

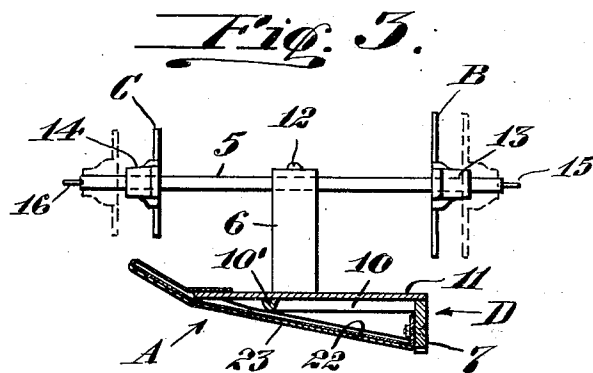
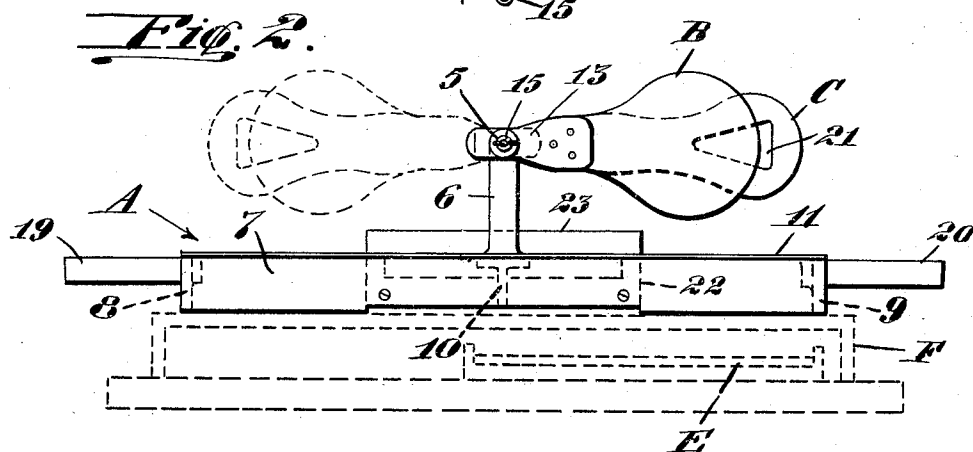
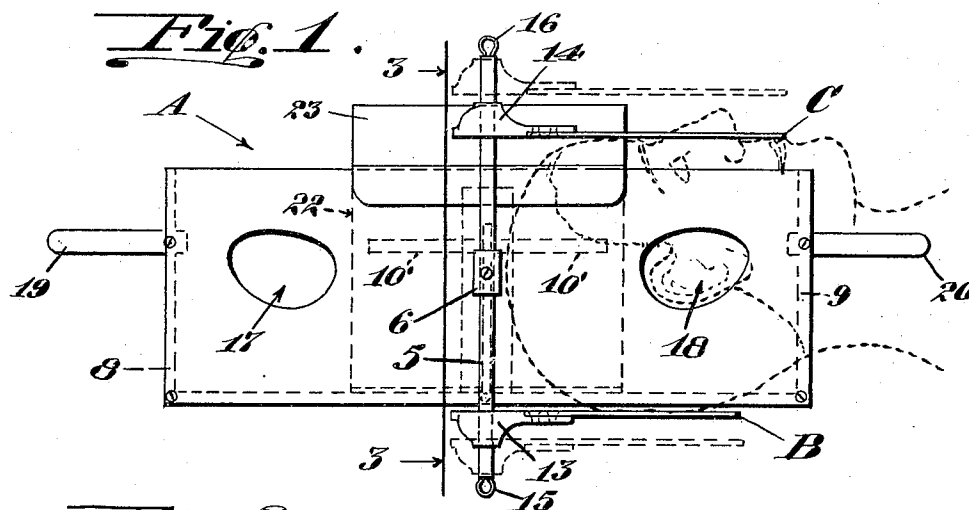
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MASTOID HEADREST AND CLAMP

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MASTOID HEADREST AND CLAMP

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This invention relates to a head rest and clamp for use in X-ray apparatus in the making of Roentgenograms.

