

C. BODMER.

GAGE.

APPLICATION FILED MAR. 31, 1909.

985,389.

Patented Feb. 28, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

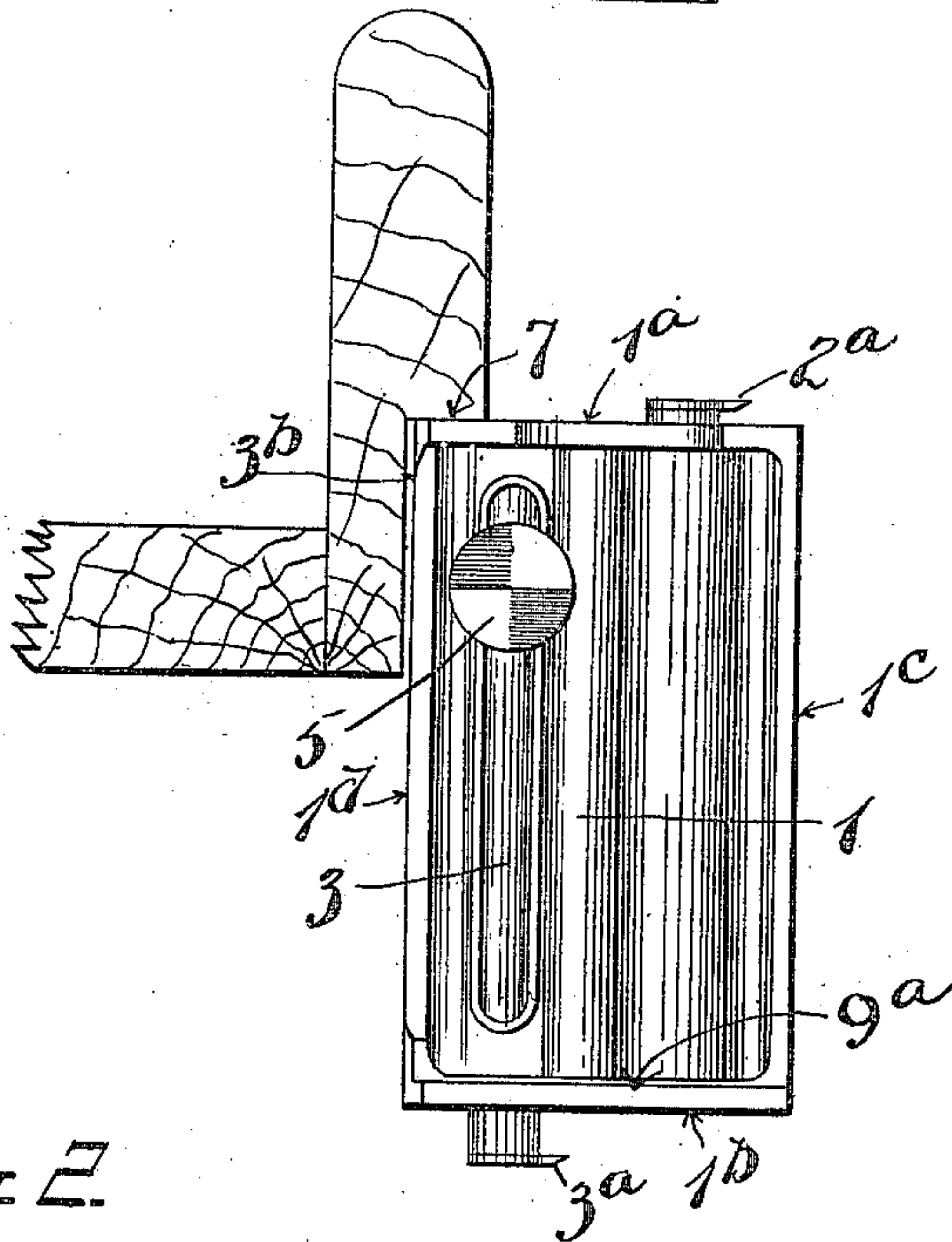


Fig. 2.

