

No. 620,556.

Patented Feb. 28, 1899.

R. W. BARTON.
SURGICAL SPLINT.

(Application filed Aug. 25, 1898.)

(No Model.)

Fig. 1.

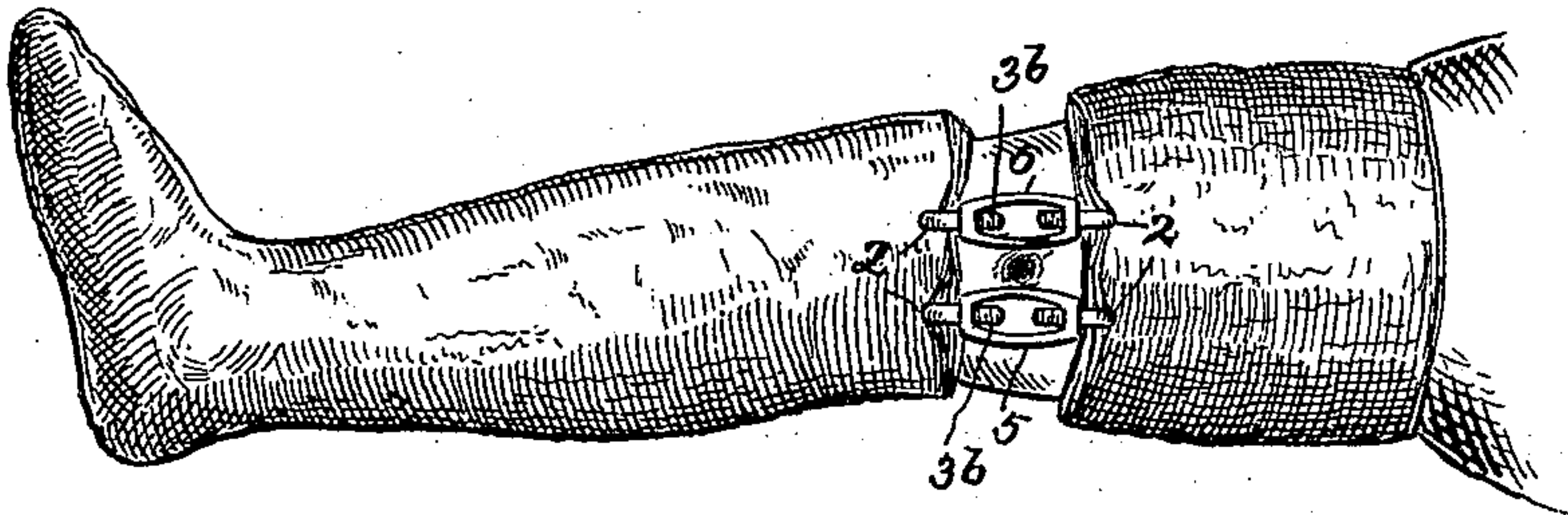


Fig. 2.