An object of the invention is to provide a head rest and clamp which is especially applicable for use in conjunction with a Buckey-Potter diaphragm of either curved or flat type, and to provide a construction whereby a head rest and clamp may be fitted and af-
10 fixed to such diaphragms of various sizes.

Another object is to provide a head rest and clamp so constructed and operable as to hold the head of a person in position to make Roentgenograms of the right and left mas-
15 toids.

Another object is to provide a head rest and clamp attachment for Buckey-Potter diaphragms and the like, which will facilitate the production of comparative stereoplates
20 of the right and left mastoids for use in diagnosis of diseased conditions.

Another object is to provide a head rest and clamp which may be readily applied and adjusted to the head of the subject, and which
25 when applied will serve to securely hold the head in a fixed position.

A further object is to provide a head rest and clamp of the above character which is simple in construction, and which may be
30 easily and quickly operated.

With the foregoing objects in view, together with such other objects and advantages as may subsequently appear the invention resides generally in the provision of a base suitable for attachment to a Buckey-Potter diaphragm or the like, together with head engaging means carried by the base, also formed and operable as to enable clamping of the head in position to make Roentgenogram exposures of either the right or left mastoids; the invention further residing in the parts, and in the combination, construction and arrangement of parts hereinafter described and claimed, and illustrated by way of example in
45 the accompanying drawings in which:

Fig. 1 is a plan view of the head clamp showing it as positioned in making an exposure of the left mastoid;

Fig. 2 is a view in side elevation of the head
50 clamp positioned as shown in Fig. 1, and in-

dicating in dotted lines the head engaging clamps as disposed in making an exposure of the right mastoid; and also showing in dotted lines the grid and photographic plate with which the head clamp is associated;

Fig. 3 is a view in cross section as seen on the line 3—3 of Fig. 1.

Referring to the drawings more specifically A indicates the base of the device, and B and C designate a pair of head clamping blades
60 which are carried on a bar 5 supported on a standard 6 erected on base A.

The base embodies a frame D, preferably formed of cast aluminum, which frame includes a side flange 7, end members 8 and 9
65 projecting from the flange, and an intermediate rib 10 extending from the flange 7 midway between the members 8 and 9; lateral projections 10' being formed on the rib 10.

The base also includes a top panel 11, preferably of rectangular shape and formed of a material pervious to Roentgen rays, which panel seats on and is secured to the frame; one longitudinal edge of the panel seating on the flange 7, the end portions of the panel
75 seating on the end frame members 8 and 9, and the intermediate portion of the panel seating on the rib 10 and its lateral extensions 10'. This panel 11 constitutes a head rest.

The standard 6 projects upwardly from the intermediate rib 10 at a point to locate the standard centrally of the top panel. The bar 5 is supported in a bore formed in the upper end portion of the standard and is fixedly held in place by a screw 12 with the bar projecting equidistant on opposite sides of the standard and extending transversely of the base in parallel spaced relation thereto. The head clamping blades B and C are formed of thin slightly flexible and resilient sheet material and are arranged with their broad dimensions extending at right angles to the panel 11; the blades being rigidly affixed to the sleeves 13 and 14 respectively which are freely slidable on the bar 5 so that they may
95 be readily shifted longitudinally of the bar and also be pivotally supported thereon whereby the blades B and C may be adjusted in various spaced relations to each other and also be projected from either side of the bar
100

to extend toward either end of the base and head rest panel.

Spring eyelets 15 and 16 are affixed to the ends of the bar 5 to provide stops which serve to prevent the sleeves from becoming inadvertently detached from the bar; the eyelets being detachable to permit removal of the sleeves and blades when so desired.

The panel 11 is formed adjacent each end thereof with ear receiving openings 17 and 18; the opening 17 being shaped to receive the right ear, and the opening 18 being shaped to receive the left ear. These openings serve to position the head of the subject in relation to the device which in turn is designed to properly position the head relatively to a Roentgen ray tube arranged thereabove and to a photographic plate E arranged beneath a grid F of the type known as a Buckey-Potter diaphragm on which the head clamping device seats.

As a means for effecting attachment of the base to the frame of the grid and to adapt it for securement to grids of various sizes the base is formed with lugs 19 and 20 projecting from the end members 8 and 9, which lugs may be engaged by any suitable clamping device connecting with the grid frame.

