

(No Model.)

H. C. WINTERMUTE.
ANKLE JOINT.

No. 434,618.

Patented Aug. 19, 1890.

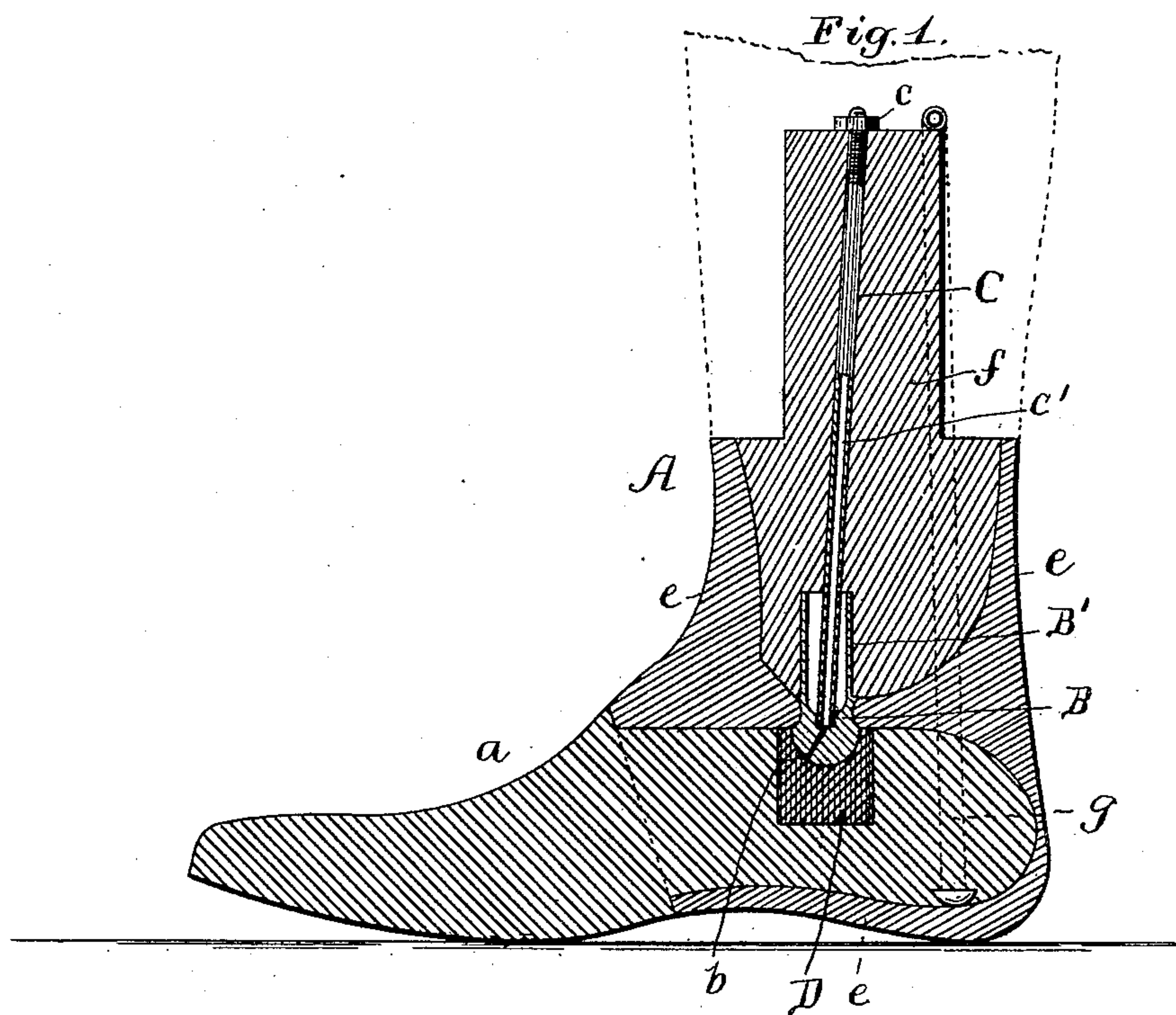


Fig. 2.

