

L. T. WEISS.
 TOOL HOLDER AND TOOL POST.
 APPLICATION FILED OCT. 8, 1908.

989,674.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.

Fig. 1

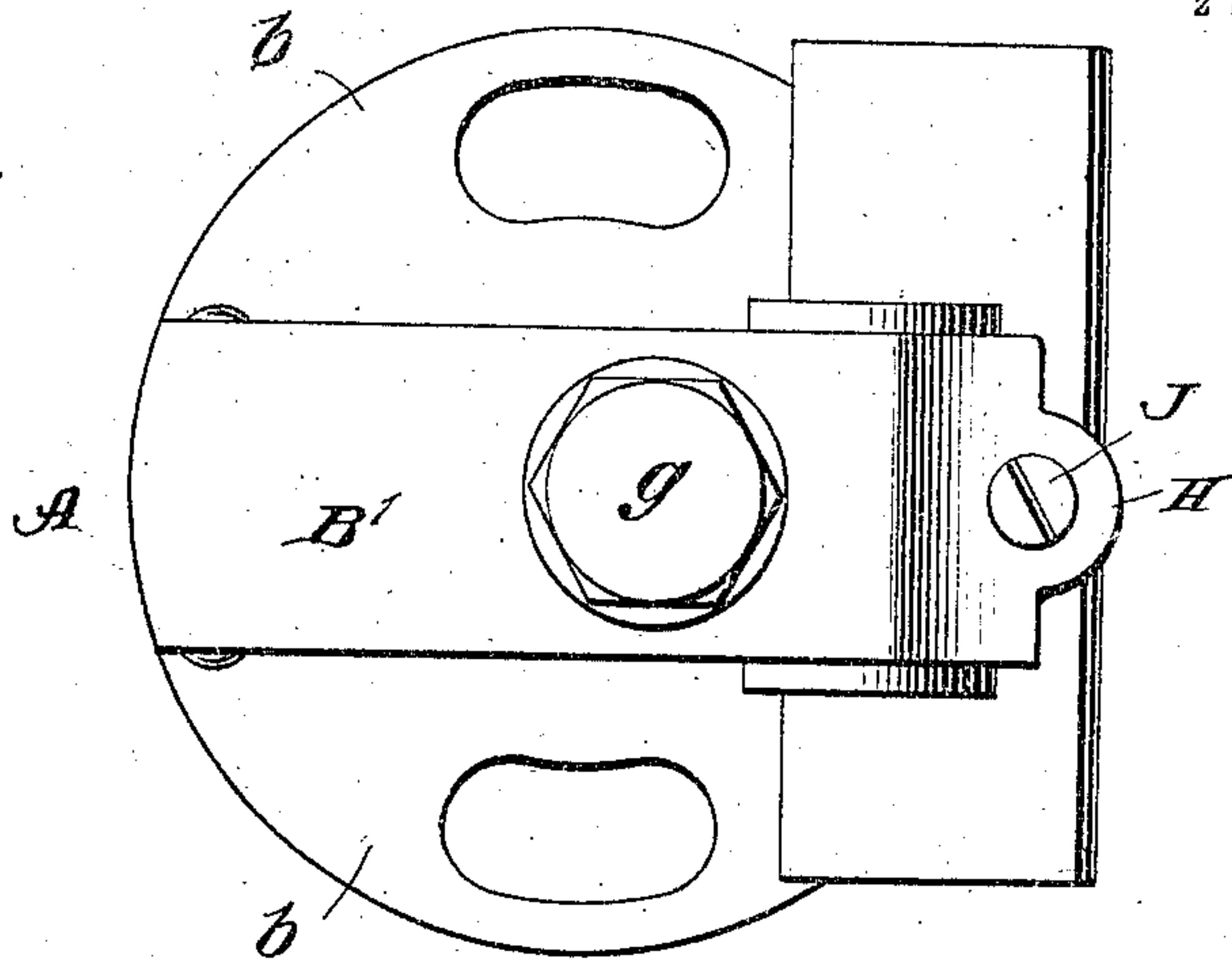


Fig. 2

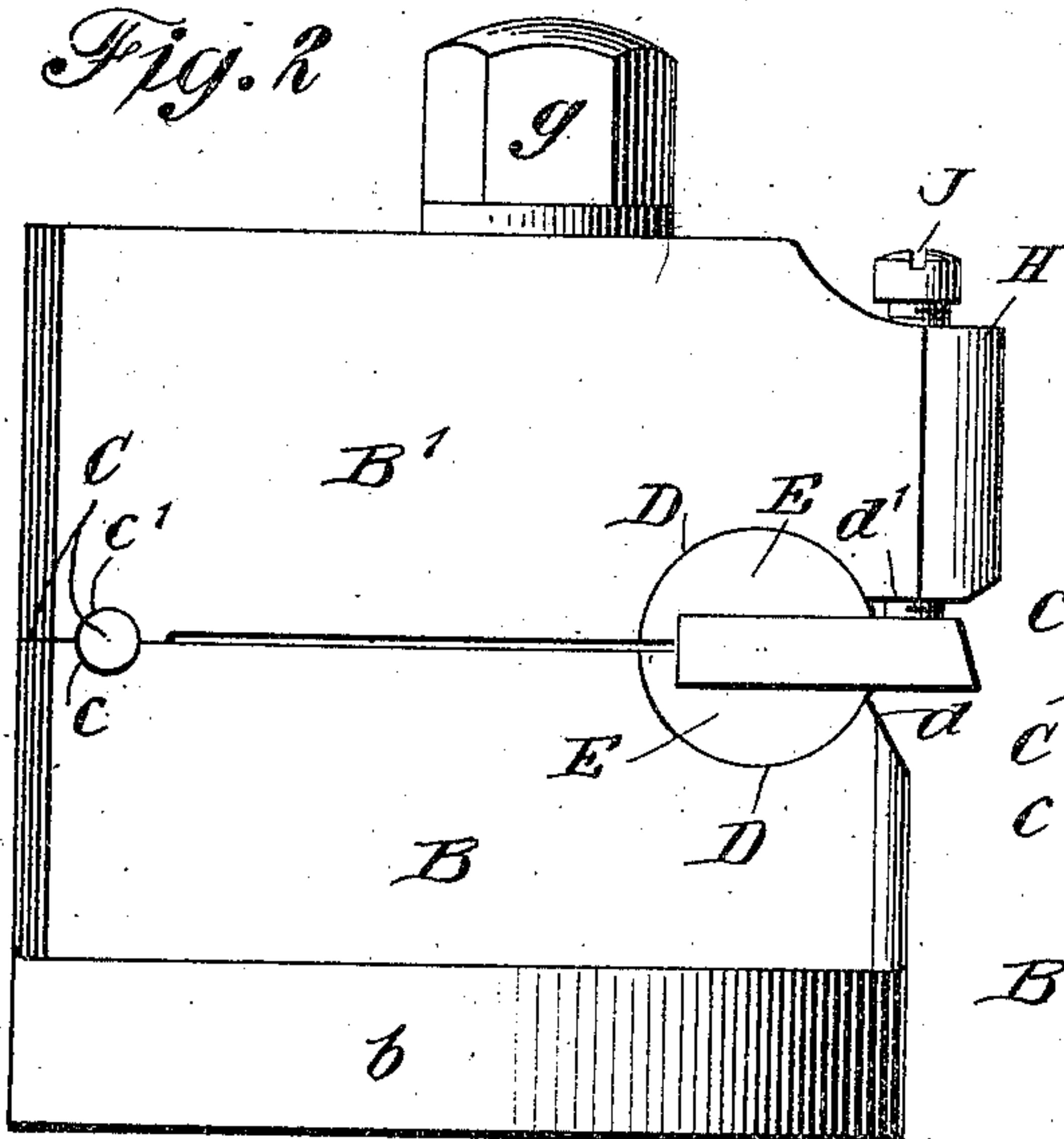


Fig. 3

