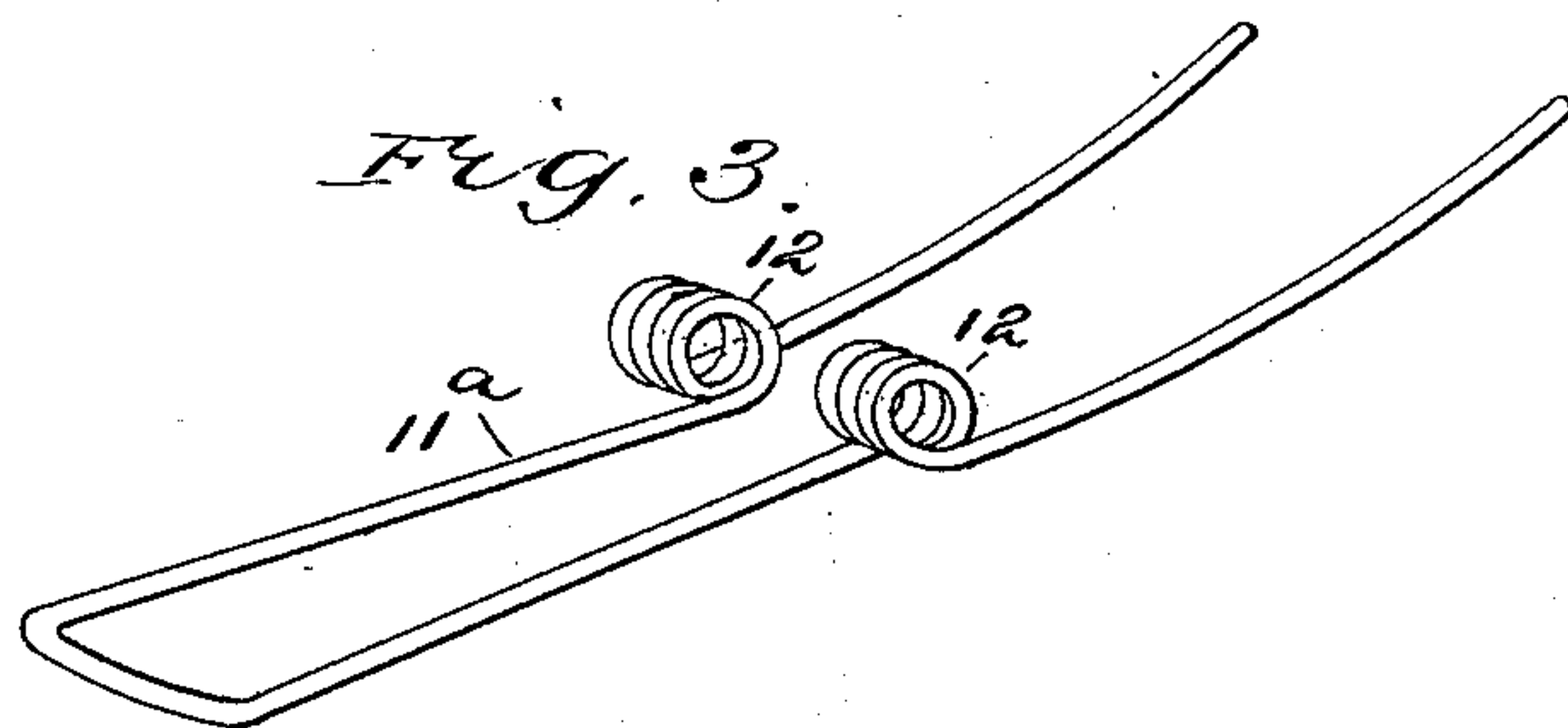
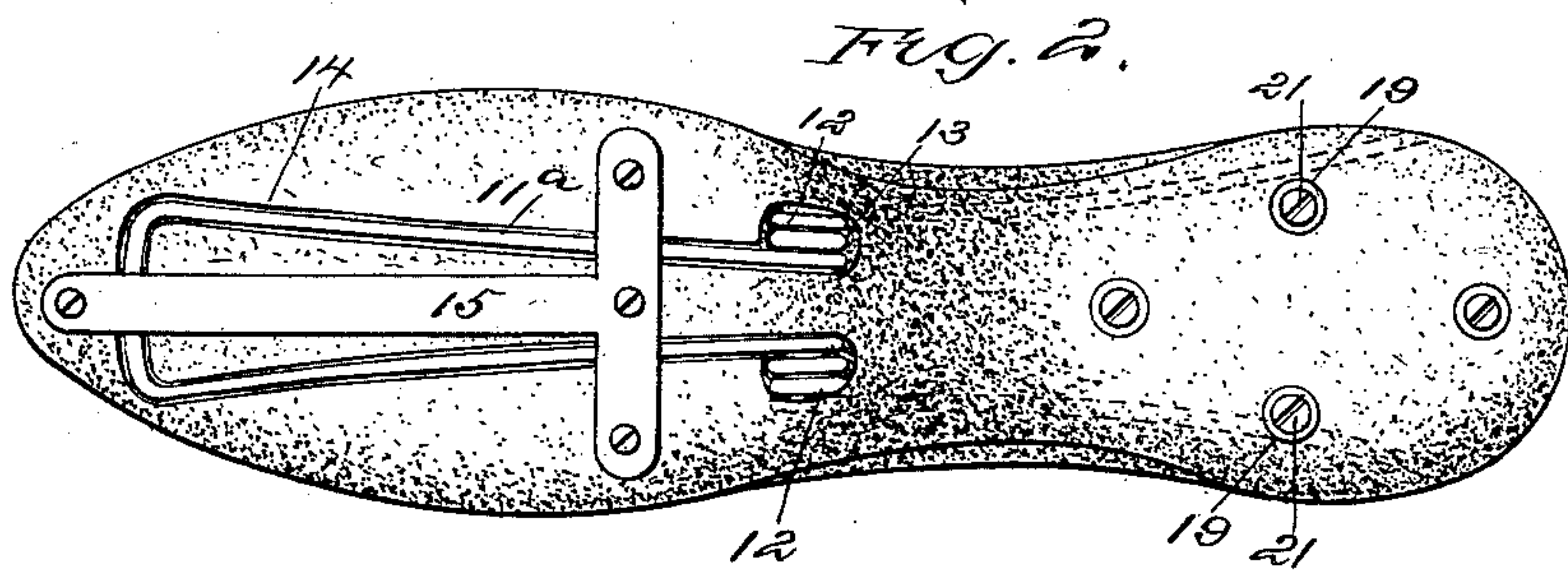
