

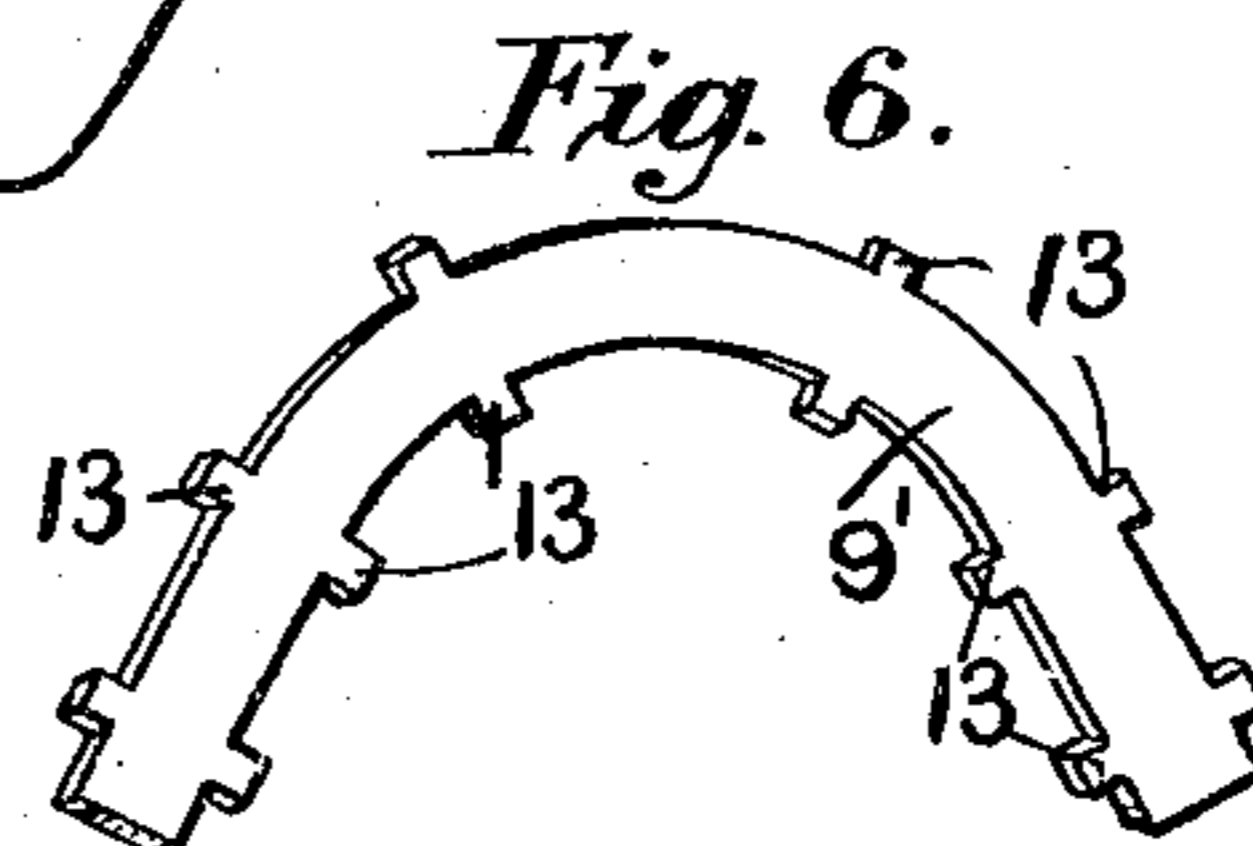
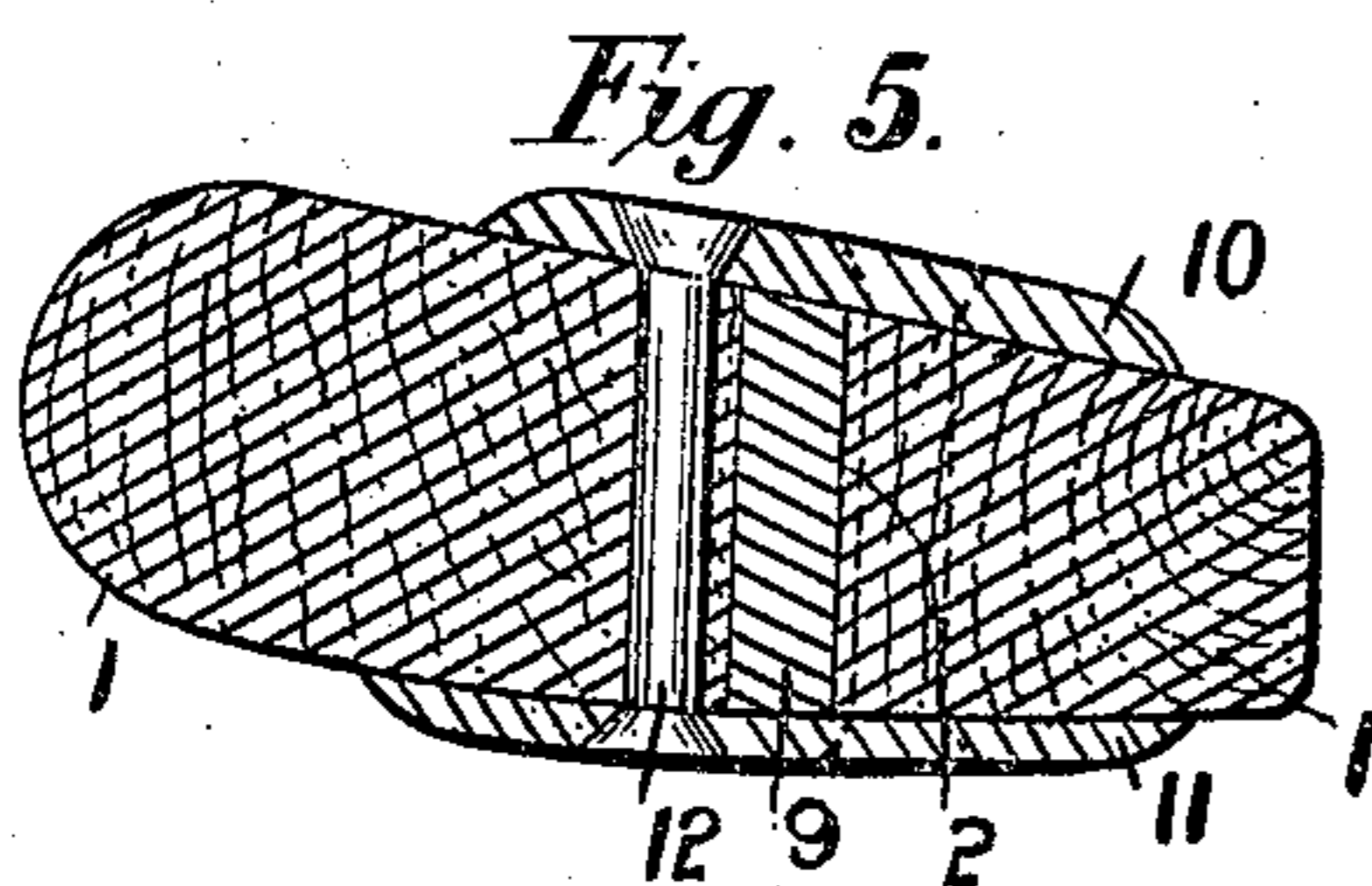
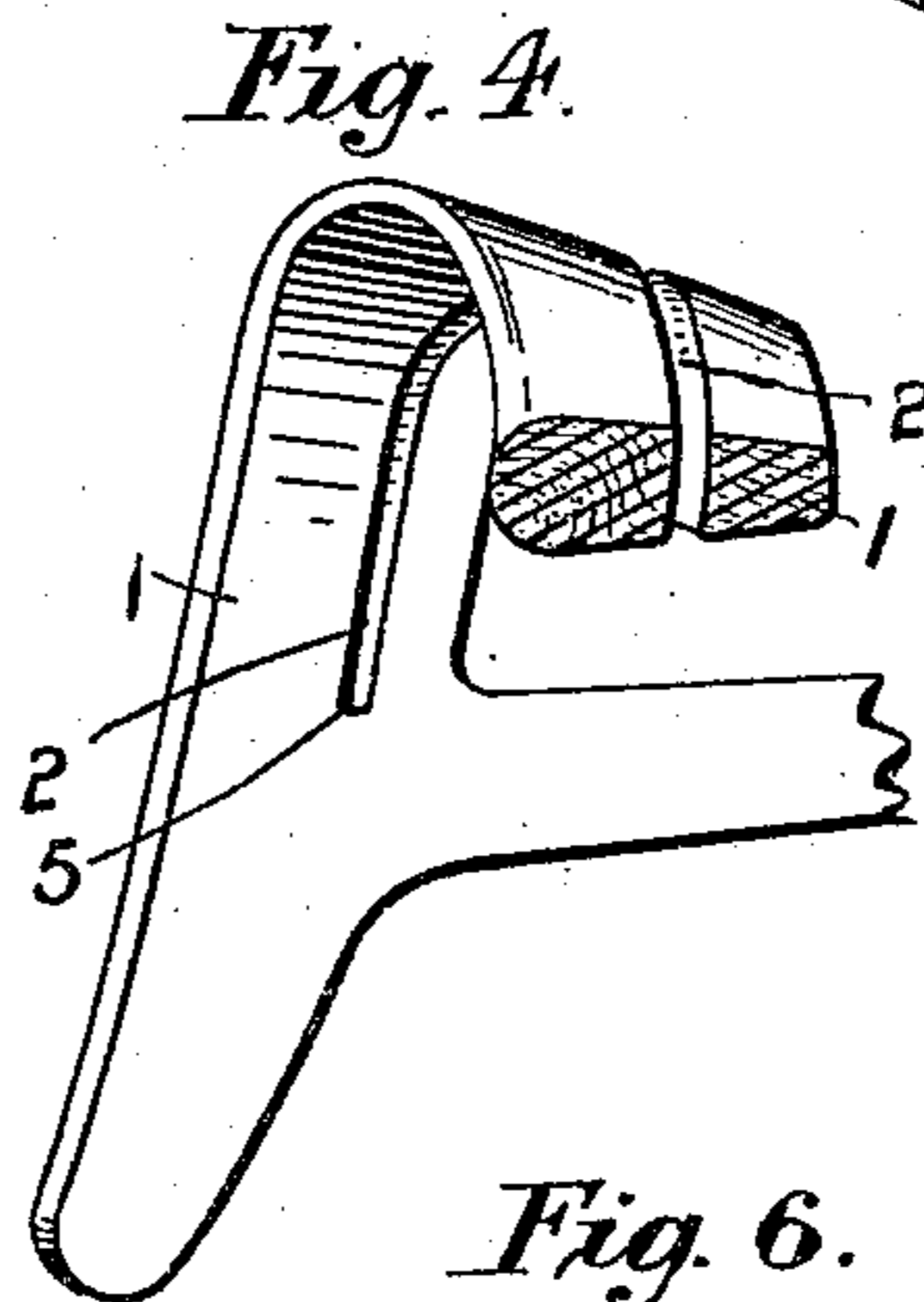
