

No. 703,086.

Patented June 24, 1902.

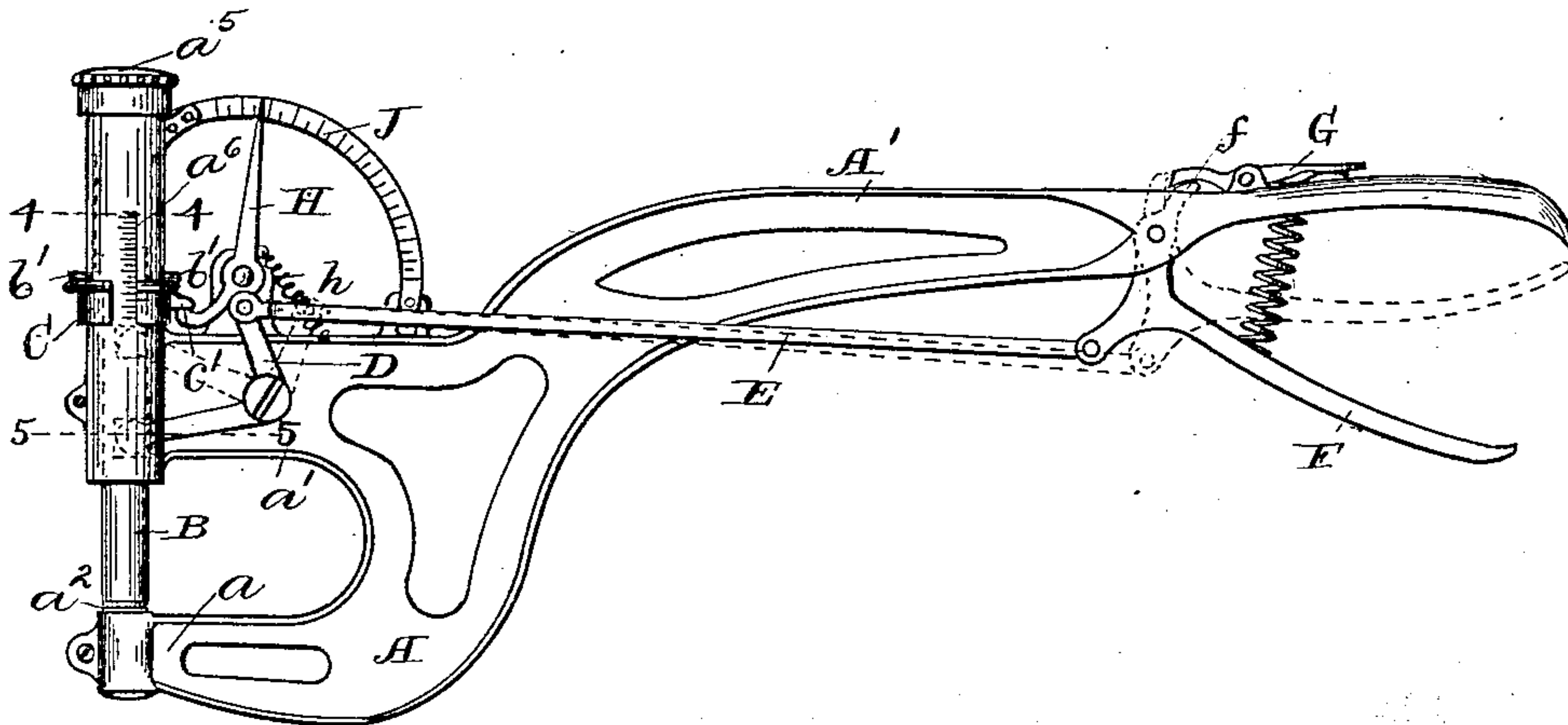
A. RUSBATCH.

GAGE.