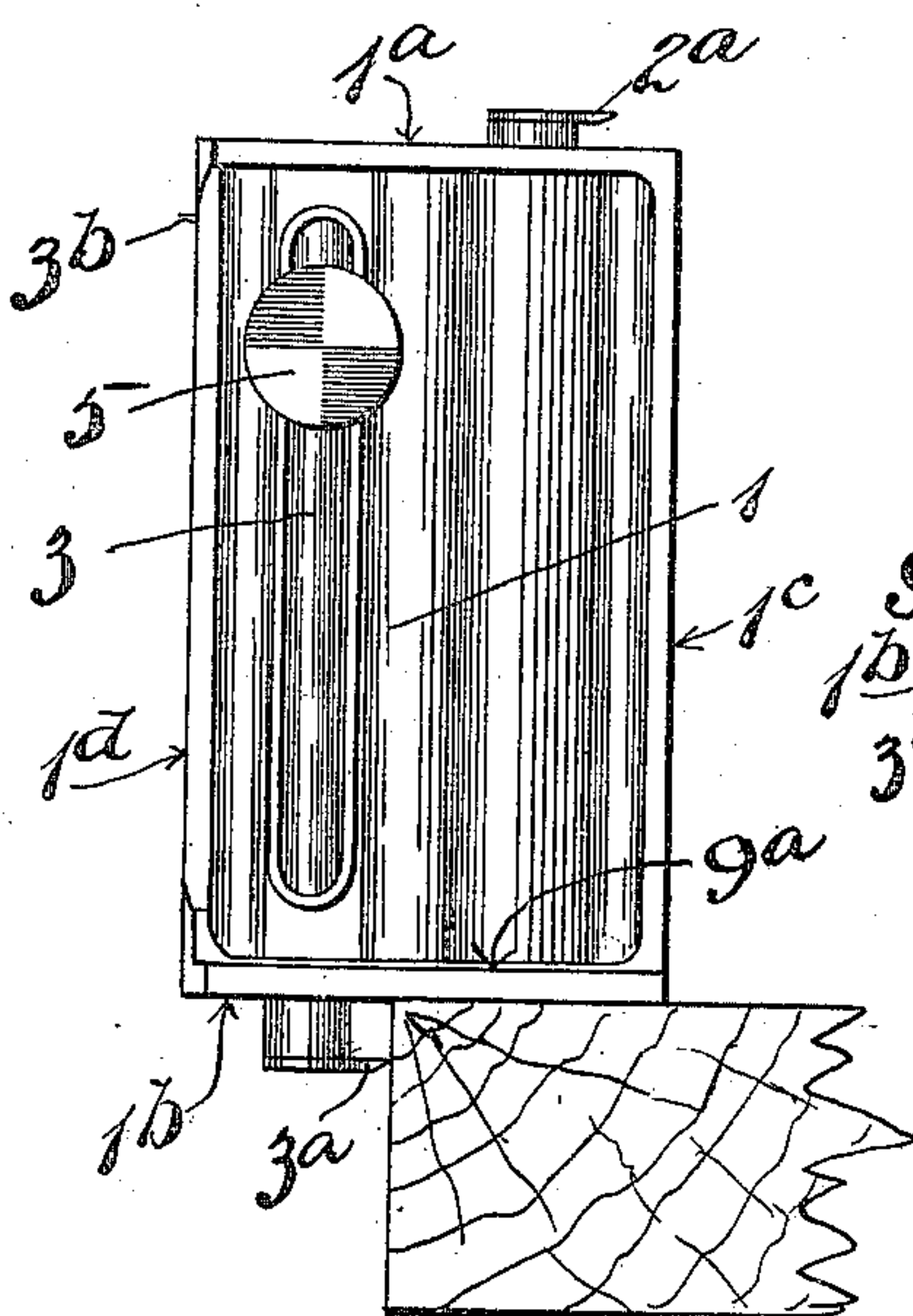
