

No. 654,943.

Patented July 31, 1900.

E. BUTLER.
HANDLE FASTENING.

(Application filed May 16, 1900.)

(No Model.)

Fig. 1.

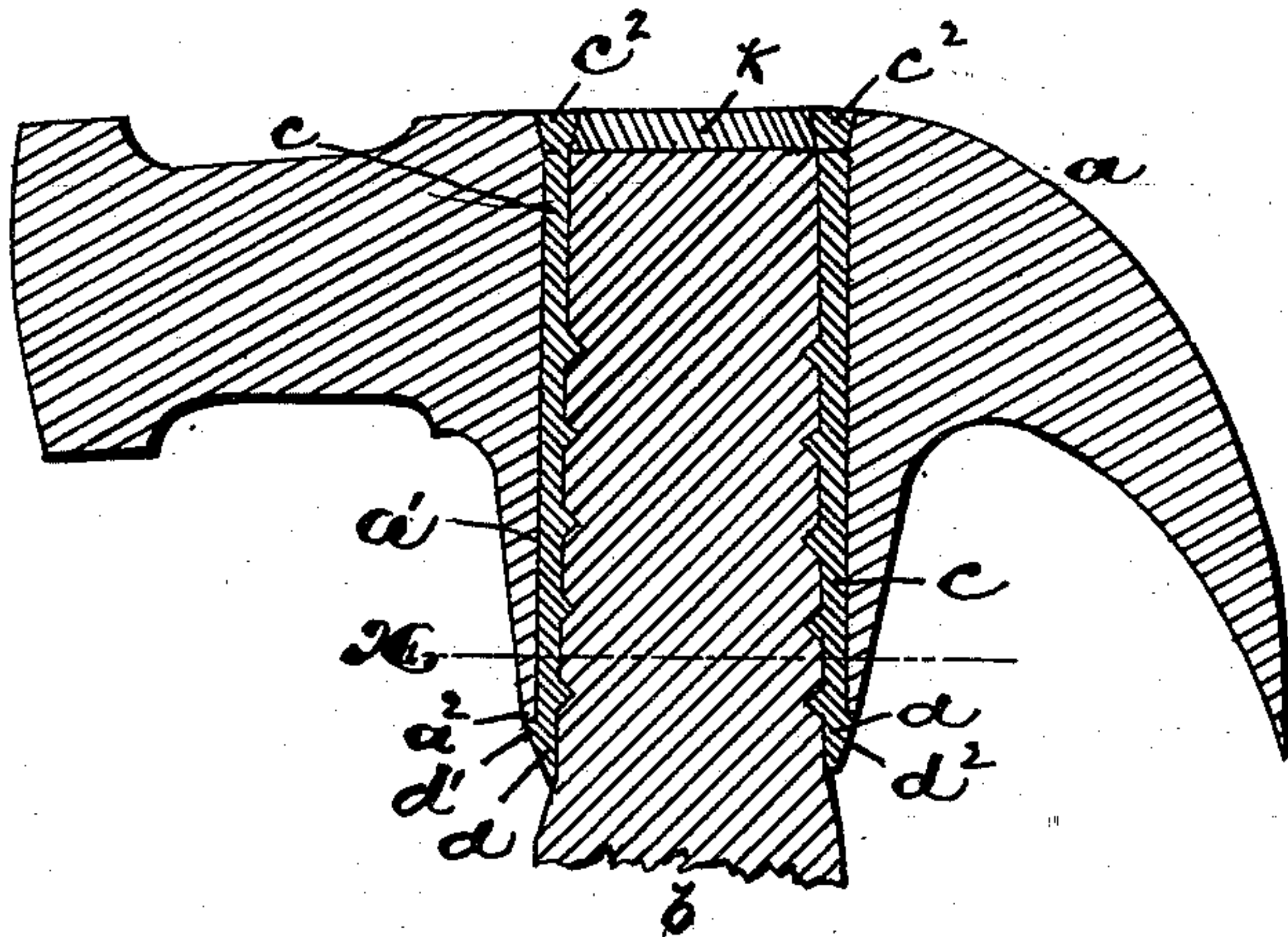


Fig. 6.

