

March 3, 1953

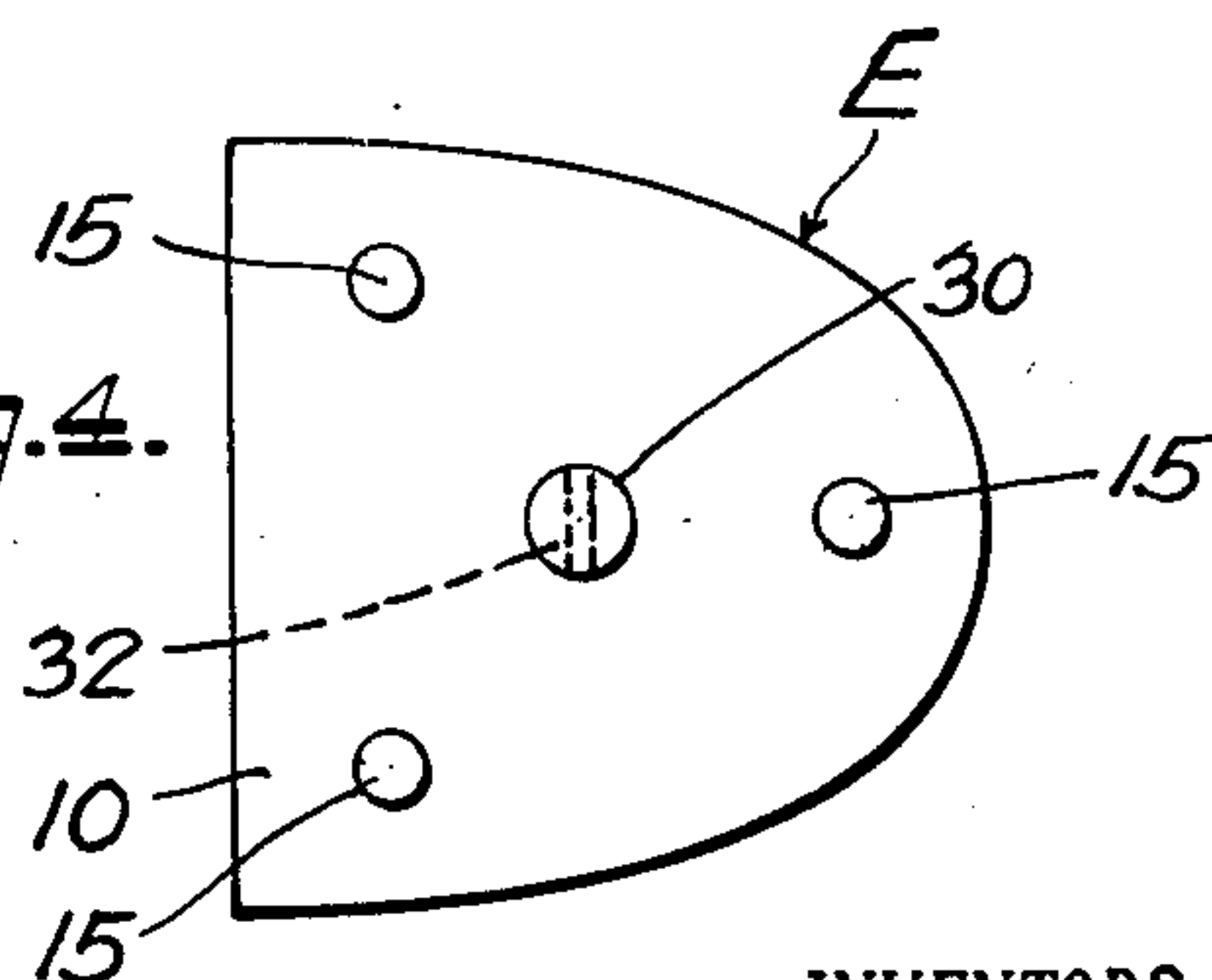
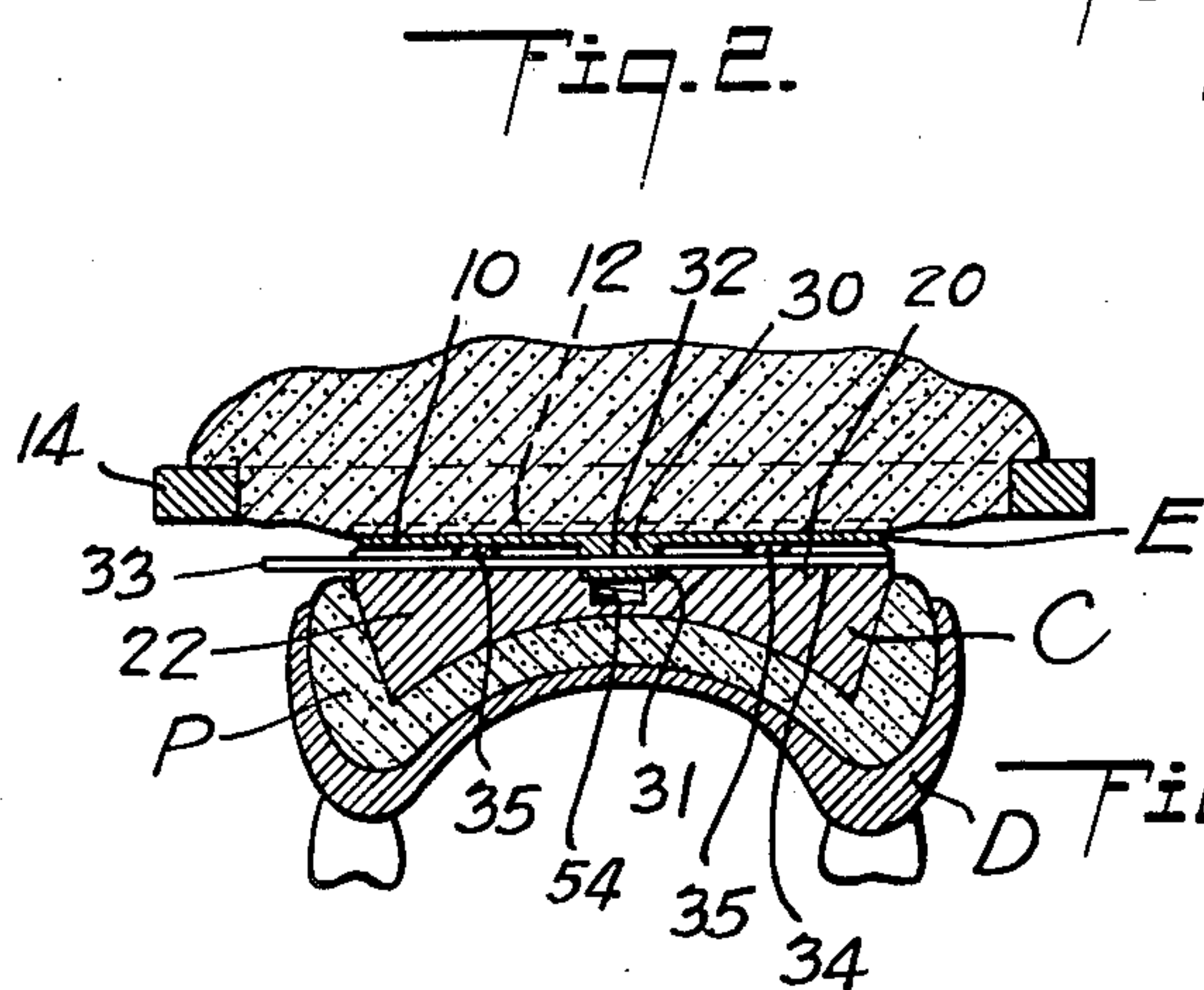