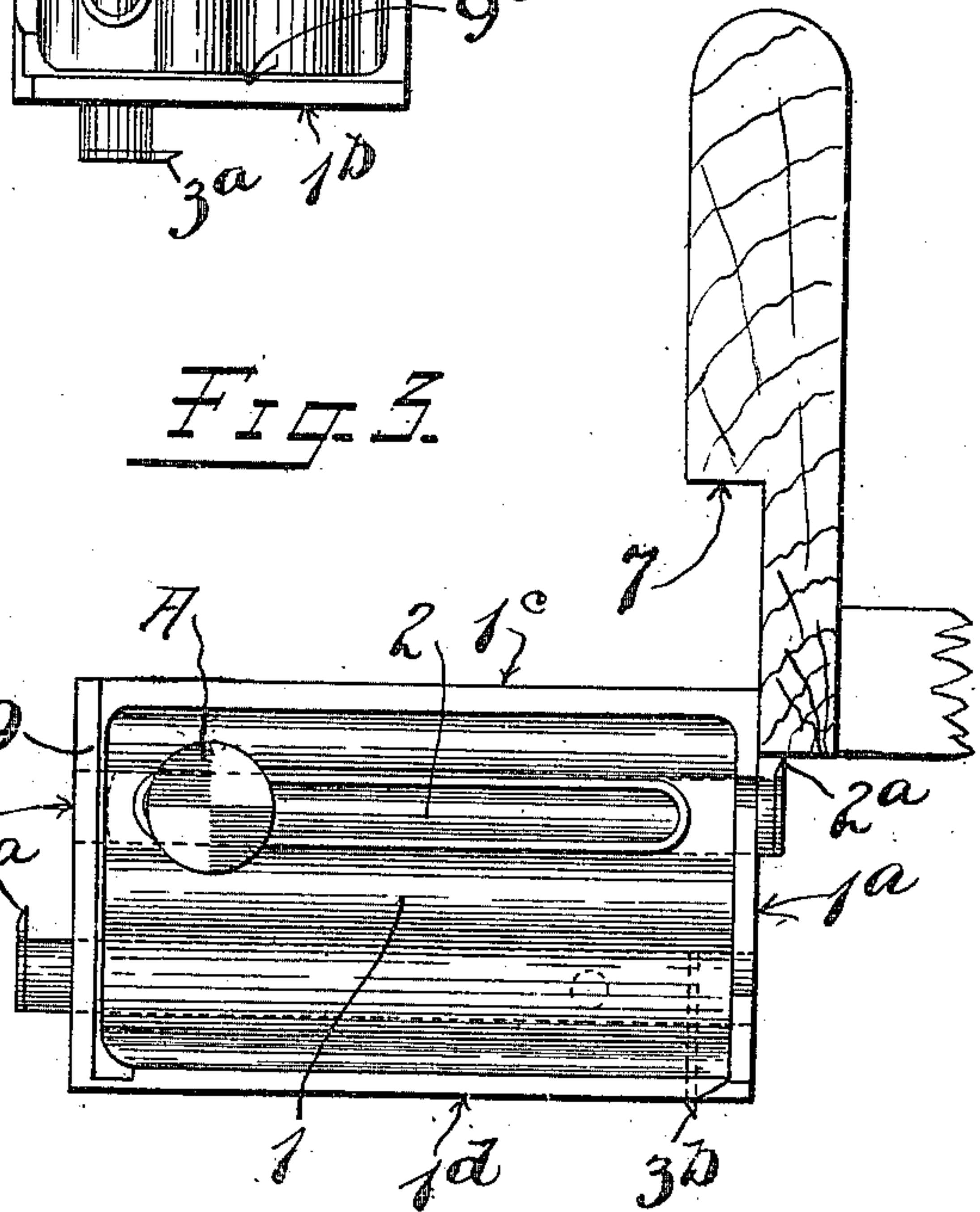


