

No. 763,076.

PATENTED JUNE 21, 1904.

F. SPALDING.  
DEPTH GAGE.

APPLICATION FILED APR. 24, 1902.

NO MODEL.

Fig. 2.

Fig. 1.

Fig. 3.

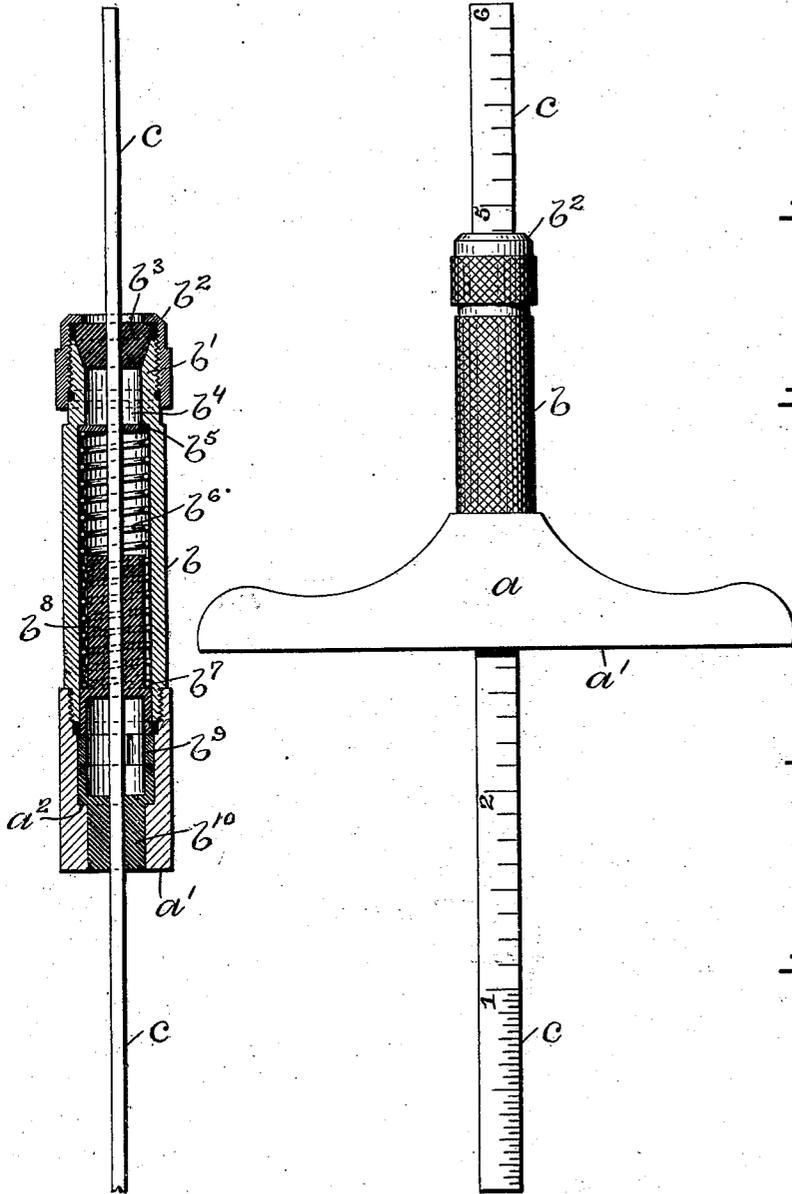


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## DEPTH-GAGE.

SPECIFICATION forming part of Letters Patent No. 763,076, dated June 21, 1904.

Application filed April 24, 1902. Serial No. 104,487. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK SPALDING, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Depth-Gages, of which the following is a specification.

This invention has reference to an instrument known as a "depth-gage," whereby the depths of holes and grooves may be accurately measured.

Depth-gages have heretofore been provided with rods and graduated bars for measuring the depths of holes, grooves, and recesses. I have designed a depth-gage in which the measuring rod or bar is supported by a spring-pressed sleeve and is made to bear against the surface of the hole or groove, so as to insure a firm bearing and secure a more accurate measurement. In the preferred form the graduated measuring-bar is rotatably supported in the sleeve and may be adjusted to secure the more ready reading of the measurement.

