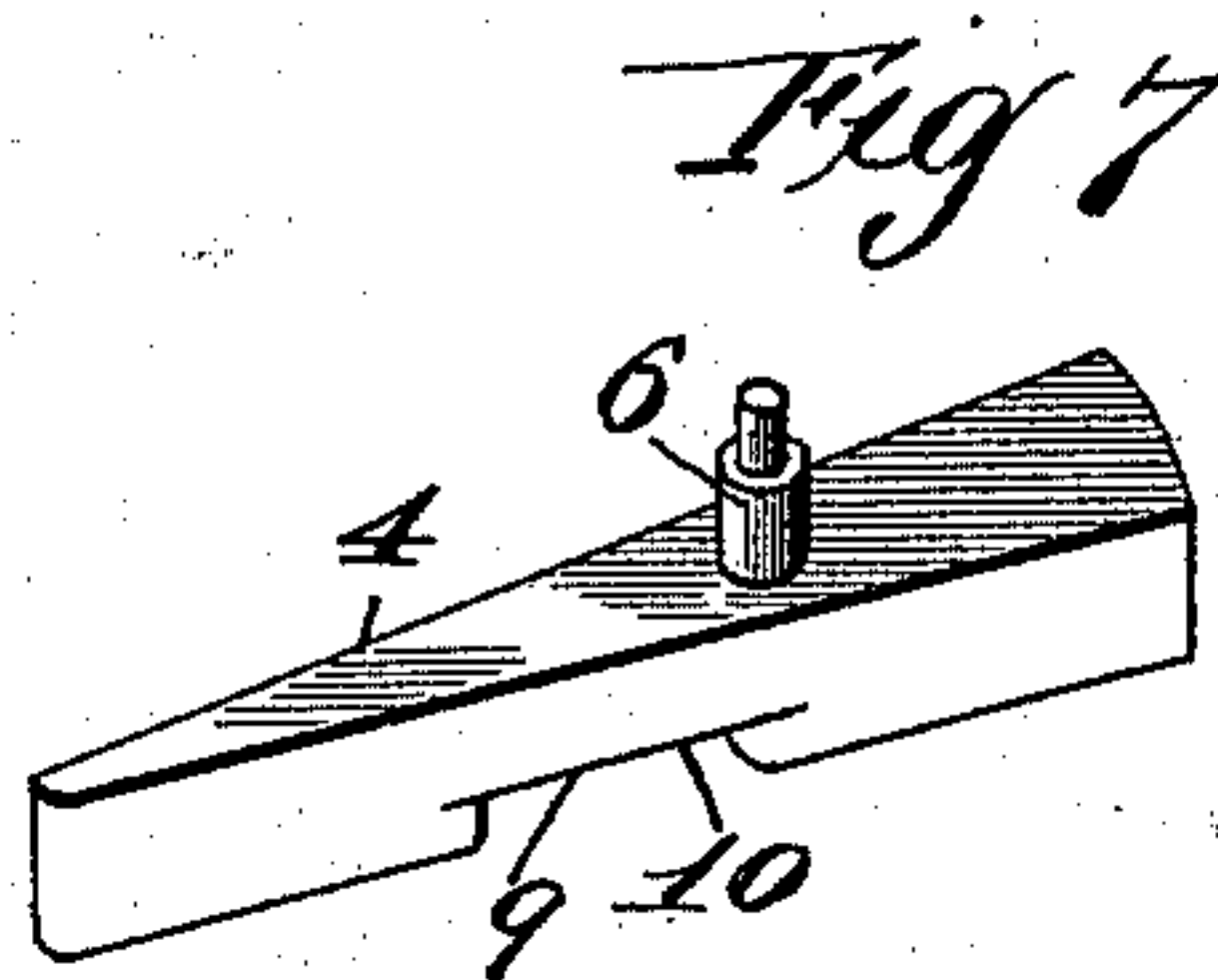