Fig. 3.



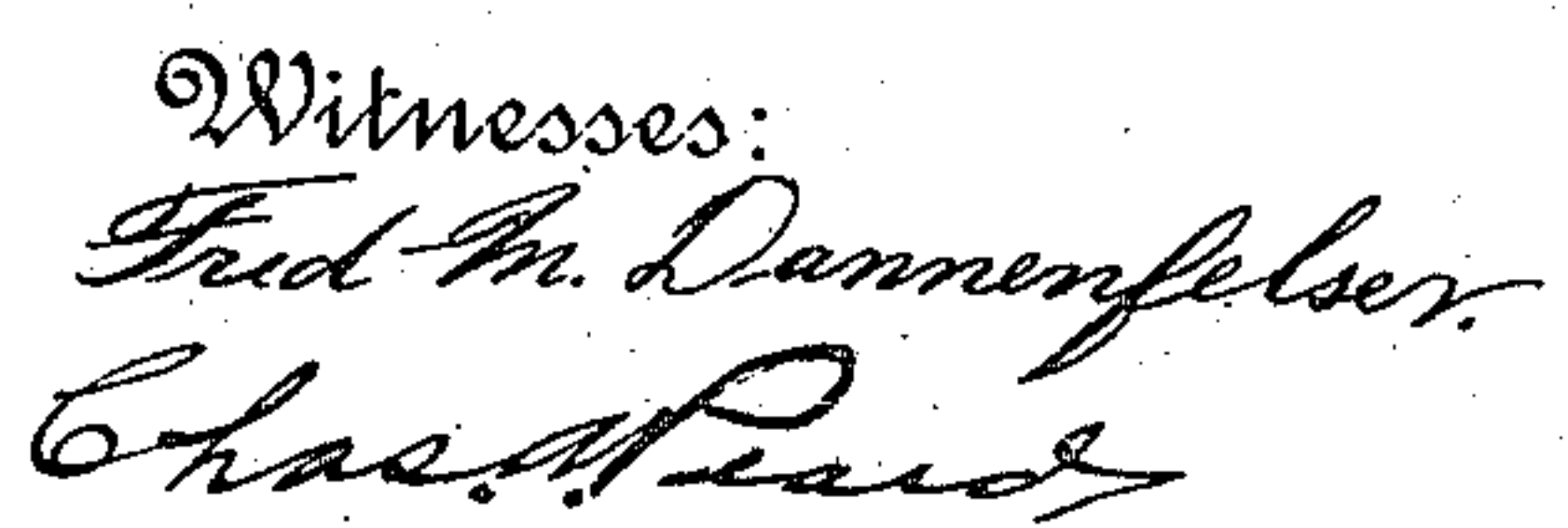
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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE.

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GAGE.

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To all whom it may concern:

Be it known that I, CHRISTIAN BODMER, a citizen of the United States, residing at New Britain, county of Hartford, Connecticut, have invented certain new and useful Improvements in Gages, of which the following is a full, clear, and exact description.

My invention relates to improvements in so-called gages for butts, locks and like hardware.

The invention relates particularly to features of improvement hereinafter pointed out, the main object being to provide in a single structure means to perform more functions than have hitherto ever been accomplished by any single device. By this improvement the device is capable of very general use in connection with the measuring and outlining of all mortises on doors and door-casings designed to receive butt hinges and locks.

In the various figures of the drawings, this invention and parts thereof are shown in different elevations, illustrative of different positions of use; in particular, the several views of the drawings illustrate the following:

In Figure 1 my improved gage is shown in position to strike the rear offset line of a mortise to be formed in a door-casing to receive a butt. In Fig. 2 the instrument is shown in position to mark the rear offset line for a butt mortise in the edge of the door. In Fig. 3 my improved gage is shown in position for striking a line indicating the depth of the mortise to be formed in the door casing to receive the butt leaf. In Fig. 4 my improved device is shown in position to aid the carpenter in striking the end lines for the mortise in the door-casing. In Fig. 5 my gage is shown in position to enable the carpenter to strike the end lines of the butt mortise in a door. In Fig. 6 I have illustrated two cutters detached.

By my improved device the work of applying butts to a large number of doors and door casings is exceedingly simplified and a uniformity is guaranteed. In practice, one operator marks a large number of doors and door casings, outlining by the marks the proper mortises in the respective parts to receive the butts. The carpenter by simply following the marking upon the respective doors and door casings may be assured (without the necessity of taking any meas-

urements himself whatever) that when the butts or hinges are applied, every door will be hung properly and accurately. By the employment of this tool and the adoption of this system, a vast amount of labor is saved.

The tool comprises the body portion 1, having the ends 1^a — 1^b , the edges 1^c — 1^d and the sides intermediate of said edges. The ends, edges and sides are respectively parallel and are used as bearings in applying and using the tool. The edge 1^d may be provided with a graduated scale, as best seen in Fig. 4, for the purpose of aiding in setting one of the cutters. Mounted longitudinally in guideways in the body 1 are cutter carrying bars 2—3.

2^a is a cutter carried at one end of the bar 2, said cutter being offset laterally therefrom and having a square outer side and a beveled inner side.

