

No. 669,003.

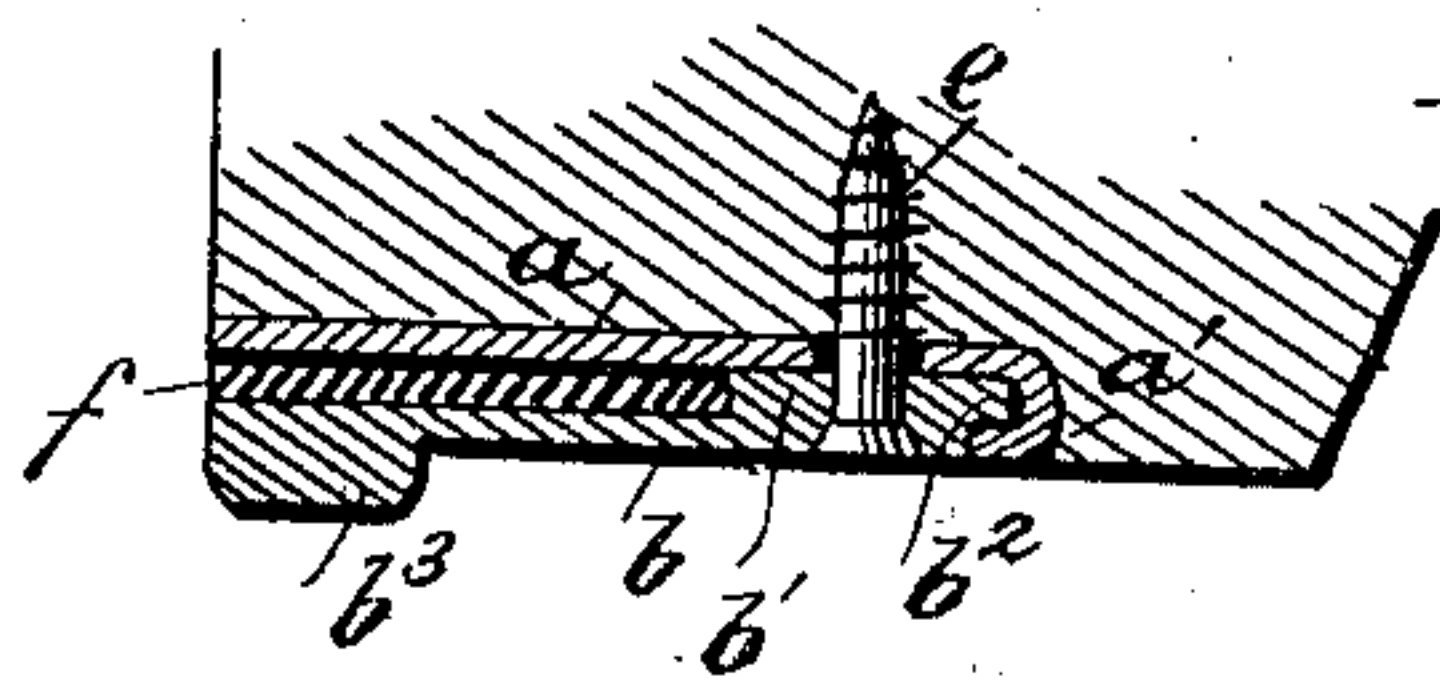