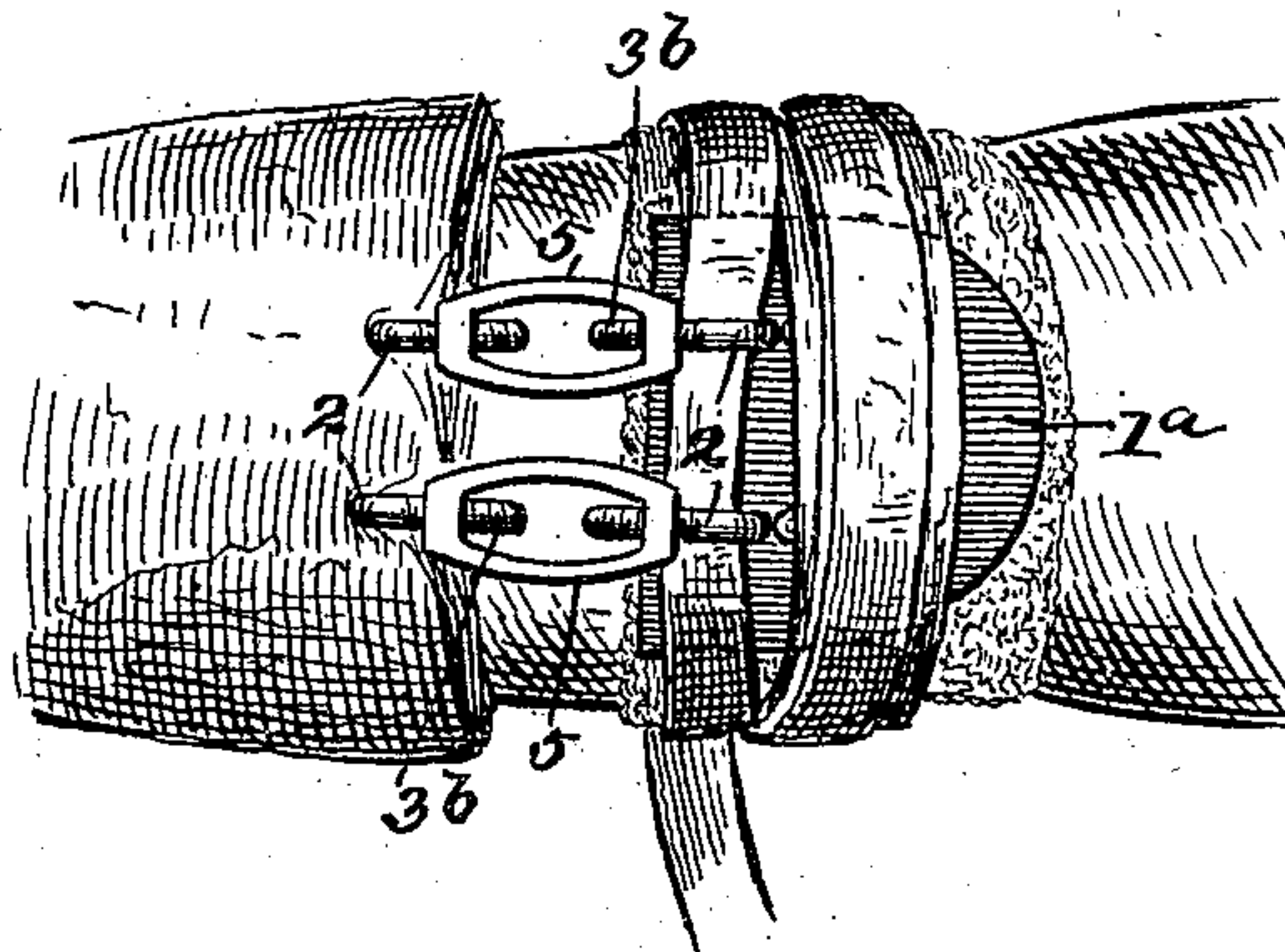


Fig. 3.

