

J. HOWE.
Boot-Trees.
No. 151,701.

Patented June 9, 1874.

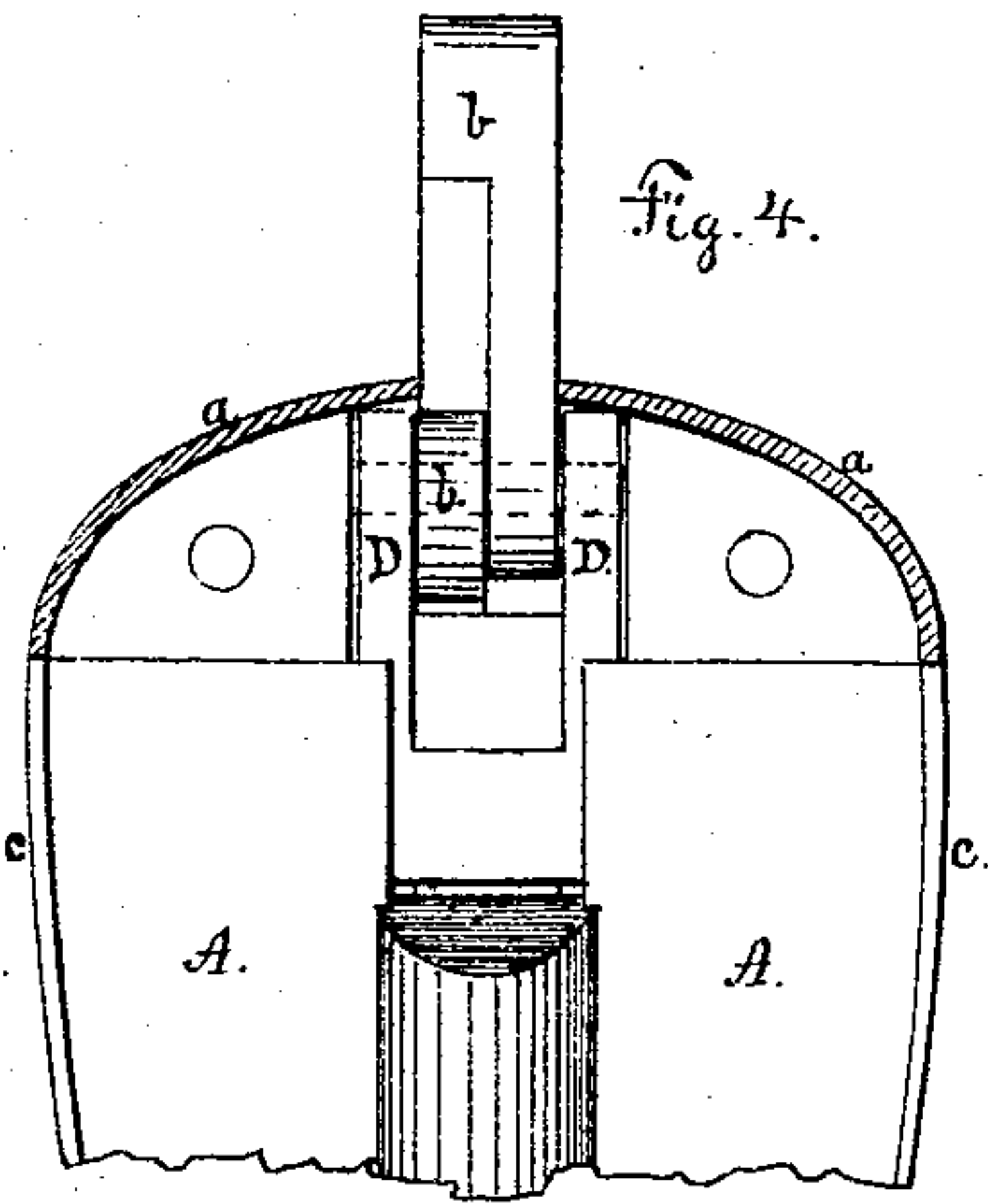


Fig. 4.

