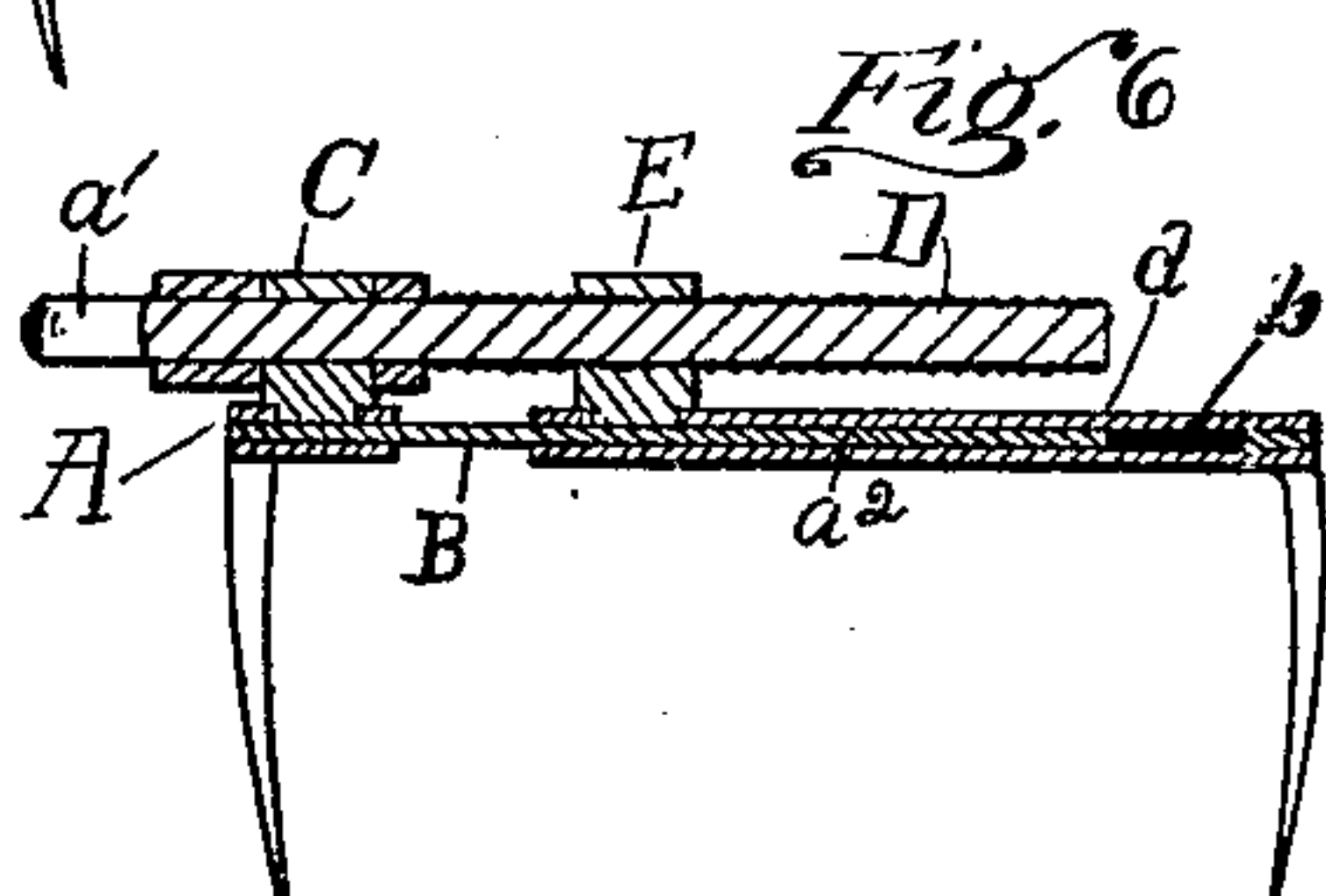