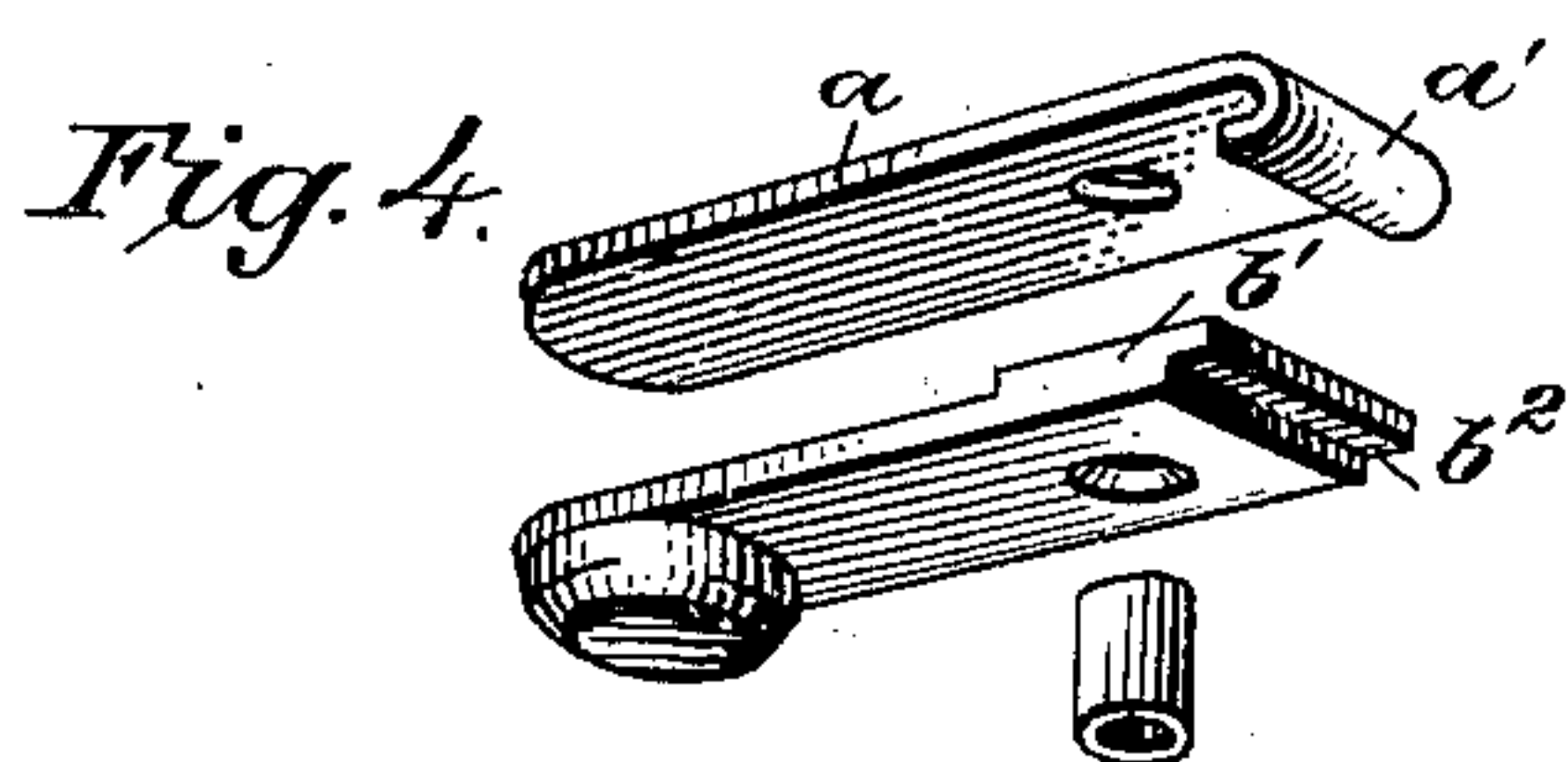