The clamping blade B is designed to be positioned against the back of the head resting sideways on the panel 11, and the blade C is designed to be positioned against the face as indicated in Fig. 1. For the purpose of insuring positioning of the head horizontally the blade C is formed with a nose receiving opening 21 which opening cooperates with the ear receiving opening in the head rest in holding the head in the desired position between the source of rays and the photographic plate.

Arranged beneath the panel 11 and extending transversely thereof is a rectangular shield 22 which is formed of material impervious to the Roentgen rays, such as lead; the shield 22 being of such width and so arranged that its side margins will extend contiguous to yet be spaced from the ear receiving openings 17 and 18, and being of such length as to underlie the full width of the panel 11 and project beyond the rear edge of the latter.

The shield 22 is so proportioned and located so as to exclude Roentgen rays from one half of the plate E which latter is employed in such size and is so arranged beneath the head clamp shield that but one half thereof will be exposed to the rays at one time.

The shield 22 is held in place by means of a supporting plate 23, formed of sheet metal, which plate is secured at one end to the flange 7 and projecting beneath the shield has its opposite end bent around and over the shield into a seated position on the panel 11. The plate 23 projects from the lower margin of the flange diagonally to the opposite edge of

the head rest panel transversely thereof at an angle of approximately fifteen degrees relatively to the panel so that when the base is positioned with the plate 23 seating on the grid the top surface of the panel will extend at an angle of fifteen degrees to the horizontal whereby the head supported on the rest will be inclined laterally to position the right and left mastoids out of vertical alignment with each other and with the Roentgen tube which is disposed on a vertical plane extending centrally of the ear receiving opening or approximately centrally of the lower mastoid of a head seating on the panel.

In the operation of the invention, the base A is secured in place on the grid F, and the head clamping blades B and C are spaced apart as shown in dotted lines in Fig. 1; whereupon the subject lays his head sideways on the panel 11 between the blades B and C with the ear extending into one of the ear receiving openings 17 or 18.

The blade B is then positioned to abut against the back of the head, which is effected by shifting the sleeve 13 on the bar 5, and the blade C is disposed against the face with the opening 21 engaging the nose, as indicated in Fig. 1; the blades being pressed sufficiently tight against the head to securely hold it in place. Movement of the sleeves 13 and 14 will then be inhibited by reason of the pressure imposed on the blades acting to clamp the sleeves in frictional engagement with the bar 5. The head will thus be firmly held against movement. On directing the Roentgen rays downwardly from a tube (not shown) arranged above the head, an exposure will be made on the half portion of the plate E extending beneath the unshielded portion of the base, the shield 22 excluding rays from the other half of the plate. A Roentgenogram exposure of the right or left mastoid will thus be made according to side of the face presented to the plate. It will be observed that by slidably supporting the blades B and C on the bar 5 as shown the blades may be readily shifted independently of each other to various relative positions and also relatively to the ear receiving opening in the head rest panel, thus facilitating adjusting the blades to abut against heads of various sizes. Quick shifting of the blades may be effected either in applying same to the head or in effecting release of the head merely by grasping the sleeves carrying the blades and pushing, pulling or turning them on their supporting bar.

In employing the device for making comparative stereoplates of the right and left mastoids, it is arranged for example, as shown in Figs. 1 and 2 and exposure is made on one half of a plate E with the left side of the face resting on the panel 11, and with the rays directed from the tube at an angle of

ten degrees from vertical toward the top of the head. After making such exposure the plate E is removed and a second plate E put in its place whereupon the lamp is shifted
 5 about two and one half inches so as to direct the rays at an angle of approximately fifteen degrees from vertical toward the top of the head and exposure is made on one half of the second plate. In this manner exposure is
 10 made of the left mastoid on one half of each of the two plates.

The base A is then reversed end for end and the blades B and C are swung to the opposite side of the bar 5 as indicated in dotted lines in Fig. 2. The head of the subject is
 15 then placed in position with the right side of the face on the panel; the right ear then being engaged in the opening 17. The head is then clamped between the blades as before, and exposure is made on the unexposed half
 20 of the first plate with the rays projected at an angle of fifteen degrees from the vertical which provides this plate with an exposure of both the right and left mastoids. The
 25 tube is then restored to the ten degree position and an exposure is made on the unexposed half of the second plate which provides this plate with exposures of both the right and left mastoids.