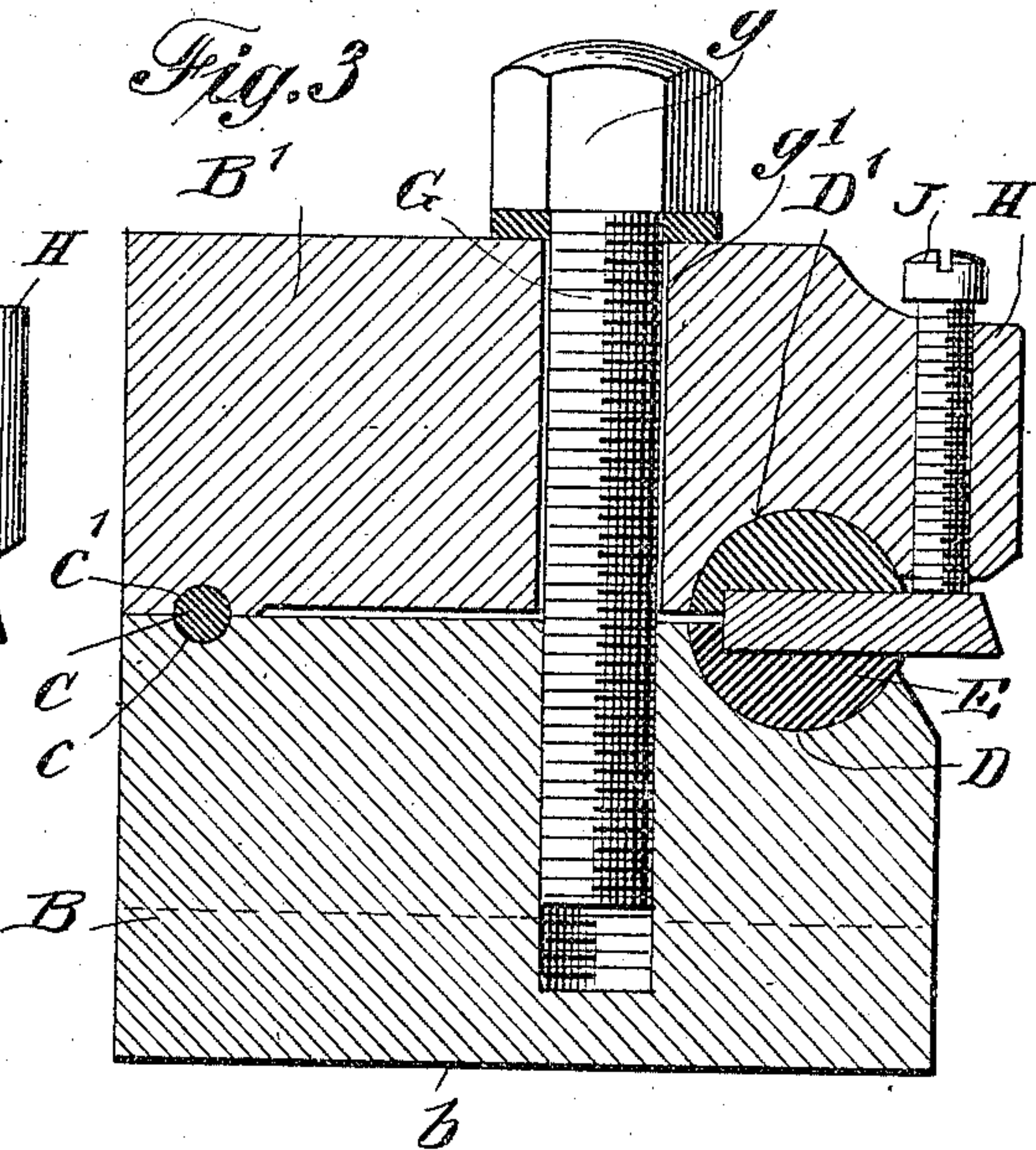
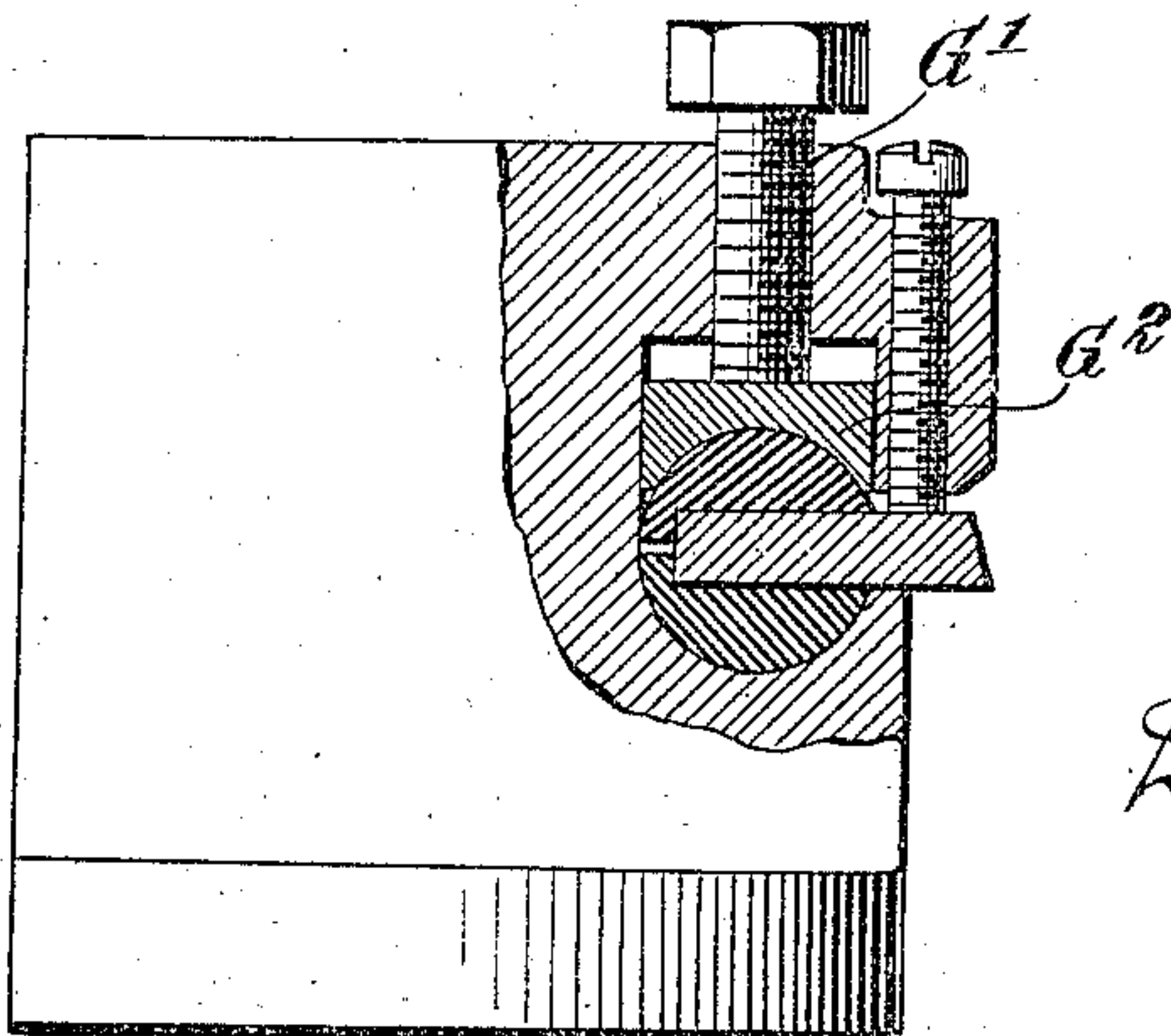