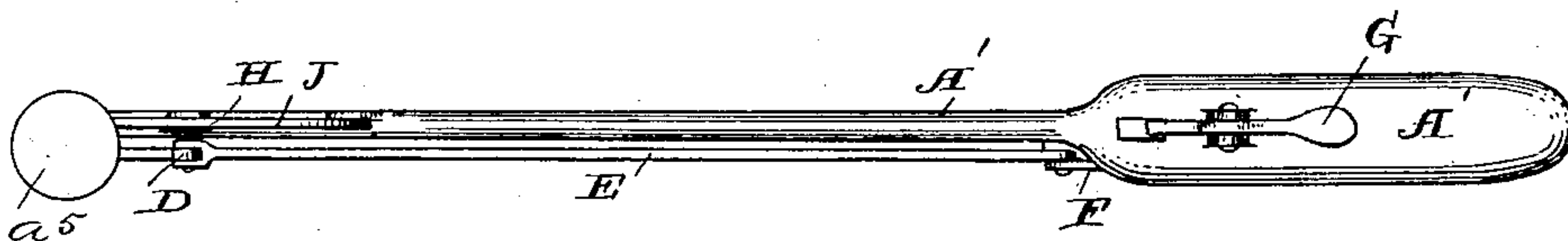
(Application filed Jan. 11, 1901.)

(No Model.)