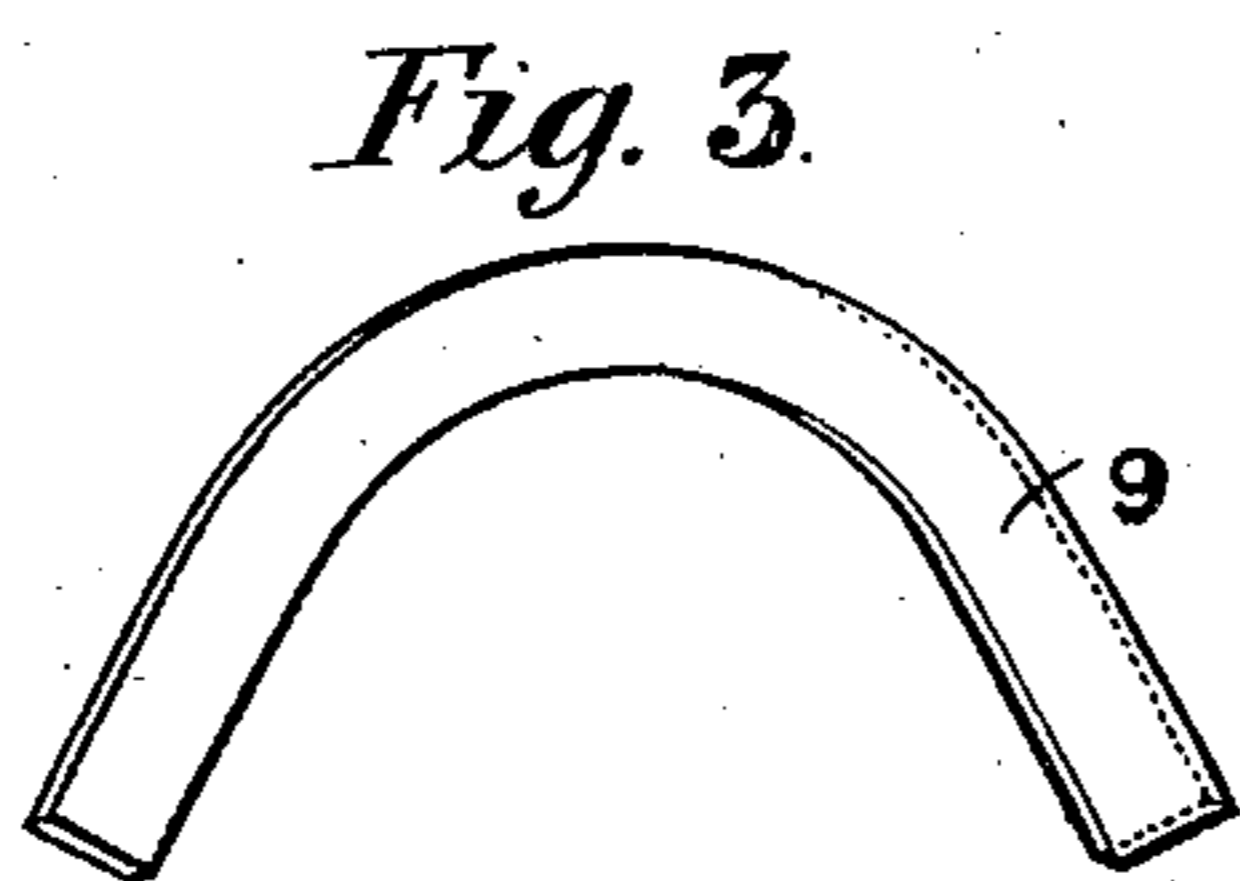
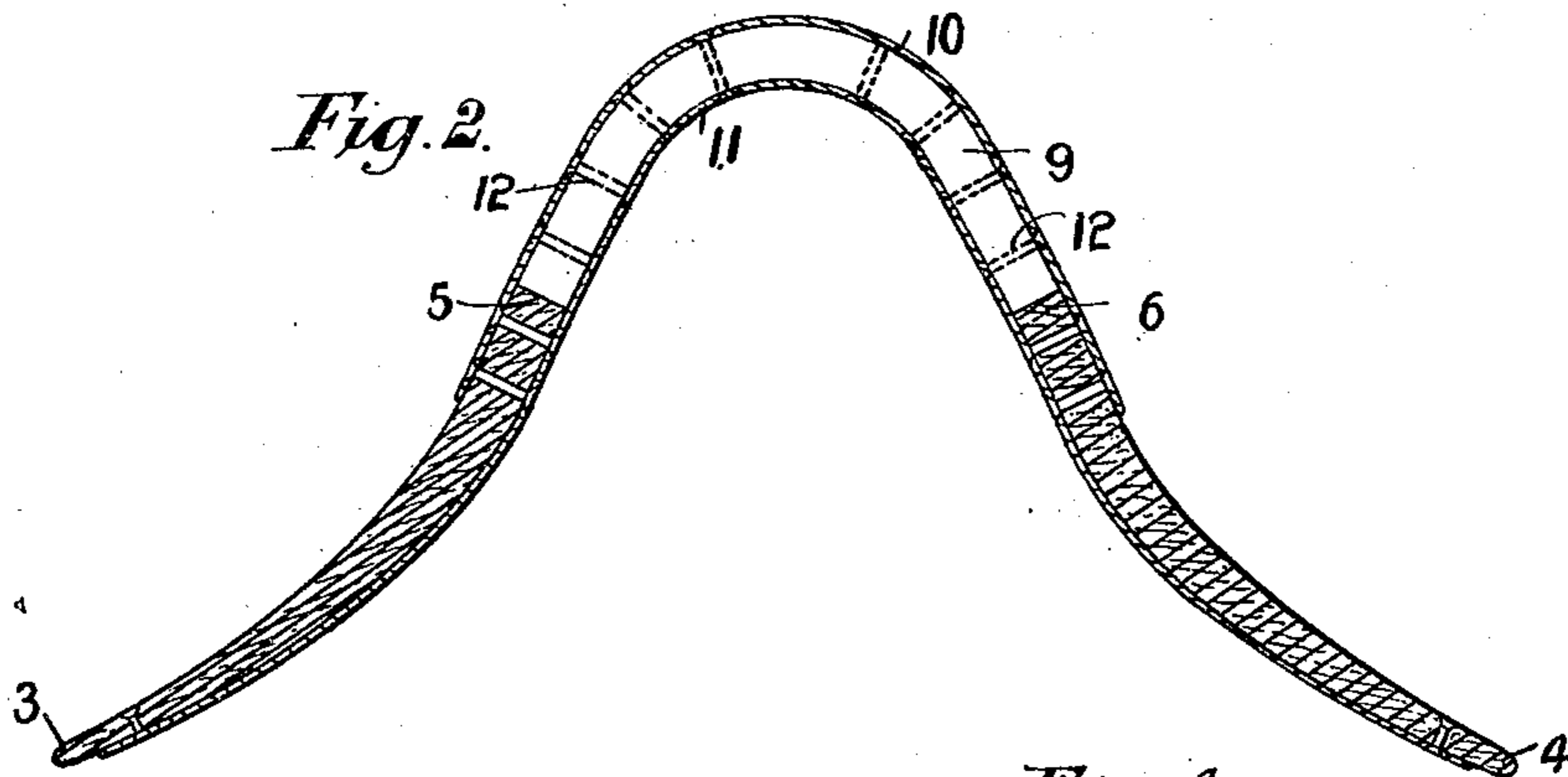
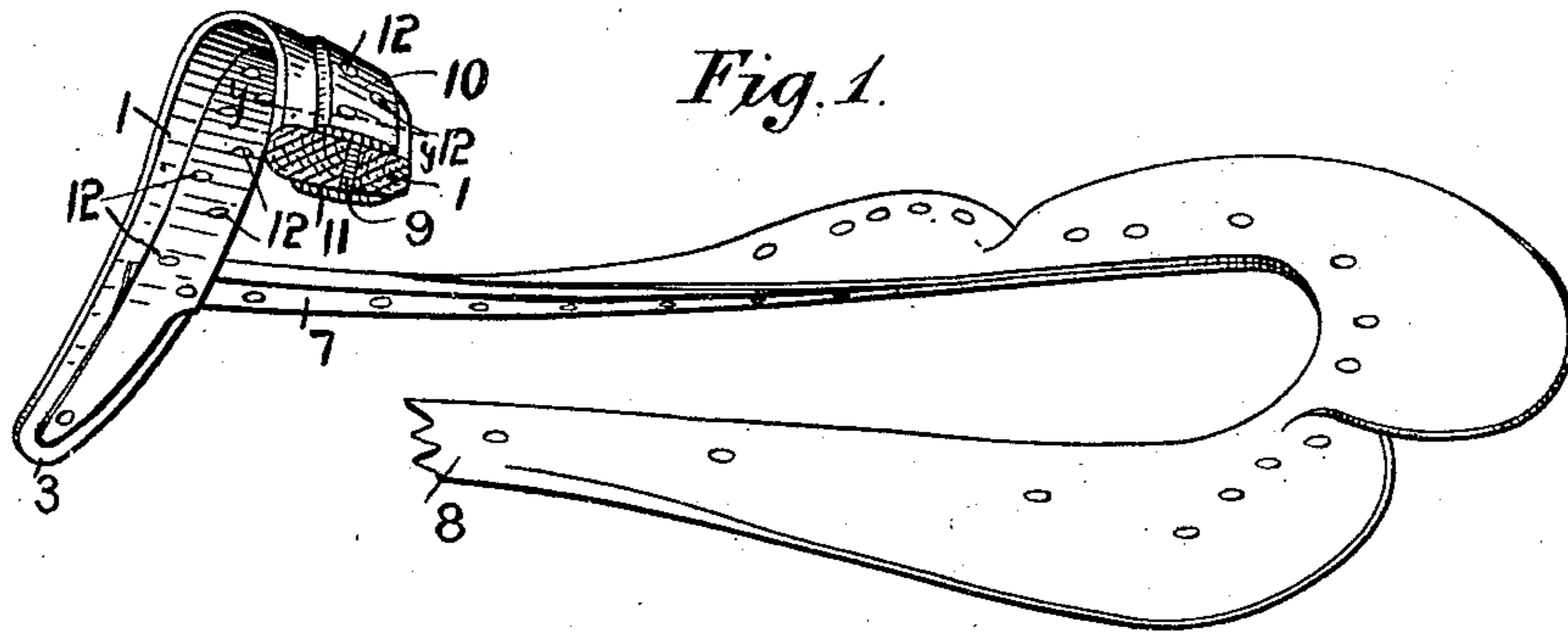
No. 820,136.