Fig. 4



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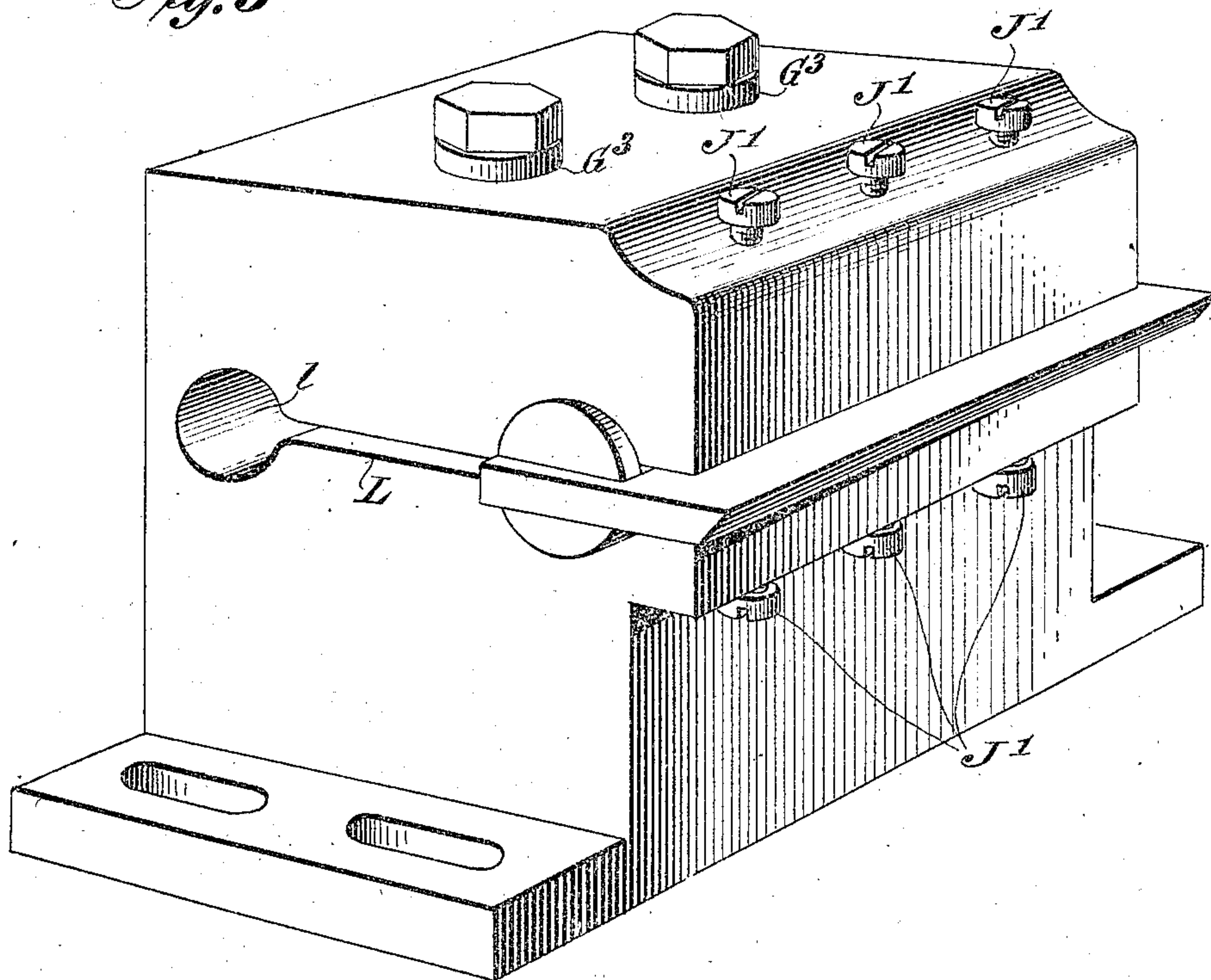
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2 SHEETS—SHEET 2.

