

No. 607,898.

Patented July 26, 1898.

V. C. TODD.  
MICROMETER GAGE.

(Application filed Oct. 27, 1897.)

(No Model.)

Fig. 1.

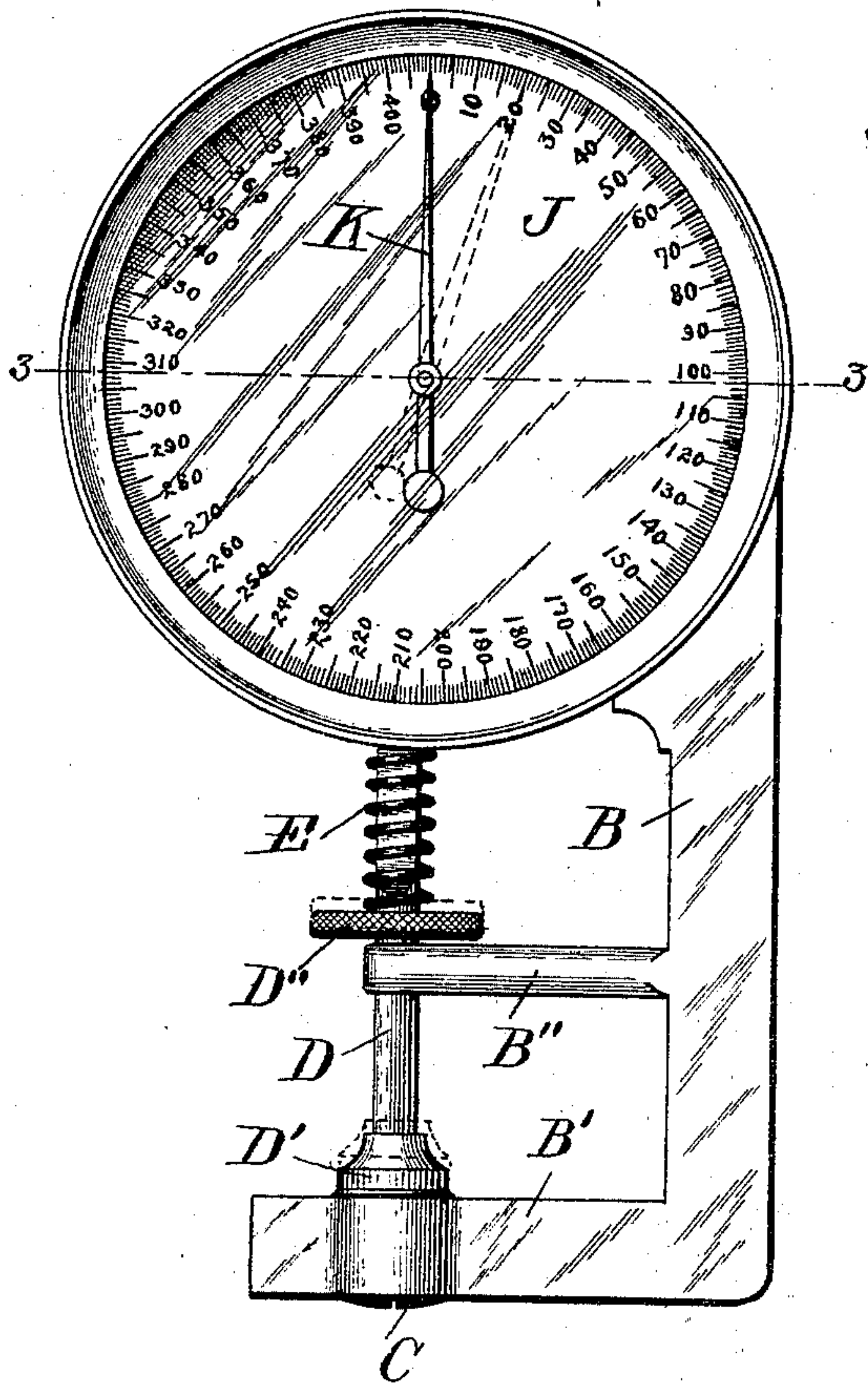


Fig. 2.