PATENTED MAY 8, 1906.

R. A. C. RUSSELL.
RIDING AND DRIVING SADDLETREE.

APPLICATION FILED MAR. 11, 1905.

3 SHEETS—SHEET 1.



Witnesses.
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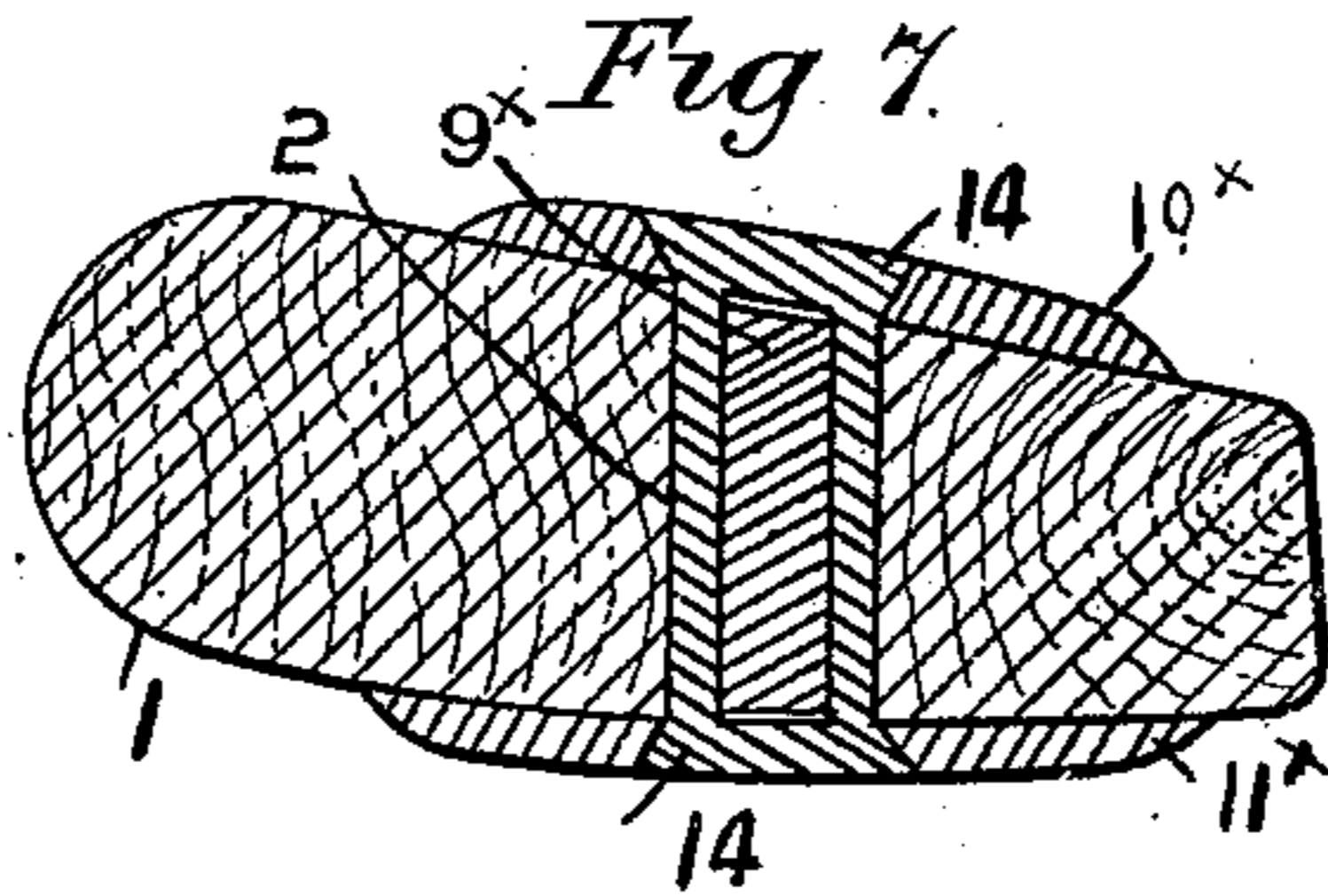