Fig. 5



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LOUIS T. WEISS, OF BROOKLYN, NEW YORK.

TOOL-HOLDER AND TOOL-POST.

989,674.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed October 8, 1908. Serial No. 456,756.

To all whom it may concern:

Be it known that I, LOUIS T. WEISS, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Tool-Holders and Tool-Posts, of which the following is a specification.

My invention relates to improvements in tool holders and tool posts.

By the use of my invention, I may do away with the danger of weakening tools, especially when high speed tool steel is used; I may economize material and work; and I may secure a very rigid construction and provide a ready means of adjusting the cutting edge of the tool.

Referring to the accompanying drawings, in which I have illustrated preferred forms of my invention, and in which similar reference letters designate corresponding parts: Figure 1 is a top view; Fig. 2, a side view; Fig. 3, a vertical section of Fig. 2; Fig. 4, a side view, partially broken away, of a modification of my invention; Fig. 5 is a perspective view of another modification.

Referring to the drawing (Figs. 1, 2 and 3) A designates a tool post proper comprised of two parts. B designates a lower body portion preferably provided with laterally extending flanges *b, b*, preferably formed integral with the lower body portion B, thereby providing a base for the post and convenient means for securing the same rigidly to any desired support, such as to the cross-slide of a lathe or other turning machine. B' designates the upper body portion of such tool post. Said two parts of the body of my tool post may be of any relative proportion to suit the requirements of any given set of conditions or the preference of the manufacturer or user. *b', b'* designate elongated apertures in said base to permit the passing therethrough of bolts, screws or other suitable fastening devices for attachment to any suitable support contiguous to the work.

G designates a screw or bolt passing down through a suitable opening or bore *g'* extending through the top body portion and a suitable distance into the lower body portion,—that portion of the opening or bore *g'* which extends into the lower body portion being interiorly screw-threaded to co-act with the thread on the screw or bolt G,

and that portion of the bore *g'* which extends through the upper body portion being preferably left smooth and not threaded. Said screw or bolt is provided with the usual head *g* abutting against the upper surface of the body portion, so that when such bolt is screwed home the upper and lower body portions will be brought firmly together.

As shown at the rear of the lower body portion and extending transversely thereof, I have formed a semi-circular groove *c* which registers and corresponds with the semi-circular groove *c'* in the upper body portion B'. Arranged to fit in these grooves is a steel rod C which is preferably rigidly secured in any suitable manner to the lower body portion B. This rod C serves as a hinge between the upper and lower body portions and also prevents a turning of the body portions relatively to each other.

Arranged adjacent to the front edge of the lower body portion B and extending transversely thereof, I provide a semi-circular bushing-groove D, the edge of the outer wall *d* thereof being cut away or cut down somewhat. Similarly in the upper body portion B', adjacent to its front edge I have formed a corresponding semicircular groove D' having the outer wall *d'* cut away and cut upward somewhat. E, E designates bushings fitting in said grooves D, D' and adapted to rotate therein, and F designates a knife, tool or other cutting instrument grasped between such bushings.

As shown, I prefer to have the front of the upper body portion extending beyond the outer edge of the lower body portion as at H, and to provide at or near the front of said upper body portion an adjusting screw J extending vertically down through the same so as to bear against the upper surface of the knife, tool or other cutting instrument when the parts are arranged in operative position.

It will be readily understood that so long as the bushings are of substantially the same diameter as the circle formed by the two grooves D, D', or, so long as each bushing, when a plurality thereof are used, are substantially segments of such circle, they may be of any desired thickness and of any desired length, according to the requirements of the cutting implement to be employed.

