(No Model.) 2 Sheets—Sheet 1.

C. B. BROWN.

BOOT OR SHOE.

No. 470,316. Patented Mar. 8, 1892.

Fig. 1

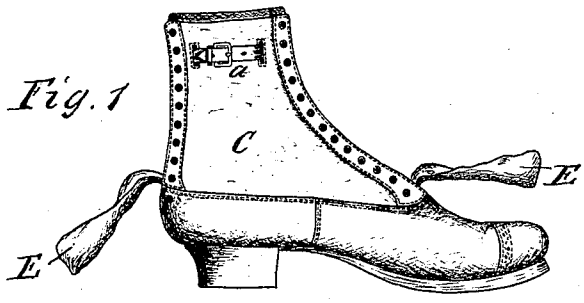


Fig. 2

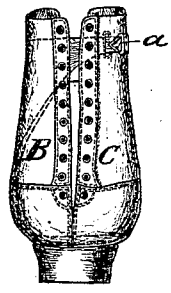
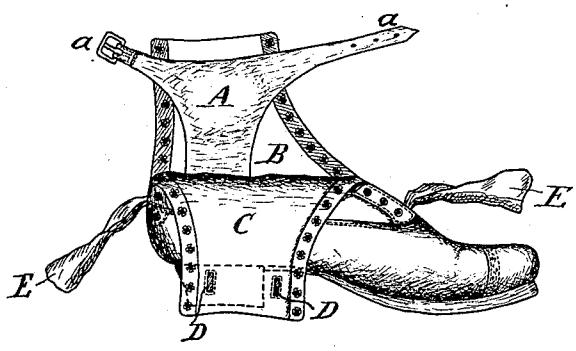


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

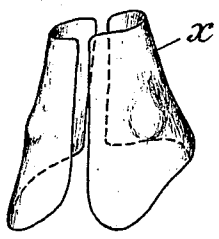


Fig. 5.

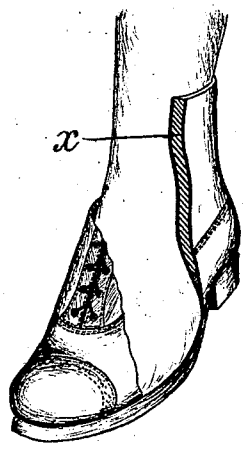


Fig. 6.

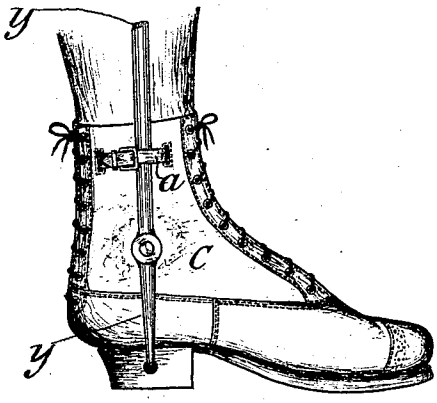
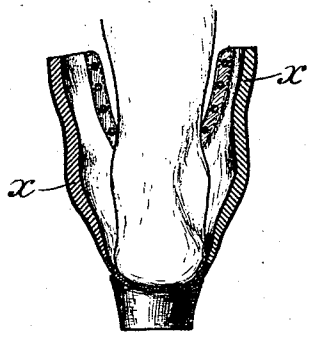


Fig. 7.



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UNITED STATES PATENT OFFICE.

CLYDE BANNISTER BROWN, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

BOOT OR SHOE.

SPECIFICATION forming part of Letters Patent No. 470,316, dated March 8, 1892.

Application filed May 13, 1890. Serial No. 351,583. (No model.) Patented in England September 11, 1889, No. 14,336.

To all whom it may concern:

Be it known that I, CLYDE BANNISTER BROWN, gentleman, of Beverly House, Southgate Park, Friern Barnet, London, in the county of Middlesex, England, a subject of the Queen of Great Britain, have invented a new or improved surgical boot for invalids and others suffering from weak ankles or other diseases and defects of the feet, (for which I have made application for Letters Patent in Great Britain, No. 14,336, dated September 11, 1889,) of which the following is a specification.

In carrying out my invention my improved surgical boot is constructed so as to open at the back and front, almost dividing the uppers into halves, each half falling to within a short distance from the sole and allowing the foot to be placed easily and firmly within the boot.

In cases of paralysis and other ailments where there is not sufficient strength in the muscles to force the foot without difficulty into the boot this boot will be found to be exceedingly beneficial.