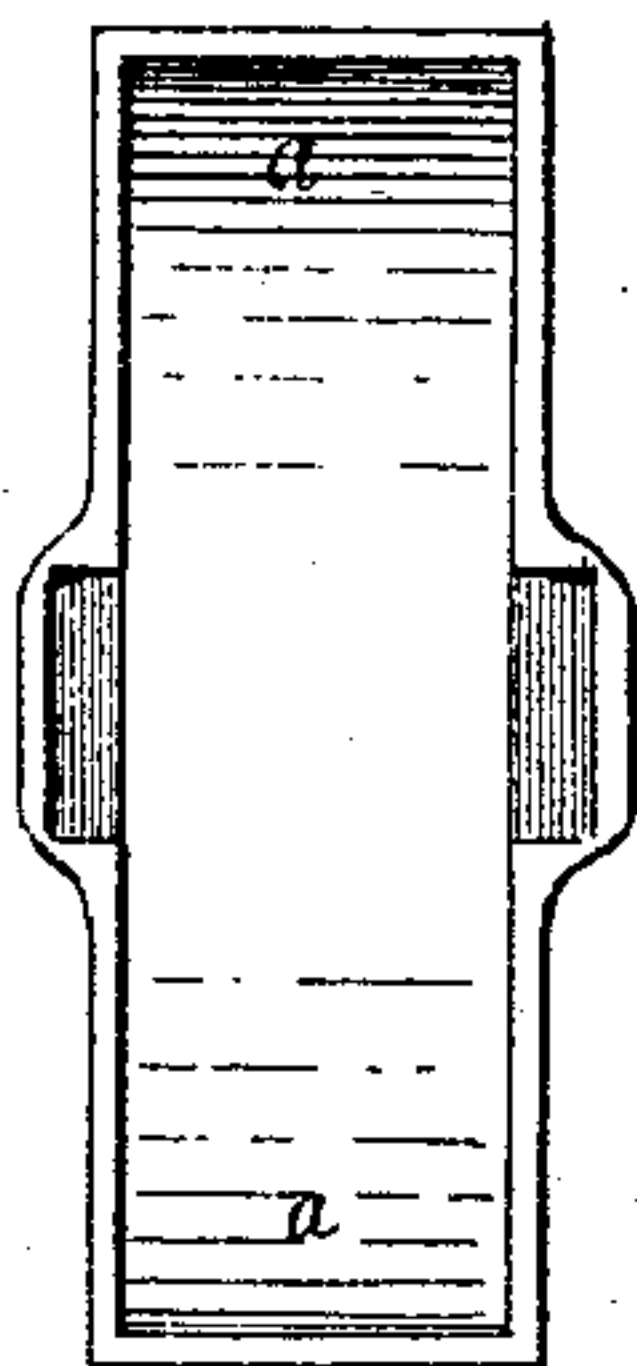


Fig. 3.

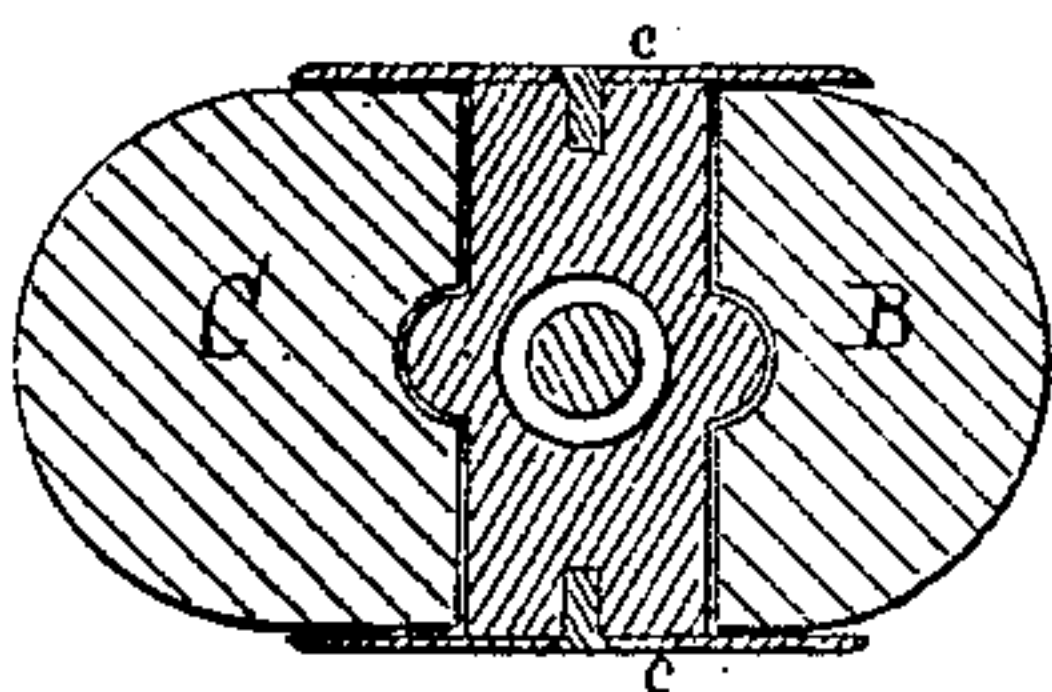


Fig. 2.