In the preferred embodiment shown,

wherein two segmental bushings are employed, each of the same is cut away to provide an opening for the cutting implement, thus leaving rear flanges *e, e*, against which
 5 the rear edge of the knife, tool or other cutting instrument abuts and which prevent rearward movement thereof. These openings in the bushings may also, of course, be
 10 varied to suit the requirements of the cutting implement.

The operation of my invention is as follows: Assuming the parts to be in the position indicated in Figs. 2 and 3, when it is desired to replace the tool shown therein
 15 with another, the mere loosening of the screw D will permit the top body portion B to be swung back on the rod C a sufficient distance to enable the cutting implement to be withdrawn from the bushings or to enable
 20 the bushings themselves together with such cutting implement to be removed from the grooves D, D' and replaced with other suitable bushings. When such cutting implement or cutting implement and bushings together have been replaced, the screw G is
 25 again screwed home, bringing the top and lower body portions rigidly and securely together and gripping the cutting implement with a firm grip. If desired, of course, the
 30 screw G may be altogether unscrewed until it clears the thread of the lower body portion and the upper body portion may be then swung back or off. Bushings of suitable thickness and length for another tool or
 35 other implement to be used may be then selected and placed in the lower groove. The cutting implement and upper bushing may be then placed in position, the upper body portion swung back into place and the screw
 40 G screwed down. The height of the cutting edge may be roughly adjusted by hand before the screw G is driven to the last point. For an absolutely accurate adjustment of the height of the cutting edge, however, I
 45 preferably use a small set screw J, the lower end of which presses against the upper surface of the implement.

It will be seen that I really have an oscillating bushing, that is to say, the two bushings taken together when the parts are in place are capable of being rotated on pressure within the limits permitted by the relative thickness of the cutting implement and the space between the outer edges or jaws
 50 of the upper or lower body portions. Consequently by setting the cutting edge originally somewhat above the desired point, driving the screw G in a sufficient distance to retard the free rotation of the bushings,
 55 then turning down the adjusting set screw, I can get the height of the cutting edge adjusted with the greatest nicety. By then driving the screw G home, the cutting implement will be held solidly and rigidly at
 60 the proper point of adjustment. Further-

more, when the tool is removed for any reason, such as for grinding, it may be replaced by hand, so that the cutting edge thereof will occupy precisely the same vertical position as before removal without the necessity
 70 of further adjustment, or, in other words, the former adjustment of such cutting edge need not be disturbed to remove the tool. Furthermore, as all the pressure exerted against the cutting edge is in a direction to-
 75 ward the set screw, such screw on account of its location slightly forward of the jaws or front edges of the body portion proper, will add greater rigidity thereto.

I may add that the rod C not only serves
 80 as a pivot but also gives greater rigidity to the structure when the parts are in position. It prevents any possibility of slipping and furthermore insures an absolutely accurate readjusting of the top and bottom body portions.
 85

I have shown a bushing in two parts or what may be called a split bushing. It may not be necessary under all conditions to use a bushing entirely split. For example, the
 90 bushing might merely be weakened somewhat at its rear edge or it might be possible to use standardized bushings for standardized implements,—the bushings being in one
 95 piece and fitting over the rear end of the cutting implement relying upon the resiliency of the metal to grip the implement when under pressure.

In Figs. 1, 2 and 3, I have shown a tool post or holder carrying a knife, tool or other
 100 cutting implement, with the cutting edge pointing downwardly and formed by the junction of the outer and lower faces of the implement, the adjusting screw being positioned above such knife or tool. It is obvi-
 105 ous, however, that by slight modifications, my invention may be used advantageously for holding a knife, tool or cutting implement with its cutting edge pointing upwardly and formed by the junction of the
 110 upper and outer faces of such implement, and in Fig. 5 I have shown a modification which is adapted to hold a cutting implement, having a cutting edge pointing in either direction.
 115

Instead of the two body portions shown in Figs. 1, 2 and 3, I may use a body portion in one piece, provided with circular
 120 bushing grooves and a bushing or bushings of substantially the same diameter as the grooves, any suitable means being employed for exerting pressure between the bushing or bushings and the cutting implement. In Fig. 4, which is a side view, partially broken
 125 away, I have shown a modification, in which the body portion is in one piece. In such a construction, pressure may be exerted directly on the upper bushing by means of a screw or bolt, such as G', or such pressure may be exerted on the bushing through the
 130

movable block G^2 , the lower face of which will substantially conform with the upper face of the bushing. This block may be secured to the lower end of the set screw or bolt.