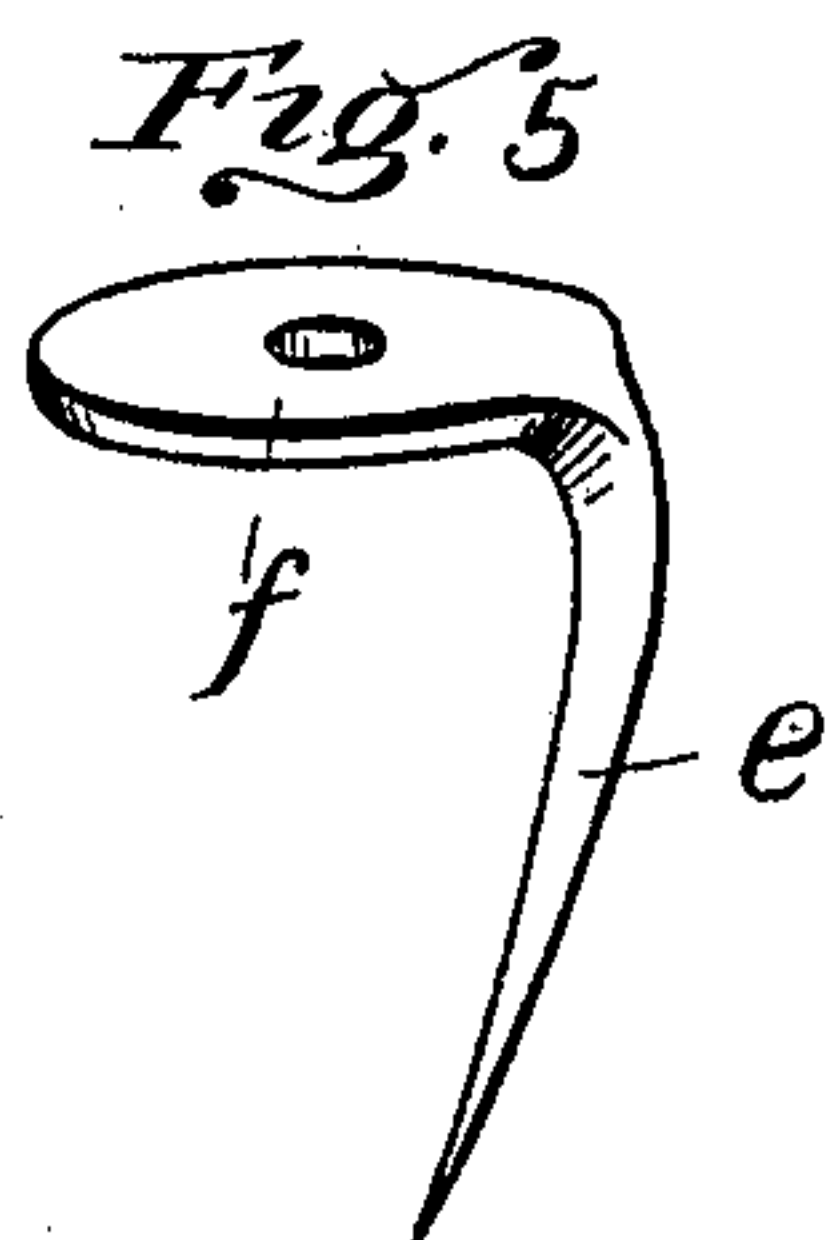