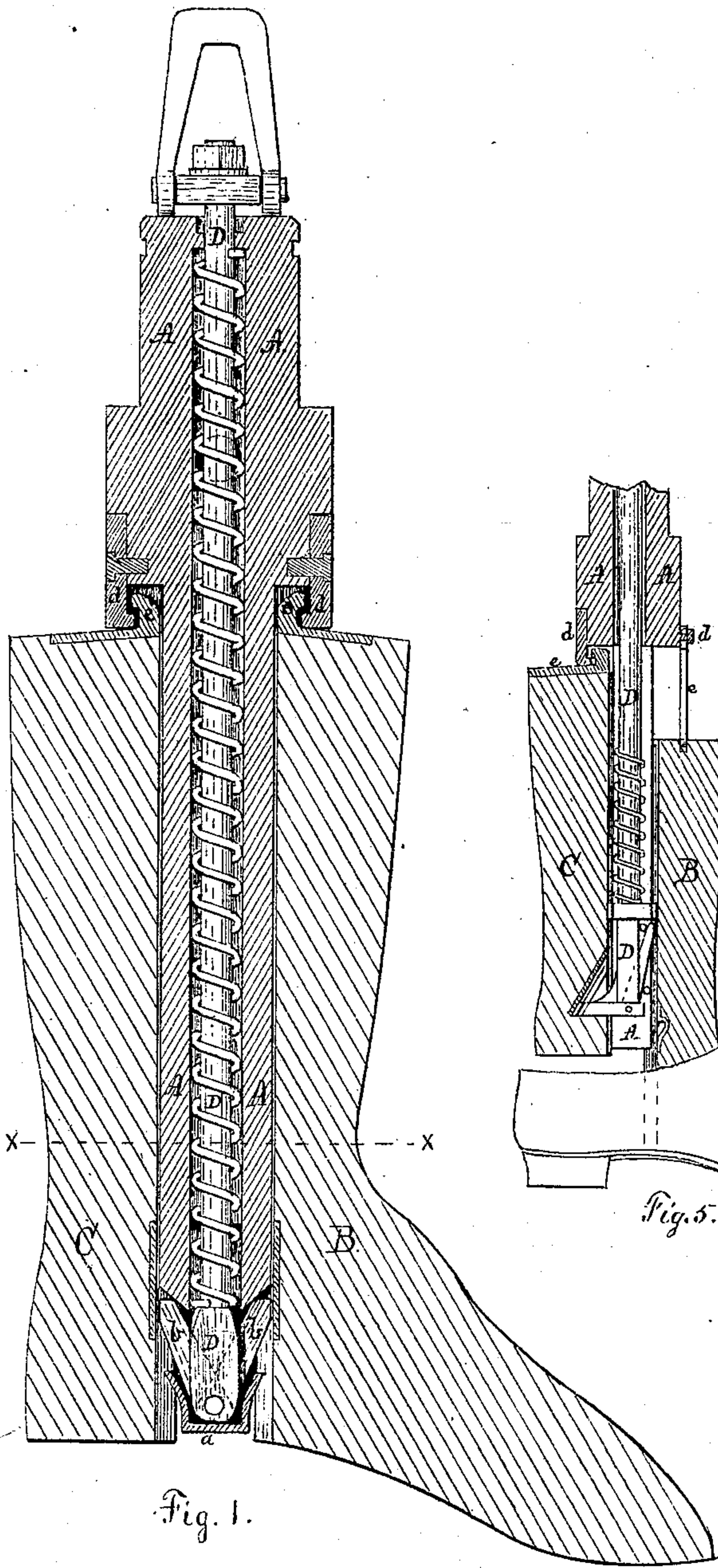


Fig. 1.