In Fig. 5, I have shown another modification, wherein the body portion is likewise composed of one piece and slotted at L to render the same sufficiently resilient to permit pressure to be applied between the portions separated by such slot to grip the bushing or bushings. A circular bore or hole Z, extending transversely of the body portion and communicating with the rear of the slot is also preferably provided to further add to the resiliency of said body portion. As shown, this construction is provided with two bolts G^3 , G^3 , and a plurality of set screws J', J' positioned both above and below the cutting implement, so as to limit or adjust either the upward or downward movement of the cutter and especially a very long cutter.

The other parts of the constructions shown in Figs. 4 and 5 and the operation of such modifications is substantially similar to that of the devices shown in Figs. 1, 2 and 3 heretofore described.

I prefer to employ a base of the general form shown as a means of securing the tool post to the support. Any suitable fastening means for so securing the same to the support may, however, be used. Similarly, I do not wish to restrict myself to the use of a set screw for adjusting the height of the blade.

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

1. In a tool post and holder, a base, a lower body portion rigidly secured thereto, an upper body portion, means for rigidly securing the upper body portion to the lower, and means for holding a cutting implement held by and between the upper and lower body portion and having its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge.

2. In a tool post and holder, a post, comprising a body portion, means for securing the same to a suitable support, a rotatable bushing for a cutting implement arranged in said body portion, and means for exerting pressure on the bushing to grip and hold the cutting implement rigidly with its cutting edge projecting across and beyond the front face of that part of the body portion contiguous to the cutting edge.

3. In a tool post and holder, a post comprising upper and lower body portions, means for securing the lower body portion to a suitable support, a rotatable bushing for the cutting implement intermediate said body portions, and means for exerting pres-

sure between the same to grip and hold the cutting implement rigidly with its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge.

4. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a rod arranged at the rear to serve as a pivot when the upper body portion is in place, means for rigidly securing the body portions together, and means for rigidly holding a cutting implement arranged at the front of the body portions and held between them.

5. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement having its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge, a bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portions for the bushing, and means for rigidly securing the top and bottom body portions together and exerting pressure on the bushing.

6. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement having its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge, a bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portions for the bushing, and means for rigidly securing the top and bottom body portions together and exerting pressure on the bushing, and means for adjusting the height of the cutting edge of the implement.

7. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement, a bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portions for the bushing, means for rigidly securing the top and bottom body portions together and exerting pressure on the bushing, and a set screw bearing against the upper surface of the cutting implement when in place.

8. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement having its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge, a rotatable bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portions for the bushing, and means for rigidly securing the top and bottom body portions together and exerting pressure on the bushing.

9. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement, a rotatable bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portion for the bushing, means for rigidly securing the top and bottom body portions together and exerting pressure on the bushing, and a set screw bearing against the upper surface of the cutting implement when in place.

10. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement having its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge, a split bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portion for the bushing, and means for rigidly securing the top and bottom body portions

together and exerting pressure on the bushing.

11. In a tool post and holder, a lower body portion provided with a base, an upper body portion, a cutting implement having its cutting edge projecting across and beyond the front face of that body portion contiguous to the cutting edge, a split rotatable bushing adapted under pressure to grip the top and bottom surfaces of the cutting implement, a holder arranged in the body portion for the bushing, and means for rigidly securing the top and bottom body portions together and exerting pressure on the bushing.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

LOUIS T. WEISS.

Witnesses:

JOS. F. O'BRIEN,

ANNA S. BROMBERG.