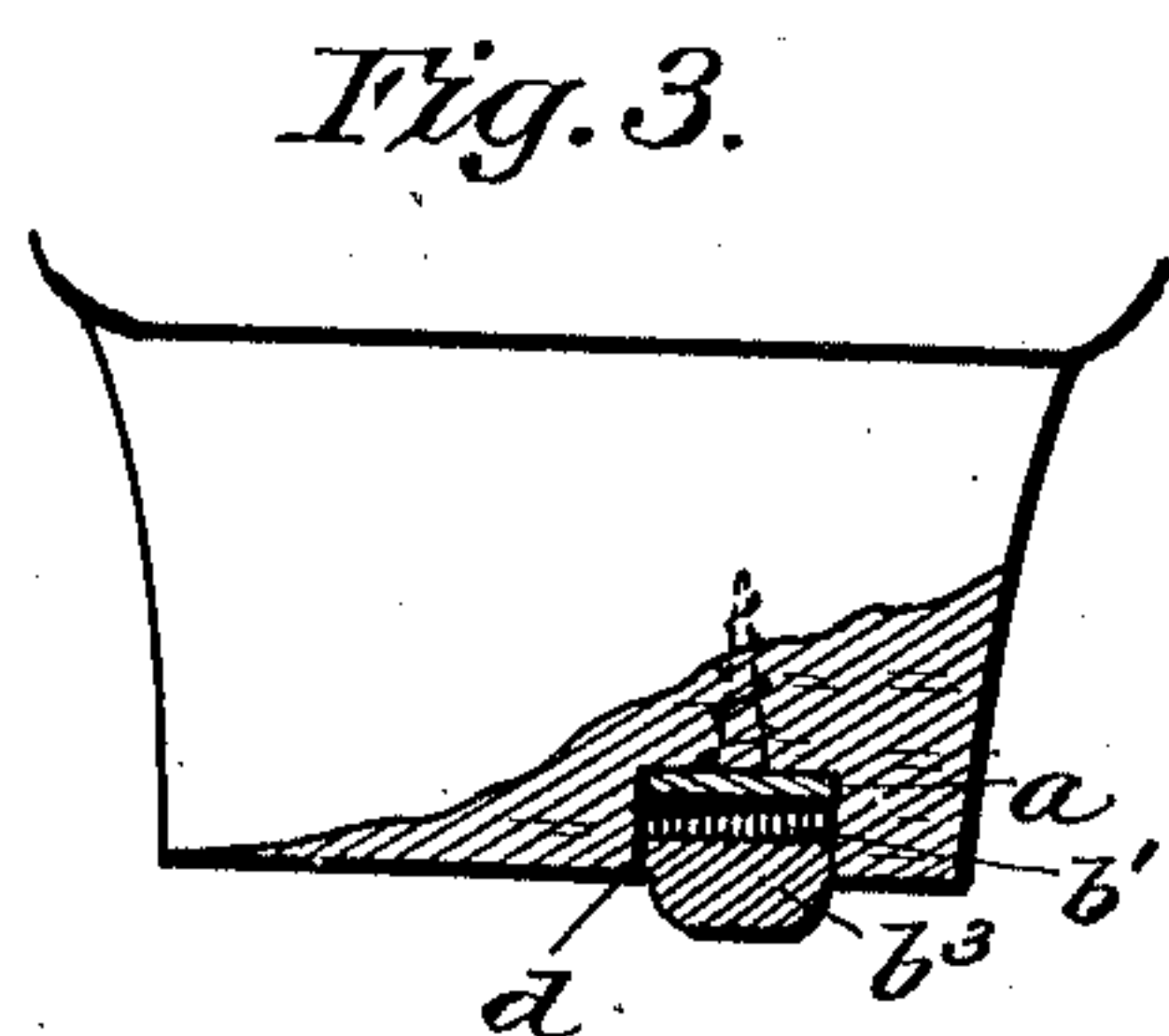