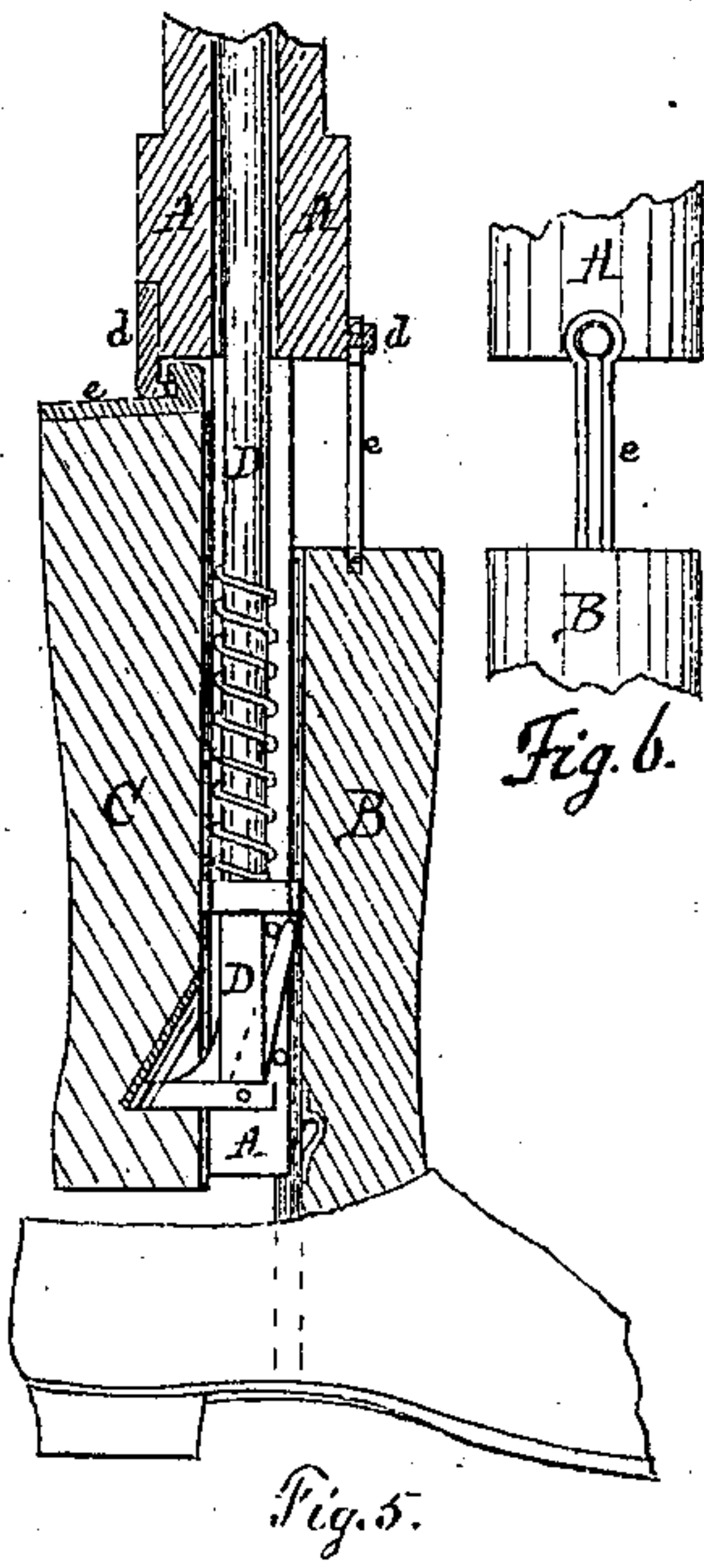


Fig. 6.