30 It will now be seen that by the use of my invention, the production of comparative stereo Roentgenograms is greatly facilitated and that accuracy in proper positioning of the head relatively to the source of rays and
 35 the photographic plate will be insured.

While I have shown and described a specific embodiment of my invention I do not limit myself to the exact construction and arrangement shown but may employ such modifications thereof as come within the scope of
 40 the appended claims.

I claim:

1. In a head clamp, a panel having an ear receiving opening, and a pair of head engaging blades adapted to extend astride the
 45 head of a person resting sideways on said panel.

2. In a head clamp, a panel having an ear receiving opening, and a pair of head engaging blades adapted to extend astride the head
 50 of a person resting sideways on said panel, and a base adapted to support said panel to position the latter at an inclination transversely.

3. In a head clamp, a panel having an ear receiving opening, and a pair of head engaging blades adapted to extend astride the
 55 head of a person resting sideways on said panel; one of said blades being adapted to abut against the back of the head, and the other of said blades being adapted to abut against the face; said last named blade being
 60 formed with a nose receiving opening.

4. In a head clamp, a panel having an ear receiving opening, a pair of head engaging

blades adapted to extend astride the head of a person resting sideways on said panel; one of said blades being adapted to abut against the back of the head, and the other of said blades being adapted to abut against the face; 70
 said last named blade being formed with a nose receiving opening, and means whereby said blades may be disposed in various spaced relations to each other and to the ear receiving opening. 75

5. In a head clamp, a head rest formed with a right ear engaging opening and a left ear engaging opening, a pair of spaced head engaging blades pivotally supported between
 80 said openings and operable to be positioned to extend toward either of said openings and to be spaced various distances apart.

6. In a head clamp, a head rest formed with a right ear engaging opening and a left ear engaging opening, a pair of spaced head engaging blades pivotally supported between
 85 said openings and operable to be positioned to extend toward either of said openings and to be spaced various distances apart; one of said blades being formed with a nose receiving opening. 90

7. In a head clamp, a panel, a standard extending upwardly from said panel, a bar on said standard projecting laterally from opposite sides thereof, a pair of sleeves slidable
 95 longitudinally of and turnable on said bar, and a blade fixed on each of said sleeves, said panel being formed with an ear receiving opening and one of said blades being formed with a nose receiving opening. 100

8. In a head clamp, a panel formed with an ear receiving opening adjacent each end thereof, a standard extending upwardly from said panel intermediate said openings, a bar on said standard projecting laterally from
 105 opposite sides thereof transversely of the panel, and a pair of blades pivotally supported on said bar for extension therefrom toward either end of said panel and operable to be disposed in various positions longitudinally of said rod. 110

9. A head clamp comprising a base, a shield impervious to Roentgen rays carried by said base, a head rest on said base having a pair of ear receiving openings between which said
 115 shield extends, and means carried on said base operable to clamp a head on said rest in alternate positions, first with one ear engaged in one of said openings then with the other ear engaged in the other of said openings. 120

10. In a head clamp, a head rest panel formed adjacent each end thereof with an ear receiving opening, a bar extending transversely of said panel intermediate said openings and supported above said panel in spaced
 125 relation thereto, and a pair of head clamping blades slidably carried on said bar for independent movement in relation to each other; each of said blades being mounted to 130

swing vertically axially of said bar, and being shiftable longitudinally of the bar.

11. In a head clamp, means for engaging the ear of a person, means connected to said ear engaging means engageable with the nose of a person, and means cooperating with said last named means to clamp a head of a person.

12. In a head clamp, a frame having a side member, and end members, a head supporting panel affixed to said frame having ear receiving openings, projections on said end members extending beyond the end margins of said panel for attachment to a support, and means for clamping the head of a person resting on said panel.

13. In a head clamp, a frame having a side member, and end members, a head supporting panel affixed to said frame having ear receiving openings, projections on said end members extending beyond the end margins of said panel for attachment to a support, means for clamping the head of a person resting on said panel; said frame being formed to support said panel at an inclination to the horizontal.

In testimony whereof, I have affixed my signature.

DAVID M. GHRIST.

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