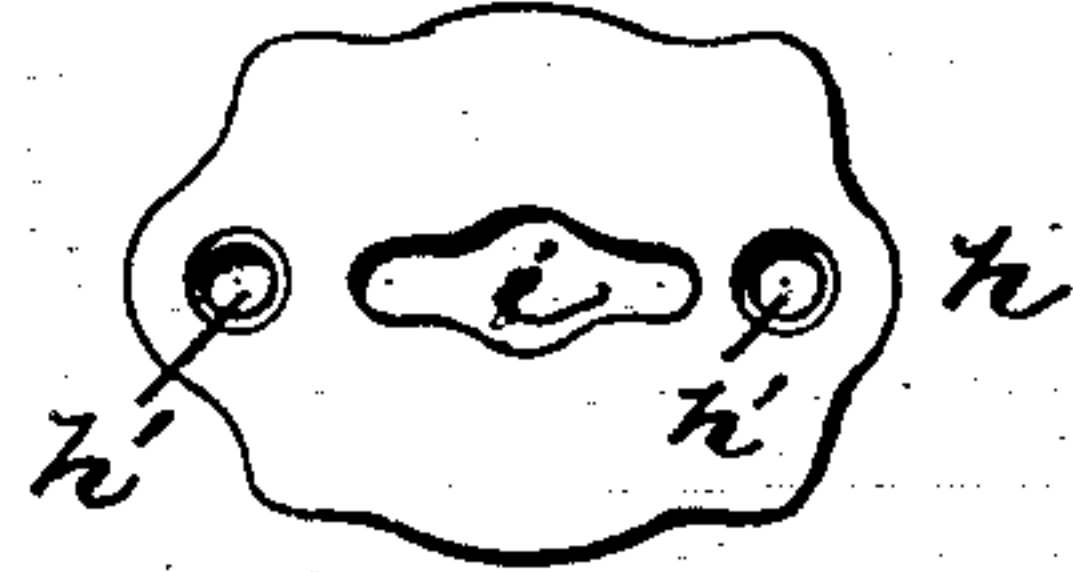


Fig. 5.