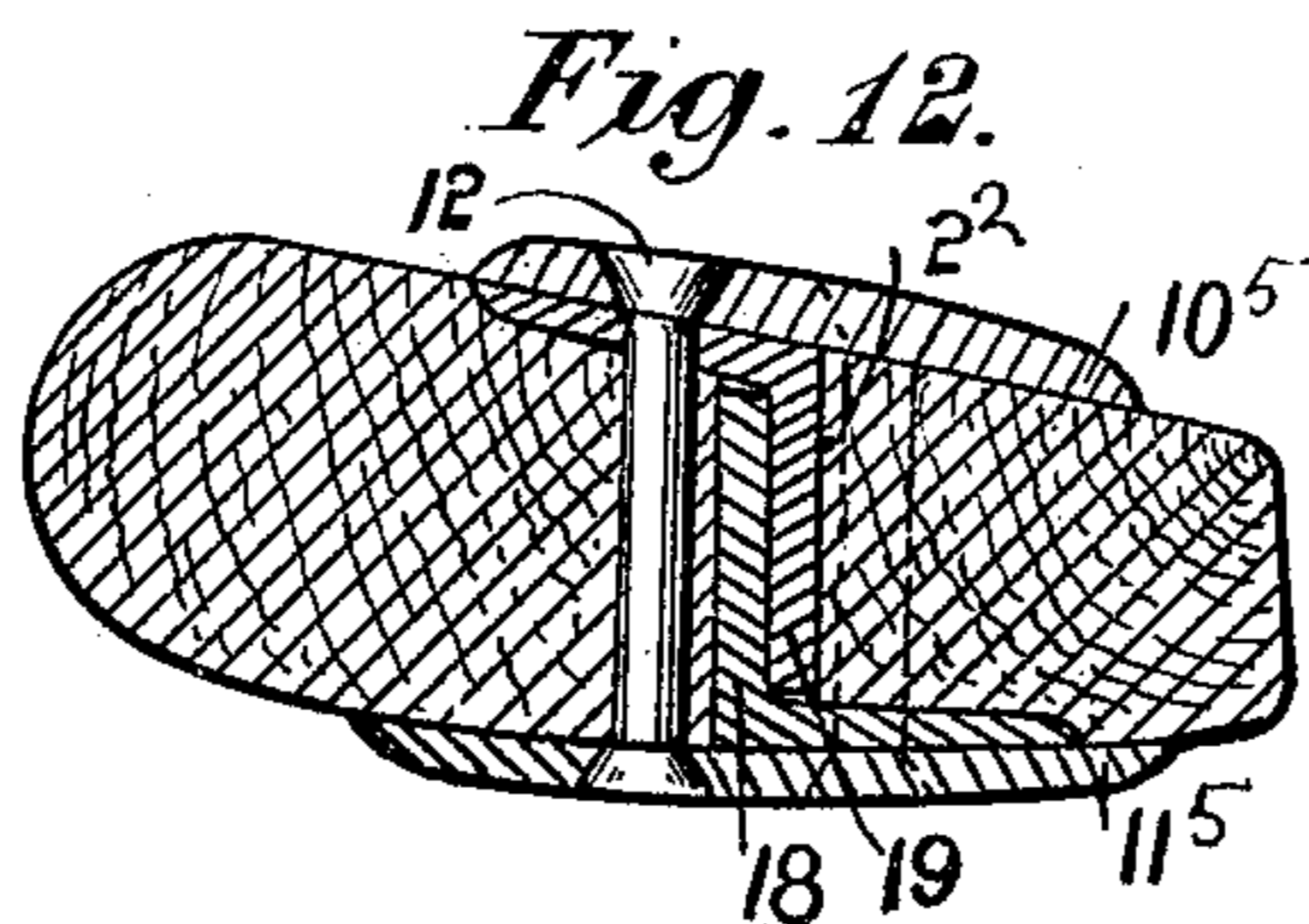
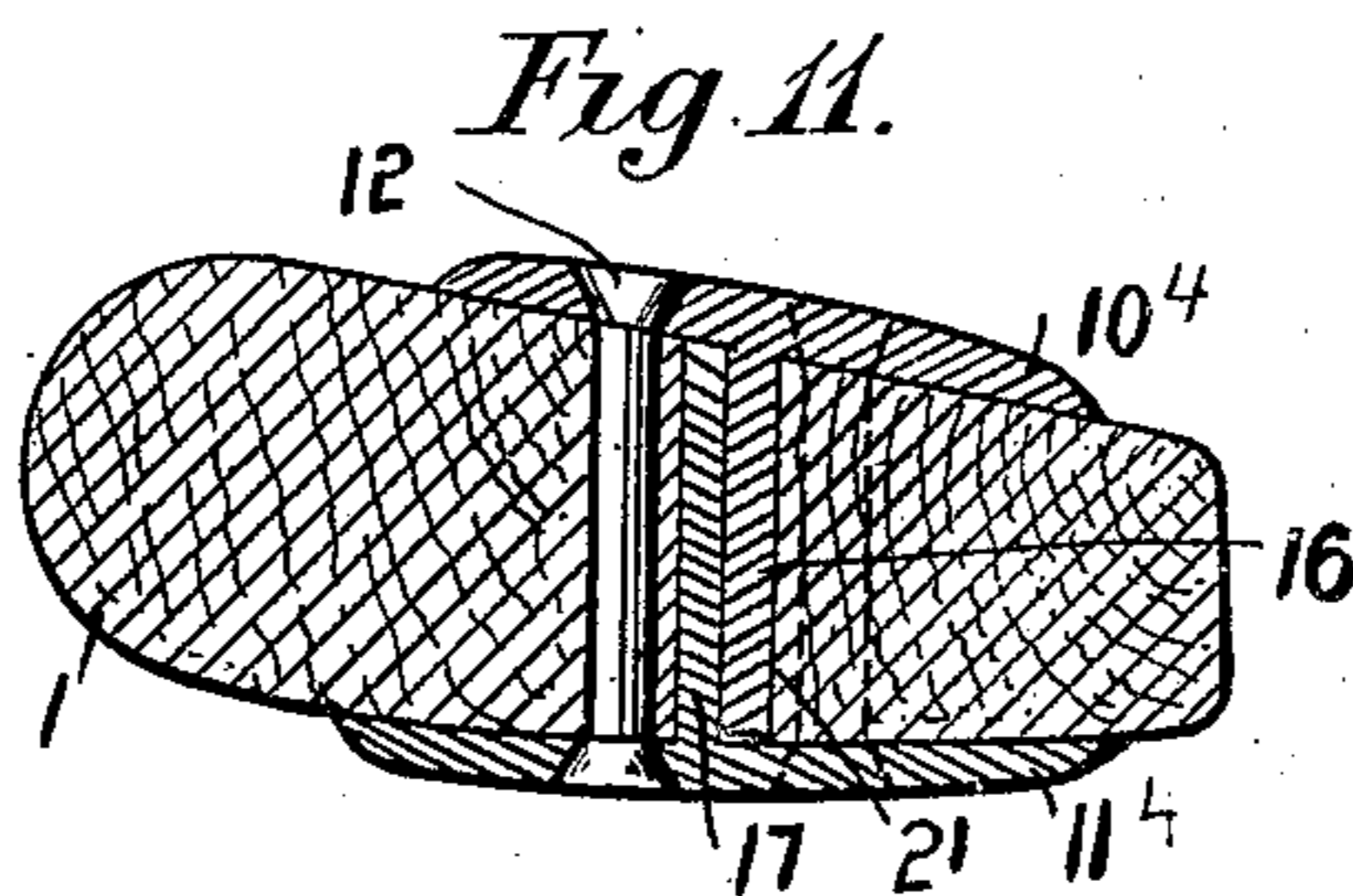
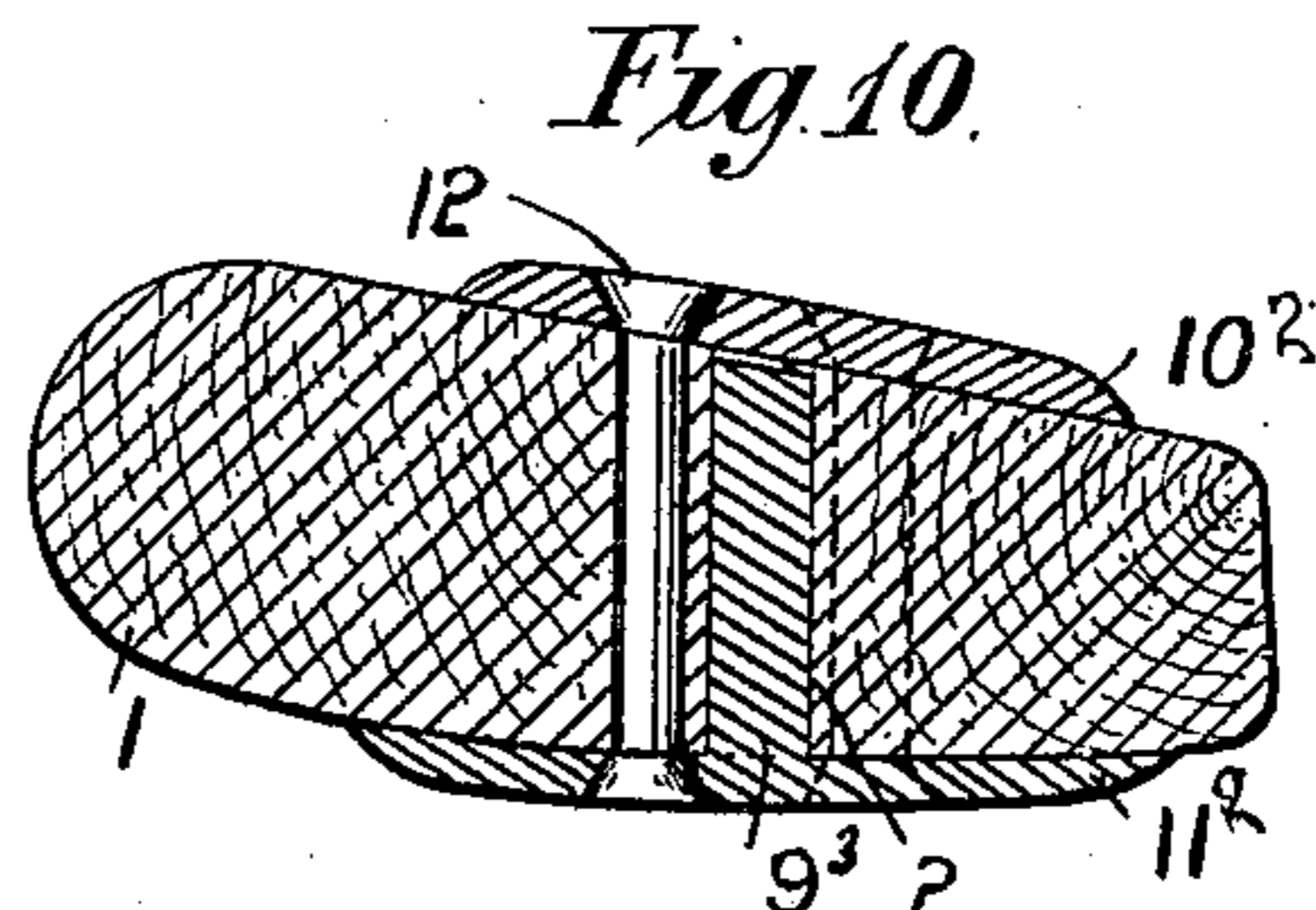
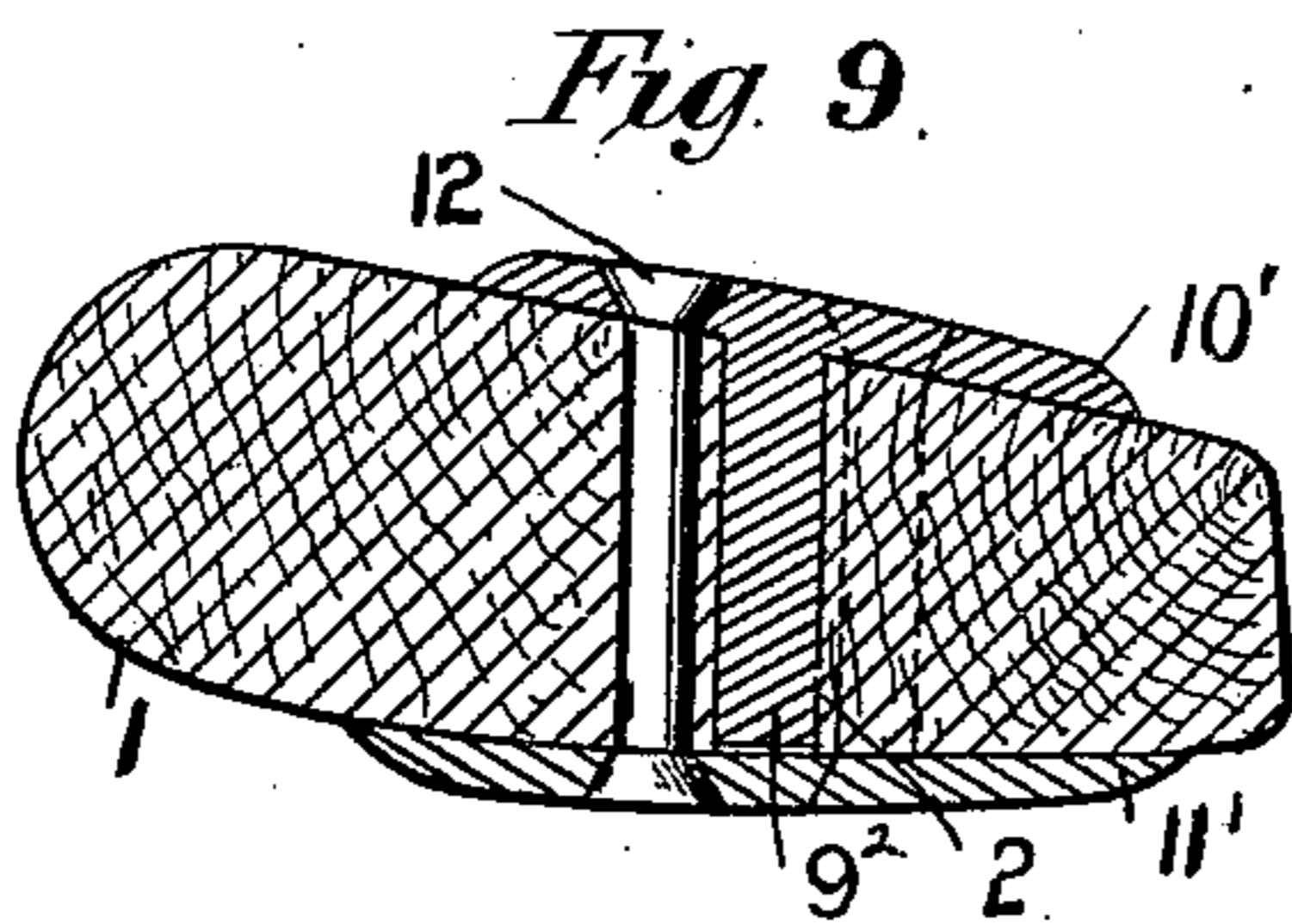
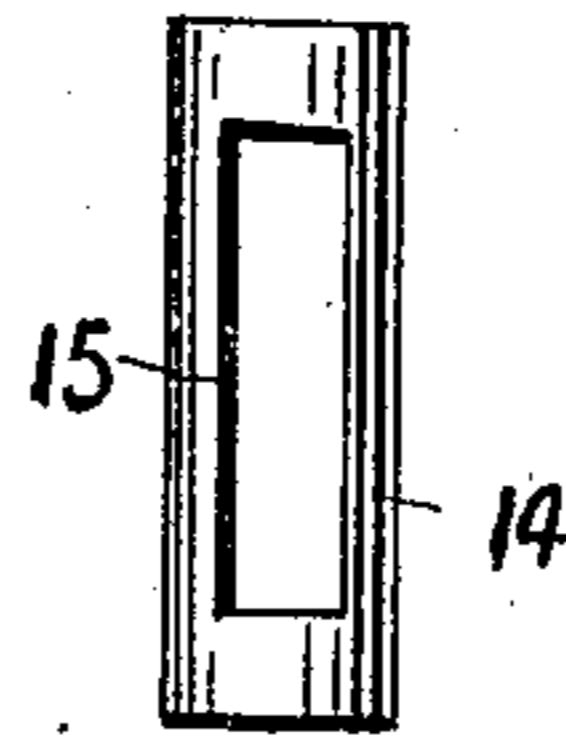