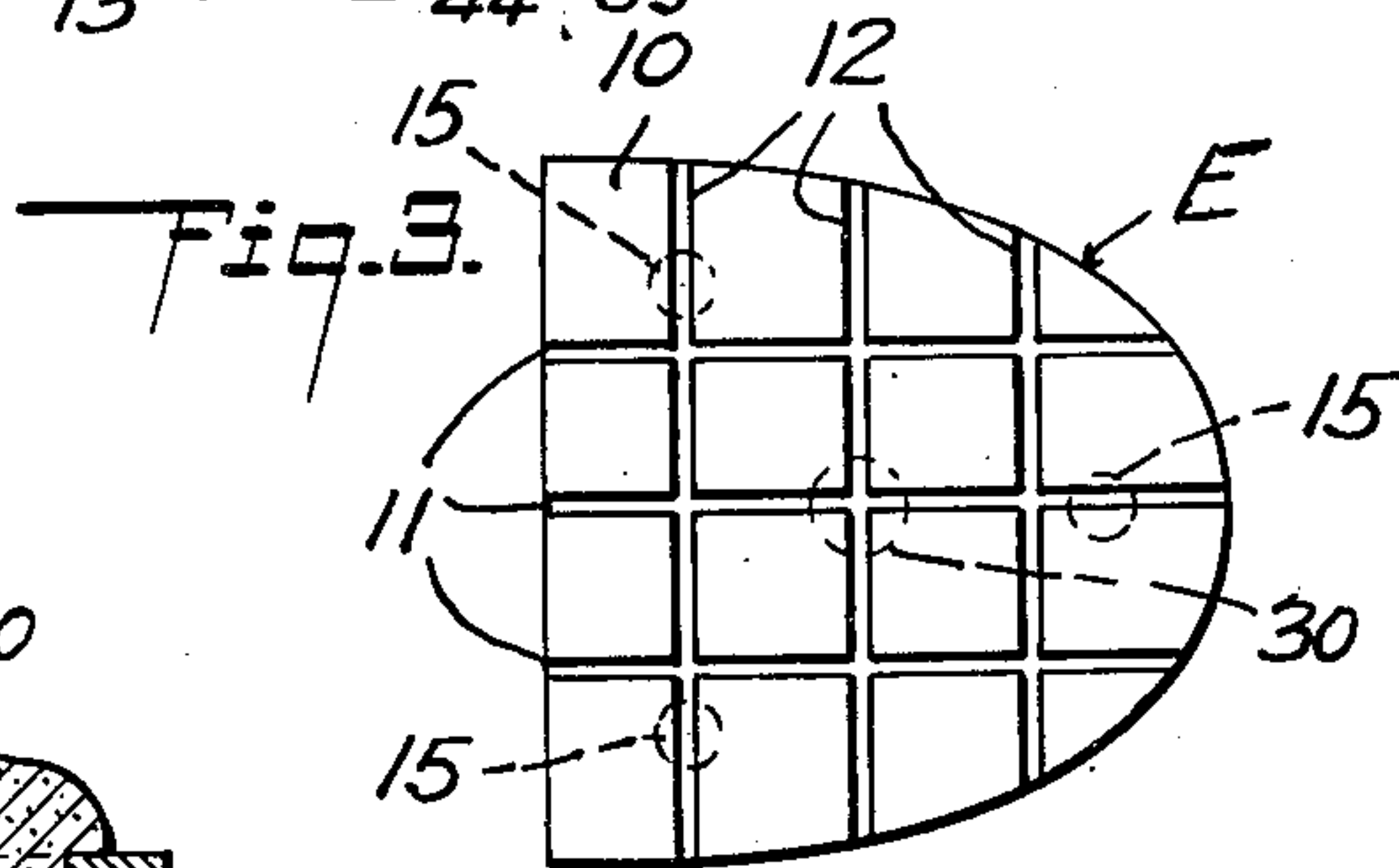
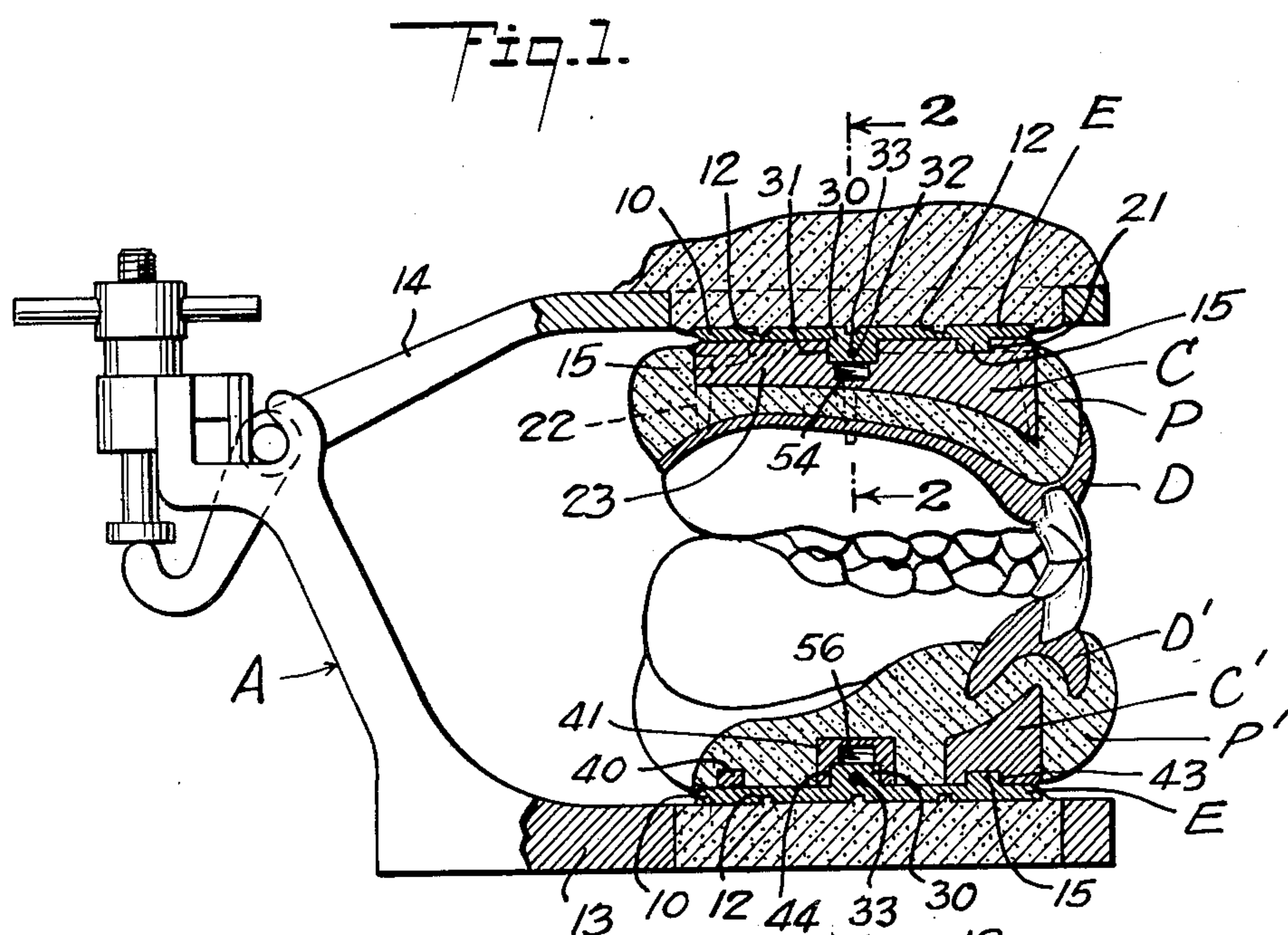
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2,629,929