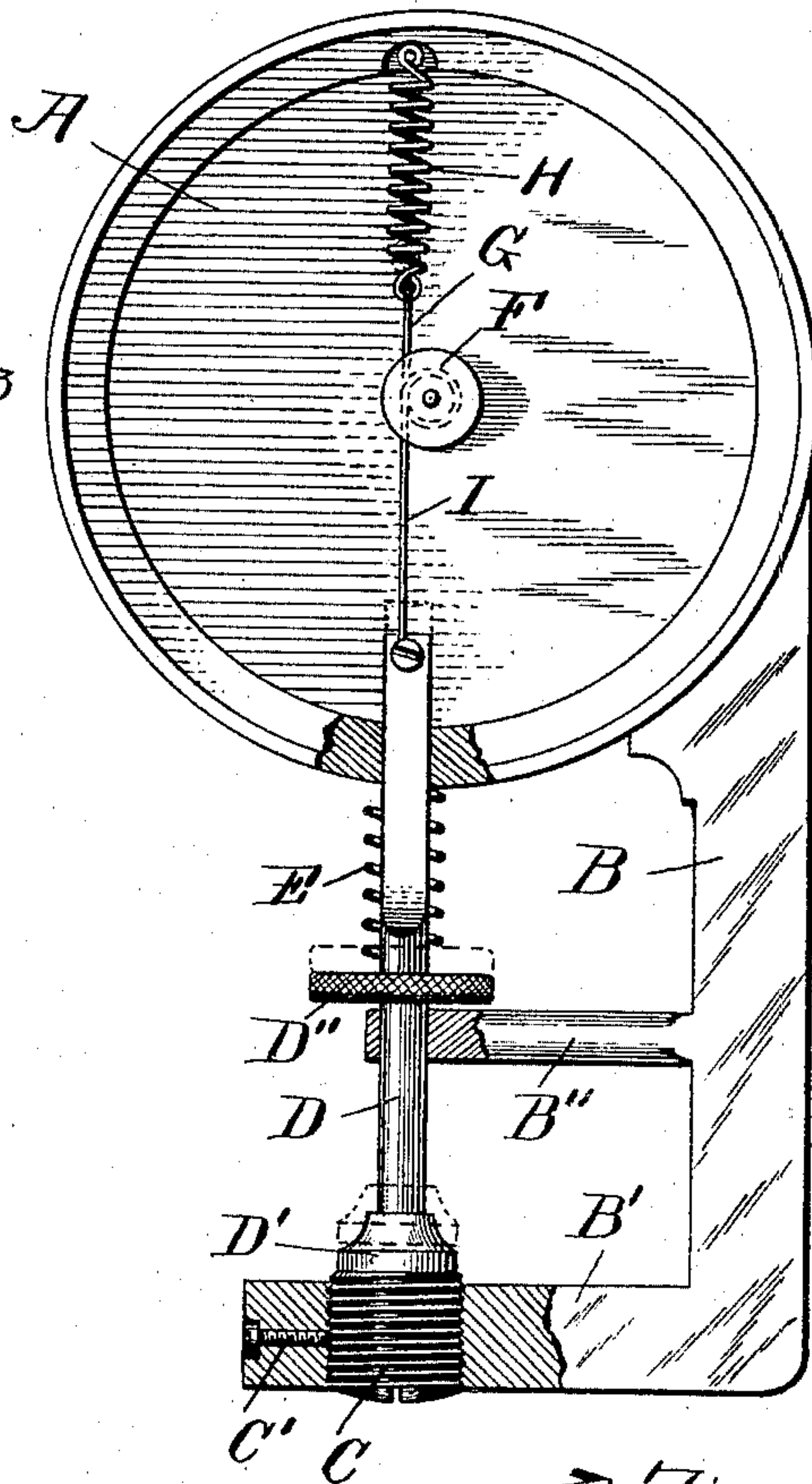
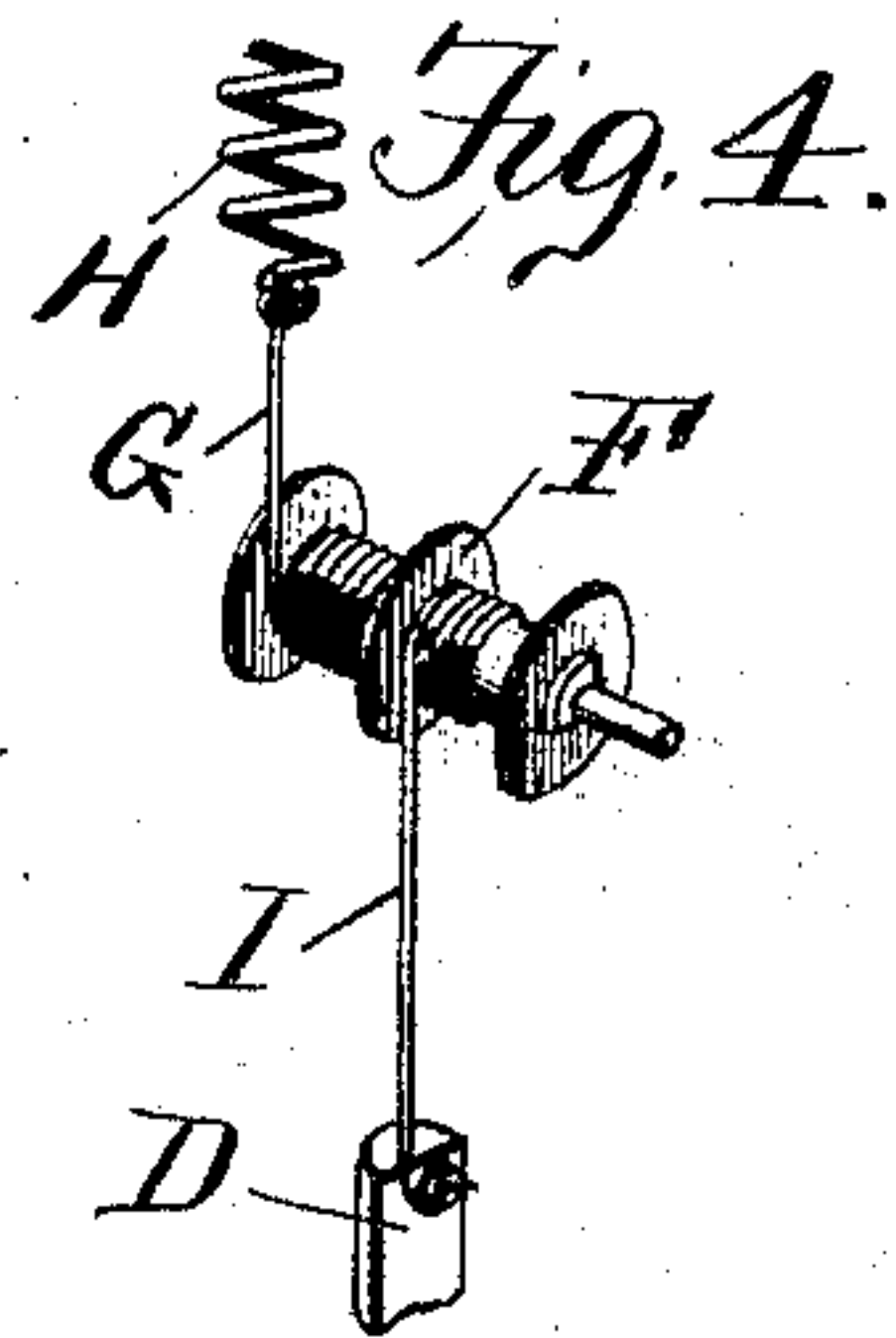