3^a is a cutter mounted at one end of the bar 3 and having a beveled outer side and a square inner side. 3^b is a cutter at the opposite end of the bar 3. This cutter having a square outer side and a beveled inner side. It is important that these bevels be observed in order that accurate work shall be guaranteed. Each bar has a perforation for receiving respectively a set screw whereby the desired adjustment of the bar, and its corresponding cutter or cutters, may be effected.

4 is a set screw for the cutter bar 2.

5 is a set screw for the cutter bar 3. The shank of each set screw passes, as shown, through a longitudinal slot in the body 1 intersecting the longitudinal guideways for each cutter respectively. The guideway for the cutter 3 is open at both ends and at one edge 1^d of the body 1, as indicated at 6, Fig. 4. The ends of the gage may be recessed to permit the cutters 2^a and 3^a to lie flush when the cutters are not being used.

In Figs. 4 and 5, I have indicated by different reference letters the different lines to be marked on the door and door-casing to outline a mortise to receive a hinge or butt (not shown). In these figures, A represents the rear offset line for a mortise in a door-casing. B is a dotted line indicating at the edge of the door-casing the depth of said mortise. C—C are dotted lines indicating the ends of the mortises. In Fig. 5 D represents the rear offset line for the mortise in the edge of a door to receive a butt or hinge. E is a dotted line representing the depth of

a mortise in the edge of a door while F—F are dotted lines indicating the ends of the mortise. Starting with the door casing, the cutter bar 3 is set so that the cutter 3^b will be offset from the end 1^a of the butt gage to the extent that it is desired to have the rear offset line A spaced from the casing stop 7. This setting of the cutter 3^b at once spaces the cutter 3^a a corresponding distance from the opposite end 1^b of the gage. The operator also adjusts the cutter bar 2 so that the cutter 2^a will project from the end 1^a of the gage to an extent corresponding to the desired depth of the mortise, that distance being determined by the thickness of the hinge leaf. When these adjustments have been effected, the work may be begun and finished without further change of adjustment. Usually the first step is to strike the rear offset line in the door casing. This is done by placing the square end 1^a of the body 1 against the stop 7, as shown in Fig. 1. Then by placing the cutter 3^b against the casing, the line A is scratched. In forming this scratch, it will be observed that the beveled side of the cutter is toward that part of the wood that is to be removed in forming the mortise. The square side of the cutter being toward the stop 7 guarantees the same measurement irrespective of the extent to which the cutter is forced into the wood. The tool is then removed and placed in the position shown in Fig. 4. The end 1^b bearing against the stop 7 operates as a square to hold the edge 1^c at exactly right angles to the line A. By means of a suitable tool such as a scratch awl, the lines C—C, determining the end lines of the mortise, may be marked. The tool is then removed and the cutter 2^a is used to draw or scratch the line B in the edge of the door casing, indicating the depth of the mortise (see Fig. 3). Without change of cutter adjustment, the tool is then transferred to the door, and positioned as shown in Fig. 2, the cutter 3^a being used to scratch the rear line D (Fig. 5) of the mortise. As before explained, since the cutters 3^a and 3^b partake of correspondingly mutual adjustment, it follows that the line D will be offset from the adjacent edge of the door to approximately the same extent that the line A is offset from the stop 7 slight allowance being made for warping and swelling, as hereinafter described. The tool is then placed on the door in the position indicated in Fig. 5 and here it will be noted that the opposite sides at one end 1^b of the gage are offset as at 9—9^a, said offset portions being squared with the adjacent side and edge of the body, whereby the lines F—F may be struck to determine the ends of the mortise in the edge of the door. The tool is then placed relatively to the door in the same position as that indicated in Fig. 3 where-

by the depth line E (Fig. 5) of the mortise may be struck by the cutter 3^a.

From the foregoing, it becomes apparent that the tool possesses very wide utility in that it enables a single operator to mark in a very short time a great number of doors and door casings with lines outlining the proper mortises to receive the hinges, thereby saving the carpenter the time otherwise required to figure out, measure and mark said mortises one at a time, this measuring operation usually being resorted to by the carpenter just preparatory to applying each hinge or each set of hinges.

In the tool itself simple and effective means is provided to permit the squaring of the end lines on both the door and door casing, and the adjusting means are so placed in the recessed portion of the body that when once adjusted there will be no necessity to disturb them when the tool is used for squaring purposes, since the heads of said adjusting screws lie wholly within the recessed portions, as shown. The construction is light. The main body being of web formation, is exceedingly compact and embraces the fewest possible parts.