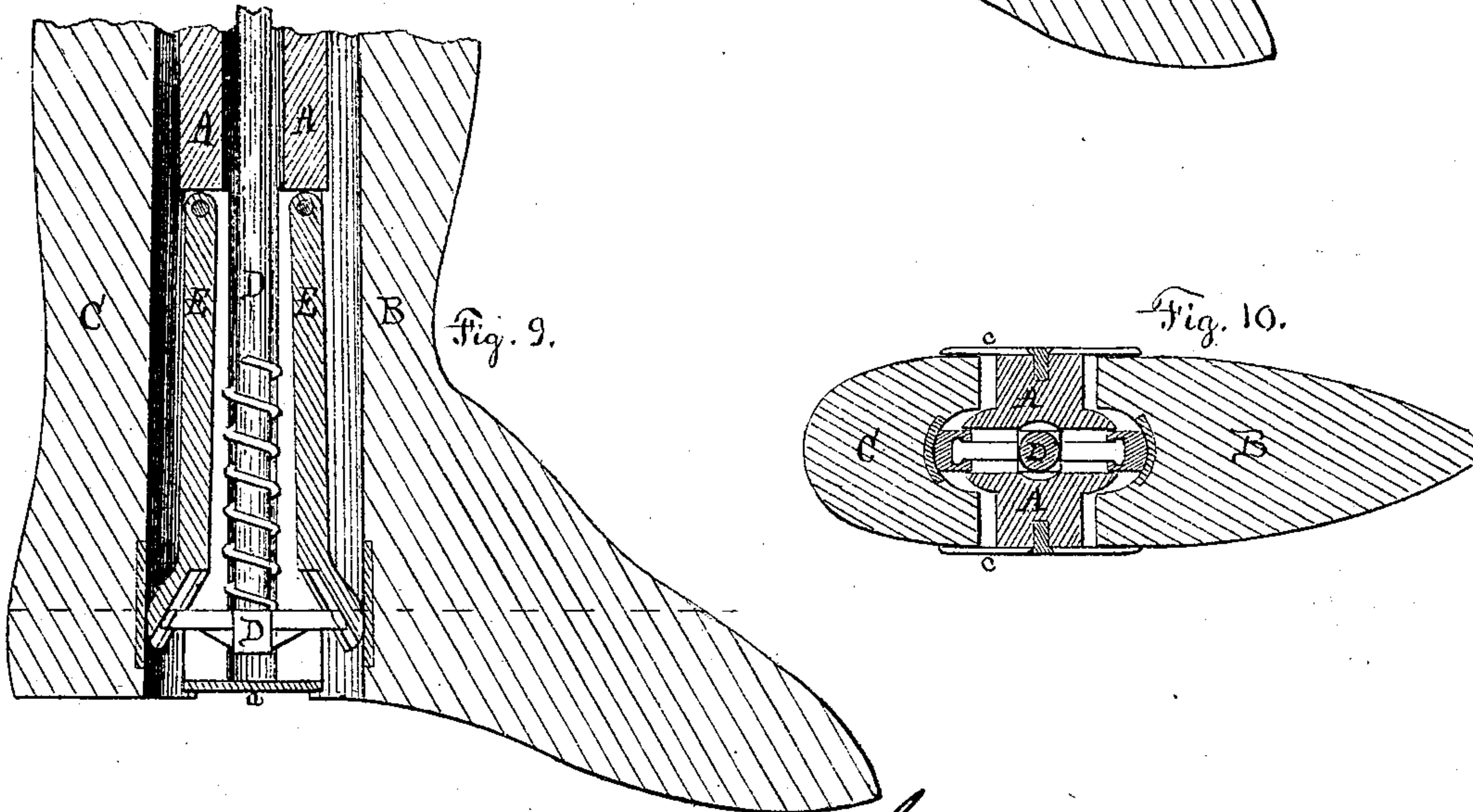
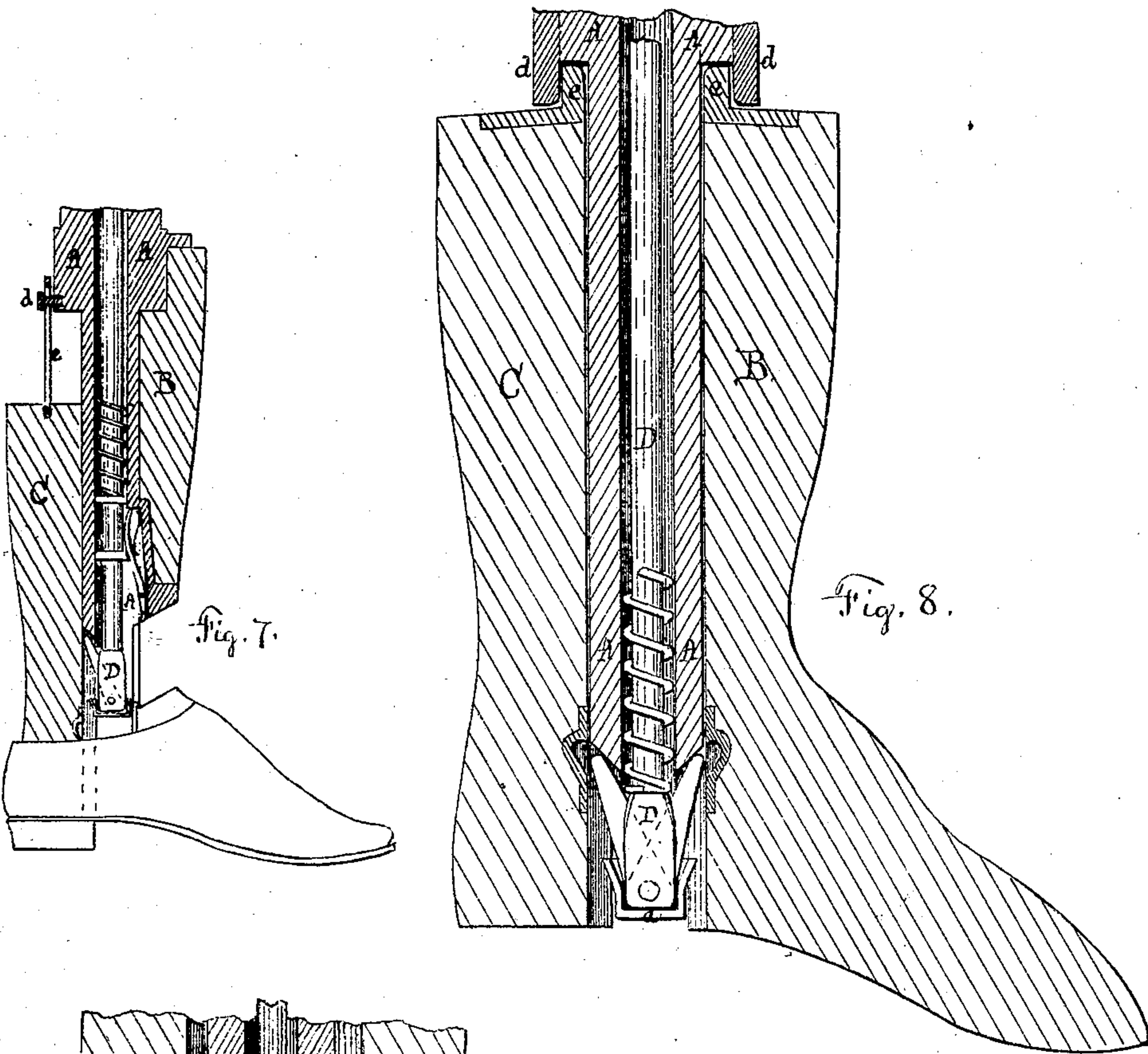
Witnesses. Oscar L. Green
J. Baum Lord