For weak ankles a cast of the ankle (to form a stiff case) is taken in poro-plastic, as hereinafter explained, or other suitable material. This casing is then divided and properly attached between the uppers of the boot. The tighter the boot is laced the more securely the ankle is held in position, thereby giving the strongest support and comfort without any undue pressure, friction, or irritation being caused by the case or stiffening.

In cases where a surgical appliance or brace is required to be attached to or connected with the boot an inside fastening is attached, passing outward through the side to secure the instrument.

There is nothing noticeable in the appearance of the boot, as it cannot be distinguished when in use with those usually worn.

For the purpose of better explaining my invention, I will proceed to describe the accompanying drawings.

In the drawings, Figure 1 is a view of my improved surgical boot, showing the lacing back and front and the strap and buckle *a* or other suitable means for fastening a surgical appliance or brace to the boot. Fig. 2 is a back view of the boot, showing the lacing. Fig. 3 is a side view of the boot with one of the sides turned down, showing the strap A for connecting a surgical appliance or brace thereto, and also the manner of turning down the sides to allow the foot to be placed easily therein. Fig. 4 shows a separate view of the "plaster cast" to be inserted in the upper, as hereinafter explained. Fig. 5 shows my boot applied to a foot, part of the boot being broken out to show the plaster cast in position. Fig. 6 shows my complete boot in position on a foot, with a surgical appliance or brace or support secured in such boot. Fig. 7 is a vertical section of a boot (not laced up) on a foot, looking from the back.

Referring to Fig. 3 of the drawings, A is the strap for connecting a surgical appliance or brace to the boot, the lower end of which strap is fastened between the sole and the uppers of the boot, the ends *a* of which strap A pass outward through the apertures D D, cut in one side for this purpose, as shown in Figs. 1 and 2, so as to buckle on the outside above the ankle. In cases where surgical appliances or supports are not required the strap A may be omitted.

The cast *x* for the ankle is taken in "poro-plastic" or any other suitable material, as hereinafter explained, and after dividing the same (see Fig. 4) it is attached between the double sides, respectively, of B and C, Figs. 2 and 3, the boot having a double upper to allow this. When the boot is laced back and front, the greatest support is given to the ankle, as it is held firmly in a sort of anklet formed by the cast *x*, which does not prevent or interfere with the usual or necessary action of the foot. Both sides of the boot may be turned down, as shown by the side C, Fig. 3, for the purpose of allowing the foot to be placed easily within the boot.

The poro-plastic material referred to consists of plastic and porous materials combined and is composed of such materials as hair, wool, fur, cotton, jute, or other suitable animal or vegetable fiber felted together and afterward made rigid by a mixture of shellac, resin, borax, and water or methylated spirits, so combined with the felted fabric as to make a substance which will become plastic when hot, and in its heated state thus be capable of molding or forming into any shape desired, while when cold it will set and become firm

and rigid. Such material is thus porous and admits respiration through it. Thus to take the cast of an ankle the compound, (poro-plastic,) as above is steamed or otherwise heated until it is quite plastic, whereupon it is lapped round the ankle until the ends meet, but are not allowed to stick, and it is then pressed with the fingers and molded into the shape of the said ankle. It is then allowed to cool in position on the ankle, and thereafter is removed by forcing open the ends, which spring back again when released.

With any other material than the above-described poro-plastic the cast of the ankle can be taken in plaster-of-paris (as is well understood) and then the material molded into shape from such plaster-of-paris cast.

The cast *x*, as shown in Fig. 4, is now ready to be inserted in the boot-upper, and for that purpose is divided into two parts, one to be inserted in each side of the boot. In cases where the ankle does not require strengthening, then the cast may be omitted.

In Fig. 6 is illustrated the lower part of a surgical appliance or brace *y*, attached to my boot by means of the bent lower end of such appliance or brace *y* entering a small hole provided in the side of the heel of the boot, while the appliance or brace *y* itself is firmly secured and retained in position by the buckle and strap *a*, which come through the side of the boot and are tightly buckled over the appliance or brace *y*, as before explained. This appliance or brace *y* represents the lower part of any form of support or crutch or other similar invalid appliances such as are required by persons having weak sides or legs or persons paralyzed or partly paralyzed on one or both sides, such supporting instruments or appliances being well known and understood in surgery.

E E are two tongues for the purpose of preventing the lacing from irritating or chafing the foot.

Having thus fully described and illustrated my invention, I declare that what I claim, and desire to secure by Letters Patent of the United States, is—

In a surgical or the like boot, the combination of a boot opening back and front, a cast for the ankle let into the double sides of such boot, and a strap coming through the side of such boot for securing a surgical appliance or brace, substantially as and for the purposes set forth.

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