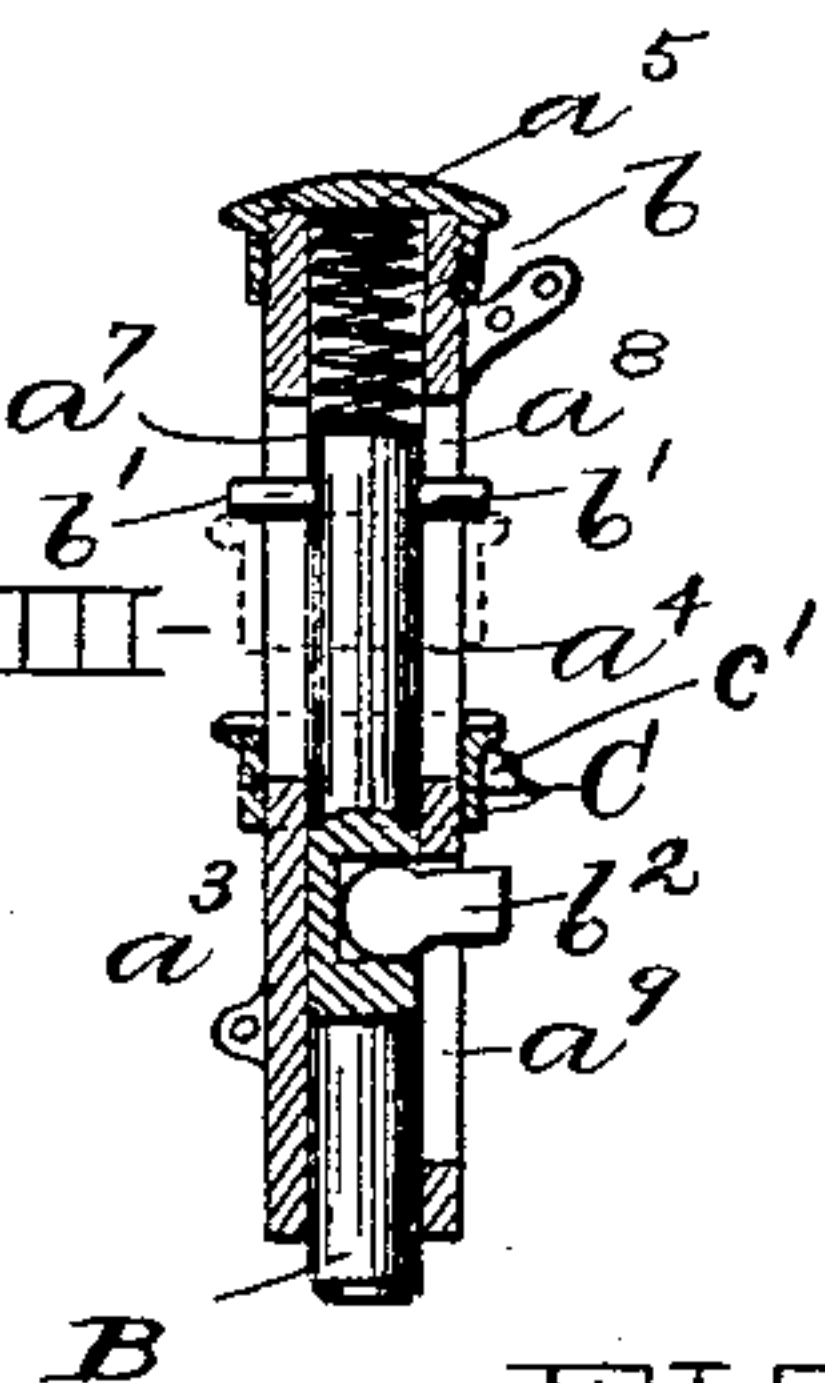
-FIG. I-



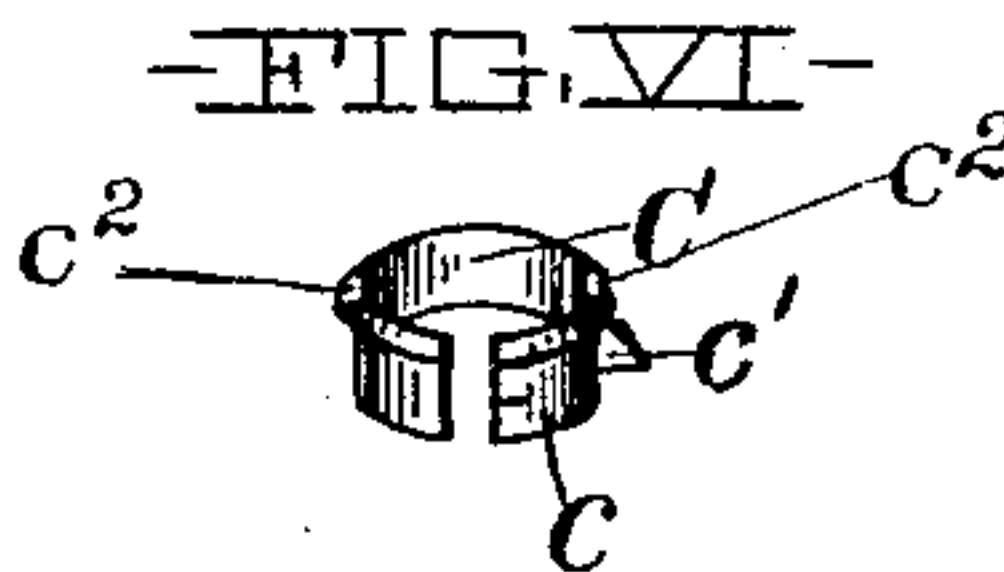
-FIG. II-



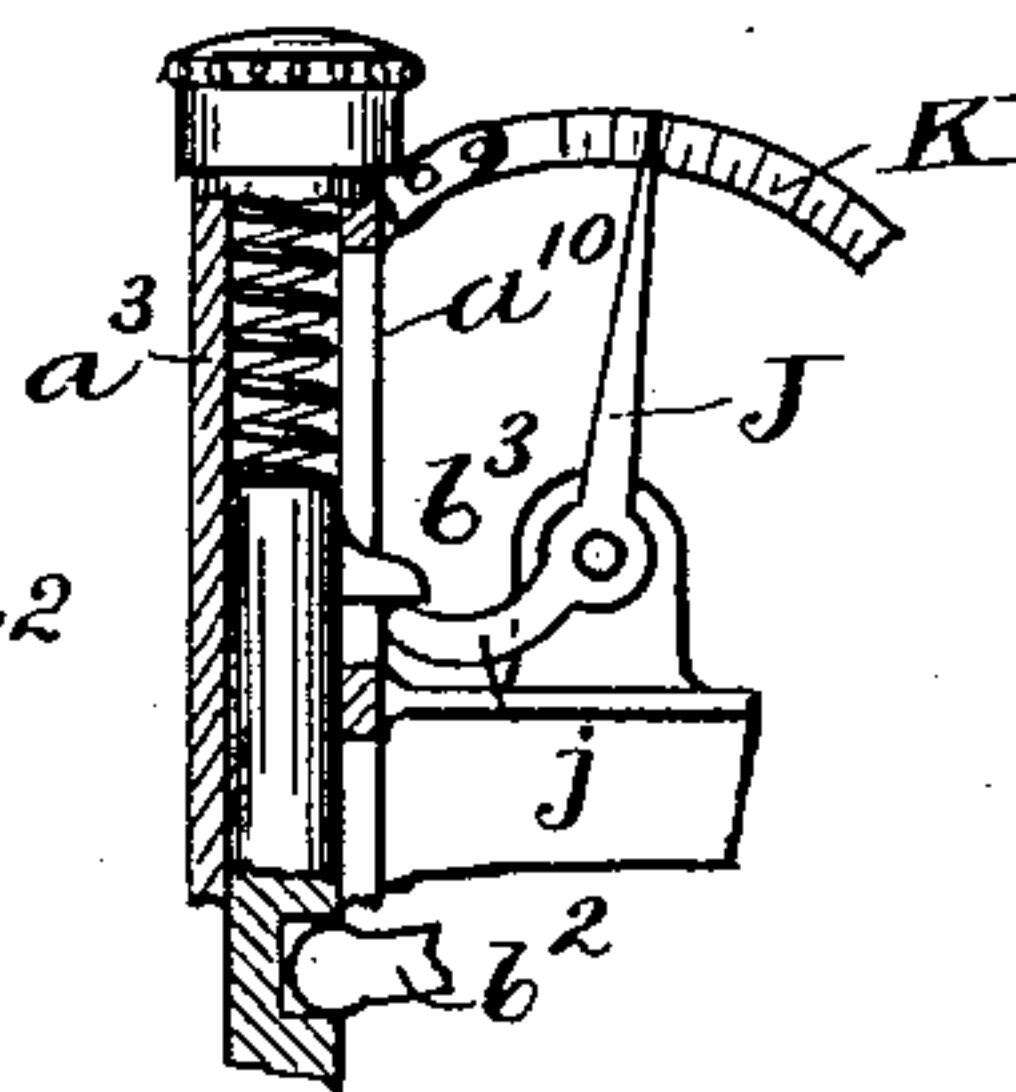
-FIG. III-



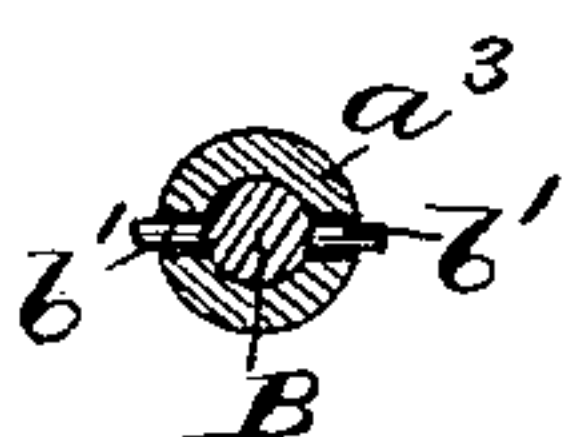
-FIG. VI-



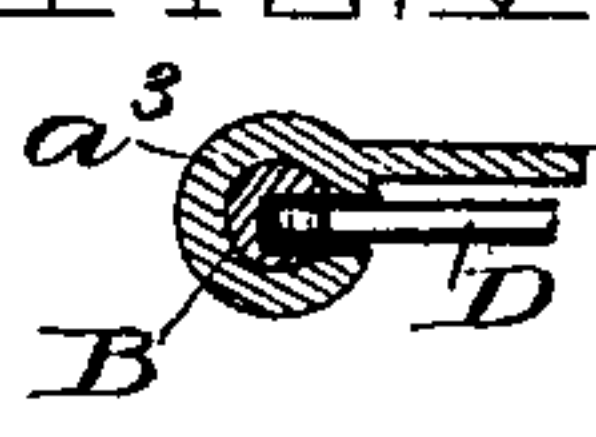
-FIG. VII-



-FIG. IV-



-FIG. V-



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# UNITED STATES PATENT OFFICE.