Figure 1 is a side view of my improved depth-gage. Fig. 2 is a transverse sectional view on an enlarged scale. Fig. 3 is a plan view and a side view of the disk by which the measuring-bar is secured when the measure has been taken. Fig. 4 is a perspective view of the washer through which the measuring-bar slides. Fig. 5 is a plan view and a side view of the sliding sleeve. Fig. 6 is a plan and side view of a split ring. Fig. 7 is a side and plan view of the socket-piece controlling the end of the measuring-rod.

In the drawings, *a* indicates the base-plate. From the lower straight edge *a'* the depths of holes or grooves are measured. From the back of the base-plate and at right angles to the straight edge *a'* extends the tubular post *b*, the upper screw-threaded end *b'* of which is provided with the internally-screw-threaded cap *b<sup>2</sup>*, by which the conical clamping-block *b<sup>3</sup>* may be drawn into the conical end of the post *b* to firmly clamp the measuring-rod *c*. The neck *b<sup>4</sup>* is contracted to form an annular shoulder against which the washer *b<sup>5</sup>* is held by the spiral spring *b<sup>6</sup>*, the opposite end of which bears on the shoulder *b<sup>7</sup>* of the sleeve

*b<sup>8</sup>*, through which the measuring-rod *c* extends and with which the same is in close frictional contact. The lower end of the sleeve *b<sup>8</sup>* is shown cupped and rests on the split ring *b<sup>9</sup>*, by which the plug *b<sup>10</sup>*, resting on the annular shoulder *a<sup>2</sup>*, is held in place.

In the preferred form, as shown in the drawings, I use a flat graduated measuring-rod *c*. This rod slides with an easy sliding fit in the conical block *b<sup>3</sup>*, the washer *b<sup>5</sup>*, and the plug *b<sup>10</sup>*, but is in frictional contact with the sleeve *b<sup>8</sup>*, which forms a rotatable spring-pressed support. When now the depth-gage is to be used, the measuring-rod is preferably drawn out somewhat farther than the depth of the groove or hole to be measured would require, so that the end of the measuring-rod *c*, upon coming in contact with the bottom of the hole, will have a tendency to lift the sleeve *b<sup>8</sup>* upward against the pressure of the spiral spring *b<sup>6</sup>*. The frictional resistance of the measuring-rod *c* on the sleeve *b<sup>8</sup>* acts to hold the end of the measuring-rod firmly in contact with the end of the hole or the surface of the groove to be measured. The measuring-rod may now be securely clamped by the conical block *b<sup>3</sup>*, preferably while the action of the coiled spring on the sleeve *b<sup>8</sup>* is still exerted and the end of the measuring-rod is pressed against the depressed surface.

The measuring-rod *c* may be rotated and placed with its flat side at any desired angle to facilitate the reading of the measurement or to insure the firm contact with the surface to be measured.

In practice I find that by the use of the spring-pressed sleeve the taking of accurate measurements is greatly facilitated.

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

1. In a depth-gage, the combination with a flat measuring-rod and a rotatable support for the same, of means for securing the measuring-rod in the adjusted position, as described.

2. In a depth-gage, the combination with the base and a tubular post, of the flat measuring-rod, the rotatable support *b<sup>8</sup>*, the spring *b<sup>6</sup>*, and means for securing the rod, as described.

3. In a depth-gage, the combination with the

base and a tubular post, of the measuring-rod, the rotatable spring-actuated support  $b^8$ , for the measuring-rod, and means for clamping the measuring-rod, as described.

5 4. In a depth-gage, the combination with the base and a tubular post, of the flat measuring-rod, the rotatable clamp  $b^3$ , the cap  $b^2$ , the rotatable support  $b^8$ , the spiral spring bearing on the support, and the rotatable plug  $b^{10}$ , substantially as described.

10 5. In a depth-gage, the combination with the base and the tubular post, of a sleeve forming a rotatable support for the measuring-rod, a measuring-rod extending longitudinally  
15 through the sleeve and in frictional contact therewith, a coiled spring acting on the sleeve,

and means for clamping the measuring-rod in the adjusted position, as described.

6. A depth-gage having a flat measuring-rod rotatably supported on a longitudinally- yielding spring-actuated support adapted to rotate with the measuring-rod, and means for securing the measuring-rod in the adjusted position, as described. 20

In testimony whereof I have signed my name 25 to this specification in the presence of two subscribing witnesses.

FRANK SPALDING.

Witnesses:

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