Jarvis Howe Inventor.
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UNITED STATES PATENT OFFICE.

JARVIS HOWE, OF MILFORD, MASSACHUSETTS.

IMPROVEMENT IN BOOT-TREES.

Specification forming part of Letters Patent No. **151,701**, dated June 9, 1874; application filed October 7, 1871.

To all whom it may concern:

Be it known that I, JARVIS HOWE, of Milford, in the county of Worcester and State of Massachusetts, have invented certain Improvements in Mounted Swiveling Trees, more especially intended for treeing shoes, of which the following is a specification:

The most important part of my invention relates to the combination of the back and front of the tree with the center-piece and distending mechanism, so that the back and front, or either, can be put into its proper place upon the center-piece, and removed therefrom, while inserted in the shoe to be treed; the object of this part of my invention being to adapt the tree more especially to shoes.

In the drawings, Figure 1 is a longitudinal section. Fig. 2 is a cross-section. Fig. 3 is a plan of the cap; and Fig. 4 is an elevation of the lower end of the tree, showing the cap in section. The other figures show modifications.

My improved tree consists of four main parts—the center-piece A, front B, back C, and distending mechanism D; and my invention relates, first, to the combination of the front and back with the other portions, so that either or both can be placed in their proper position for operation while inserted in, and together with, the shoe to be treed; second, the means for attaching the upper part of the back and front, or either, to the center-piece; third, the method of inserting the rod of the distending mechanism in the center-piece.

The journal on the center-piece A fits into a socket mounted on a table. This table and socket and the system of levers connected with it are in such common use in mounted swiveling boot-trees that they are not here described.