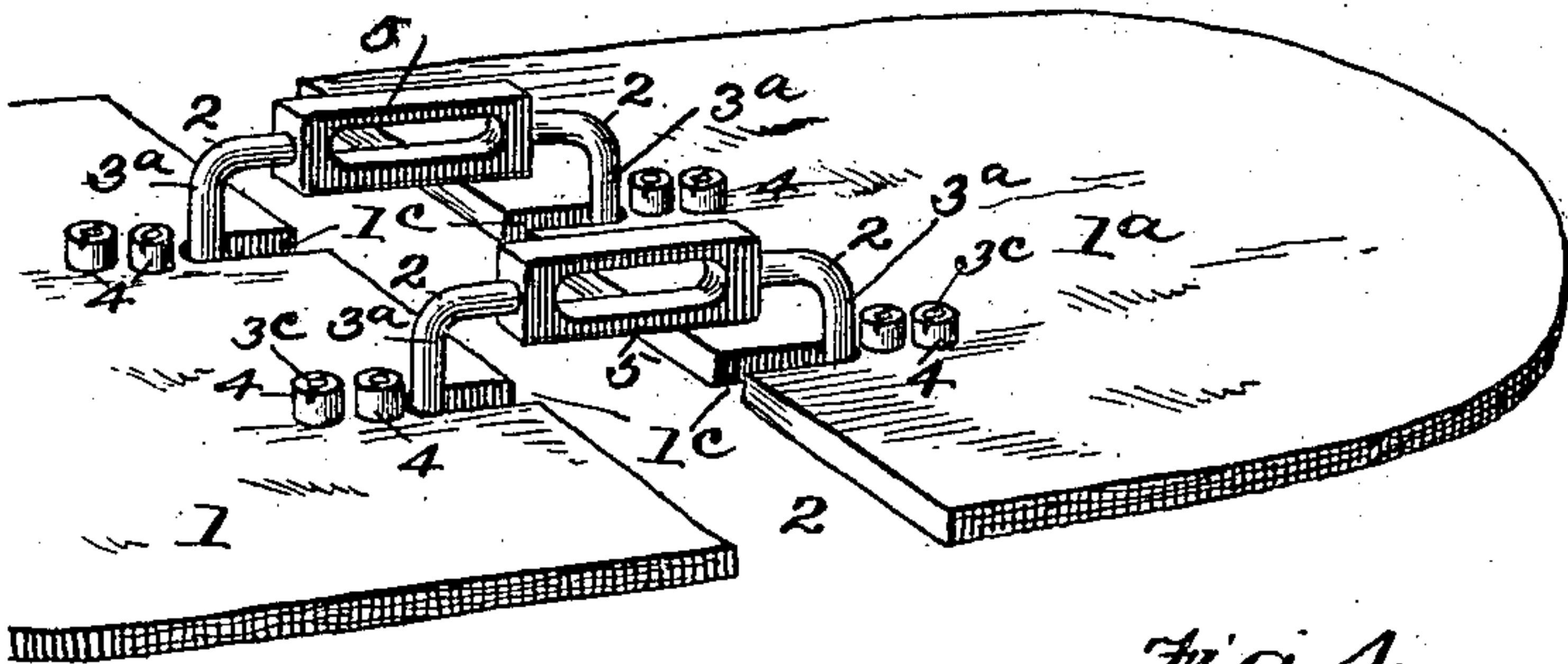
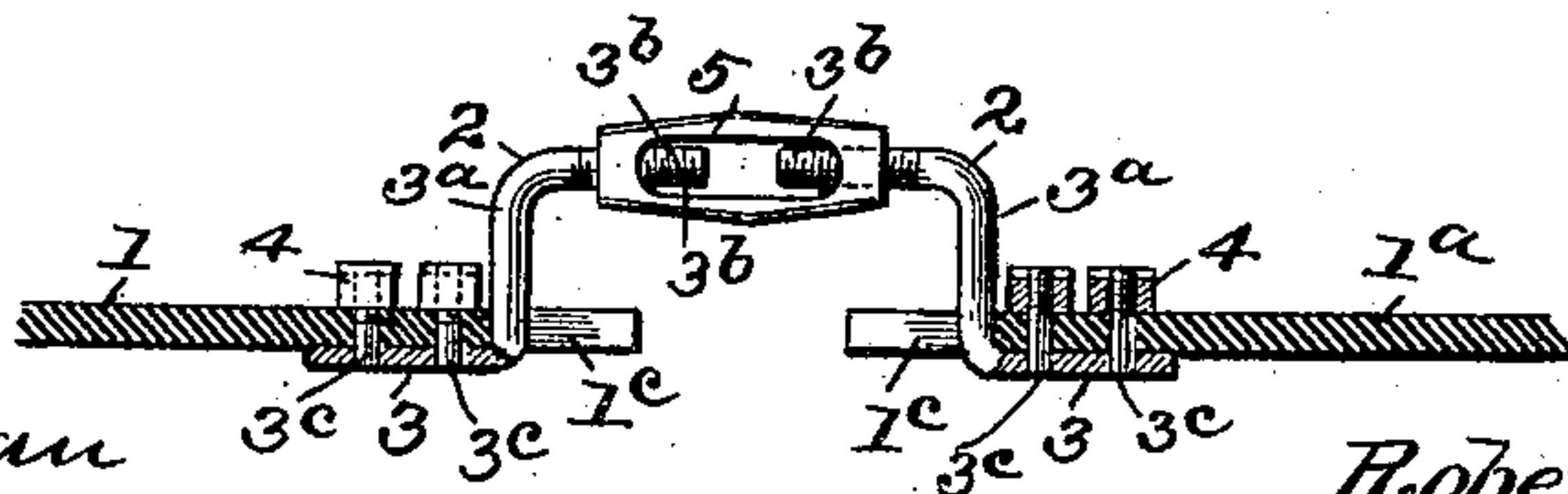


Fig. 4.