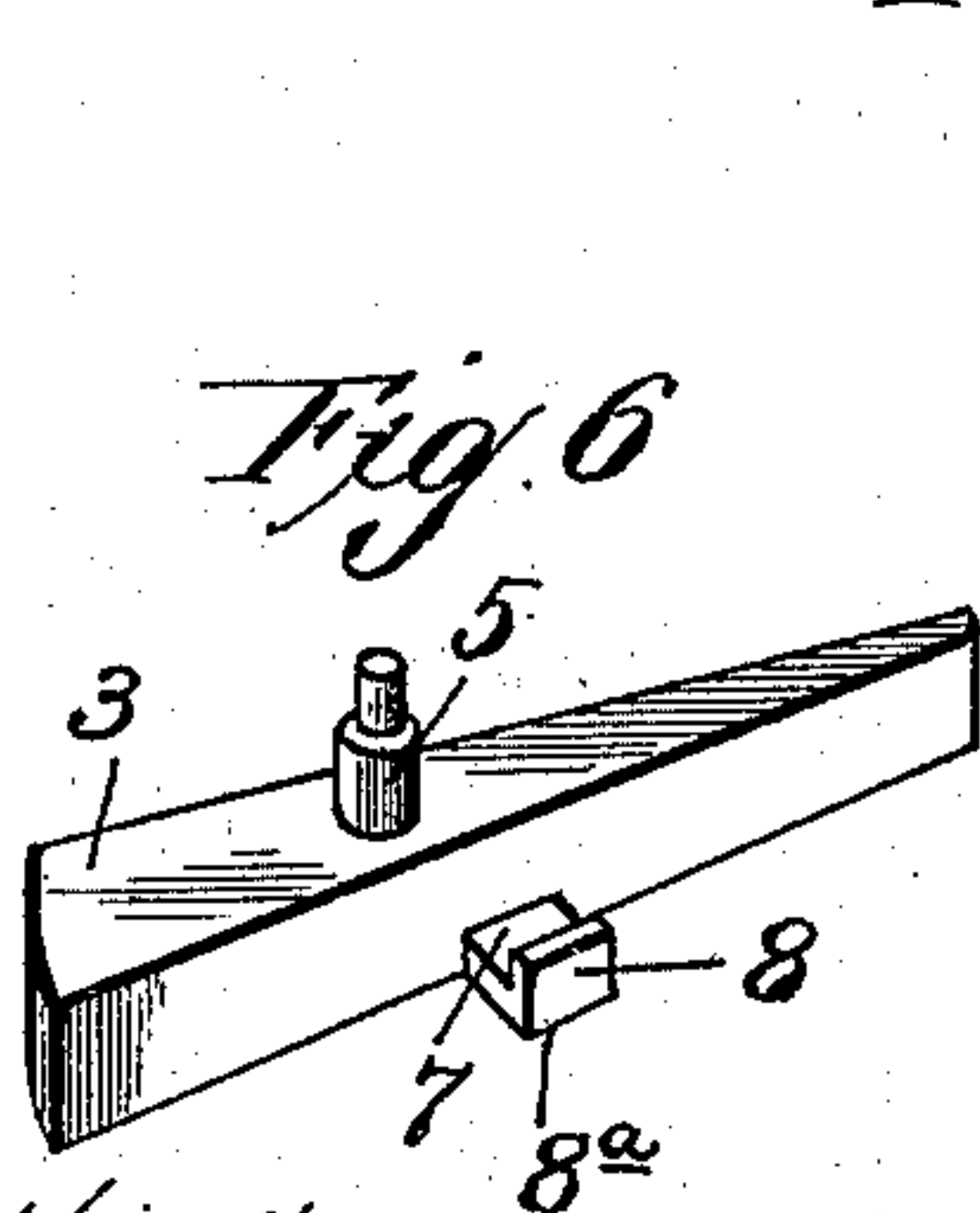