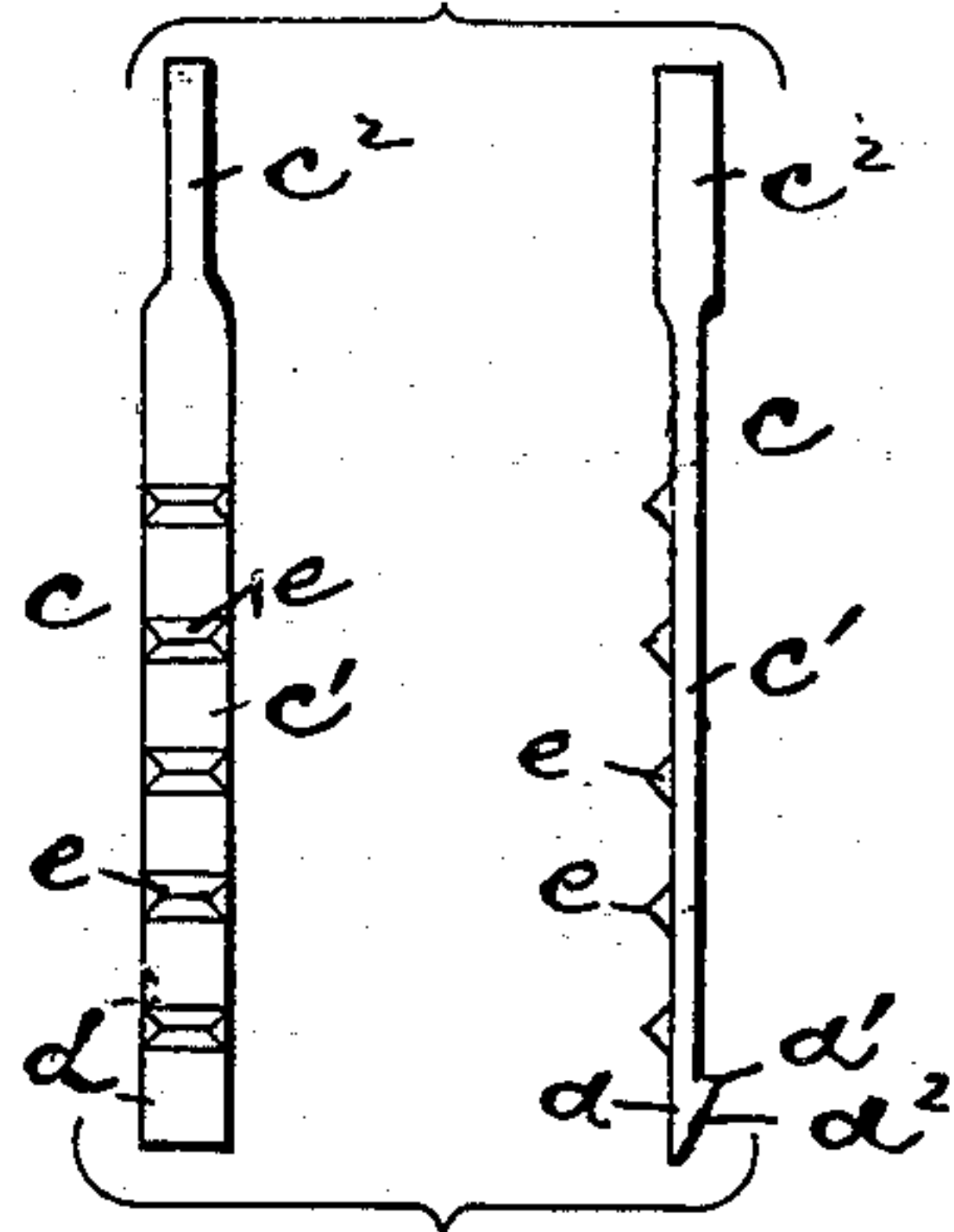


Fig. 3.