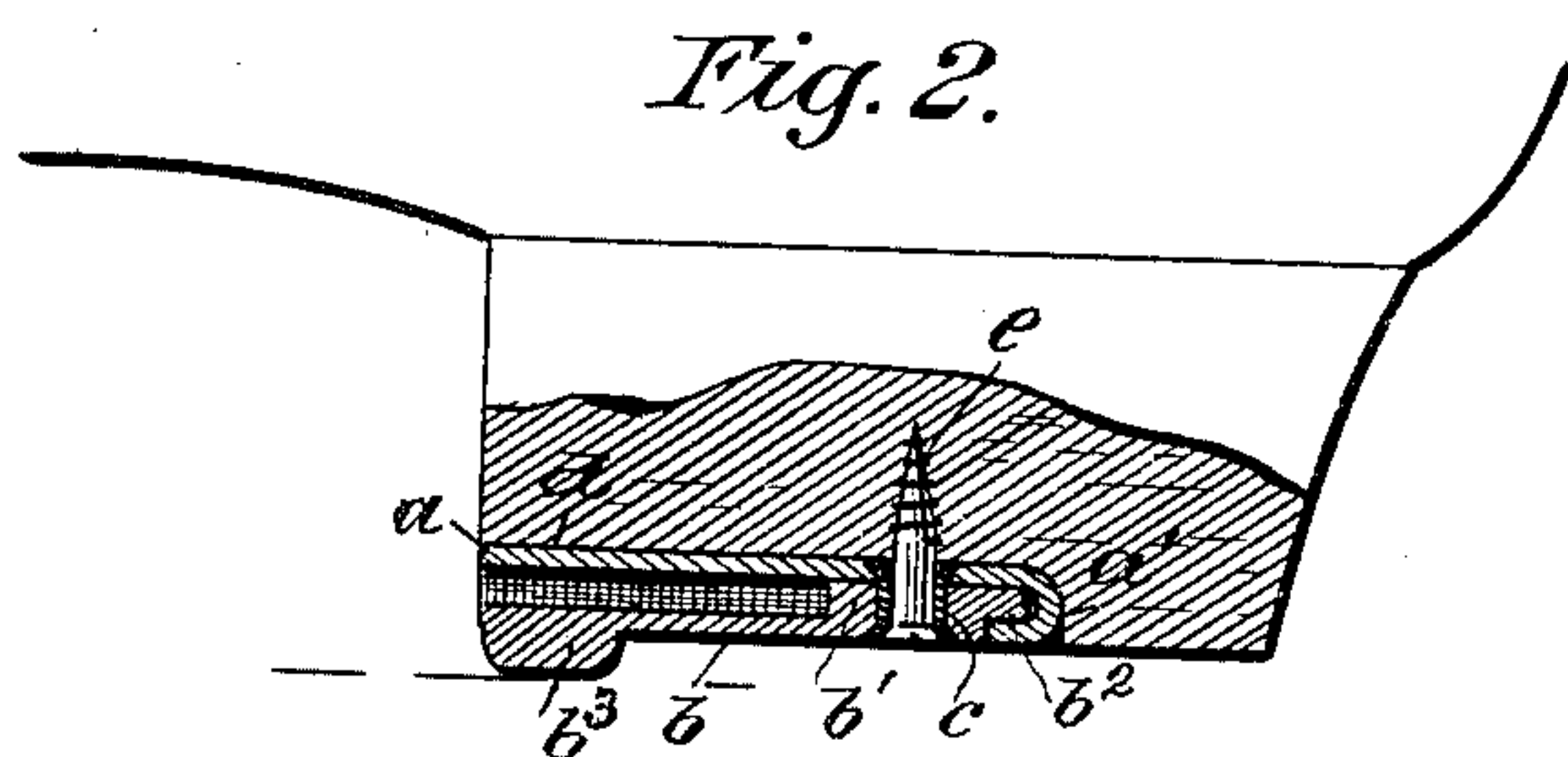