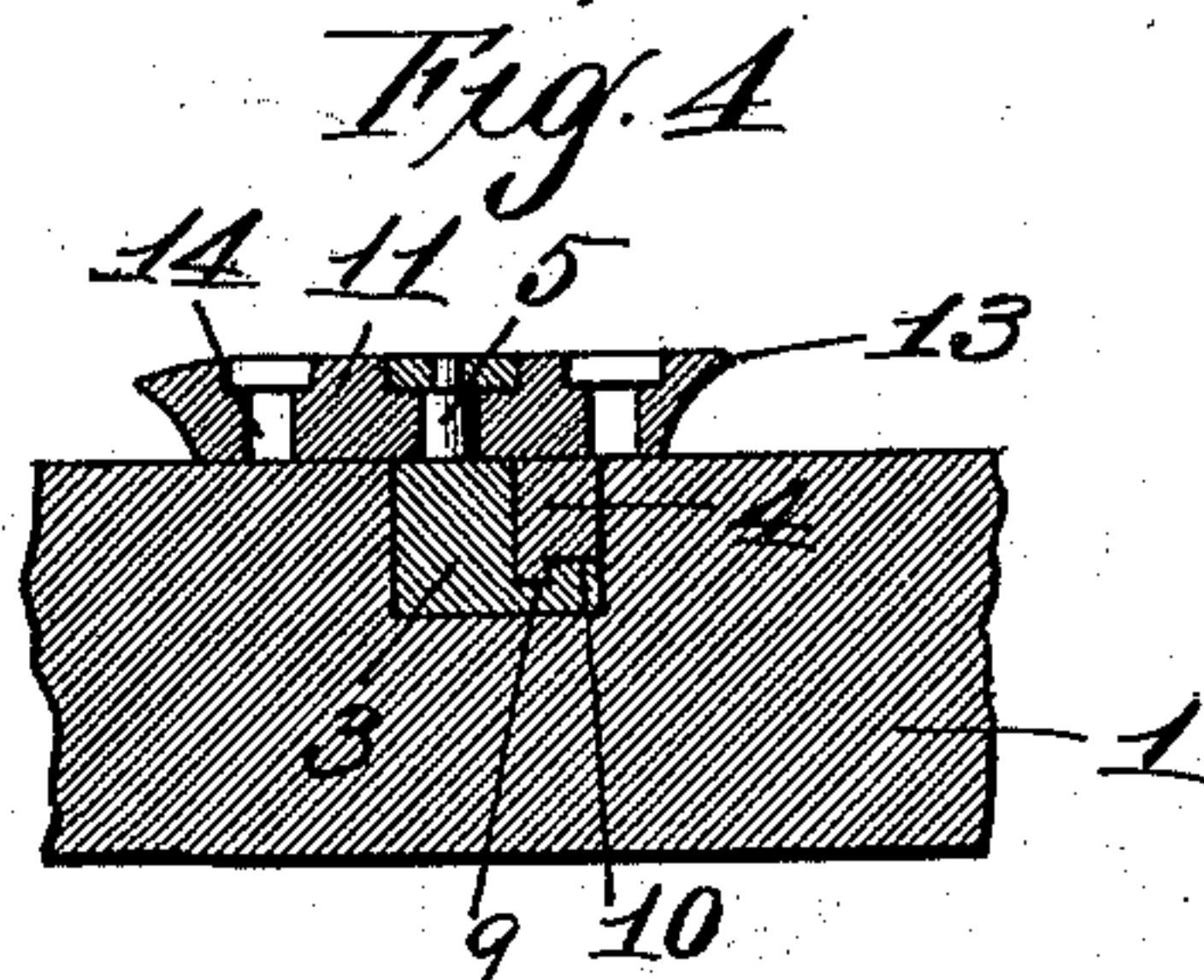
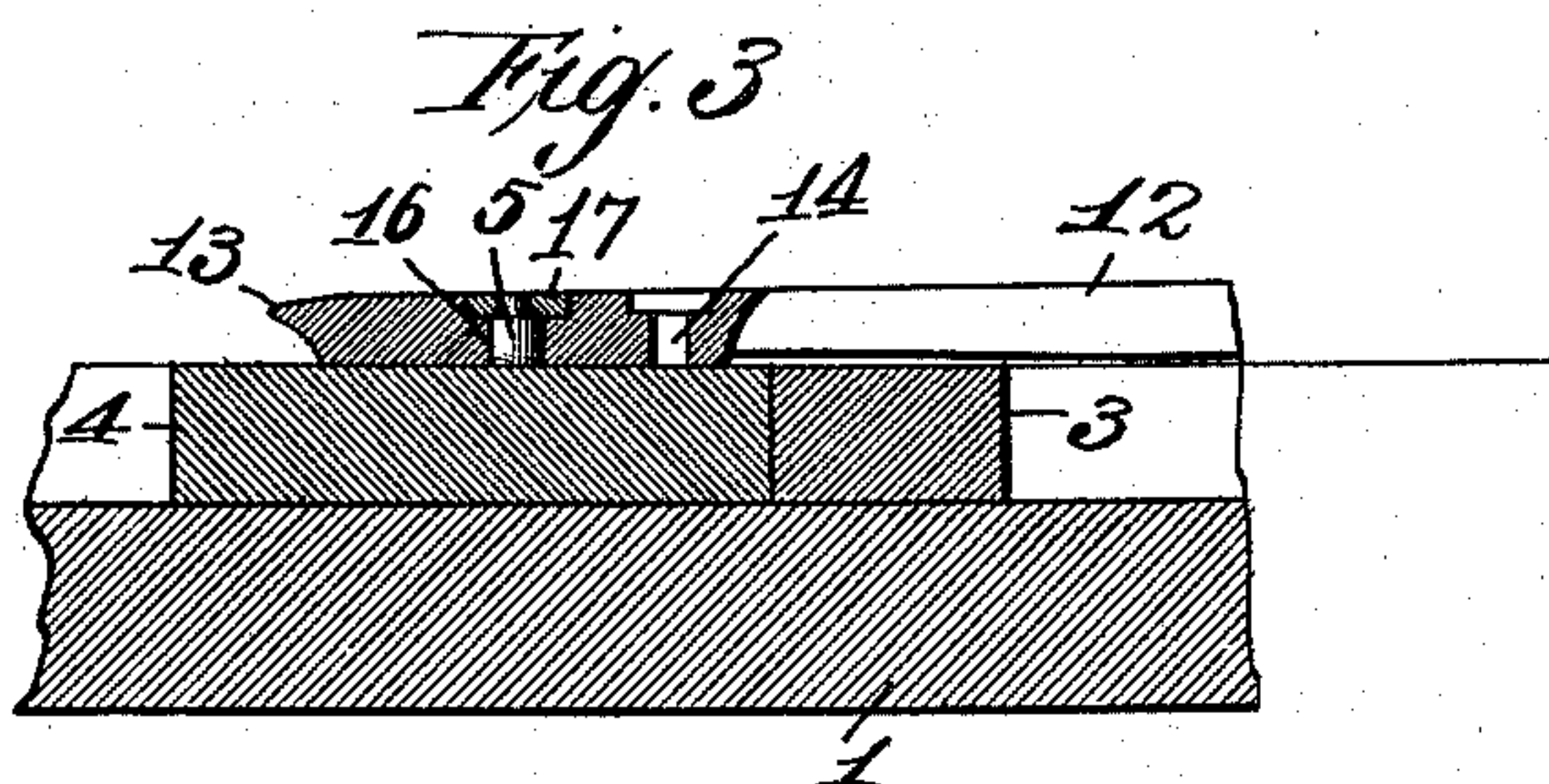