ALFRED RUSBATCH, OF CLEVELAND, OHIO.

## GAGE.

SPECIFICATION forming part of Letters Patent No. 703,086, dated June 24, 1902.

Application filed January 11, 1901. Serial No. 42,849. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED RUSBATCH, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Gages, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to gages for measuring the thickness of plates or the like, and has for its object the provision of means whereby the gage may be applied to the object to be measured, readily released and withdrawn therefrom, and the measurement read after the gage is withdrawn. Said invention consists of means hereinafter fully described, and specifically set forth in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents a side elevation of a gage embodying my invention. Fig. II represents a top plan view thereof; Fig. III, a vertical section of the upper jaw of the yoke, showing the reciprocable measuring-pin in elevation thereon. Figs. IV and V represent transverse sections of the barrel forming part of the yoke, taken upon the planes indicated by lines 4-4 and 5-5, respectively. Fig. VI represents a detail view of the sliding recording-collar; and Fig. VII represents a vertical partial section of a modified form of my invention, showing portions thereof in elevation therein.

A frame A is provided with two jaws  $a$   $a'$ , in the end of the lower of which is mounted an adjustable threaded plug  $a^2$ , whose upper surface forms one measuring-surface of the gage. The upper jaw is formed with an upwardly-extending barrel  $a^3$ , having an internal longitudinal bore  $a^4$  formed therein, in which is seated a reciprocable measuring-pin B, whose lower face forms the upper measuring-surface of the gage. The upper extremity of such barrel is provided with a

screw-cap  $a^5$ , which confines a helical spring  $b$  between it and the upper extremity of the pin B, whereby it is seen that such spring may be caused to urge the pin toward the opposite jaw  $a$ . Slidably mounted upon the outside of the upper portion of the barrel and frictionally engaging same is a recording spring-collar C, provided with a mark  $c$ , which in conjunction with a scale  $a^6$ , marked upon the barrel-surface over which the collar slides, indicates the position of said collar upon such barrel. Two lateral longitudinal slots  $a^7$  and  $a^8$ , located diametrically opposite one another, are formed in the barrel, through which project, respectively, two setting-pins  $b'$ , secured to the measuring-pin B, as shown in Fig. IV, and located intermediately of the upper end of said measuring-pin and said collar C, as shown in Fig. III. Said collar is provided with two grooves  $c^2$ , located diametrically opposite each other, as shown in Fig. VI. In the lower inner shell portion of said barrel is cut a slot  $a^9$ , Figs. III and V, into which projects one arm of a bell-crank D, the extremity of such arm engaging a recess  $b^2$ , formed in the measuring-pin, as shown in Fig. III. The other arm of said crank is connected with one end of a rod E, whose other end is connected with a spring-grip F, fulcrumed upon a handle A', forming part of the frame A. Said grip is provided with a dog  $f$ , which may be caused to engage a trigger G, also fulcrumed upon such handle. The arrangement of the grip, connected rod, and bell-crank is such that upon pressing the grip the dog assumes a position in which it may become engaged with the trigger G, the measuring-pin B being in its extreme uppermost retracted position, as shown in dotted lines in Fig. I.

The collar C is provided with a rearwardly-projecting lug  $c'$ , which engages on its under surface a downwardly-projecting arm of a pointer or indicating-lever H, pivoted upon the frame, as shown in said Fig. I, and provided with a spring  $h$  for maintaining such engagement. A segmental scale J is secured to the frame, and in conjunction with said pointer forms an auxiliary device for indicating the position of the collar C.

It is seen from the above construction that the sliding recording-collar C may be moved upon the supporting-barrel independently of



the measuring-pin when the measuring-surfaces are distended—that is, when the reciprocable measuring-pin is retracted from the opposite jaw.