In the machine shown in Figs. 1, 2, 3, and 4, the center-piece A is cast with a longitudinal circular opening for the purpose of receiving the rod of the distending mechanism and its spring. This rod is forked at its lower end to receive the two pivoted arms, the upper ends of which lie against the inclined surfaces at the bottom of the two longitudinal ribs of the center-piece, while their lower portions lie between the two flaring lips of the cap *a*; consequently, when the rod is pulled longitudi-

nally against its spring, (which is effected by the treadle and system of levers above referred to as in common use in mounted swiveling boot-trees,) these two arms are caused to separate, and when it is moved back again by its spring they are caused to approach each other. The end of the center-piece is formed to receive this cap *a*, which is secured upon it. This cap is shown in cross-section in Fig. 1, and in longitudinal section, as applied to the center-piece, in Fig. 4. The lapping brasses *c c* are secured by screws to the center-piece, in the well-known way. The hooked pieces *d d* are secured to the center-piece, and the hooked pieces *e e* to the front and back, respectively. The upper ends of the arms *b b* bear against pieces of metal attached to the back and front, respectively. The forked portion of the rod is rectangular in form, and the lower portion of the longitudinal opening in the center-piece corresponds with it in form, and forms ways in which this portion of the rod plays longitudinally.

The operation of my tree is as follows: The back and front are first inserted in the shoe to be treed, and then they are slid longitudinally into their places on the center-piece. Force is then applied to the distending mechanism by means of the swivel on the end of the rod, the rod being pulled out longitudinally. This motion of the rod causes the pivoted arms to bear against the front and back, and thus fill the shoe; and this strain upon the front and back causes the hooks *e e* to engage with the hooks *d d*, and thus lock the front and back in place. The shoe is then rubbed over and the rod released and drawn back into its first position by its spring, which releases the front and back from strain. When the shoe and front and back are drawn off from the center-piece, or far enough off to enable the shoe to be removed, the front and back are then inserted in a second shoe, when the operation is repeated.

In practice I make several backs and several pairs of fronts for each tree, the better to fit the different sizes of shoes.

Mounted swiveling boot-trees consisting of a back, front, center-piece, and distending mechanism are well known. In most of them the backs are so combined with the center-piece as

to be readily detachable, and in one case both the backs and the front were so combined; but in all such trees it is impossible to detach either the back or front while they remain in the boot, or to insert them in the boot and then place them in their proper position on the center-piece.

It is not, in fact, either necessary or especially desirable that a tree for treeing boots should be capable of this operation, (although my improved tree can be constructed for treeing boots, if desired,) while it is highly necessary that a mounted swiveling tree for treeing shoes should be capable of this operation; and the principle of this part of my invention and its main feature of novelty consist in so constructing the tree that the front and back, or at least one of them, can, when removed from its proper position, be inserted in the shoe, and then, while remaining in the shoe, be placed in its proper position for operation, the shoe at the same time being properly placed upon the tree.

The machine shown embodies this principle in the best manner known to me; but it is obvious that many modifications of the machine shown can be made, which will embody this principle in some degree. For instance, the foot part of the front can be constructed as in the boot-trees in common use, and the remainder of the front be immovably attached to the center-piece, as in the tree patented by C. T. Eames in 1856. In this case the back and foot part will be first inserted in the shoe, and then slid into their places; but while this is no doubt feasible, it is obvious that it will be more difficult than when the whole front is first inserted in the shoe. This tree is shown in Fig. 7, which is precisely like the Eames tree as now made, except as to the back and the mechanism which connects it with the center-piece.

Again, the back may be attached to the center-piece, so that it cannot be inserted in the shoe before it is placed in its proper position on the center-piece, (as in the boot-tree of Eames,) and the front alone be first inserted in the shoe; and this will no doubt answer well for certain styles of shoes, so long as the back is of the proper size for the shoes. This is shown in Fig. 5, where the center-piece and the manner of applying the rod to it and the mechanism which connects the back with the center-piece are the same as Eames's. This figure and Fig. 6 also show a slotted lip attached to the front, and playing longitudinally on a stud attached to the center-piece, the head of which stud is too large to go through the slotted portion of the lip, but small enough to go through the enlarged opening at the upper part, to enable the front to be detached and another applied. This form of lip is also applicable to the back, as shown in Fig. 7.

Thirdly, a different distending mechanism may be used—as, for example, the cross-heads and inclined planes shown in the Eames patent above mentioned, and in R. L. Lewis's patent of 1858, the inclined planes being attached

not to the back and front, respectively, but to pieces over which the back and front can slide, as shown in Fig. 10 in cross-section, and in Fig. 9 in longitudinal section, in which E E are the pieces over which the back and front slide, and which are pivoted in slots formed in the center-piece.