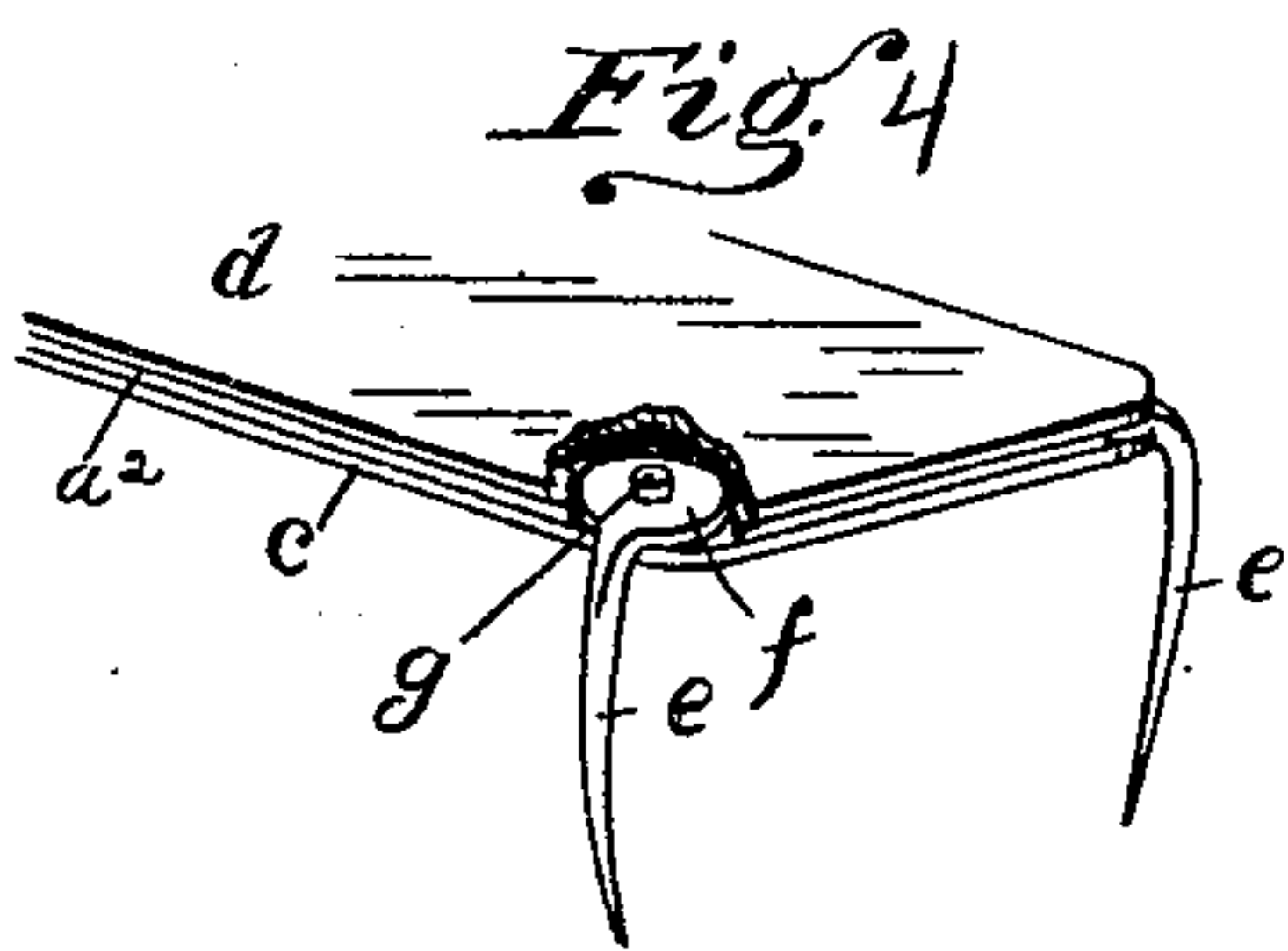