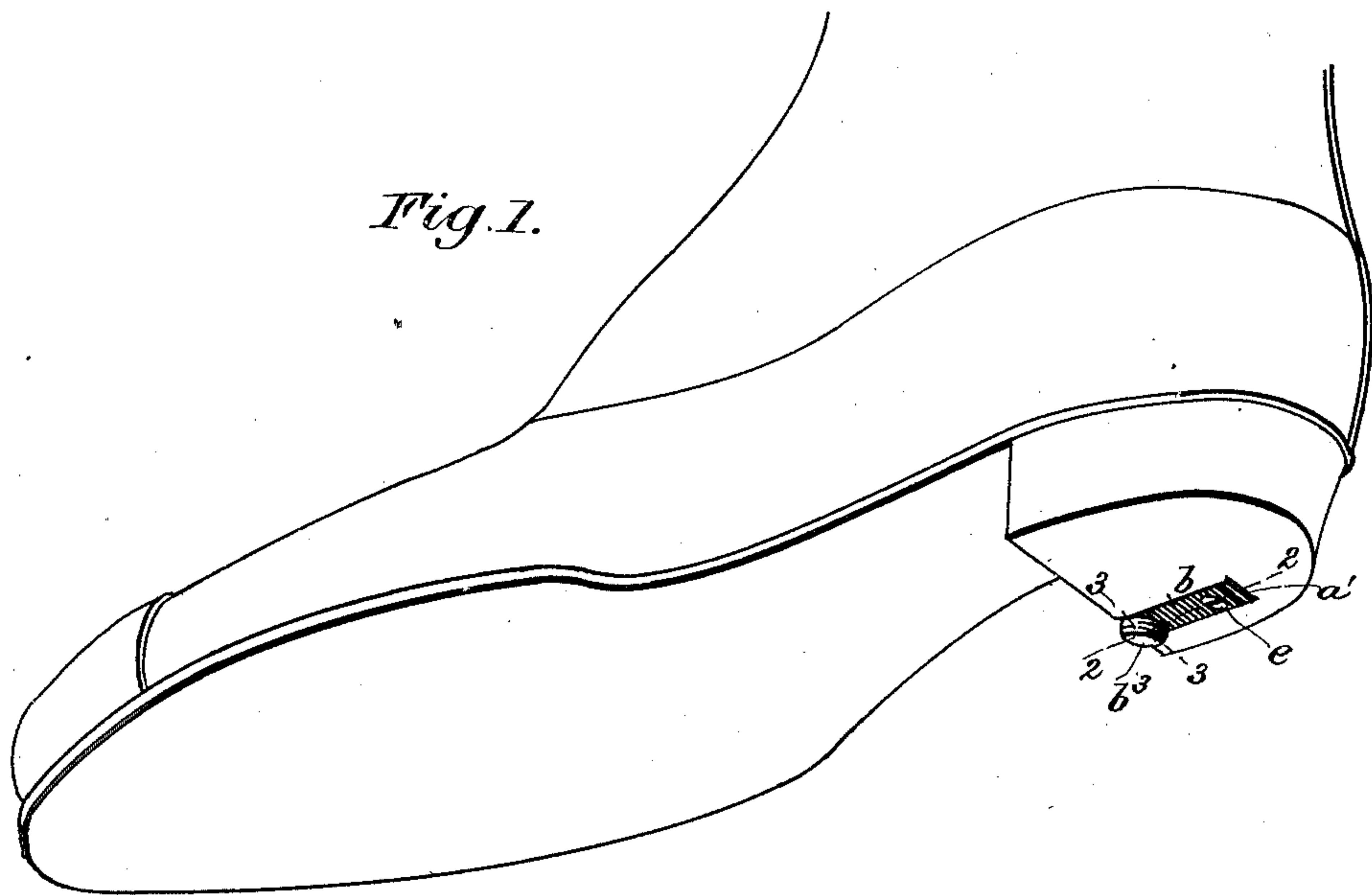
Patented Feb. 26, 1901.