MOUNTING FOR ARTIFICIAL DENTURES

Filed March 17, 1952

2 SHEETS--SHEET 1



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2 SHEETS—SHEET 2

Fig. 5.

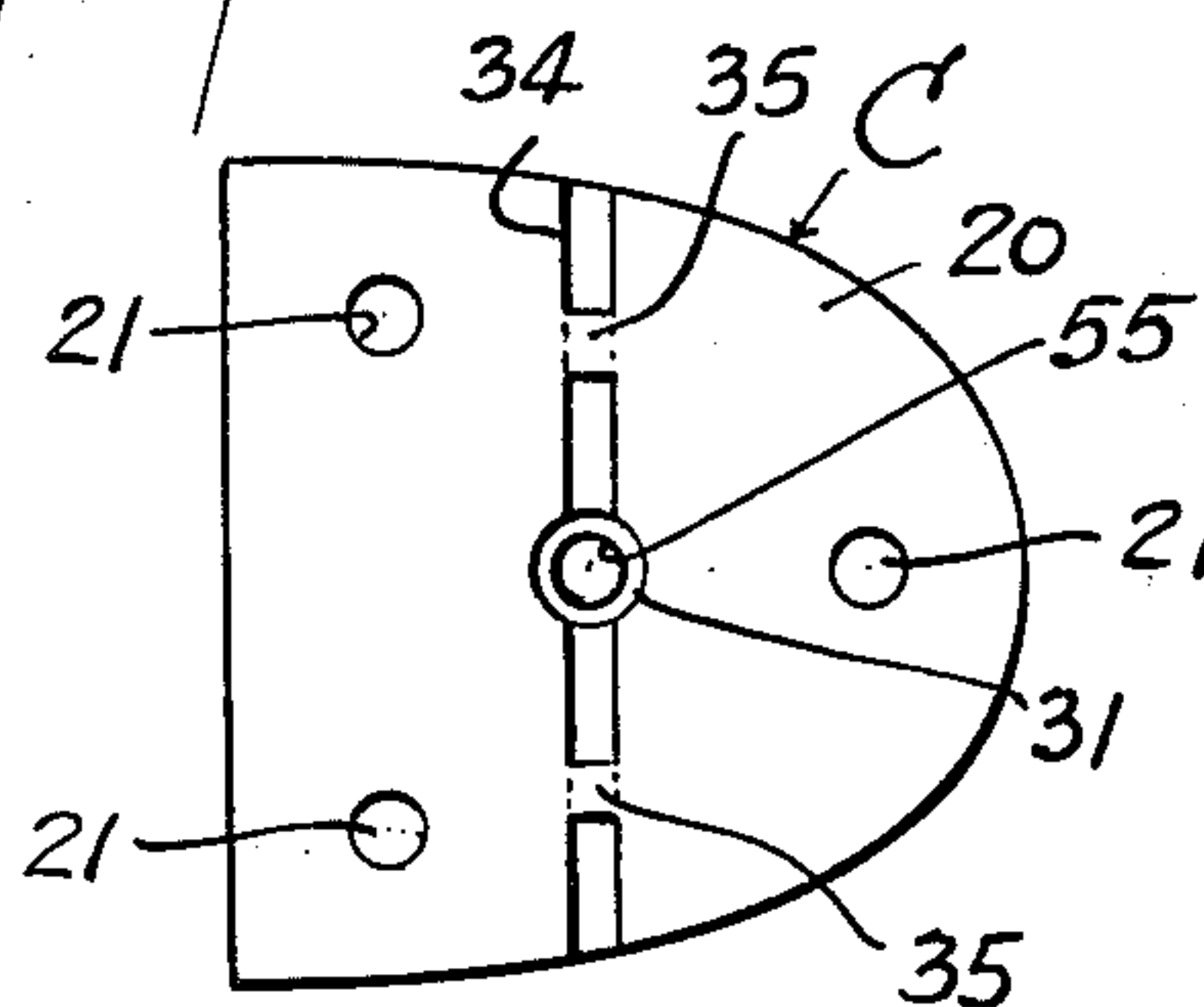


Fig. 6.

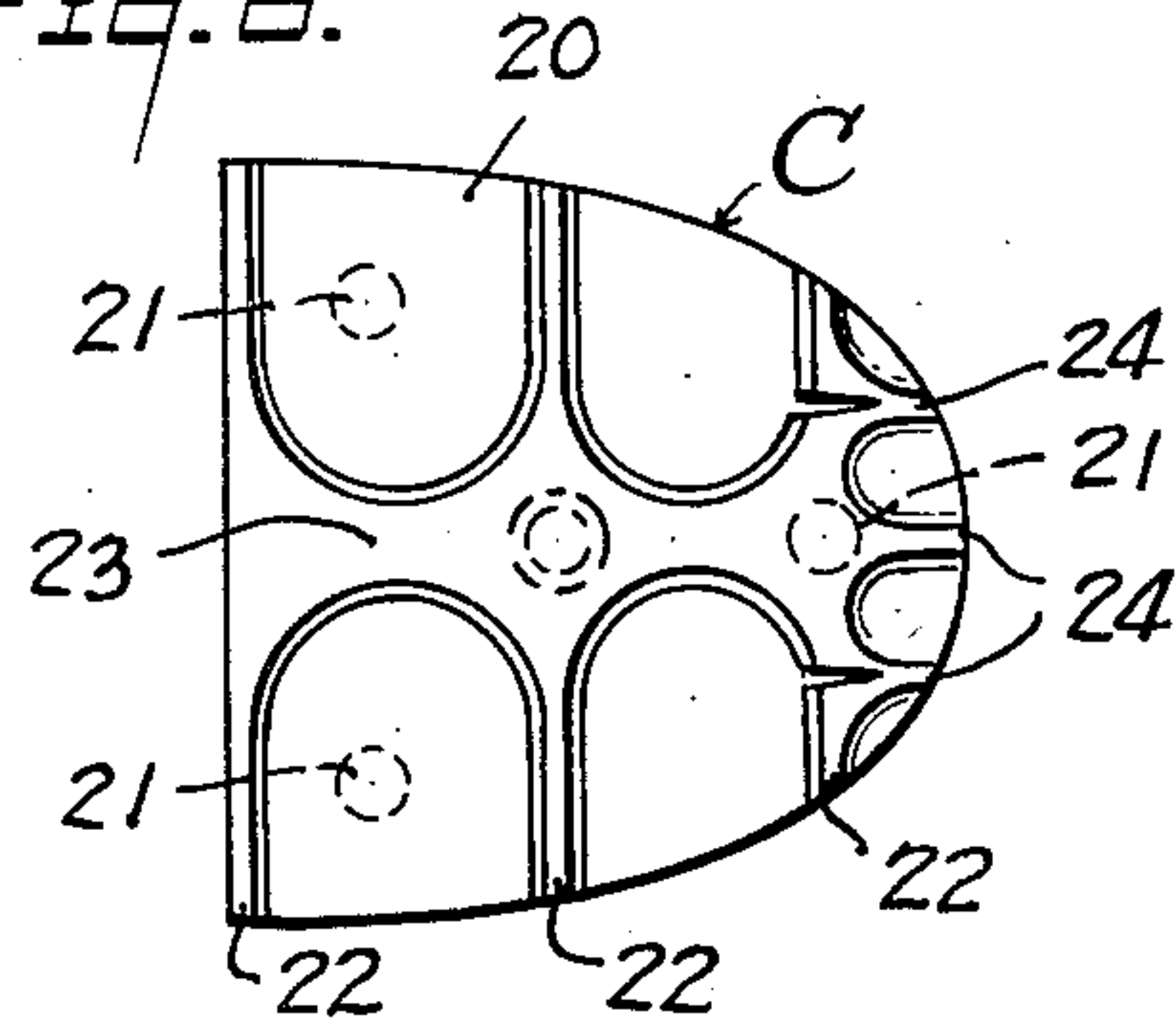


Fig. 7.