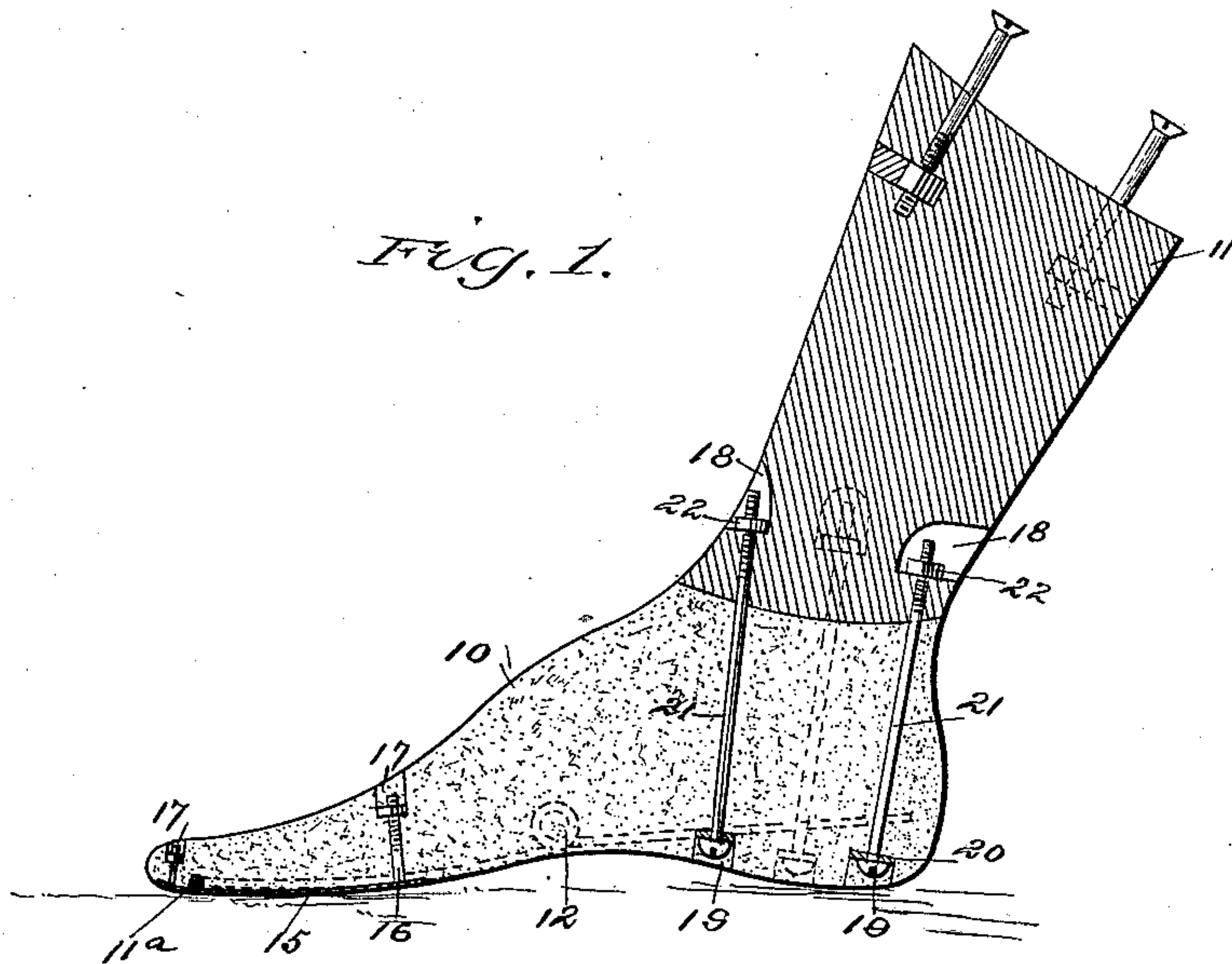