Not only is there a distinct advantage in beveling the cutters on the bar 3 in the manner described and for the purpose already set forth, but an additional advantage is gained in this respect,—in that an allowance is made for the swelling and warping of the door. This will clearly be seen on reference to Fig. 1. The overall length of the bar 3 with the cutters attached corresponds to the overall length of the gage. The cutting edge of the blade 3^b is spaced from the adjacent edge of the gage to an extent slightly more than the cutting edge of the cutter 3^a from the adjacent end of the gage, the difference being due to the particular arrangement of the bevels of the cutters 3^a 3^b. This difference will cause the lines to be struck in such a manner on the casing and door respectively, that when the hinge is applied there will be a clearance between the face of the door and the stop 7 (when the door is closed) corresponding substantially to the thickness of the cutter 3^a, said clearance being for the purpose of allowing for swell and warping.

What I claim is:

1. A butt gage comprising a body, two cutter bars, cutters carried thereby and projecting laterally therefrom, one of said bars having a cutter at each end thereof, said body having parallel guide passages for said cutter bars extending longitudinally therein, the two ends of said gage body having parallel bearing faces arranged at right angles to the edges of said body, a lateral squaring offset at one side of one end of said gage, said offset having a bearing wall at its inner side squared with respect to the adjacent

side and edges of said body, a slot in one edge of said body to permit the passage of a cutter on one of said bars.

2. In a gage of the character described, a body having two bearing ends and having two parallel guideways, two cutter bars mounted in said guide-ways respectively, cutters carried thereby and projecting laterally therefrom, one of said bars having a cutter at each end thereof, the two ends of said body being at right angles to the guideways for the cutters and also to one edge of said body, a lateral squaring offset at one side of one end of said gage, said offset having an inner bearing wall squared with respect to the adjacent side and edges of the body, an adjusting set-screw for each of said cutter bars, said gage body having recesses in its sides to receive said screws within and below the plane of said offset and said side, said body having side slots for the travel of said screws and a slot in one edge to permit the passage of a cutter on one of said bars.

3. A gage of the character described comprising a body having two guide-ways therein parallel with each other, a cutter bar in each guide-way of a length not greater than the overall length of said gage body, the ends of said gage body being parallel, both sides of said gage body being at right angles to the parallel ends, one edge of said gage body being slotted longitudinally, the slot intersecting one of said guide-ways, the cutter bar in the last mentioned guide-way having a cutter at one end and projecting laterally therefrom and also projecting slightly through said slot and beyond the adjacent surface of said gage.

4. In a gage of the character described, a body portion having parallel ends and having two parallel side bearings, and an edge bearing, said side and edge bearings being arranged at right angles to said parallel ends, one end being laterally offset said offset being squared along its inner edge with relation to one adjacent side and edge bearing of said body, and cutters and means

whereby said cutters are adjustably carried by said body.

5. In a gage of the character described, a body portion having parallel ends and having two parallel sides and an edge intermediate of said sides, said sides and edge being arranged at right angles to said parallel ends, one end having two lateral offsets arranged on opposite sides of said body, said offsets being squared with respect to said sides and edge of the gage, and cutters and means whereby said cutters are adjustably carried by said body.

6. In a gage of the character described, a body having a web-like center, said body having two parallel sides, two edges the longitudinal lines of which are parallel, two parallel ends at right angles to said edges, said ends and one of said edges being flattened to afford bearings, said web having a longitudinal guide-way, a cutter bar in said guide-way of said web, one of these parts having a slot and the other having means passing through said slot to adjustably secure the cutter bar at various positions of adjustment, one end of said gage body having a side offset squared with relation to said flattened edge and extending across one side of said body.

7. A butt gage comprising a body having parallel end bearings and parallel side bearings and bearing edges the longitudinal lines of which are parallel, each side and edge bearing being arranged at a right angle to each end, two cutter bars, laterally extending cutters carried thereby, one of said bars being of a length not greater than the overall length of said body, and both bars being longitudinally adjustable relatively to the body, one edge bearing of said body being channeled to form a cutter passage, an offset squaring flange at one side of said body adjacent one end.

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Witnesses:

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