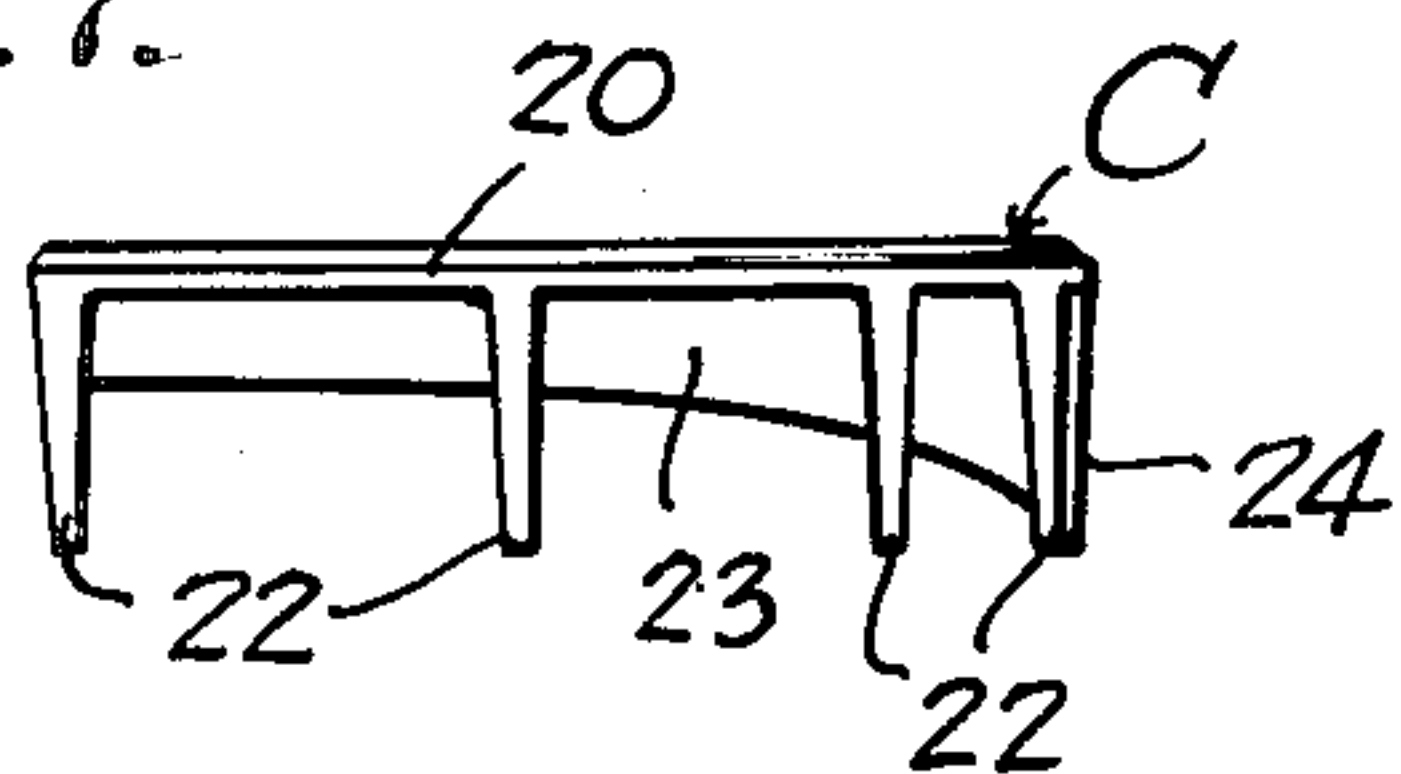


Fig. 8.

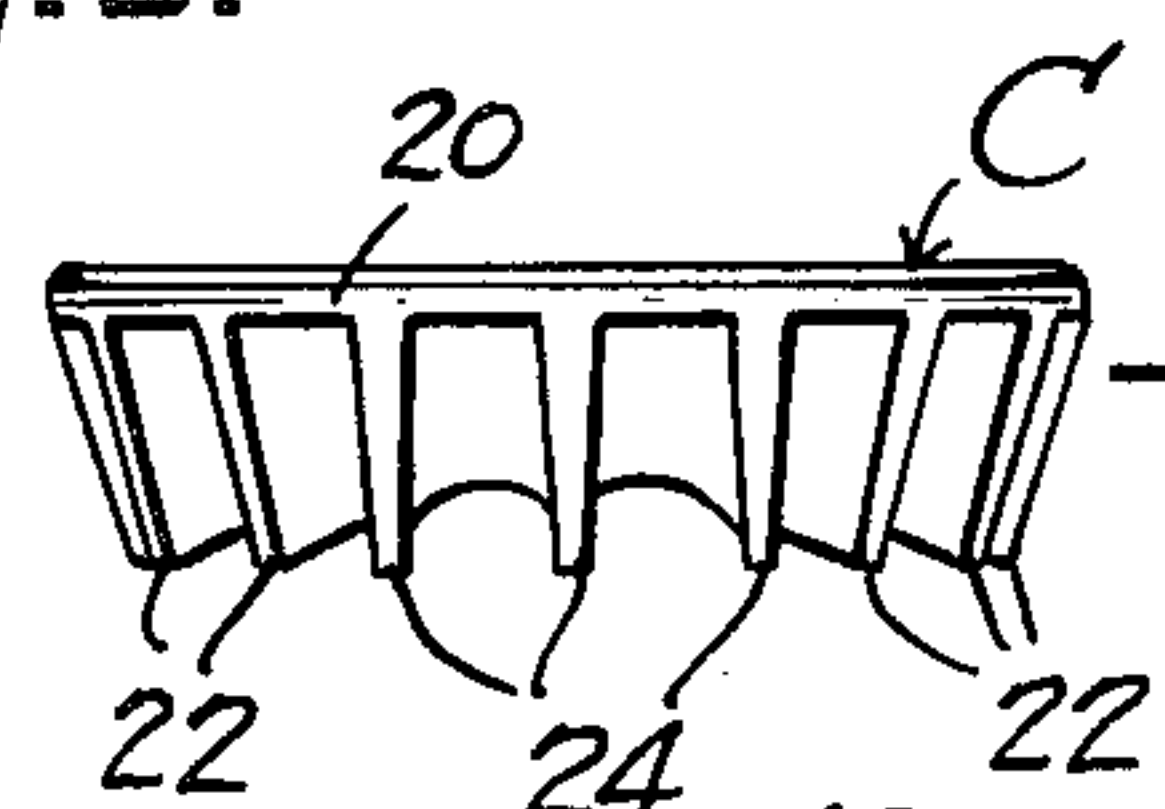


Fig. 9.