Fig. 8.



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3 SHEETS—SHEET 3.

Fig. 13.

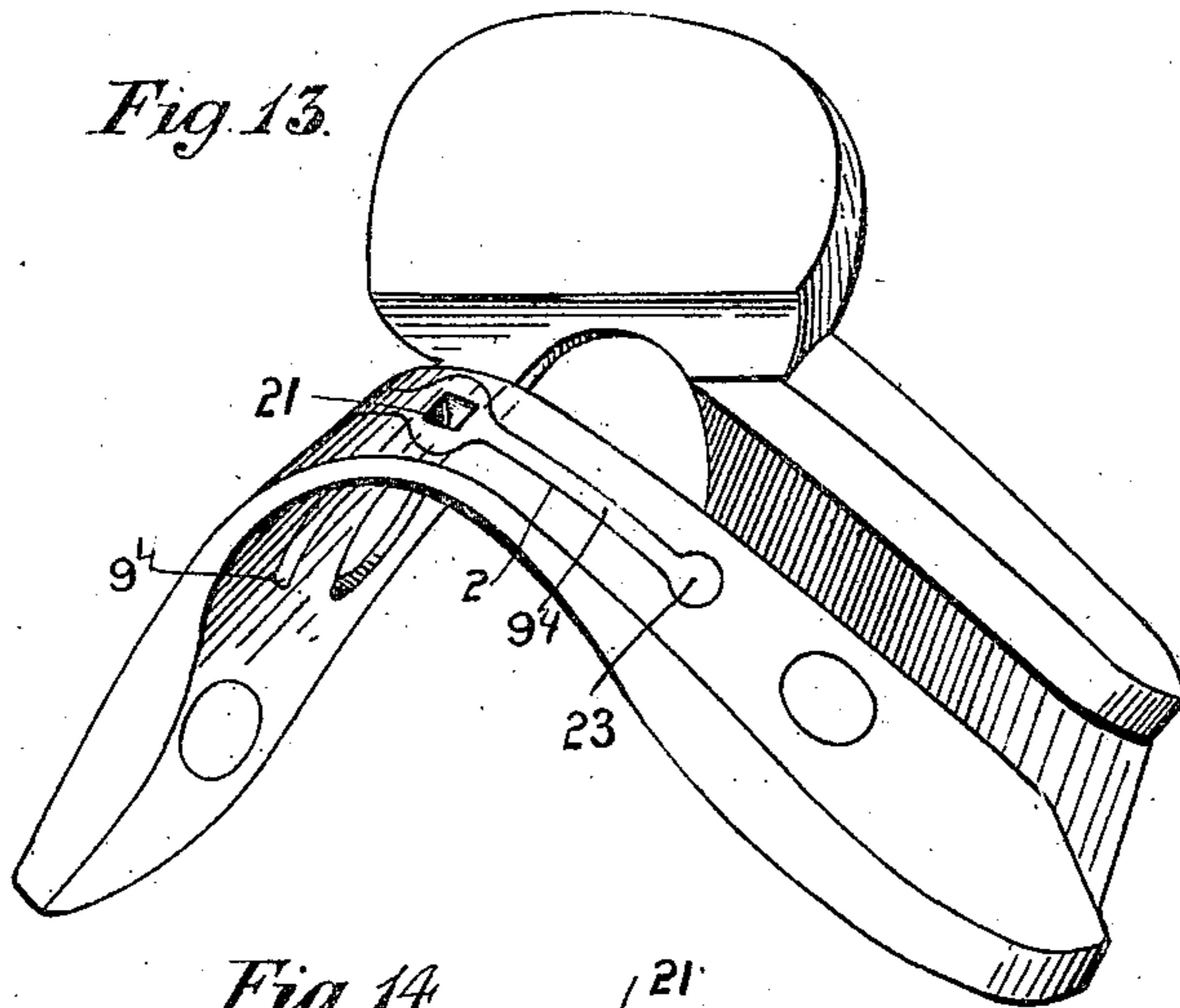


Fig. 14.