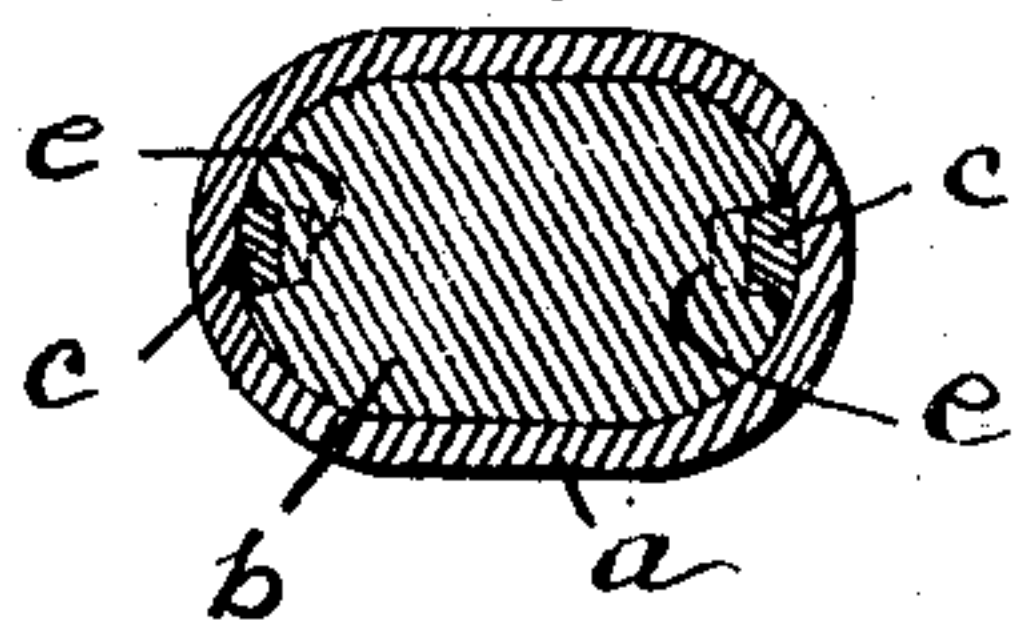


Fig. 4.