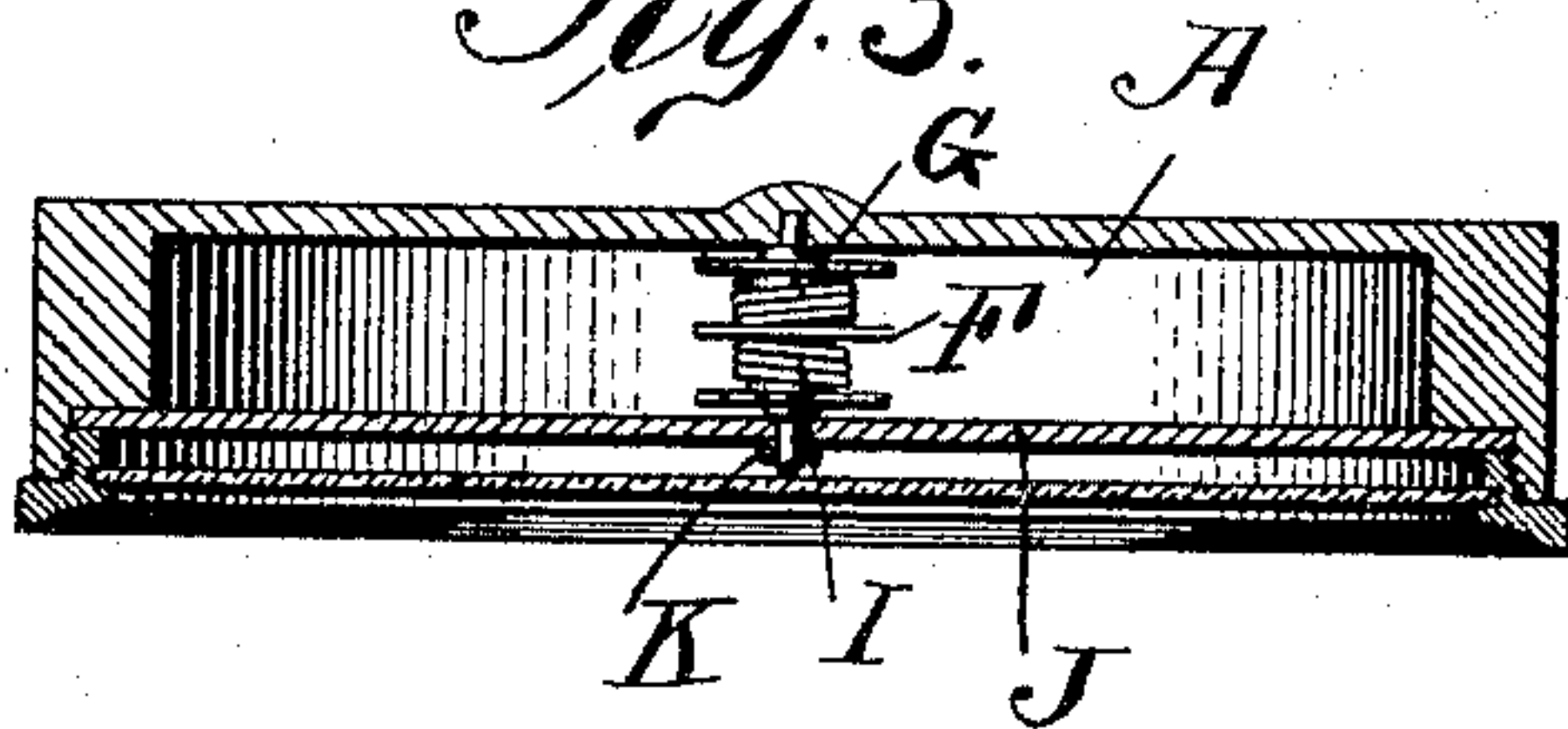