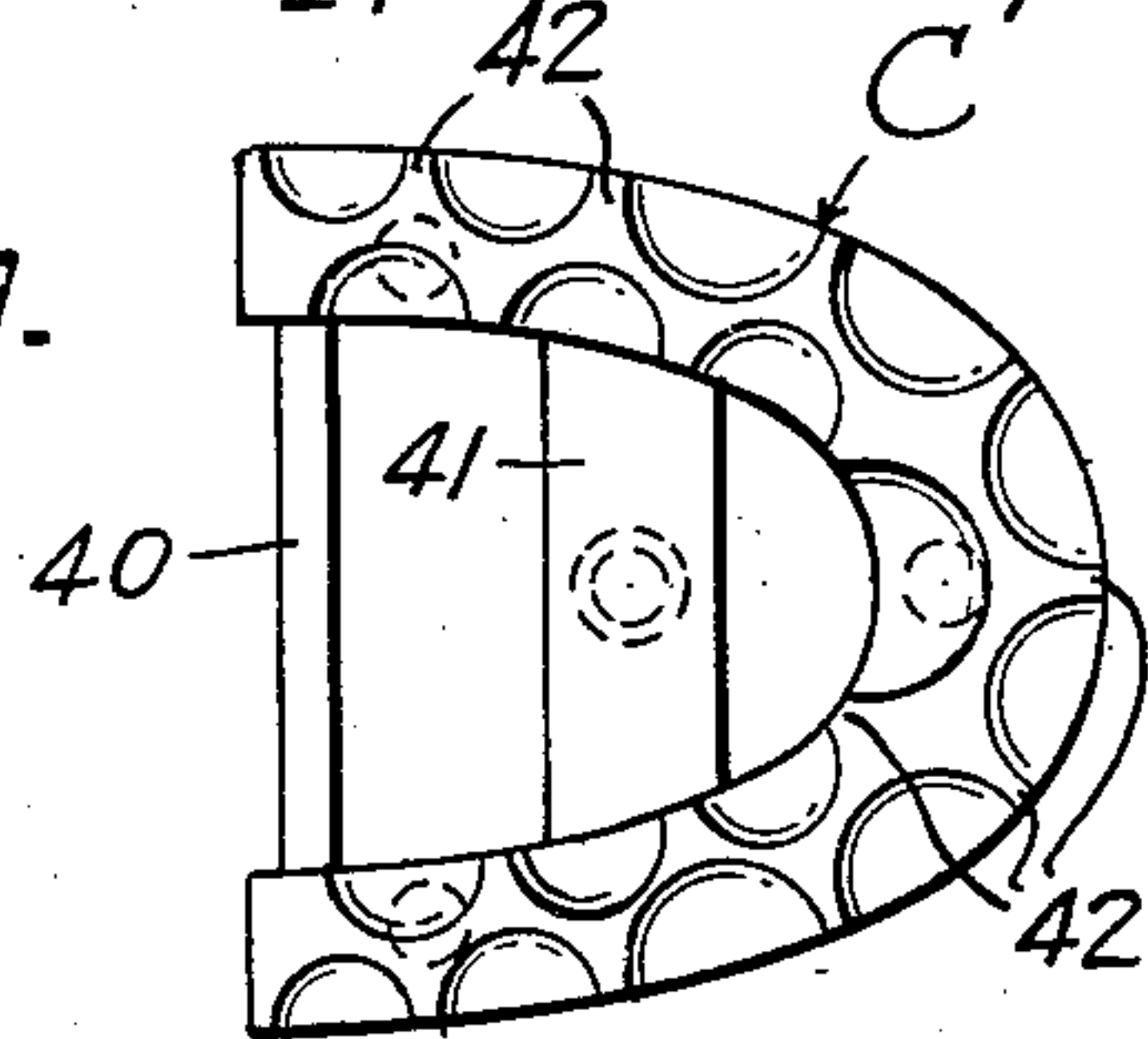
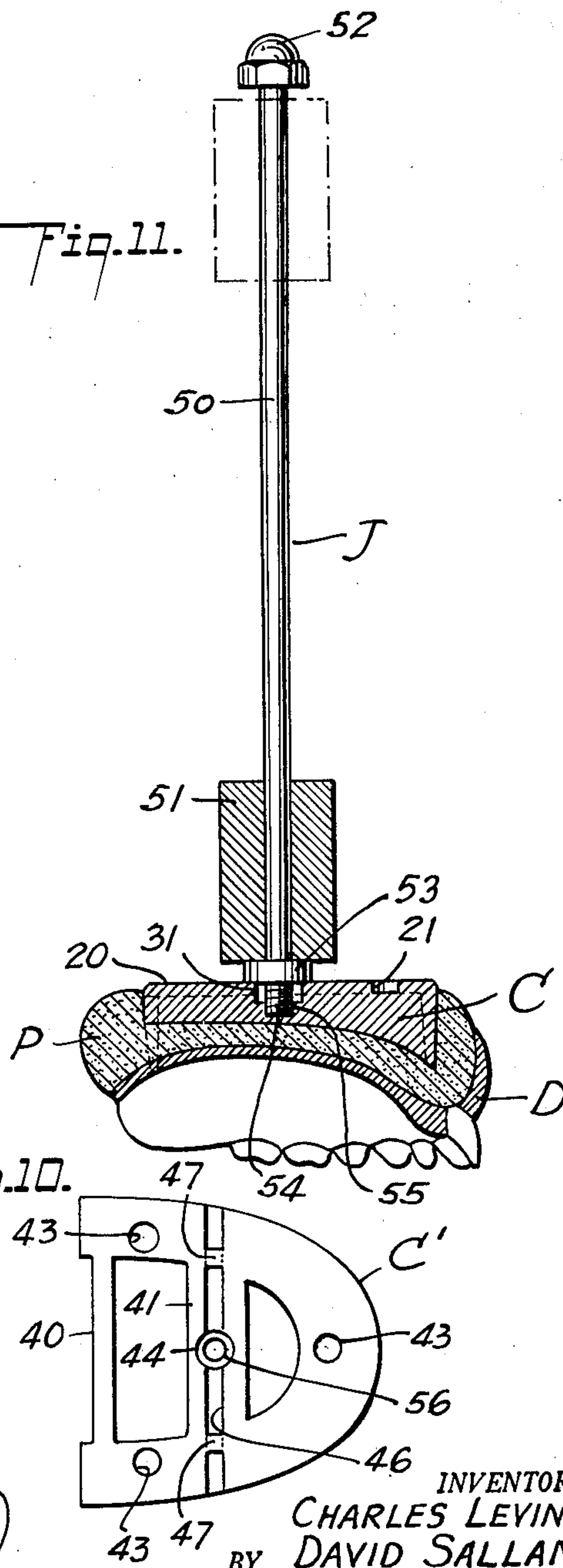


Fig. 11.