(No Model.)

A. GAULT.
ARTIFICIAL LIMB.

No. 428,839.

Patented May 27, 1890.



WITNESSES:

W. R. Davis.
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BY

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UNITED STATES PATENT OFFICE.

ALEXANDER GAULT, OF MEDFORD, MINNESOTA.

ARTIFICIAL LIMB.

SPECIFICATION forming part of Letters Patent No. 428,839, dated May 27, 1890.

Application filed October 7, 1889. Serial No. 326,193. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER GAULT, of Medford, in the county of Steele and State of Minnesota, have invented a new and useful
5 Improvement in Artificial Limbs, of which the following is a full, clear, and exact description.

My invention relates to an improvement in artificial limbs, especially to the construction
10 of the foot and ankle, whereby all ankle machinery and heel and toe cords are dispensed with, and has for its object to provide a means whereby felt may be employed in forming the foot and the toe of said foot may be held
15 at all times in a position to contact naturally with the ground.

A further object of the invention is to impart such elasticity to the foot that the wearer may walk with comfort and dispatch
20 and without the peculiar constrained appearance noticeable in parties wearing artificial limbs of the ordinary construction.

The invention consists in the novel construction and combination of the several parts,
25 as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate
30 corresponding parts in all the views.

Figure 1 is a central vertical section through the foot and ankle. Fig. 2 is a bottom plan view of the foot, and Fig. 3 is a detail perspective view of the spring employed in the
35 foot.