G. E. SWAN.

SPRING TREAD DEVICE FOR BOOTS OR SHOES.

(Application filed June 13, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE ELBRIDGE SWAN, OF BEAVER DAM, WISCONSIN.

SPRING-TREAD DEVICE FOR BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 669,003, dated February 26, 1901.

Application filed June 13, 1900. Serial No. 20,198. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ELBRIDGE SWAN, residing at Beaver Dam, in the county of Dodge and State of Wisconsin, have invented a new and Improved Spring-Tread Device for Boots or Shoes, of which the following is a specification.

This invention relates to improvements in spring-tread devices especially adapted for application to the heels of boots and shoes, which have for their purpose to provide a spring pad or cushion which will aid in lifting the heel of the boot or shoe as it is drawn up from the pavement or floor, to prevent the shock and jar usually incident in walking on hard pavements, roadways, or floors, and serves to render the steps the more easy and elastic, as well as youthful.

In its more specific nature my present invention relates to improvements on a device of the character stated which forms the subject-matter of my Patent No. 562,748, granted June 23, 1896; and the same consists in certain details of construction and novel arrangement of parts, all of which will hereinafter be fully described, and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view illustrating my invention as applied to the heel of a shoe. Fig. 2 is a longitudinal section of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a cross-section thereof on the line 3 3 of Fig. 1. Fig. 4 is a detail view of the two parts constituting the device detached, and Fig. 5 is a view of a modified arrangement hereinafter referred to.

In my other patent, before referred to, the spring-tread device is made of a single strip of spring material suitably bent upon itself to the required shape. While I have found this form of device advantageous and adapted to produce the results claimed therefor, from practical experience I have discovered that irregular motion or strain upon the rear end thereof—that is, at the point where the single piece is bent upon itself—frequently causes the device to break at this point and in consequence renders it useless. Furthermore, owing to the peculiar bend of my patented device special contrivances are required to produce the same, which makes the cost of

manufacture excessive, and, again, by reason of forming the convexed or wear portion proper a part of and bending the same down from the lower member of the body portion of the device it soon flattens or bends down or wears through, which is a very objectionable result, because when broken or worn through the said end tends to cut the carpet or scratch the floor walked upon.

To overcome the objectionable features above noted is the prime object of my present invention, which also has for its purpose to provide a spring-tread device of the character noted of a durable and stable construction which can be more economically made and which will the more effectively serve for the intended purposes than that form of device disclosed in my former patent.

Generally my present invention comprehends a spring-tread device formed of two pieces—a lower one made up of a strip of sheet-steel or other equivalent material and an upper metal piece—and novel means for connecting the two, whereby the results and advantages hereinafter set out are obtained with little or no danger of the device breaking.

My present invention also comprehends a novel combination of a lower spring-plate member and an upper drop-forged member, the two pieces having a peculiar connection whereby they can be quickly and firmly secured as the device is fastened in an operative position, said connections being also of such character that the strain upon the two pieces will be so disseminated as to relieve the single fastener-screw used to hold the device in position upon the shoe, and thereby reduce the danger of the article becoming loosened or detached during ordinary usage to the minimum.

I attain the several desired objects above noted by constructing the device of an inner member *a*, formed of a spring material, sheet-steel being used in practice, the same being in the nature of a flat plate of suitable length and width. One end, which I term the “rear,” of this plate turns outward, as at *a'*, and forms, as it were, a lock-hook, the purpose of which will presently appear.

b designates the outer or tread portion of the device, which in the present construction of my invention is a drop-forged piece of spring

metal, being preferably the same width of the sheet-steel piece *a* and a length substantially that of the said piece *a*, as clearly shown in Fig. 2, by reference to which it will also be
 5 noticed the member *b* has a solid heel-piece *b'* of a thickness equal that of the space between the two members *a b* when joined, and the rear end of the said piece *b'* has a protecting-lip *b²*, adapted to fit under and inter-
 10 lock with the turned-up locking-lip *a'* of the member *a*, such correlation of parts being especially provided to secure a solid bearing for the under or tread member *b* when it engages the member *a*. The two members *a b* when
 15 fitted together are held fast to form a single body by means of a hollow rivet *c*, that passes through the heel part of the member *b* and the hook end of the member *a*.

By forming the tread member *b* by drop-
 20 forging I am enabled to economically provide the outer end thereof with a solid wearing-slug *b³*. It is manifest that by making the said wearing-slug of a solid body, as stated and shown, the danger of the wearing-point
 25 of the tread member *b* incident to the form of bearing-point shown in my former patent is absolutely avoided and the cost of making the same materially reduced, and my present form of wearing-slug also tends to strengthen
 30 the tread member *b* instead of weakening it.