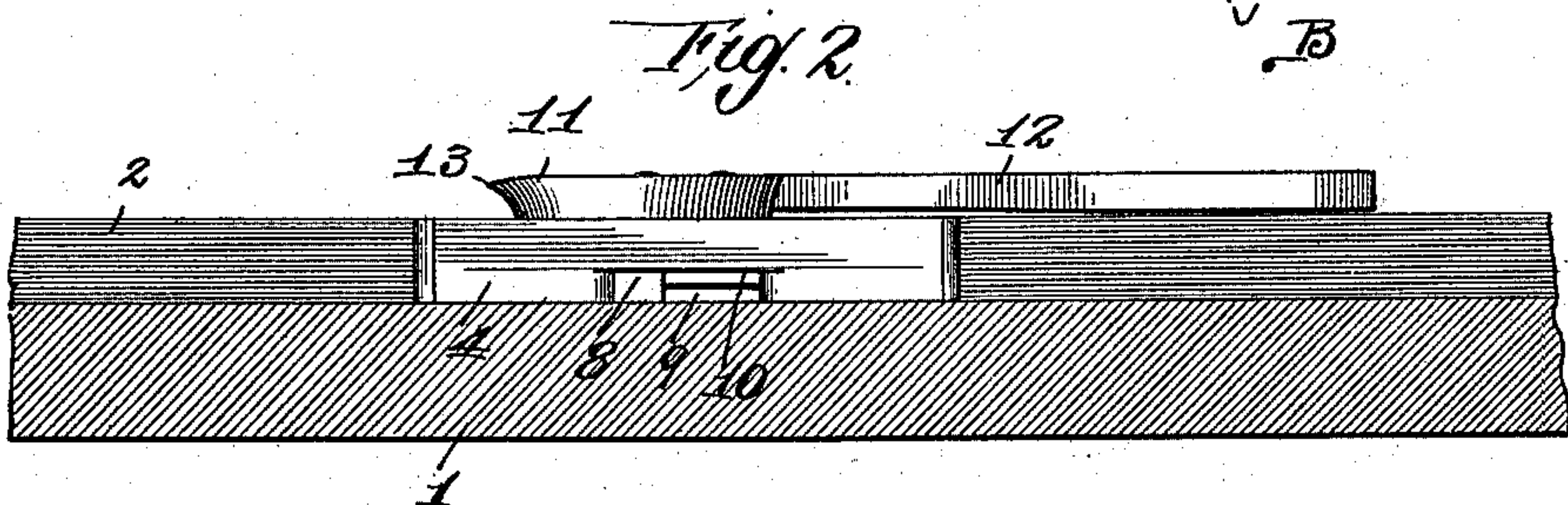