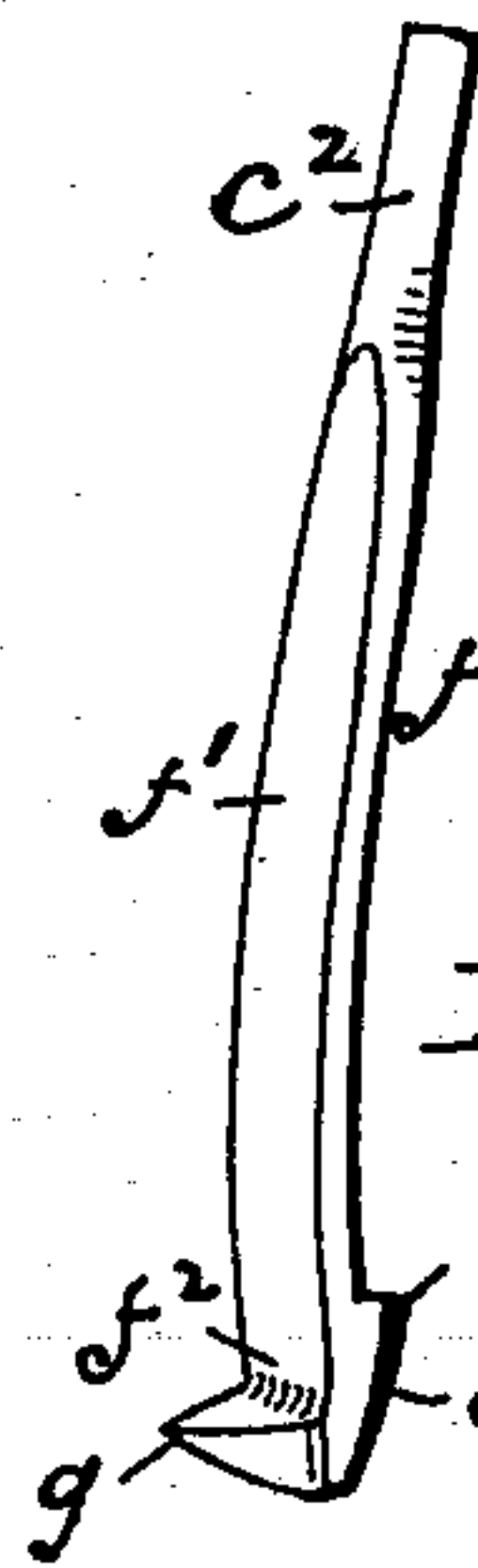
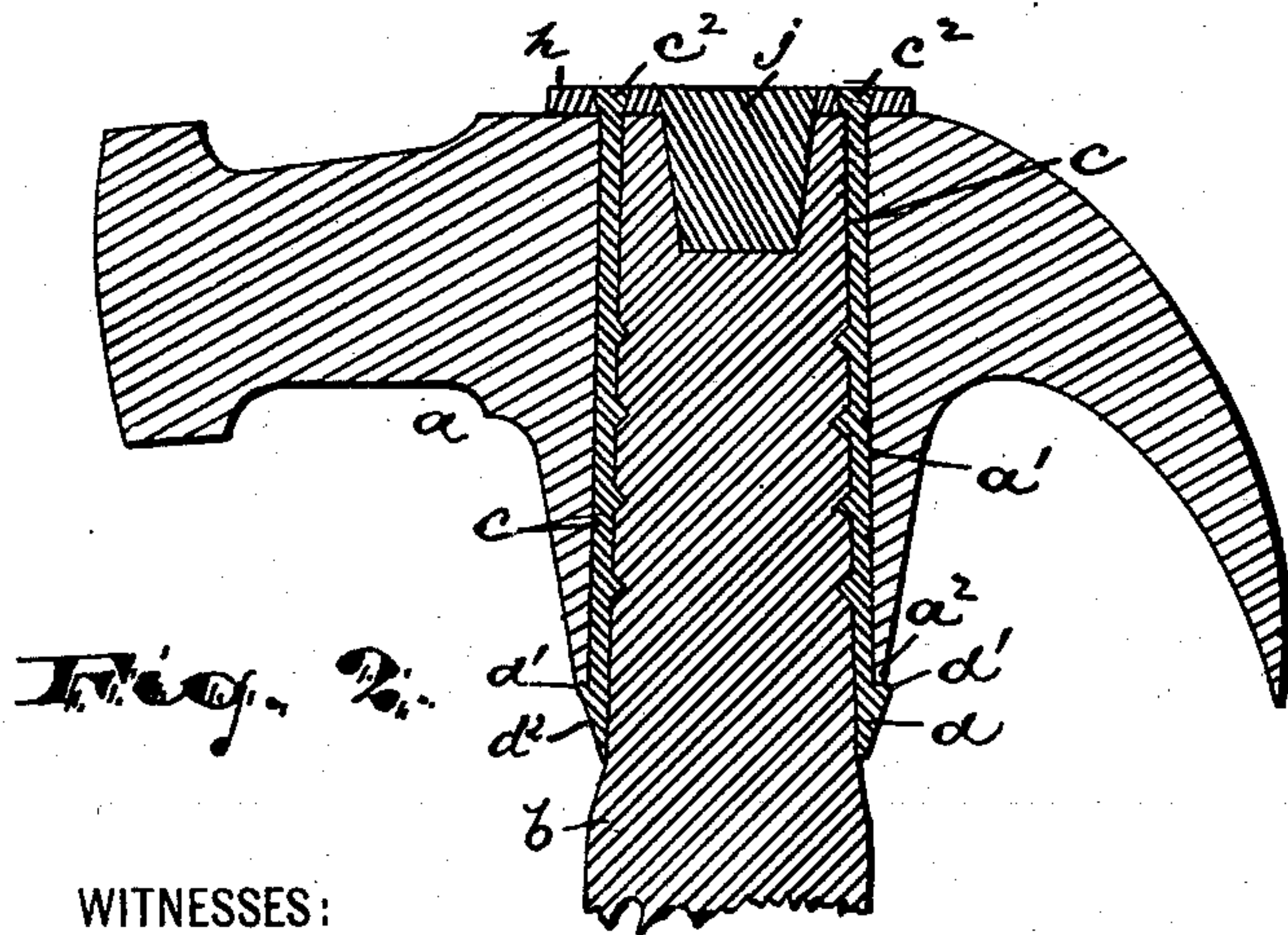
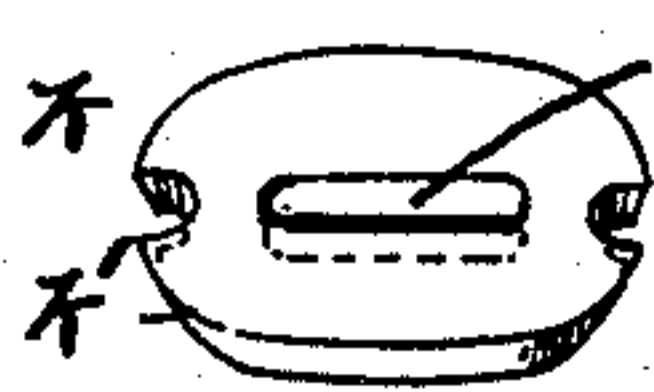


Fig. 7.