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SURGICAL SPLINT.

SPECIFICATION forming part of Letters Patent No. 620,556, dated February 28, 1899.

Application filed August 25, 1898. Serial No. 689,495. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WHITE BARTON, residing at Marion, in the county of Crittenden and State of Arkansas, have invented a new and Improved Surgical Splint, of which the following is a specification.

Primarily this invention is designed to provide a simple and novel form of splint, more particularly adapted for use in the treatment of compound and comminuted fractures.

This invention also comprehends an improved construction of splint in which extensibility can be readily effected without rearranging the bandage and without the use of weights.

In its more specific character my improvement is in the nature of an immobile anto-expansion splint—immobile for the reason that it maintains a permanent and fixed position when applied, anto-extension because it maintains a proper natural extension of limbs or other parts injured in a manner demanding its application without the use of weights or other contrivances such as is commonly needed to secure the proper extension of the injured limb.

Although my improvement is more particularly designed for use in the treatment of compound and compound comminuted fractures, the same is also applicable for treating fractures of arms or hands or other parts of the anatomy of man or beast in cases where the fracture of the bone is complicated with injury to the soft tissues, (flesh,) requiring not alone the proper setting of the bones and maintenance thereof, but at the same time a proper exposure of the wound of the flesh, whereby the same can be properly and advantageously treated.

My invention consists generally of a splint comprising two sections or base portions of suitable pliable material adapted to be readily secured in proper position on the limb at the point necessary and at opposite sides of the line of fracture and a bridge portion connecting the two pliable sections in such manner as to maintain them in an immovable position after proper adjustment, whereby the surface of the wounded portion can be left free for treatment without in the least affecting the setting of the splint.

In its subordinate features my invention

comprises a novel construction and arrangement of parts, which will be first described in detail and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 illustrates my invention as applied for use. Fig. 2 is a view illustrating the manner in which the base members of my improved splint are made fast to the limb. Fig. 3 is a detail perspective view of the simplest form of my improved splint, and Fig. 4 illustrates my splint as having extensible bridge portions.

In its practical construction my improved splint comprises a base portion formed of two sections separately held, but united to and composing a part of the complete splint-body.

In its simplest form the splint has two base members $1\ 1^a$, which are held in alinement, but separated to form an intervening space 2, the purpose of which will presently appear. The members $1\ 1^a$ are formed of a tough pliable material, preferably leather, for the reason that when applied, either after soaking in water or not, it adjusts itself to the contour of any limb portion in either a normal or swollen state. When made of leather, the same is to be of good sound dressed material of about one-eighth of an inch in thickness, because of its great resistance on the stronger limb portions.

While I have found it more desirable to make the base members $1\ 1^a$ of leather, I desire it understood that they can be formed of any other suitable tough or pliable material which will readily give to the contour of that portion of the limb to which it is applied.

The bridge portions, which connect the members $1\ 1^a$, consist each of angle-brackets 2, having base portions 3, vertical shanks 3^a , and horizontally-threaded extensions 3^b .

The members 3^a are fitted in slots 1^c , formed in the adjacent ends of the pliable base members $1\ 1^a$ and having their base portions 3 fixedly secured to the lower faces of the members $1\ 1^a$ by the studs 3^c , which pass up from the base portion 3 through the leather members $1\ 1^a$, their upper ends being threaded to receive clamp nuts or washers 4, which may be in the nature of thumb-screws or slotted head members.

In its simplest form the horizontal mem-

bers 3^b are not threaded, but are rigidly connected to form a part of a slotted finger-piece 5, which connects the ends of the opposing bracket members 3 and in connection therewith forms a complete bridge-piece, which, as will be seen, projects up high enough from the wounded portion of the limb to admit of a free access to such portion and easy treatment thereof.