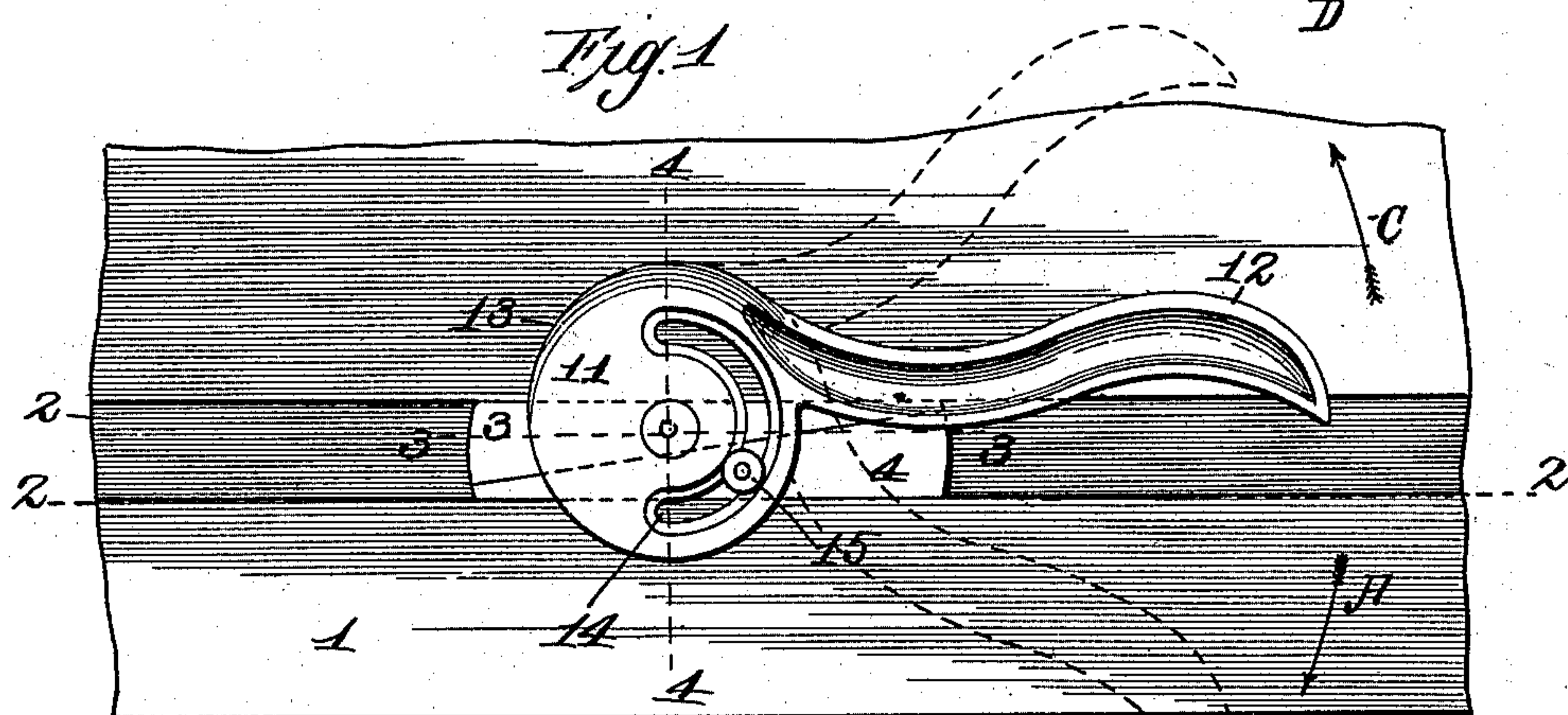