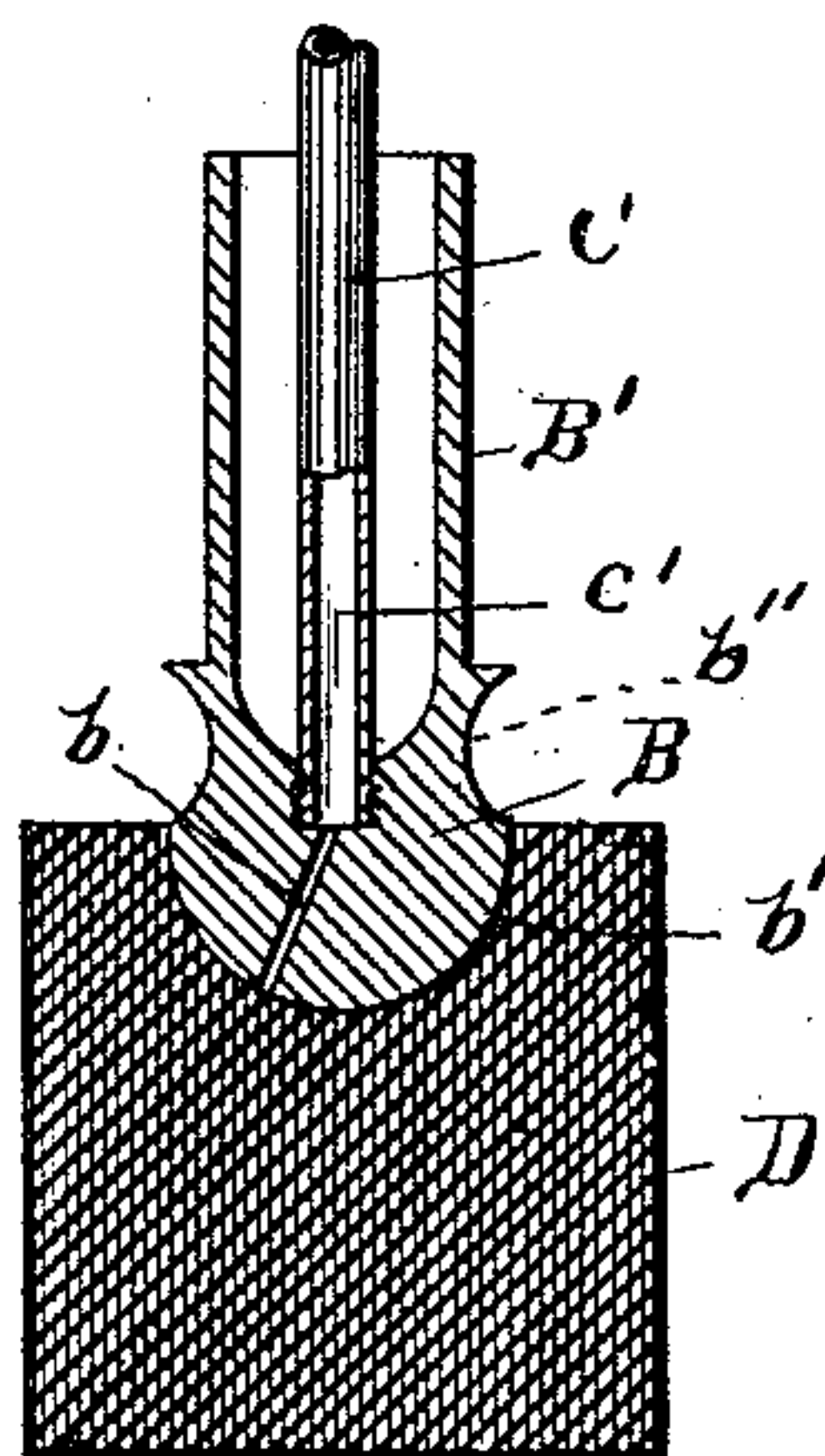
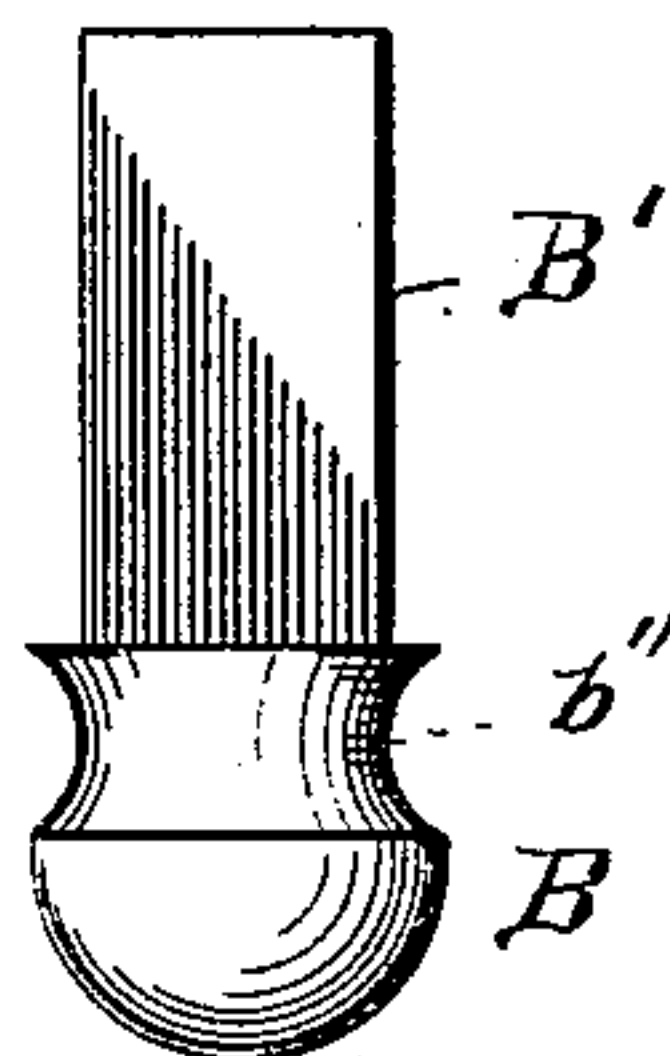