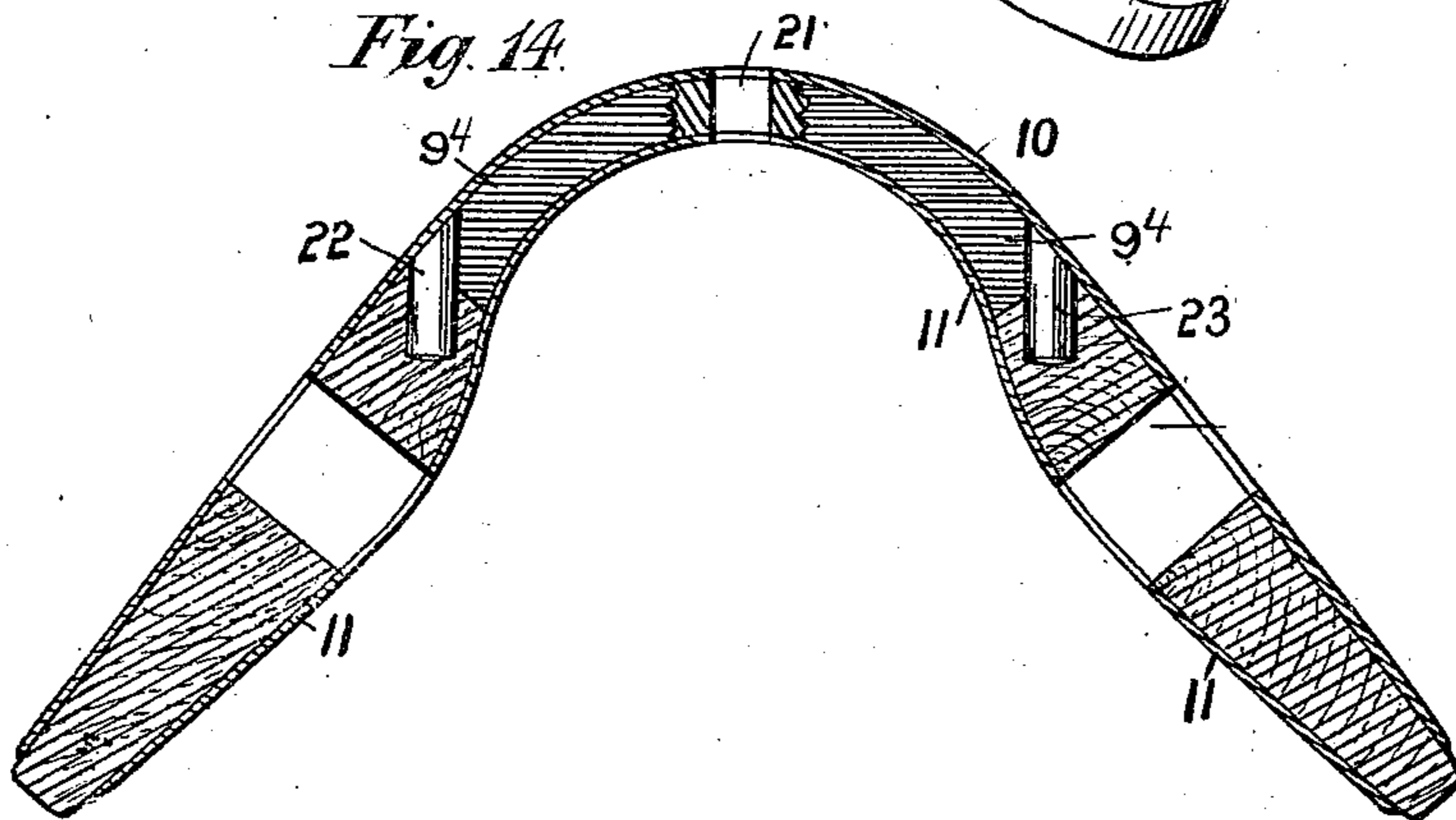


Fig. 15.

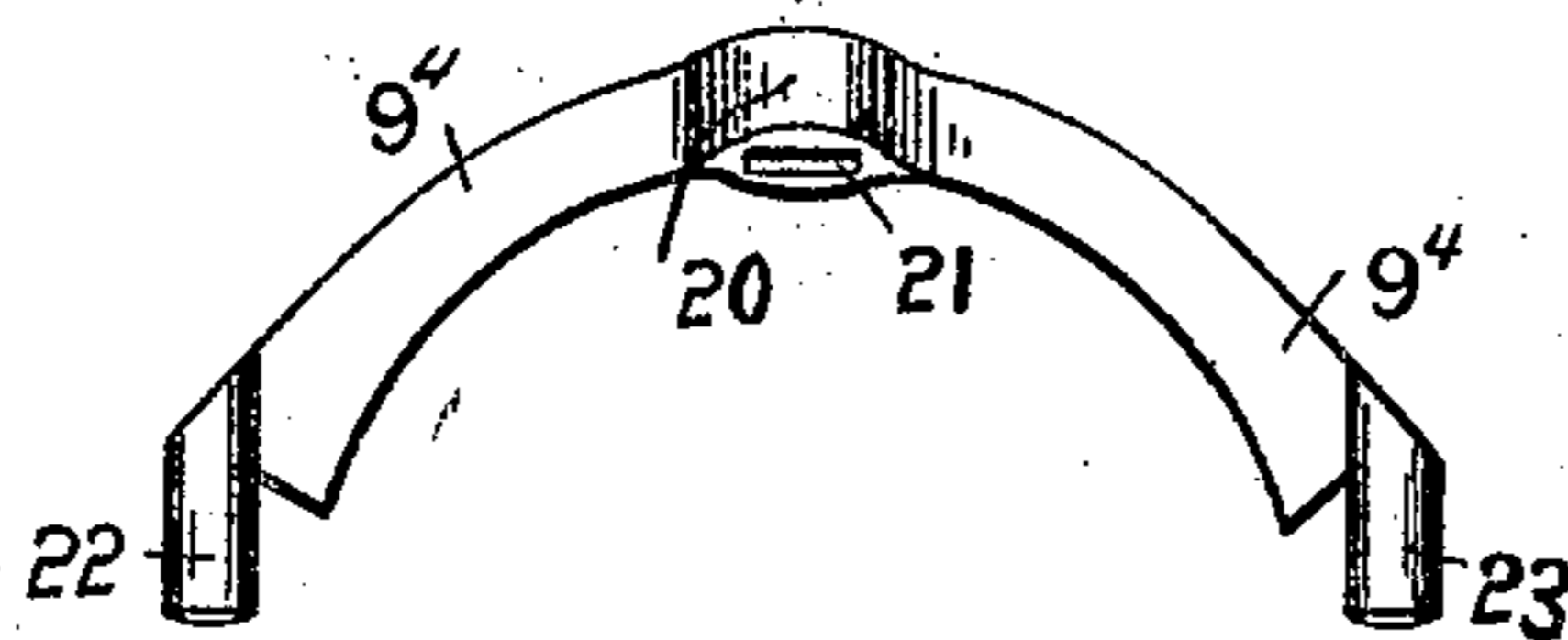


Fig. 17.

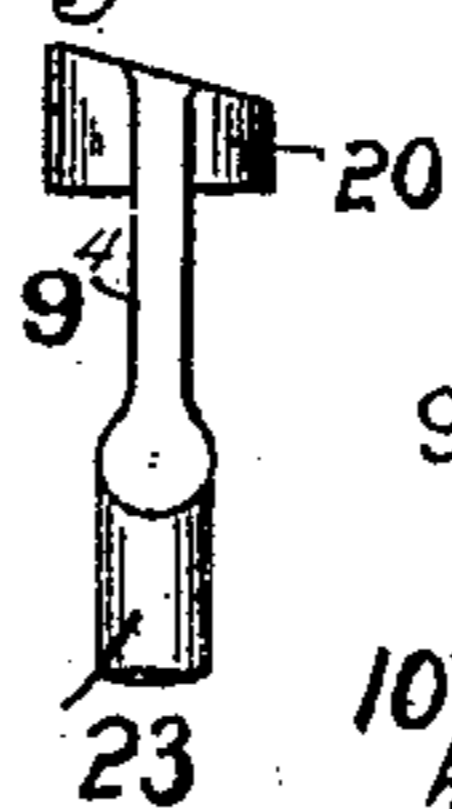


Fig. 18.