(No Model.)

A. J. COCHRAN.
BENCH CLAMP.

No. 557,972.

Patented Apr. 7, 1896.



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UNITED STATES PATENT OFFICE.

ARTHUR J. COCHRAN, OF ST. LOUIS, MISSOURI.

BENCH-CLAMP.

SPECIFICATION forming part of Letters Patent No. 557,972, dated April 7, 1896.

Application filed September 16, 1895. Serial No. 562,636. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. COCHRAN, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Bench-Clamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved bench-clamp; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of my improved bench-clamp, the same being applied for practical use. Fig. 2 is a longitudinal sectional view taken, approximately, on the indicated line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional view taken, approximately, on the indicated line 3 3 of Fig. 1. Fig. 4 is a cross-sectional view taken, approximately, on the indicated line 4 4 of Fig. 1. Fig. 5 is a front elevation of the head of my improved clamp. Figs. 6 and 7 are views in perspective of a pair of mating wedges made use of in carrying out my invention.

Referring by numerals to the accompanying drawings, 1 indicates the bench, in the face of which and along one edge is formed a rectangular groove 2, the same being in direct alinement with the ordinary bench-stop.

3 and 4 indicate a pair of mating wedges, the same being of such width as that when they are placed side by side they will readily operate in the groove 2, and said wedges are of such height as that they will lie flush with the top of the bench when located in said groove. Formed integral with and extending upwardly from the top sides of these wedges 3 and 4 are pins 5 and 6, the upper ends of which are reduced in diameter.

Formed integral with and extending laterally from the inner face of the wedge 3 and adjacent the lower edge thereof is a lip 7, with the outer end 8^a of which is formed integral an upwardly-projecting lug 8. Formed in the under side of the wedge 4, at the center thereof, is a recess 9, in which the lip 7 operates, and a deeper recess 10 is formed adjacent the outer face of the wedge 4, in which the lug 8 operates.

The clamp proper, or that part of the device that engages the work, comprises a disk

11, with which is formed integral an operating-handle 12. The periphery of the front of this disk 11 is formed into a continuous engaging edge 13, the same being flush with the top surface of the disk on one side of the same and gradually extending into a lower plane on the opposite side of said disk, the purpose of this construction being hereinafter set forth.

Formed in the disk 11 is a countersunk semicircular slot 14, through which, when the clamp is properly positioned, the pin 6 of the wedge 4 passes, and upon the reduced upper end of said pin 6 is riveted a washer 15, the same bearing in the countersunk portion of the slot 14. Formed in the disk 11, at an eccentric point relative to the slot 14 and the circumference of the disk 11, is an aperture 16, through which passes the pin 5 of the wedge 3. Said aperture 16 is countersunk, and located in the countersunk portion is a washer 17, that is riveted to the reduced upper end of said pin 5. The aperture 16 is so formed in the disk 11 as that it is nearest to that portion of the edge 13 of the disk 11 that lies flush with the top surface of said disk.