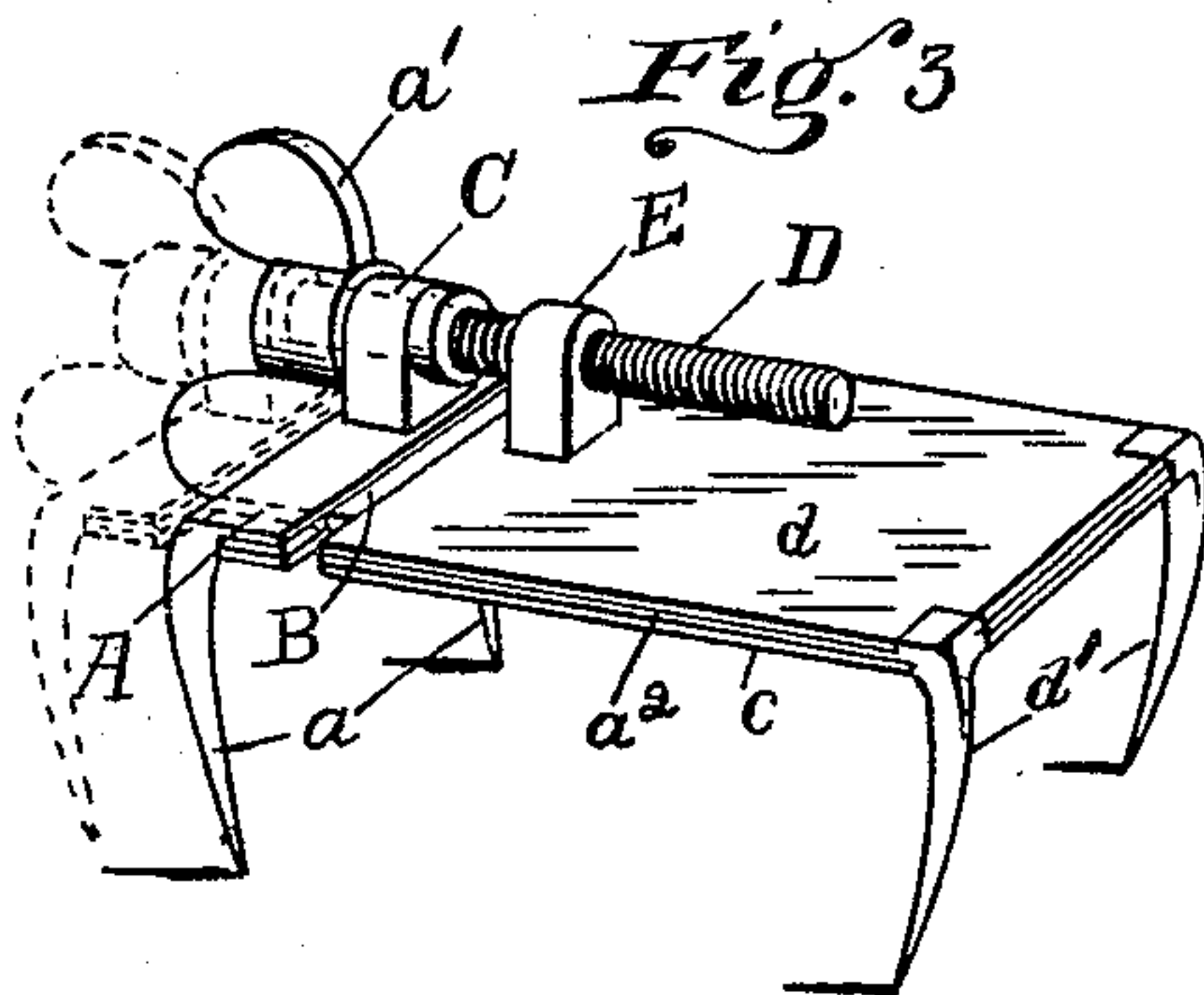