Fig. 3.



Witnesses:  
G. A. Pennington  
Ralph Lahick

Inventor:  
Vernon C. Todd,  
by *Dakney F. Cornwall*  
his Attys.



# UNITED STATES PATENT OFFICE.

VERNON C. TODD, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
EDWIN H. EHRLER, OF SAME PLACE.

## MICROMETER-GAGE.

SPECIFICATION forming part of Letters Patent No. 607,898, dated July 26, 1898.

Application filed October 27, 1897. Serial No. 656,524. (No model.)

*To all whom it may concern:*

Be it known that I, VERNON C. TODD, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented  
5 a certain new and useful Improvement in Micrometer-Gages, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference  
10 being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of my improved micrometer-gage. Fig. 2 is a view partly in side elevation and partly in section, the dial-plate being removed. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4 is a detail view of the pulley and its cooperating  
15 cords or wires.

This invention relates to a new and useful  
20 improvement in micrometer-gages, the object being to produce a gage by the use of which may be determined the thickness of materials—such, for instance, as sheet metals, paper, &c.—to ascertain whether or not said  
25 materials are being produced of uniform thickness; and another object is to provide a gage of the character described which is positive in action, simple in construction, embodying few working parts, and which may be  
30 cheaply manufactured.

With the foregoing objects in view the invention consists in the provision of a graduated dial or scale with which cooperates an indicator or pointer, which is operated or controlled by a plunger or presser-foot adapted  
35 to engage the material being measured; further, in the provision of an adjustable plug or block with which the presser-foot or plunger cooperates and by the adjustment of which  
40 the indicating mechanism may be properly set to zero when the parts are in normal position.

Other features of invention reside in the construction, arrangement, and combination  
45 of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In the drawings, A indicates a casing mounted upon a standard B, from the lower end of  
50 which projects an offset or foot B'.

Adjustably secured in offset B' is a plug or block C. This plug is preferably screw-threaded into a suitable opening in the offset, being a simple and effective means of obtaining fine  
55 adjustments, and may be locked in position by a set-screw C'; but other obvious adjusting means may be employed, and therefore I do not wish to be limited to the particular construction shown.