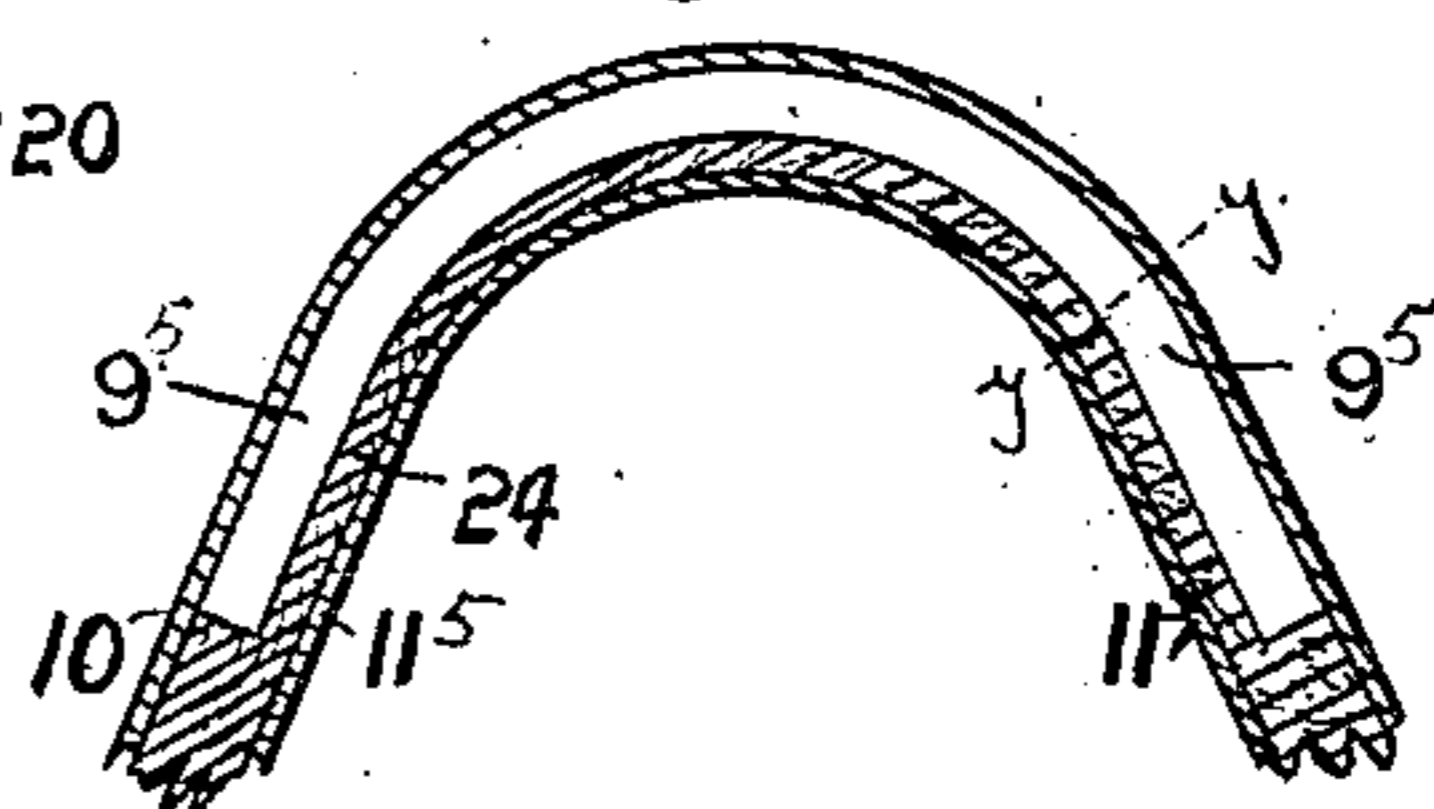


Fig. 16.

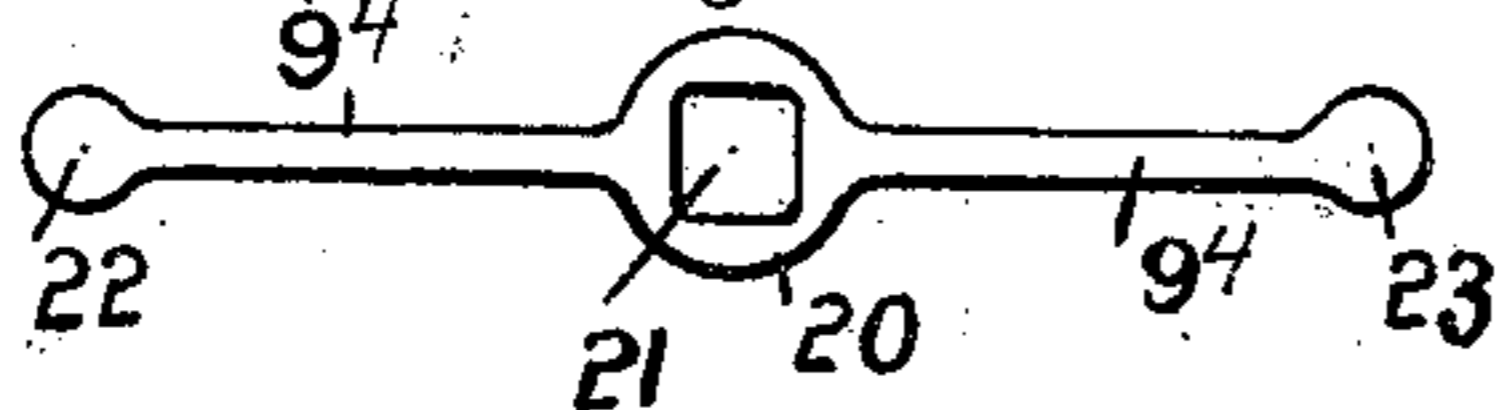
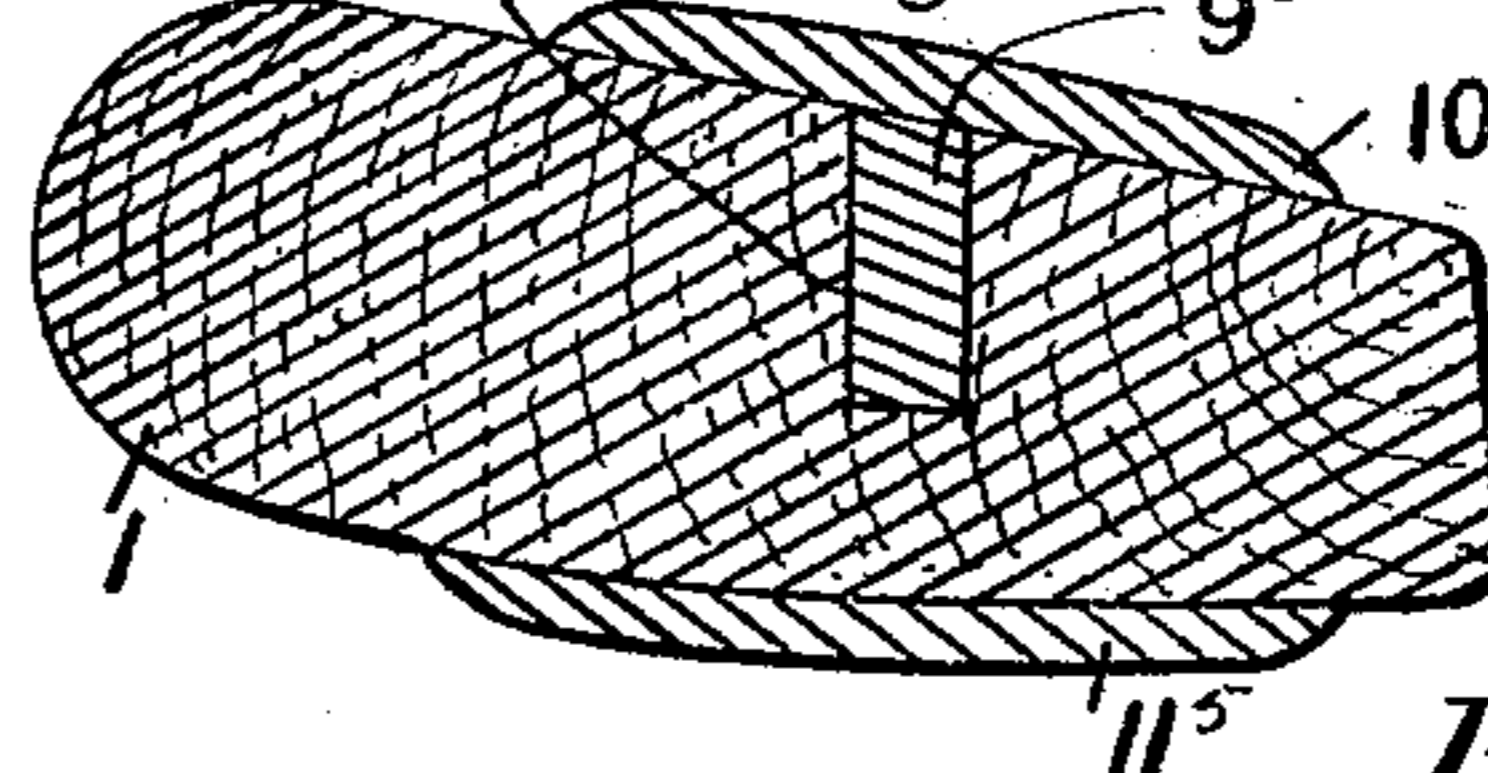


Fig. 19.



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UNITED STATES PATENT OFFICE.

ROBERT ALFRED COWLEY RUSSELL, OF STAFFORD, ENGLAND.

RIDING AND DRIVING SADDLETREE.

No. 820,136.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed March 11, 1905. Serial No. 249,624.

To all whom it may concern:

Be it known that I, ROBERT ALFRED COWLEY RUSSELL, farm overseer, a subject of His Majesty the King of Great Britain and Ireland, residing at Wolseley Bridge, Stafford, in the county of Stafford, England, have invented new and useful Improvements in Riding and Driving Saddletrees, of which the following is a specification.

This invention consists of the herein-described improvements in riding-saddletrees and in driving-saddletrees, the objects of this invention being to provide simple and efficient means for increasing the strength of the arch or head of the saddletree without increasing the weight of the same. In fact, by employing this invention I am enabled to make a saddletree of a given weight much stronger than heretofore, or I can maintain the same strength with a considerable reduction in weight.