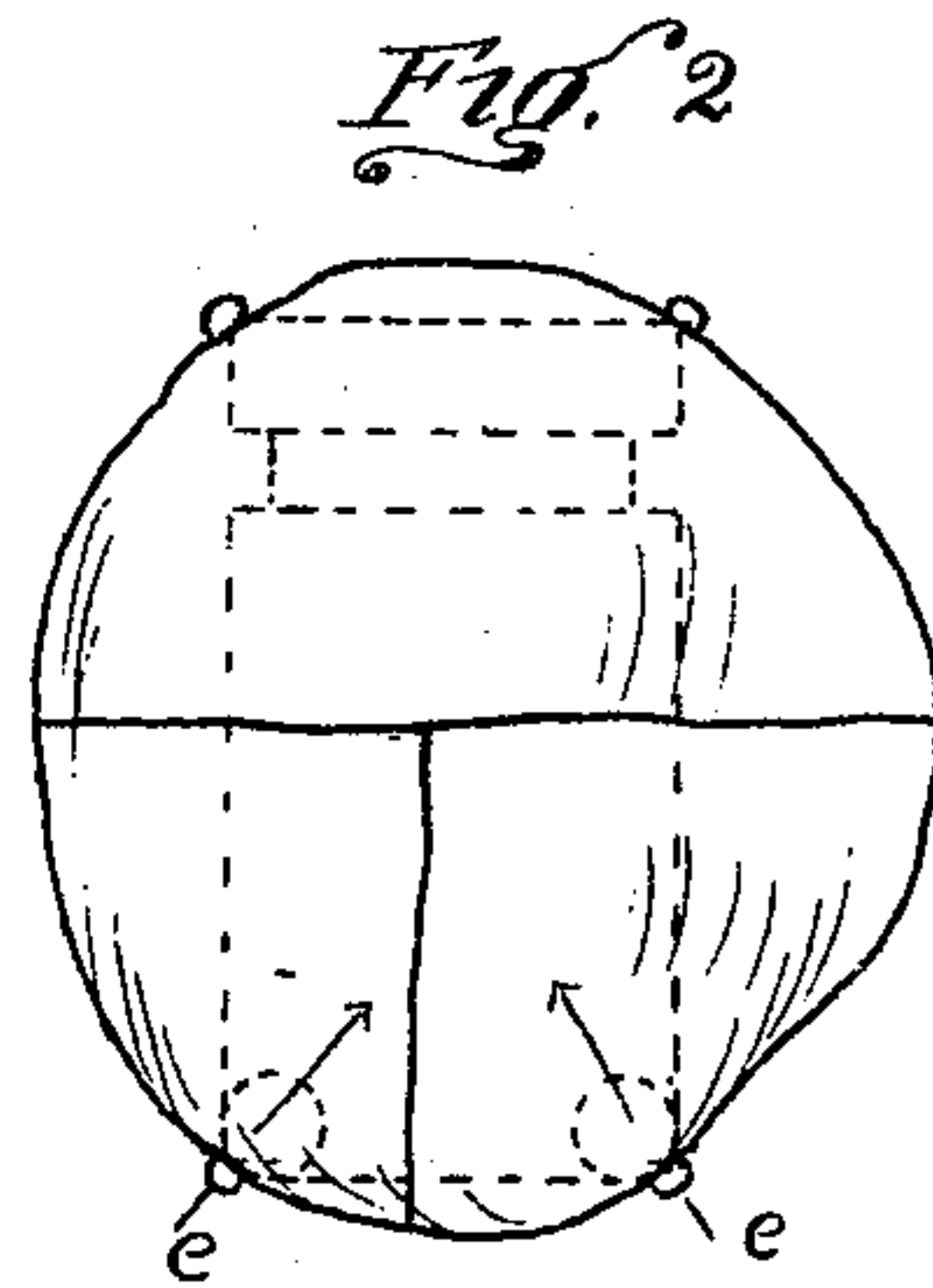