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EMMANUEL BUTLER, OF NEWARK, NEW JERSEY.

HANDLE-FASTENING.

SPECIFICATION forming part of Letters Patent No. 654,943, dated July 31, 1900.

Application filed May 16, 1900. Serial No. 16,837. (No model.)

To all whom it may concern:

Be it known that I, EMMANUEL BUTLER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Hammers, Sledges, Axes, &c., and Means for Holding the Heads Thereof to their Handles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to enable the heads of hammers, sledges, axes, and other similar handled tools to be more securely attached to their handles to thus avoid danger of the head flying off while the tool is in use, to secure a construction which shall be more positive and effective and one which shall not prevent a wedge being driven into the handle at any time to take up lateral looseness due to its shrinkage, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved hammer or similar handled tool and in the means for fastening the head thereof to its handle, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a central sectional view of a claw-hammer to which my improved handle-holding device has been applied. Fig. 2 is a similar view illustrating a modified construction. Fig. 3 is a cross-section taken on line *x*, Fig. 1, and Fig. 4 shows in perspective the cap used in the construction illustrated by Fig. 1. Fig. 5 shows one of the holding-strips in side and in edge view. Fig. 6 is a plan of the end plate, and Fig. 7 illustrates a modified form of holding-strip sometimes preferred.

In said drawings, *a* indicates the head of a carpenter's hammer, said head being of any usual construction and having an eye *a'* to receive the handle *b*. It will be understood

that a carpenter's hammer is shown for purposes of illustration only and that my invention is equally applicable to any tool having a head with an eye receiving a handle, such as sledges, axes, &c.

In carrying out my invention I apply to the handle end about to be inserted in the head holding-strips *c*, which extend longitudinally of the handle and preferably lie at diametrically-opposite sides of the handle. Usually the handle end is of an oval or elliptical cross-section, and under such conditions the holding-strips are preferably disposed at opposite ends of the longest diameter, as shown in Fig. 3. They may, however, be placed anywhere on the side of the handle. The holding-strips are applied to the handle *b* before said handle is inserted into the eye *a'*, preferably by means of a suitable machine which forces them into the wood of the handle at the proper point on its length. The handle end is then started into the eye, and by the act of driving it into its seat the holding-strips are further pressed into the handle, being held against longitudinal slipping by the grip given them upon the wood before starting the handle into the eye. Thus when the handle is driven to its final position the holding-strips are immovably held between the handle and inner walls of the eye.

Each holding-strip comprises a thin flat body *c'* and a reduced neck *c''* of substantially circular cross-section at one end of said body. The entire strip is of such length that the neck *c''* projects beyond the hammer-head and end of the handle when inserted, while the opposite end *d* of the body *c* projects at the rearward end of the eye and lies against the handle. This rearwardly-projecting end *d* of the strip has an outward projection or stop *d'*, adapted to engage the edge *a''* of the hammer-head, as shown in Figs. 1 and 2. This stop *d'* preferably extends outward flush with the outer surface of the head and from this point is beveled backward to the handle, as at *d''*.

To secure engagement of the holding-strip *c* with the handle *b*, the body portion *c'* of said strip is provided with sharp studs *e*, adapted to enter into the wood of the handle and prevent longitudinal displacement of either handle or strip with respect to the other.

These studs may extend across the flat body c' of the holding-strip, as shown, or may be round teats or of any other well-known form; but it is important that said studs be arranged at considerable distances apart to prevent "stripping" of the wood. Preferably these studs are arranged in a row along that portion of the length of the strip which is inclosed by the eye of the hammer; but under some conditions I may use a strip f , as shown in Fig. 7, where the inclosed portion f' is smooth and the exposed tip f^2 provided opposite the stop d with a single-pointed stud g , adapted to enter the handle. The hammer-handle being thus held against longitudinal movement with respect to the holding-strips pressed between said handle and the inner walls of the eye and said strips being restrained by the stops d from further passage into the eye said hammer-handle is thereby firmly secured against any sliding into the eye in a direction which would cause its end to project beyond the hammer-head.