The operation is as follows: In Fig. 1 the clamp is shown at a point approximately halfway between a locked and unlocked position. Should it be desired to engage the work with the clamp, the operator manually engages the handle 12 and moves the same in the direction indicated by the arrow A, Fig. 1, and to a position indicated by dotted lines B, Fig. 1. As the slot 14 is formed eccentric to the pivot-point of the disk 11, which is the pin 5, the edge of said slot 14 will engage against the pin 6 of the wedge 4 and move said wedge 4 away from the wedge 3, thus allowing said wedges to be freely moved longitudinally in the groove 2, formed in the bench 1. When the entire clamp has been moved to the proper position and the edge thereof engages against the end of the work opposite from the end which is engaged against the stationary bench-stop, the operator manually engages the handle 12 and moves the same in the direction indicated by the arrow C, Fig. 1, to the position as shown by dotted lines D in said figure. Owing to the eccentric arrangement of the slot 14 relative to the pivot-point of the disk 11 the

wedges 3 and 4 will be drawn toward one another until their outside faces very firmly engage against the sides of the groove 2. This rigidly locks the clamp at the desired point, 5 As the disk 11 is partially rotated by the movement required to lock the clamp in the groove 2, the forward engaging edge 13 of said disk will bear against the end of the work, and as said edge 13 is slightly inclined 10 the work will be with the continued movement of the disk 11 more firmly brought into contact with the surface of the bench. Thus the work is very firmly held in the manner and at the point desired. To release the clamp, 15 the operator moves the handle 12 in the direction indicated by the arrow A and in so doing moves the wedges 3 and 4 away from each other in the manner previously described, and thus allows the clamp to be moved 20 along the groove 2 away from the work. The lip 7, operating within the recess 9, restricts the movement of the wedges.

A bench-clamp of my improved construction is simple, strong, and durable, is easily 25 and quickly engaged or disengaged in use upon a piece of work, and may at any time desired be removed from the bench.

I claim—

1. In combination with a bench having a 30 groove formed therein, a pair of wedges operating in said groove, a disk eccentrically pivoted upon one of said wedges, a handle formed integral with said disk, said disk being provided with a semicircular slot, and a pin 35 passing upwardly from the mating one of the wedges through said slot.

2. In combination with a bench having a longitudinal groove formed therein, a pair of mating wedges arranged to operate in said 40 groove, pins formed integral with and projecting upwardly from said wedges, a disk having a semicircular slot formed therein ec-

centrically pivoted upon one of said pins, the mating one of said pins passing upwardly through said slot, an inclined engaging edge 45 formed on the front face of the disk, and an operating-handle formed integral with said disk.

3. In combination with a bench provided with a longitudinal groove, a pair of wedges 50 arranged to operate in said groove, means for restricting the movement of said wedges relative to one another, integral pins projecting upwardly from said wedges, a disk eccentrically pivoted upon one of said pins, said 55 disk being provided with a semicircular slot through which the remaining pin projects, a forwardly-projecting continuous engaging edge formed integral with the front of the disk, one end of said engaging edge being in 60 the same plane with the top of the disk, the remaining end being in a lower plane, and an operating-handle formed integral with and projecting laterally from said disk.

4. In combination with a bench having a 65 longitudinal groove formed therein, a pair of wedges operating in said groove, a lug and lip on one of said wedges and a recess in the mating wedge thus forming a sliding connection between the wedges, a disk eccentrically 70 pivoted upon one of said wedges, said disk having a continuous engaging edge in the shape of a winding semicircle means for operating the said disk, which disk is provided with a semicircular slot, and a pin passing 75 upwardly from the mating one of the wedges through said slot.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR J. COCHRAN.

Witnesses:

JOHN C. HIGDON,
MAUD GRIFFIN.