In the practical application of my improved splint the base portions 1 1^a are properly set at opposite sides of the line of flesh wound and made firm and immovable by fitting plaster-of-paris bandages in the usual way of applying such bandages in simple fractures. In fractures of the thigh or at the knee the pliable base members 1 1^a extend over and cover the knee well and the plaster bandages made heavy by careful and increased quantity, the same treatment being also employed at the ankle and foot to especially guard against any movement of the joints. This arrangement gives a continuous splint that will hold a fractured limb either straight or at any angle desired by the attending surgeon. In operation after the fracture is properly reduced the fractured limb is also properly extended.

It will be observed that when applied my improved splint by reason of the bridge portion furnishes the severed continuity of the plaster-of-paris portion and simply maintains immovably the extension secured at reduction and becomes an immobile anto-extension splint, because it is stable and of itself maintains a proper extension of the injured limb.

In Fig. 4 I have illustrated my improvement as having an adjustable bridge. In this construction the central or apertured portion 5 is in the nature of a turnbuckle having right and left screw-threads engaging the threaded ends of the horizontal portions 3^c on the brackets 3. This adjustment permits of the splint being broadened or contracted as the extent of flesh wound (with view of proper drainage and treatment) justifies.

In the practical application of my invention a three-inch bridge or bracket piece by the use of the turnbuckle can be extended to five inches, a four-inch to six inches, a five-inch to seven inches, &c., without in the slightest impairing its utility, as the turnbuckle can be cut sufficiently deep to stand more pressure up and down than will be placed by proper use of the nut or of the ends of the bracket members. It will be understood the bridge portion can be made of any suitable material.

While my improved splint can be secured to the limb by bandaging in any well-known manner, yet preferably the same is applied in the following manner: The sound part of the leg or other limb is incased in a flannel bandage and absorbent cotton applied at any joints where greatest security or strength be desired to overcome tendency to rotary motion. Under the base members 1 1^a is placed a pad of absorbent cotton or surgical gauze

or lamb's wool, which padding is allowed to extend a few inches below the termination of leather remote from the wound, so that the abruptness or unevenness at the end of the leather may be overcome to guard against cracking of the plaster-of-paris. A two-inch or narrower bandage of flannel covers the entire base members of the splint. This narrower bandage must, however, not be longer than necessary to make a roll of two inches in diameter, so that when the brackets are reached in bandaging the said bandage can readily be passed under and between such brackets, making a figure-8 tie around the respective ends of the brackets, whereby to draw them together and prevent spreading. A narrower plaster bandage is also used over leather and at the ends of the brackets for the same reason.

My improvement provides a simple means for furnishing the severed continuity of plaster-of-paris bandages without in the slightest impairing the efficacy of the bandage as a whole and without interfering with a proper treatment of the wound at the point of separation of the bandage-sections. It is manifest that the same can be used at any point where a plaster bandage is applicable.

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

1. A surgical splint, consisting of separated pads arranged for attachment to a limb by bandages, and an angular rigid bridge-piece having two vertical members, and a horizontal member connecting said vertical members, the latter being rigidly attached at their lower ends to each pad whereby to hold the horizontal member above the outer face of the pads, as and for the purpose set forth.

2. A surgical splint, consisting of separated pads arranged for attachment to a limb by bandages, and an angular rigid bridge-piece having two vertical members and an extensible horizontal member connecting said vertical members, the said vertical members being rigidly attached at their lower ends to each pad whereby to hold the horizontal member above the outer face of the pads, as and for the purpose set forth.

3. A surgical splint, consisting of a pair of juxtaposed and separated pads arranged for attachment to a limb by bandages, said pads being formed with slots in their adjacent edges, and angular bridge-pieces provided with outwardly-extending ends by which they are attached to the inner face of said pads in the rear of said slots, vertical members extending through said slots to and beyond the opposite face of the pads, and a horizontal member supported by said vertical members above the last-named face of the pads, as and for the purpose set forth.

4. A surgical splint, consisting of a pair of juxtaposed and separated pads formed with slots in their adjacent edges, angular bridge-pieces provided with outwardly-extending

ends by which they are attached to the inner
face of said pads in the rear of said slots, ver-
tical members extending through said slots
contiguous to the rear wall thereof to and be-
5 yond the opposite face of said pads, and hori-
zontal members supported by said vertical
members, the said latter members being sepa-
rated between its ends, and the adjacent end

being oppositely screw-threaded, and a turn-
buckle connecting said ends, as and for the
purpose set forth.

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Witnesses:

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