The device shown in the Richardson patent of 1863, also, may be readily adapted for use in my tree, either with or without these pieces E E, and so also the toggle-joint shown in my patent of 1848.

The particular form of distending mechanism is obviously a matter of choice, its essential characteristics being that it shall cause the shoe to be filled and stretched by the back and front of the tree, and shall not be so connected to the front or back as to prevent it from being put in position and removed while inserted in the shoe, or to prevent the tree being turned upon its journal.

It is of great importance that the back and front be locked in place while the shoe is being rubbed. In the machine shown, the hooked lips *d d* and *e e* perform this office; but it is obvious that the locking mechanism now in common use, to lock the foot to the front in boot-trees, may be readily adapted to my tree; or the distending mechanism may itself perform this office, as shown in Fig. 8, where a toggle-joint is used, whose ends are retracted from their sockets when the tree is collapsed, but enter them, and thereby tend to force the back and front upward, as well as outward, when the rod is pulled out.

These lips *d d* and *e e* perform another function—that is, they prevent the back and also the front from separating from the center-piece at the top. In a boot-tree it is necessary that the back should separate from the center-piece at the top, in order to fill the leg of the boot; but this is objectionable in a shoe-tree, and for this reason I use these lips *d d* and *e e*, which may be hooked, as shown in Figs. 1, 5, and 7, or without hooks, as shown in Fig. 8.

Another novel feature in my improved tree is the method of putting and securing the rod in the center-piece; and consists in forming the center-piece with an opening throughout its length, through which the rod can be inserted from the lower part of the tree, and held in place by a cap covering the opening, the object being to facilitate the insertion and securing of the rod, and thereby cheapen the cost of construction. It is obvious also that the rod may be forced inward to separate the back and front of the tree, and outward to collapse it, instead of vice versa; and this would be an improvement, inasmuch as it would bring the bearing lower down on the back and front, which is desirable; but it would be a disadvantage, as it is easier to apply the power to pull out the rod than to shove it in.

I am aware that in the old-fashioned hand boot-trees and in the shoe-trees now in use, the back and front are inserted in the boot or

shoe before they are pressed apart to fill and stretch it; and I do not, of course, intend to claim all trees in which the back and front, or either, can be inserted in the boot or shoe before pressure is brought to bear against them to fill and stretch the boot or shoe. I am also aware that in the boot-tree patented to Wm. Upfield, in 1850, the front could be inserted in the boot before the rest of the tree—to wit, the back and distending mechanism—was so inserted; but this tree was not provided with a journal, so that it could be inserted in a socket, and was not a mounted or a swiveling tree. I do not, therefore, claim all combinations of a front with the other parts of a tree when the front can be first inserted in the boot or shoe to be treed; but, so far as I am aware, no tree has ever heretofore been constructed with a main portion supporting the distending mechanism and provided with a journal intended to fit in a socket for the purpose of supporting the tree, and either a back or front so connected with it that the back or front could be inserted in a boot or shoe, and then, remaining so inserted, be properly applied, together with the boot or shoe, to this main portion.

I disclaim, therefore, all combinations of the front of a tree with the other parts when the part with which the front is combined is not provided with a journal to support the tree, so that it can be turned on the axis of the journal, and with a distending mechanism, which will not interfere with its so turning, as this part of my invention relates wholly to the improvement of mounted swiveling trees, and

more especially to the adaptation of such trees to the treeing of shoes.

What I claim as my invention is—

1. The combination of the center-piece A, distending mechanism D, and the front B and back C, as constructed and arranged so that the back and front can both be placed on the center-piece in their proper position for operation while inserted in and together with the shoe.

2. The combination of the back C with the center-piece A and distending mechanism D, as constructed and arranged so that the back can be placed in its proper position for operation while inserted in and together with the shoe or boot to be treed.

3. The combination of the front B with the center-piece A and distending mechanism D, as constructed and arranged so that the front can be placed in its proper position for operation while inserted in and together with the shoe.

4. The hooked lips *d* and *e*, in combination with the back and center-piece, and also with the front and center-piece, as described.

5. The combination of the rod, center-piece, and cap, as described.

6. The distending mechanism D, consisting of the arrangement, as specified, of the rod, the pivoted arms, and the inclined planes against which these arms bear.

JARVIS HOWE.

Witnesses:

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O. P. GREENE.