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

HARRIS C. WINTERMUTE, OF KANSAS CITY, MISSOURI.

ANKLE-JOINT.

SPECIFICATION forming part of Letters Patent No. 434,618, dated August 19, 1890.

Application filed May 12, 1890. Serial No. 351,481. (No model.)

To all whom it may concern:

Be it known that I, HARRIS C. WINTERMUTE, a citizen of the United States, residing at Kansas City, in the county of Jackson, State of Missouri, have invented certain new and useful Improvements in Ball-and-Socket Ankle-Joints, 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 improvements in universal ball-and-socket ankle-joints; and it consists in the novel construction and arrangements hereinafter fully set forth and described.

Its object is, first, to provide a universal joint in the natural ankle; second, to provide an artificial joint which shall be durable in its movements, as well as easy, and, third, to provide such a joint with simplicity and economy, which I do by using the parts illustrated in the accompanying drawings, in which—

Figure 1 is a cross sectional view of an artificial foot, ankle, and instep provided with my improved joint. Fig. 2 is a sectional detail view of the ball and the block in which the socket or cup is formed, and Fig. 3 is a detail view of the said ball.

Referring to the drawings by letter, A represents an artificial foot composed of the wooden foot *a*, the rubber instep, and ankle *e*, and the ankle-extension *f*. These are held in position by means of the tubular bolt C. The rubber substance *e* extends entirely around the joint and passes around and under the heel to the hollow of the foot, as shown in the accompanying drawings. This rubber ankle makes up for the deficiency of muscles and gives the ankle an elastic movement. *g* is the heel-cord, which passes from the bottom of the heel upward, where it is secured in a suitable manner. These parts, however, I do not claim as my invention.

B is a semi-ball provided with an extension or neck *b''*, from which extends the projection B'. Said projection B' is hollow, and is designed to extend upward through the rubber ankle *e* and a sufficient distance into the ankle-extension *f* to make it rigid.

Passing from the ankle-extension down-

wardly is a tubular bolt C, which has its lower end securely threaded or screwed into the metallic ball B, as shown in Fig. 1. The object of having this tube hollow is to provide a means whereby the joint may be lubricated when desired, and the cup in the extension B' serves to retain any oil that may escape from the said tube, preventing it from spreading through the joint between the wood and the rubber which forms the ankle.

b is a small hole drilled through the ball from the point where the tubular bolt extends to the surface of said ball, and is to convey the oil from the tubular bolt C to the cup *b'*, in which the ball is situated.

D is a block of hard close-grained wood set on end in the foot-piece, as shown in Figs. 1 and 2. In said block D is formed a semicircular cup *b'*, which receives the ball B. The block D being set in the foot with the grain running vertically, causes it to be more durable and to give better results. This block may be composed of any hard close-grained wood, apple or pear being preferable. The upper end of tubular bolt C is provided with the nut *c*, which holds it firmly in position. The joint being constructed in this manner, the wearer will have free use of the limb with which it is worn, and all the movements will be free, easy, and natural. Now by using my improved joint composed of the semi-ball and single socket, the joint is always perfect, as the neck *b''* allows the ball to fit itself to the socket as it wears away, and the tubular bolt C keeps the joint lubricated all the time, thereby making it easy and more durable, and at the same time making said lubricating process simple, as it can be done without taking the members apart.

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

1. A universal joint composed of the metallic ball B and block D, said ball B having the neck *b''*, from which extends the hollow projection B', for the purpose substantially as specified.

2. The metallic ball B, having the slot *b* and the hollow extension B', the tubular bolt C, threaded into said ball B and connecting

with said slot, thereby forming a means whereby the joint may be lubricated, substantially as set forth and specified.

3. The metallic ball provided with the hole
5 *b*, through which the oil may pass from tubular bolt *C* to joint *b'*, substantially as specified.

4. The metallic ball *B*, having the hole *b*
and hollow extension *B'*, tubular bolt *C*,
10 threaded in said ball, and block *D*, set on

end, operating in combination with an artificial ankle *A*, substantially as shown and described.

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

HARRIS C. WINTERMUTE.

Witnesses:

S. L. C. HASSON,

ROBERT A. BALDERSON.