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2,629,929

MOUNTING FOR ARTIFICIAL DENTURES

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7 Claims. (Cl. 32—32)

1

Our invention relates generally to the art of molding articles, and more particularly to the manufacture of artificial dentures.

In its broad aspect, the primary object of our invention is to provide means by which the removal of a core from an undercut mold will be greatly facilitated, and, more specifically to provide a device by which an undercut model may be removed from an artificial denture without danger of cracking, breaking, or in any way structurally damaging the denture.

Another object of our invention is to provide a device of the above described character embodying means for absorbing and retaining heat from a plastic denture when plasticized, so as to aid in curing the denture.

A further object of our invention is to provide a device which enables a denture to be removed from an articulator as often as desired for milling in the teeth in occlusion, without affecting registration of the denture, thus greatly simplifying and expediting the manufacture of the denture.

With these and other objects in view, our invention resides in the combinations, arrangements and functional relationships of elements as set forth in the following specification and particularly pointed out in the appended claims.

In the accompanying drawings,

Figure 1 is a view showing in vertical central section, one form of mounting for artificial denture models embodying our invention;

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a top plan view of a mounting plate embodied in our invention;

Figure 4 is a bottom plan view of the mounting plate;

Figure 5 is a top plan view of a model divider core for an upper denture, embodied in our invention;

Figure 6 is a bottom plan view of the model divider core shown in Figure 5;

Figure 7 is a view in side elevation, of the model divider core shown in Figures 5 and 6;

Figure 8 is a view in front elevation, of the model divider core shown in Figures 5 and 6;

Figure 9 is a top plan view of a model divider core for a lower denture, embodied in our invention;

Figure 10 is a bottom plan view of the model divider core shown in Figure 9; and

Figure 11 is a vertical longitudinal sectional view of a jarring tool embodied in our invention, and showing the tool applied for use in the re-

2

moval of a model divider core from the model of an upper denture.

Referring specifically to the drawings, our invention, in its present embodiment broadly comprises a mounting element E for both upper and lower dentures, a model divider core C for upper dentures, a model divider core C' for lower dentures, and a jarring tool J.

Each of the two identical mounting elements E is in the form of a thin, flat, metal plate 10 having the general plan configuration of a dental arch, and is provided on one side with suitable holding means such as intersecting grooves 11 and 12. The grooves 11 and 12 are adapted to receive plaster from a mass thereof to form plaster keys attaching the plate to either the base jaw 13 or the movable jaw 14 of a conventional articulator A, according as the plate is to be used in conjunction with a lower denture or an upper denture as shown in Figure 1.

On its other side the plate 10 is provided with locating means in the form of a number of projections such as round pins 15 of which three are shown approximately equally spaced in the present illustration.

The model divider core C is also in the form of a flat metal plate 20 having a plan configuration similar to that of the plate 10, and is provided on one side with locating means in the form of a number of recesses 21, three in number and spaced to receive the pins 15 of the plate 10 to establish a fixed relationship between the plates.

The other side of the plate 20 is provided with a number of tapered partition walls or dividing fins 22, some of which may extend transversely from a center wall 23, and others longitudinally to the front of the plate from the closest transverse fin 22 as shown at 24.

The pattern of these fins may be widely varied, it only being necessary that when the core is pressed into a plaster model P of an upper denture D, the core will divide the mass of plaster into weakly connected sections and will firmly adhere to the model when set, for mounting of the denture in the articulator A.

Centrally from the side of the plate 10 having the locating pins 15 projects a stud 30 which is received in a central opening 31 of the plate 20 when the latter is applied to the plate 10 as shown in Figure 1. The stud 30 is provided with a diametric opening 32 adapted to receive a locking pin 33 when passed through a groove 34 in the plate 20, which groove is spanned by cross bars 35 at opposite sides of the stud 30,

all to the end of detachably securing the core C to the mounting element E in a predetermined fixed relationship so as to rigidly and demountably support the upper denture D from the movable jaw 14 of the articulator.

The core C' for lower dentures is of generally horseshoe configuration in plan as shown in Figures 9 and 10, and is spanned transversely at its open end by a rigid connecting strut 40, and medially by a cross bar 41. The upper side of the core C' is provided with a staggered arrangement of tapered partitions or dividing fins 42, whereas the lower side of the core is provided with recesses 43 spaced to receive the locating pins 15 of the mounting element E, and a central opening 44 to receive the stud 30 of the element E, all in the same manner and for the same purpose as previously described in the assembly of the core C with an upper denture.

The lower side of the core C' is also provided with a groove 46 intersecting the opening 44 and spanned by cross bars 47 so as to receive one of the locking pins 33 for co-action of the pin with the stud 30 and the cross bars 47 in detachably securing the core C' to the mounting element E in a predetermined fixed relationship, whereby to rigidly and demountably support the lower denture D' from the base jaw 13 of the articulator through the medium of the plaster model P' as clearly shown in Figure 1.

The jarring tool J shown in Figure 11 comprises a rod 50 on which is mounted a weight 51 freely slidable between a stop nut 52 on one end of the rod and a stop collar 53 adjacent to the other end of the rod, which other end is screw threaded as shown at 54. The threaded end 54 of the rod 50 is adapted to be screwed into a threaded socket 55 in the core C at the bottom of the opening 31 of the core, or into a threaded socket 56 (Figure 1) in the core C' at the bottom of the opening 44 of the latter, for co-action with the respective core in the operation of the invention which is as follows:

As the steps of mounting the upper and lower dentures in the respective jaws of the articulator are identical, a description of the steps for mounting an upper denture will suffice for both dentures. One of the mounting elements E is first affixed to the jaw 14 by applying a mass of plaster thereto while the element is held flatly against the underside of the jaw so that the plaster enters the grooves 11 and 12.