5 In operating the above-described device, and assuming the parts to be in the position shown in full lines in Fig. I, in which the measuring-surfaces are in contact and in which both scales indicate zero, the grip is  
10 first pressed toward the handle until it reaches a position in which it may be engaged by the trigger and is thereupon locked. Such movement is accompanied by the retraction of the measuring-pin B, which moves up-  
15 wardly, compressing the helical spring  $b$ , the recording-collar C, however, remaining in its original position, as shown in Fig. III. Said collar is now slid upwardly until it contacts the setting-pins  $b'$ , as shown in dotted lines, Fig. III, the pointer H following. The collar  
20 is placed in contact with said pin so as to cause the latter to engage the grooves  $c^2$ . The gage is now placed so as to include the object to be measured between its jaws, the  
25 plug  $a$  contacting the lower surface thereof, and the trigger disengaged from the grip. The measuring-pin being released is urged downwardly by the spring  $b$  until it strikes the upper surface of such object. Such down-  
30 ward movement is accompanied by the downward movement of the collar C, the two movements ceasing simultaneously on the formation of contact of the measuring-pin with the object being measured. During such  
35 downward movement the pins  $b'$  maintain the position of the collar, preventing same from turning, and thereby keeping same in proper relationship with the scale  $a^6$ . The measuring-pin is now retracted by pressing  
40 the grip and locking the same, as before, the gage being then withdrawn from said object. During such latter operation, however, the collar remains at the point to which it was moved by the measuring-pin, so that  
45 upon such withdrawal the reading indicated thereby is the thickness required. By properly proportioning the two arms of the auxiliary pointer H it is seen that such reading may be had upon an enlarged scale upon the  
50 segmental scale J.

The principle of my invention may be carried out by means of a variation of the above-described device, as illustrated in Fig. VII, in which the sliding collar and scale  $a^6$  are dis-  
55 pensed with. In such arrangement the barrel  $a^3$  is provided with the slot  $a^{10}$ , as before, through which projects a lug  $b^3$ , whose path of reciprocation intersects the path of the lower arm  $j$  of a pointer J, mounted upon the  
60 frame and operating in connection with a segmental scale K, the arrangement being similar to that of the pointer and scale above described. Said pointer is, however, mounted upon its support so as to frictionally engage  
65 same, whereby it is caused to remain fixed

in any position in which it may be placed. In other respects the construction remains the same. In operation, the measuring-pin being in its upper or open position, the pointer is moved by hand until it engages  
70 the lug  $b^3$ . Upon the release of the said pin the pointer-arm is carried downwardly and ceases its movement simultaneously with the pin, and upon the retraction of the latter remains in such position. The device then  
75 being withdrawn, as previously described, the measurement may be read upon the scale K.

Other modes of applying the principle of my invention may be employed instead of  
80 the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any one of the following claims or the equivalent of such  
85 stated means be employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a gage, the combination of two measuring members one of which is mounted upon and reciprocable in a support, a spring in  
90 said support tending to cause said measuring members to approach, positive means for retracting said reciprocable member, a recording member mounted and slidable upon a support, said reciprocable member provided  
95 with means adapted during its movement toward the other to engage said recording member and during its retracting movement to disengage same.

2. In a gage, the combination of two measuring members one of which is mounted upon and reciprocable in a support, a spring in  
100 said support tending to cause said members to approach, positive means for retracting said reciprocable member, means for locking said retracting means, a recording member mounted and slidable upon said support,  
105 said member connected with said reciprocable member in a manner such as to be movable therewith during the approaching movement and independent thereof during the retracting movement.

3. In a gage, the combination of two measuring members, one of which is mounted upon and reciprocable in a support, a spring in the  
115 latter tending to cause said members to approach, said support provided with a laterally-extending handle having a spring-grip positively connected with said reciprocable member and means for locking same, a recording-  
120 collar mounted and slidable upon said support, said reciprocable member provided with a lateral projection adapted to engage one extremity of said collar.

Signed by me this 5th day of January, 1901. 125

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A. E. MERKEL.