D indicates a rod or plunger the upper end  
60 of which projects into the casing A through a suitable opening, in which it is adapted to freely move, while its lower end passes through a guide-opening in an arm B'', projecting from standard B.  
65

On the lower end of plunger D is fixed a  
70 presser-foot D', which normally engages plug C, or, rather, is yieldingly held thereagainst through the medium of a spring E, surrounding plunger D and exerting its tension against  
75 the casing A and a handpiece D'', fixed on plunger D. This handpiece may be of any suitable construction, but preferably a disk with milled edges, as shown, the object being to provide a handle by which the plunger may  
80 be moved against the tension of spring E to raise the presser-foot D' from its cooperating plug C.

Plunger D may be formed with a flattened face, as shown, or may have a slot-and-pin  
85 connection with the opening in casing A, through which it slides to prevent the plunger turning.

F indicates a double pulley, about one section of which is adapted to be secured and  
90 coiled a fine wire or cord G, whose other end is secured to a spring H, the tendency of which is to pull upon the wire or cord G to rotate the pulley to the right by reason of the cord coiled about the pulley being thereby unwound. I indicates a similar wire or cord secured at one end to the rod or plunger D,  
95 while its opposite end is secured to and coiled about the other section of pulley F in such manner that when the rod or plunger D is lowered to its normal position, as shown in full lines, the cord I is drawn, the pulley rotated to the left, winding or coiling wire or cord G upon its section of the pulley, and stretching  
100 the spring H, thereby placing the same under



tension. The action of spring H when the plunger is raised to the position shown in dotted lines, or higher or lower, as the case may be, is to pull upon wire or cord G and rotate  
5 the pulley F to the right.

J indicates a dial-plate upon which is a graduated scale, as shown, with which dial or scale coöperates an indicating-pointer K, mounted upon the outer end of the spindle of  
10 pulley F, which projects through a bearing-aperture in the dial-plate. A suitable glass crystal is secured over the dial, as shown, to exclude dust and other foreign particles, and also to prevent the displacement of the indi-  
15 cating-pointer.

The operation of the device is as follows: The presser-foot D' is raised a sufficient distance to permit of a sheet of metal, paper, or other material being placed therebetween and  
20 the plug C. The presser-foot is then permitted to be forced down upon the material through the medium of its connected plunger or rod D and its coöperating spring E. The pointer K will then indicate upon the dial the  
25 degree of thickness of the material. Thus in using my improved micrometer-gage to ascertain whether or not materials are running of uniform caliber or thickness the indication of the first portion or piece of material meas-  
30 ured is taken, and the gage then is applied to other portions of the same piece or applied to different pieces of material it will readily be seen whether or not the material registers uniformity of thickness or caliber upon the  
35 dial.

This improved gage is especially adapted for use in paper manufactories and warehouses and may be equally as well employed to measure sheet metals. It is also obvious  
40 that the gage may be employed to measure materials in other than sheet form.

In assembling the several parts of the gage the parts are so adjusted that the pointer indicates "0" on the dial; but the wires or cords  
45 G and I may expand or contract slightly and throw the indicator out of true. The pointer may readily be again set to its proper zero po-

sition by adjusting the plug or block C either upward or downward, as the case may be.

I am aware that many minor changes in the 50 construction, arrangement, and combination of the several parts of my gage can be made and substituted for those herein shown and described without in the least departing from the nature and principle of the invention. 55

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

1. In a micrometer-gage, the combination with a fixed member, of a movable member 60 mounted in guides in said fixed member, a spring E for forcing the measuring end of the movable member against the measuring end of the fixed member, a spindle, an indicating device operated by said spindle, a cord or 65 wire I attached to said movable member and wound around said spindle, a cord or wire G likewise wound around said spindle, and a spring H to which the cord or wire G is connected, substantially as described. 70

2. In a micrometer-gage, the combination with an adjustable member, comprising a screw-plug, a set-screw for locking said screw-plug in position, a spring-pressed movable member for coöperating with said screw-plug, 75 an indicator, means for operating said indicator, said means comprising a spring, a double pulley, a cord or wire connecting said spring and one section of said pulley, said cord being coiled about said pulley, and a cord or wire 80 connecting the other section of said pulley with the movable member, said cord or wire being so coiled about the pulley that, when pulled upon, it causes the pulley to rotate in a direction reverse from that caused by a pull 85 upon said other cord; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 21st day of October, 1897.

VERNON C. TODD.

Witnesses:

HUGH K. WAGNER,  
G. A. PENNINGTON.