nine inches long; it can be used either for short or long holes or key ways.

20 Variations in details of construction may be made without departing from the spirit and scope of my invention.

25 Having described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination with a casing socket and a spring-pressed extension plunger therein, of an elongated handle therefor, a push rod, means on said plunger for pushing the rod lengthwise, and a test indicator positioned to make contact with the outer end

of said rod for showing variations in dimensions of inside surfaces.

2. The combination with a casing socket, an extension plunger and spring therein, of a collar having a beveled lug on said plunger, an elongated handle engaging with said casing socket, a push rod mounted on the handle and adapted to make contact with said beveled lug, and a test indicator positioned to make contact with the outer end of said rod for taking inside measurements.

3. The combination with a casing socket and an extension plunger and spring therein, of an elongated handle engaging with the socket member, collars fixed on the handle, and provided with openings, a spring-pressed push rod in the opening of said collars and having contact ends, a beveled lug on said plunger and adapted to bear on the inner end of said rod, and a test indicator mounted on the outer end of said handle and having a contact pin in position to make contact with the outer end of said rod for taking inside measurements in a hole or a key way.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM WITTNER.

Witnesses:

CHAS. W. BRUGER,
RICHARD GABRIELSKY.