In carrying out the invention the foot 10 is constructed entirely of felt, what is known as "white Mexican felt" being preferred, the ankle 11 being made of wood, and preferably
40 hollow. The felt of which the foot is composed is cut, carved, or otherwise formed to a suitable shape, and in the said foot a spring 11^a is introduced, one member whereof is buried in the felt, the other member being made to
45 contact with the bottom or ball of the foot. The spring 11^a is made of wire of suitable size, which is bent upon itself essentially to a U shape, and in each member at or near the center a coil 12 is formed, so that the coiled
50 portion of the spring will normally stand essentially at a right angle to the forked extremity.

In the foot near each side of the heel portion a longitudinal channel is formed having an outlet in the bottom of the foot at or near
55 the instep, and in the channels the members of the forked end of the spring are introduced, to lie one at each side of the center of the heel, the extremities of said forked members being visible, or nearly so, at the back of
60 the heel, as best shown in Figs. 1 and 2.

Cavities 13 are formed in the felt at the instep portion of the foot to receive the coils 12 of the spring, as best shown in Fig. 2, the said coils being placed uppermost, whereby
65 considerable tension must be exerted upon the bow portion of the spring to cause it to contact with the ball of the foot or assume a position essentially parallel with the bifurcated section, as illustrated in Figs. 2 and 3. 70

I preferably form a channel 14 in the bottom or ball of the foot to receive the bow portion of the spring 11^a, and the said bow portion of the spring is held in place usually
75 by means of a T-plate 15 crossing the same transversely and longitudinally, which plate is held in position by bolts 16, passed through the plate and upward through the felt, each of which bolts is provided at the upper end
80 with a lock-nut 17, as illustrated in Fig. 1, a recess being formed in the upper portion of the foot to permit the said nuts to be readily entered upon the bolts and countersunk. By
85 thus securing the spring 11^a to the foot the toe is normally retained in a natural position, as the tendency of the bow portion of the spring is to draw downward, and when the wearer treads upon the ground in walking considerable elasticity must be imparted
90 to his movements.

The wooden ankle 11 is attached to the felt foot in the following manner: In the sides of the ankle cavities 18 are formed, as shown in Fig. 1, and similar cavities 19 are produced
95 in the bottom of the heel. A washer 20 is placed in each heel-cavity, and a bolt 21 is passed upward through the washer until the head contacts therewith, through the heel portion of the foot and the lower portion of the ankle into the upper cavities 18, in which
100 cavities a nut 22 is screwed upon each bolt. The cavities 18 in the ankle I preferably fill with melted brimstone, and all the metal employed in the construction of the limb is

brass. The foot may, if desired, be covered with calf-skin or other pliable material, the ankle being preferably covered with raw-hide.

5 In attaching the ankle to the foot I preferably give to the ankle quite a rearward inclination, as illustrated in Fig. 1, which inclination I find in practice adds materially to the comfort of the wearer, and instead of the
10 plate 15, illustrated in connection with the spring, wire may be employed to sew the bow portion of said spring to the foot, though the plate is preferred.

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

1. As an improved article of manufacture, an artificial limb having the foot thereof
20 formed of felt, substantially as shown and described.

2. In an artificial limb, the combination, with the foot portion thereof constructed of felt, of a spring attached to the foot at the under side thereof, substantially as shown
25 and described, and for the purpose specified.

3. As an improved article of manufacture, an artificial limb having the foot thereof formed of felt and provided with a bow-spring having its forked ends secured in the

body of the foot, and its bow end held in con- 30
tact with the ball of the foot, substantially as shown and described, whereby the toe is held in a natural position, as set forth.

4. In an artificial limb, the combination, with a felt foot, of a bow-spring having coils 35
produced in each member at or near the center, the forked end of the spring being introduced into the body of the heel portion of the foot, and the bow-section carried to a con- 40
tact with the ball of the foot, a plate contacting with the ball of the foot and the bow-section of the spring, and means, substantially as shown and described, for securing
said plate to the foot, as and for the purpose
specified. 45

5. The combination, with a felt foot hav-
ing a spring secured therein exerting a down-
ward tension upon the toe, of a wooden
ankle provided with cavities near its lower
end, bolts passing up through the foot from 50
its bottom into said cavities, and nuts screwed
upon said bolts, substantially as and for the
purpose specified.

ALEXANDER GAULT.

Witnesses:

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ORRIN LEE.