In fitting the device, say, to the heel of a shoe the heel is first formed with a longitudinal socket *d* of such depth and width that when the device is fitted in place all of the
 35 tread member *b* thereof excepting the slug *b³* will be flush with the lower piece of the heel. This method of securing the device provides for holding the same in position by means of a single screw *e*, as all lateral strain
 40 upon the said device is taken up by the walls of the socket of the heel.

While I prefer to secure the upper and lower members *a b* together by means of the hollow rivet *c*, as before described, as the said
 45 rivet holds the two members as one, the said rivet feature may be eliminated, as the two parts can be securely held in place by the single screw *d* alone.

To add further elasticity to the device, as
 50 well as to keep dirt from clogging the space between the two members *a b*, I fit a block *f*, of rubber, leather, or other material of elastic or semi-elastic nature. This block *f*, however, may also be omitted without nullifying
 55 the general effectiveness of my device.

The advantages of the spring-tread device involving the general idea of my present invention have been set out in my former patent. It is, however, deemed proper to state
 60 herein that my invention provides a simple and inexpensive mechanical appliance for boots or shoes that will in a great measure compensate for the loss of elasticity on the cartilages of the knee and other joints inci-
 65 dent to age.

In use when walking the under or short member *b* will become pressed, and as the

heel is elevated the spring action of the device will assist the foot in its upward movement, said device also acting as a cushion on the downward pressure of the heel. Thus a light springy action is imparted and the exercise of walking is rendered much less wearisome than heretofore. 70

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 75

1. A spring-tread for boots and shoes formed of spring metal, having a body portion consisting of an inner flat member, one end of which terminates in an outturned hook, an outer flat member having a heel portion adapted to lie against the inner flat member, said heel portion having a tongue or projection to fit under and engage the hook of the inner member, said inner and outer members being apertured for the passage of the securing-screw and means for interlocking the inner and outer members, substantially as shown and described. 80 85 90

2. The combination with the heel of a boot or shoe, said heel having a socket extending to its forward edge, of a spring-tread consisting of an inner member and an outer member, said members having interlocking means, the outer or base member having a wearing-slug projected downward therefrom, substantially as shown and described. 95

3. A spring-tread for boots and shoes, formed of a spring metal and comprising an inner flat member having a single aperture and an outturned portion bent upon itself to form a locking-hook, an outer member, said outer member having a heel portion, said heel portion having an extension to fit under the lock-hook of the inner or flat member, said heel portion being apertured, the apertures of the two members registering to form a passage for the securing-screw, said members having interlocking means substantially as shown and for the purposes described. 100 105 110

4. As a new article of manufacture, a spring-tread for boots and shoes, comprising an inner member, formed of a flat sheet-steel plate *a*, one end of which terminates in an outturned hook *a'*, an outer drop-forged member *b*, said member *b*, having a portion *b'* having a lip *b²*, adapted to project under and engage the hook *a'*, of the plate *a*, said member *b*, having an outwardly-projecting integral wear-slug at the front end, a hollow rivet connecting the two members *a b*, all being arranged substantially as shown and for the purposes described. 115 120

5. The combination with the heel of a boot or shoe having a socket therein extending to its forward edge, of the spring-tread formed of a spring material and comprising an inner member formed of a flat plate having a width equal that of the heel-socket and having its inner end formed with an outturned hook *a'*, and an outer member *b*, fitting the said socket with its outer face flush with the bottom face of the heel, said outer member 125 130

having a heel portion adapted to rest against the inner plate or member a , said heel portion having a projection b^2 , to extend under and interlock with the hook end a' , of the
5 member a , each member having a single aperture, said apertures registering for the passage of the securing-screw, and an elastic filling fitted between the free ends of the outer and inner members of the body por-

tion the outer member having a wearing- 10 slug projected forward in a plane beyond the tread-face of the heel, all being arranged substantially as shown and described.

GEORGE ELBRIDGE SWAN.

Witnesses:

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