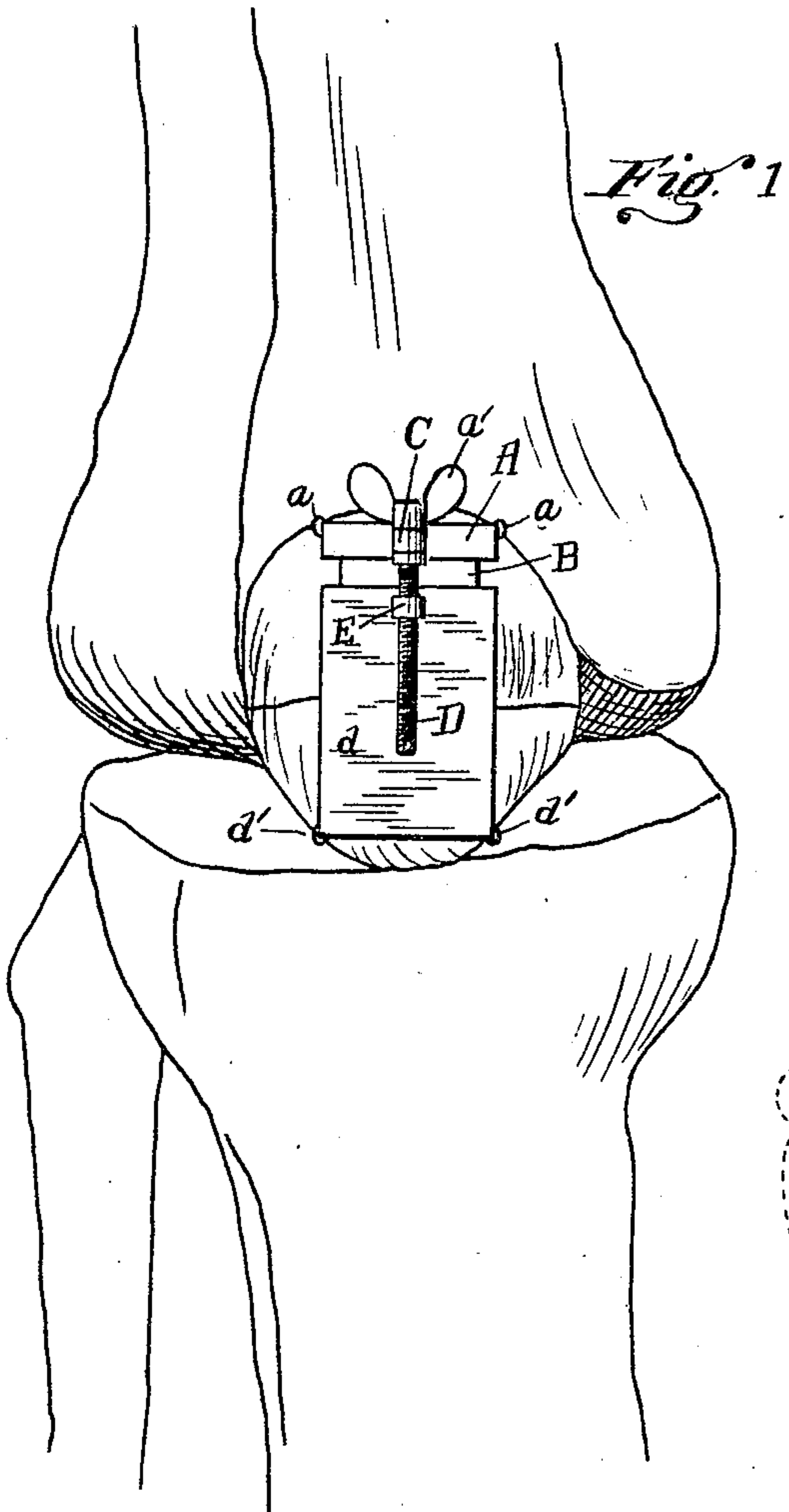