The dividing core C which has been previously embedded in the plaster model P on which the denture D has been molded, is now applied to the element E in a position for the register or locating pins 15 to enter the openings 21, and the stud 30 to enter the opening 31, all as clearly shown in Figure 1.

One of the locking pins 33 is now passed through the groove 34 and through the opening 32 in the stud 30 for co-action therewith and with the cross bars 35 in detachably securing the core C rigidly to the element E in a definite fixed position. By withdrawing the locking pin 33, the denture D with the core rigidly embedded in the plaster model P can be entirely removed from the jaw 14 of the articulator for milling in the teeth in occlusion, or for any other purpose.

By the provision of the mounting element E and the co-acting core C, the denture may be removed and replaced in the articulator as often as desired without affecting the original registration or position of the denture with respect to the articulator jaw.

When the denture is to be separated from the plaster model P, the threaded end 54 of the jarring tool J is screwed into the threaded socket 55 of the core C. By now sliding the weight 51 on the rod 50 with a hammering action against the stop 53, the core will be jarred loose from the model, the loosening being facilitated by the tapered form or draft of the fins 22 and 24 which enables them to be readily freed and withdrawn from the plaster.

As the plaster model contains an impression of the fins 22 and 24 and the central wall 23 in the form of complementary grooves, the model is divided by these grooves into weakly connected sections which are easily separated and freed from the denture regardless of undercuts therein, and without any danger of cracking, breaking, marring or otherwise structurally damaging the denture, as well as materially expediting the process of manufacturing the denture. It will also be noted that with the cores C and C' constructed of metal, that during the curing operation of a plastic denture on a plaster model, the heat from the plasticizing denture will be rapidly absorbed by the core so as to materially expedite the curing.

We claim:

1. A mounting for artificial dentures comprising: a mounting element having plaster keying means by which said element can be rigidly secured by a body of plaster to a jaw of an articulator; a divider core adapted to be embedded in a plaster model on which a denture is molded; said element and core having co-acting means establishing a fixed relationship between the element and core when the latter is applied to the element; said element and core having co-acting connecting means detachably securing the core to the element so as to permit removal of the denture and replacement thereof in the articulator without disturbing the registration between the denture and articulator.

2. A mounting for artificial dentures comprising: a mounting element having plaster keying means by which said element can be rigidly secured by a body of plaster to a jaw of an articulator; a divider core adapted to be embedded in a plaster model on which a denture is molded; said element and core having co-acting locating means establishing a fixed relationship between the element and core when the latter is applied to the element; said element and core having co-acting connecting means detachably securing the core to the element so as to permit removal of the denture and replacement thereof in the articulator without disturbing the aforesaid fixed relationship; said core having laterally projecting partition walls arranged to be embedded in the plaster model to divide same into weakly connected sections for easy removal without damage to the denture.

3. A mounting for artificial dentures comprising: a mounting element having plaster keying means by which said element can be rigidly secured by a body of plaster to a jaw of an articulator; a divider core adapted to be embedded in a plaster model on which a denture is molded; said element and core having co-acting locating means establishing a fixed relationship between the element and core when the latter is applied to the element; said element and core having co-acting connecting means detachably securing the core to the element so as to permit the removal of the denture and replacement thereof in the articulator without disturbing the aforesaid fixed rela-

5

tionship; said core having laterally projecting partition walls arranged to be embedded in the plaster model to divide same into weakly connected sections for easy removal without damage to the denture; said core having means to which a jarring tool is attachable for jarring the core loose from the denture model.

4. A mounting for artificial dentures comprising: a mounting element having plaster keying means by which said element can be rigidly secured by a body of plaster to a jaw of an articulator; a divider core adapted to be imbedded in a plaster model on which a denture is molded; said element and core having co-acting locating means establishing a fixed relationship between the element and core when the latter is applied to the element; said element and core having co-acting connecting means detachably securing the core to the element so as to permit removal of the denture and replacement thereof in the articulator without disturbing the aforesaid fixed relationship; said core being constructed of heat conducting material capable of rapidly absorbing heat from a plasticized denture during curing of the denture on the model, so as to expedite the curing operation.

5. A mounting for artificial dentures comprising: a mounting plate having one side grooved to provide plaster keying means by which said plate can be rigidly attached by a body of plaster to a jaw of an articulator; a divider core plate having laterally projecting partitioning walls adapted to be embedded in a plaster model on which a denture is molded; the other sides of said plates having co-acting locating means providing a fixed relationship between the plates when said core plate is applied to said mounting plate; and means co-acting with said plates to detachably secure said core plate to said mounting plate so as to permit removal of the denture and its replacement in the articulator without disturbing the aforesaid fixed relationship.

6. A mounting for artificial dentures comprising: a mounting plate having one side grooved to provide plaster keying means by which said plate can be rigidly attached by a body of plaster to a jaw of an articulator; a divider core plate

6

having laterally projecting partitioning means adapted to be embedded in a plaster model on which a denture is molded; the other sides of said plates having co-acting locating means providing a fixed relationship between the plates when said core plate is applied to said mounting plate; said other side of one of said plates having a recess, and said other side of the other of said plates having an attaching stud received in said recess; and a locking member co-acting with said stud and said one of said plates to detachably secure the plates together.

7. A mounting for artificial dentures comprising: a mounting plate having one side grooved to provide plaster keying means by which said plate can be rigidly attached by a body of plaster to a jaw of an articulator; a divider core plate having laterally projecting partitioning walls adapted to be embedded in a plaster model on which a denture is molded; the other sides of said plates having co-acting locating means providing a fixed relationship between the plates when said core plate is applied to said mounting plate; said other side of one of said plates having a recess and a groove intersecting the recess; cross bars spanning the groove at opposite sides of the recess; said other side of the other of said plates having an attaching stud received in said recess and provided with a through opening; and a locking pin received in said groove and passing through said opening of said stud for co-action with the stud and with said cross bars in detachably securing the plates together.

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The following references are of record in the file of this patent:

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