I will describe this invention by referring to the accompanying drawings, on which—

Figure 1 is a general view of a riding-saddletree, partly in section, with its arch or head strengthened in accordance with this invention. Fig. 2 is a central vertical sectional view through the arch or head and the points. Fig. 3 is a separate view of the strengthening-piece which I employ in the arch or head of the saddletree. Fig. 4 is a perspective view, partly in section, of the fore part of the saddletree before the said strengthening-piece and the top and bottom plates are fixed thereto. Fig. 5 is a cross-section through the arch of the saddletree on the line *y y* of Fig. 1. Fig. 6 is a modified form of the said strengthening-piece. Fig. 7 is a cross-section through the arch of the saddletree, illustrating a modification of this invention. Fig. 8 shows separately one of the rivets used in the arrangement illustrated by Fig. 7. Figs. 9, 10, 11, and 12 are each cross-sectional views through the arch of the saddletree, illustrating further modifications of this invention. Fig. 13 is a general view of a gig-saddletree strengthened in accordance with this invention, but represented without the top and bottom plates of the arch or gullet, so as to show my strengthening-piece in the arch. Fig. 14 is a central vertical sectional view through the arch and sides of the same gig-saddletree on a larger scale. Fig. 15 is a side elevation of the metal strengthening-piece separately which I use in the arch of the said gig-saddletree. Fig. 16 is a plan of the

said strengthening-piece, and Fig. 17 is an end view of the same. Fig. 18 is a sectional elevation of the arch of a saddletree, illustrating a further modification of my invention; and Fig. 19 is a cross-sectional elevation through the arch on the line *y y* of Fig. 18, but on a larger scale.

Referring first more particularly to Figs. 1, 2, 3, 4, and 5, in carrying out this invention I form in the wood at the head 1 of the tree a slot 2, which is sawed or otherwise formed in the same lengthwise across the arch in the direction from one point 3 to the other point 4, this slot 2 extending right through the wood, (or, as hereinafter described, the slot may only extend partly through the wood.)

The slot by preference terminates at 5 6 just above where the side parts 7 8 of the tree connect to the arch. Into this slot 2 I insert an arched-shaped strip or plate of steel or other suitable metal 9, (shown separately by Fig. 3,) this plate 9 being in section of considerably greater depth than is its width or thickness. The arched plate 9 will, as shown in Figs. 1, 2, and 5, thus be situated between the top plate 10 on the top of the arch or head and the gullet-plate 11 below the same, so that this arched plate 9, in combination with the top and gullet plates 10 11, now forms a double-flanged girder-section of which the arched plate 9 is the vertical web. The top plate 10, with the arched plate or vertical web 9 and the gullet-plate 11, are secured together by rivets, which may be arranged in various ways—as, for instance, the rivets may, as shown in Figs. 1, 2, and 5, be ordinary rivets 12, arranged alternately at both sides of the arched plate 9, passing through holes in the top plate 10 and in the gullet-plate 11 and right through the wooden substance of the tree and riveted over, and thus securing these two plates 10 and 11 and the tree and the arched plate 9 together, or, as shown by Fig. 6, the rivets, which in this case are marked 13, may be projections which are formed on the top and bottom edges of the arched plate 9 and pass through corresponding holes in the top plate 10 and in the gullet-plate 11 and are riveted over, so as to secure these three plates together, or, as shown by Figs. 7 and 8, the rivets (in this case marked 14) may be each made with a central longitudinal slot 15, (see Fig. 8,) through which the arched plate 9 is threaded, as in Fig. 7, and then these rivets 14 pass

through the holes in the top plate 10^x and in the gullet-plate 11^x and are riveted over, as aforesaid, or the rivets for securing the top plate 10 and the gullet-plate 11 and the
 5 arched web or plate 9 together may be arranged in any other convenient way, as will readily be understood. Thus the head or arch of the tree is very considerably strengthened, enabling what is known as the "extra"
 10 gullet-plate to be dispensed with, if desired, and also enabling the thickness of the top and gullet plates to be made much thinner and lighter than heretofore, thus greatly reducing the weight of the tree for a given
 15 strength.

It is to be understood that this invention is applicable to the heads of ladies' saddletrees, as well as to others, and, if desired, may also be similarly employed to strengthen the
 20 points of the saddletree.

The arch-shaped strengthening web or plate 9 is by preference made separate from the top plate 10 and gullet-plate 11, as above described; but, if desired, said arch-shaped
 25 strengthening web or plate 9 may be formed in a piece with the top plate 10 or with the gullet-plate 11, which will thus be made of a T-section bar or of angle-section, or both the
 30 top plate 10 and the gullet-plate 11 may be of T-section or of angle-section, with their vertical webs fitting together in the slot 2, as above described. These modifications are illustrated by Figs. 9, 10, 11, and 12, to which I will now refer.

35 In the modification shown by Fig. 9 the strengthening web or strip 9² is formed in a piece with the top plate 10', which is thus T-section, as shown, the gullet-plate 11' being of the ordinary kind.

40 In the modification shown by Fig. 10 the strengthening web or strip 9³ is formed in a piece with a gullet-plate 11², which is thus T-section, the top plate 10² being of the ordinary kind.

45 In modification shown by Fig. 11 both the top plate 10⁴ and the gullet-plate 11⁴ are made of T-section, each having a vertical web, which are marked, respectively, 16 and 17, these two webs fitting together in the slot 2'
 50 in the tree, and thus together having the same effect as the strengthening web or strip 9, as above described.

In the modification illustrated by Fig. 12 the two arch-shaped strengthening-plates (in this case marked, respectively, 18 and 19) are
 55 made of angle-section with their vertical webs fitting together in the slot 2² and with their other webs fitting round and against the top and bottom of the arch under the top plate
 60 10⁵ and gullet-plate 11⁵.

The arched strengthening-plate 9 or its equivalent, as above described, is by preference fixed in the slot 2 in the wood before the latter is covered by the canvas or like material,
 65 so that when the canvas or like material is

wrapped round and secured to the wood to strengthen and hide the same in the usual way the strengthening strip or web will be inclosed by the canvas or like material and be hidden from view, and the canvas or like material will securely bind together the wood of the tree at both sides of the strengthening strip or web. 70

This invention is applied to gig-saddles and other driving-saddles similarly as above described with reference to a riding-saddle; but when applied to gig-saddles and other harness-saddles the arched-shaped strengthening-plate 9⁴ is, as shown by Figs. 13, 14, 15, 16, and 17, made with a central boss 20, in
 80 which is a vertical square or other hole 21 to receive the shank of the pedestal. The end portions 22 23 of the arched strengthening-plate 9⁴ are by preference enlarged, as shown, to take into corresponding holes in the
 85 wooden part of the tree, as in Fig. 14, and assist in further strengthening the arch by preventing the sides of the tree from springing apart.

As before stated, the slot or saw-cut 2 in
 90 the arched-shaped part of the wooden tree, in which the arch-shaped metal strengthening-plate fits, may either extend right through the substance of the saddletree, as in the examples illustrated by Figs. 1 to 17, both inclusive, and this is what I prefer, so that the
 95 arched strengthening-plate will by its fixing-rivets be clamped between and touch both the top plate and the gullet-plate, or, as shown by Figs. 18 and 19, the slot or saw-cut
 100 2⁴ may extend only partly through the wood of the tree, in which case, if the slot is made round the top of the arch, as shown by these figures, there will be a certain thickness of
 105 wood, as at 24, between the bottom edge of the arched strengthening-plate 9⁵ and the gullet-plate 11⁵, the object in either case being to leave the wooden tree stronger than is the case when the saw-cut extends right through it, as in the examples illustrated by Figs. 1
 110 to 17.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a saddletree, the combination with the head, the top plate and the gullet-plate,
 115 of an arch-shaped metal plate or strip fixed in said head, substantially as described.

2. In a saddletree, the combination with the arch-shaped head having a slot formed lengthwise thereof, of a metal plate or strip
 120 secured in said slot, substantially as described.

3. In a saddletree, the combination with the arch-shaped head having a slot formed lengthwise thereof, the head-plate and the
 125 gullet-plate, of a metal plate or strip secured in said slot between said plates, substantially as described.

4. In a saddletree, the combination with the arch-shaped head having a slot formed
 130

lengthwise thereof, the head-plate and the gullet-plate, of a metal plate or strip in said slot and means extending through said head for securing said plates together, substantially as described.

5 5. In a saddletree, the combination with the arch-shaped head, the head-plate and the gullet-plate, of a metal strip secured in said head between said plates, a boss formed near
10 the center of said strip having an opening therein, and vertically-arranged lugs on the opposite ends of said strip, substantially as described.

15 6. In a saddletree, the combination with the head having a slot formed lengthwise thereof, the head-plate and the gullet-plate, of a metal strip secured to one of said plates

and extending into said slot, and means for connecting said plates, substantially as described.

20 7. In a saddletree, the combination with the head having a longitudinal slot extending through the same, of a head-plate, a gullet-plate, metal strips secured to said plates and extending into said slot, and means for secur-
25 ing said plates together, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT ALFRED COWLEY RUSSELL.

Witnesses:

CHARLES BOSWORTH KETLEY,
THOMAS JOHN ROWE.