(No Model.)

C. A. BUSH.
SURGICAL APPARATUS.

No. 583,455.

Patented June 1, 1897.



Witnesses.
C. J. Cross
J. A. Jeffers

Inventor:
Charles A. Bush
By Fred W. Bond
Atty.

UNITED STATES PATENT OFFICE.

CHARLES A. BUSH, OF CANTON, OHIO.

SURGICAL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 583,455, dated June 1, 1897.

Application filed September 25, 1896. Serial No. 606,988. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BUSH, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Fracture Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a top view showing my device properly attached. Fig. 2 is a detached view of a knee-cap, showing a compound fracture and illustrating the device properly attached, the device being shown in dotted lines. Fig. 3 is a perspective view. Fig. 4 is a view showing a portion of the apparatus and illustrating the same provided with pivoted tangs or points. Fig. 5 is a detached view of one of the pivoted tangs. Fig. 6 is a longitudinal section.

The present invention has relation to fracture apparatus especially designed for use in clamping together severed sections of broken knee-caps; and it consists in the novel arrangements hereinafter described, and particularly pointed out in the claim.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents the sliding head or section, to which are securely attached in any convenient and well-known manner the tangs *a*. To the head A is attached or formed integral therewith the plate B, which plate is formed of a length and width to correspond with the length and width of the chamber or opening *b*, said plate being so adjusted as to size that it will move back and forth in the chamber *b*, but is so adjusted that it will be held in proper relative position at all times and under all circumstances. The chamber *b* is formed by means of the upper and lower plates *c* and *d*, which plates are formed of a size to correspond substantially with the size of the apparatus or device. To the plates *c* and *d* are attached the tangs *d'*, and when a simple fracture of the knee-cap is produced said tangs may be rigidly attached, as illustrated in Fig. 3.

To the head A is attached the lug C, to which lug is journaled the screw-threaded shaft D, which screw-threaded shaft is extended through a screw-threaded aperture located upon and attached to the plate *d*, said screw-threaded aperture being formed in the lug E.

For the purpose of treating compound fractures of the knee-cap the plates *c* and *d* are provided with the pivoted tangs *e*, which pivoted tangs are provided with the disks *f*, said disks being located between the plates *c* and *d* and illustrated in Fig. 4, and are held in proper position by means of the rivets. In use the tangs *a* and *d'* or *e*, as the case may be, are spaced so that the knee-cap proper will come between said tangs, as illustrated in Figs. 1 and 2, after which the screw-threaded shaft D is rotated in the direction to bring the tangs *a* and *d'* toward each other, thereby bringing the broken sections of the knee-cap together.

For the purpose of preventing the tangs from slipping upward after they have been properly adjusted upon the edges of the knee-cap said tangs are bent or inclined inward or toward each other, by which arrangement said tangs will have a tendency to better adhere to and bind the knee-cap.

By my peculiar arrangement I am enabled to bring together fractured portions of a knee-cap and hold them in such a position that they will become knitted together, and at the same time the tangs are so formed that they will not pierce the bone, thereby preventing any injury to the parts clamped together.

For the purpose of rotating the screw-threaded shaft D its outer end is provided with the thumb-nut *a'*, which thumb-nut is securely attached to the shaft in any convenient and well-known manner. The plates *c* and *d* are held the desired distance apart, so as to form the chamber *b*, by means of the interposed strips *a''*, which interposed strips may be formed separate and the plates *c* and *d* properly attached to said strips, or, if desired, one of the plates may be provided with flanges, which flanges take the place of the interposed strips; but in either event the plates *c* and *d* are to be riveted together.

It will be understood that various devices can be employed to adjust the tangs *a* and *d'* or *e* to or from each other and hold said tangs

at the desired point of adjustment without departing from the nature of my invention, but the device shown is the one preferred.

Having fully described my invention, what
5 I claim as new, and desire to secure by Letters Patent, is—

In a fracture apparatus the combination of
an adjustable head provided with a guide-
plate, tangs pivoted to the plates and means
10 for adjusting the tangs upon the head and

plates to or from each other, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES A. BUSH.

Witnesses:

BERTHA FINCH,

F. W. BOND.