To prevent the hammer-head from slipping or flying off the end of the handle, a cap h is provided which lies at the end of the handle and overlaps at its edges upon the hammer-head, as shown in Fig. 2. Said cap is perforated and countersunk, as at $h' h'$, to receive the ends of the extensions c^2 of the holding-strips, and said ends are riveted down flush with the surface of the cap. Said cap being thin presents a nice appearance, and the hammer-head is thus firmly held between the stops d and cap h on the holding-strips, and said strips are gripped to the handle by pressure against the eye, which forces the studs e deeply into the wood. A very rigid union of parts is thus obtained, and one, moreover, which is easily and cheaply effected.

Inasmuch as the eye of a hammer usually flares toward the end of the handle I may sometimes correspondingly bevel the edges k' of a cap k , shaped to nicely fit the eye, and let said cap into the eye flush with the outer end of the hammer-head, the handle being in this case shortened to admit the cap and the slope of the inner walls of the eye being sufficient to limit inward passage of the cap. This construction is illustrated in Figs. 1 and 4. The cap h is in any event preferably provided with an aperture i , through which a wedge j may be driven at any time if the wooden handle becomes laterally loose in the eye through shrinkage. This prevents my improved device from interfering with the ordinary wedging of the handle into its head.

Having thus described the invention, what I claim as new is—

1. The combination with a hammer-head having an eye, and a handle having its end forced into said eye, of a holding-strip pressed between the handle and the walls of the eye and having sharpened studs driven into the handle, said holding-strip being longer than the eye of the hammer and projecting there-

from at both ends, one of said ends lying backward against the handle and having a stop engaging the edge of the hammer-head and the other end being reduced and projecting beyond the end of the handle, and a cap at the end of the handle, which engages, at its edges, the hammer-head, said cap being perforated and the said reduced end of the holding-strip passed through said perforation and riveted, substantially as set forth.

2. In a hammer or like handled tool, the combination with a head having an eye, of a handle having its end shaped to drive into said eye, holding-strips having pointed studs sunk into the sides of said handle end whereby longitudinal movement with respect to the handle is prevented, said holding-strips having their rearward ends engaging the edge of the head when seated in the eye and their forward ends reduced and projecting beyond the handle, and a cap at the end of the handle, engaging the hammer-head and having perforations receiving the said reduced ends of the holding-strips and having a middle aperture through which a wedge may be driven into the handle, substantially as set forth.

3. In a hammer or similar tool, the combination with a head having an eye and a handle inserted in said eye, of holding means clamped between said handle and the walls of the eye and having ends projecting beyond the hammer-handle, and a cap, secured to said ends and overlying upon the hammer-head and having an aperture through which a wedge may be driven into the handle end, substantially as set forth.

4. As an article of manufacture, the herein-described means for holding hammer-heads and the like to their handles, comprising holding-strips each having a thin flat body portion provided at one side with sharpened studs and at the other side with a stop near one end, and having the other end reduced to form a neck, and a cap perforated to receive said necks, substantially as set forth.

5. As an article of manufacture, the herein-described device for holding hammer-heads and the like to their handles comprising holding-strips each having a thin body portion provided on one side with sharp studs and on the other side and near one end with a stop d' , and having at the other end a reduced neck adapted to project beyond the extremity of the handle, and a cap adapted to lie at the extremity of the handle in engagement with the head and having perforations to receive the said necks of the holding-strips and an aperture through which a wedge may be driven into the handle, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of May, 1900.

EMMANUEL BUTLER.

Witnesses:

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C. B. PITNEY.