July 27, 1948. H. J. BEYER 2,445,869

SANITARY BODY REST FOR CHAIRS

Filed April 29, 1946

3 Sheets-Sheet 1

Fig. 1

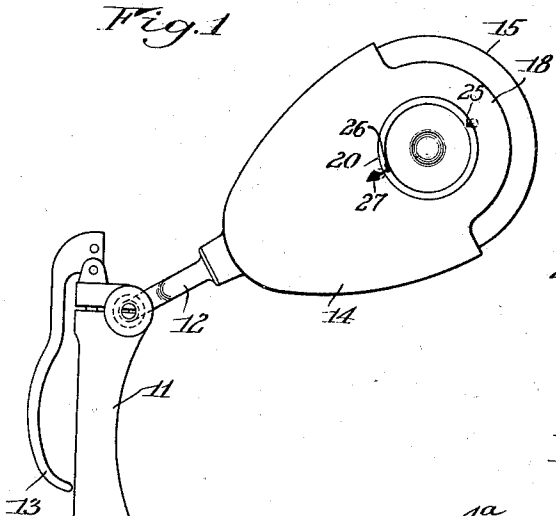


Fig. 2

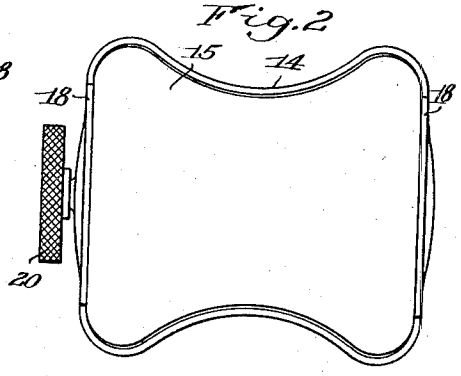


Fig. 3

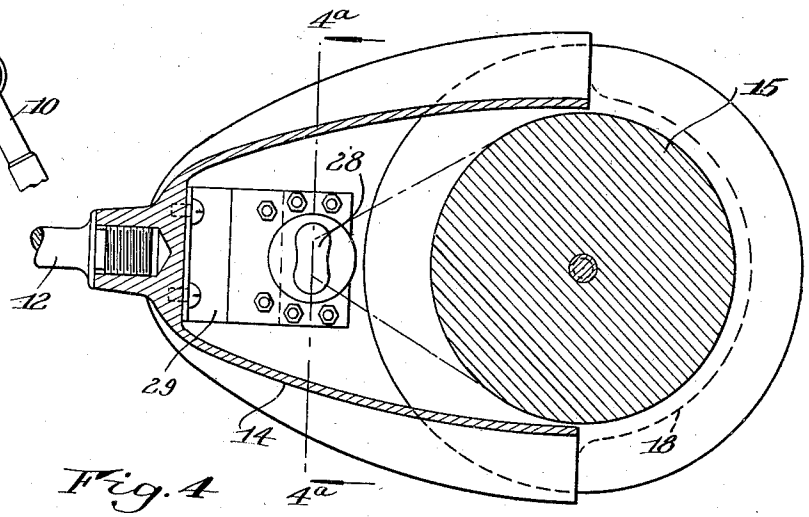
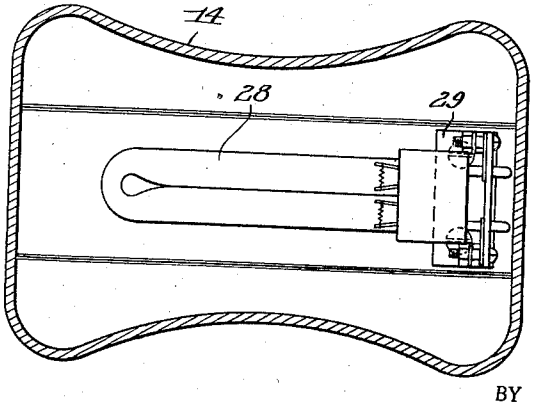


Fig. 4



INVENTOR.
Henry J. Beyer

BY Edward N. Rumpston
his Attorney

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Fig. 5

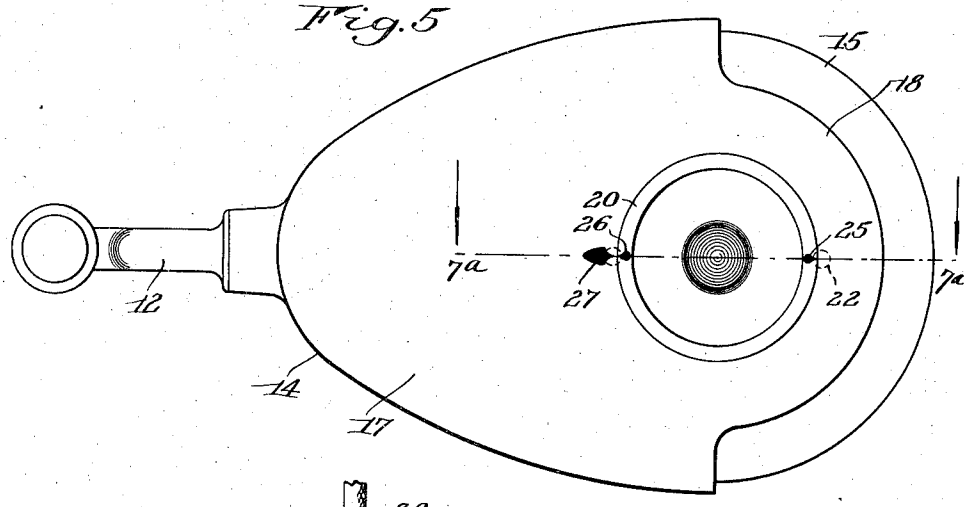


Fig. 6

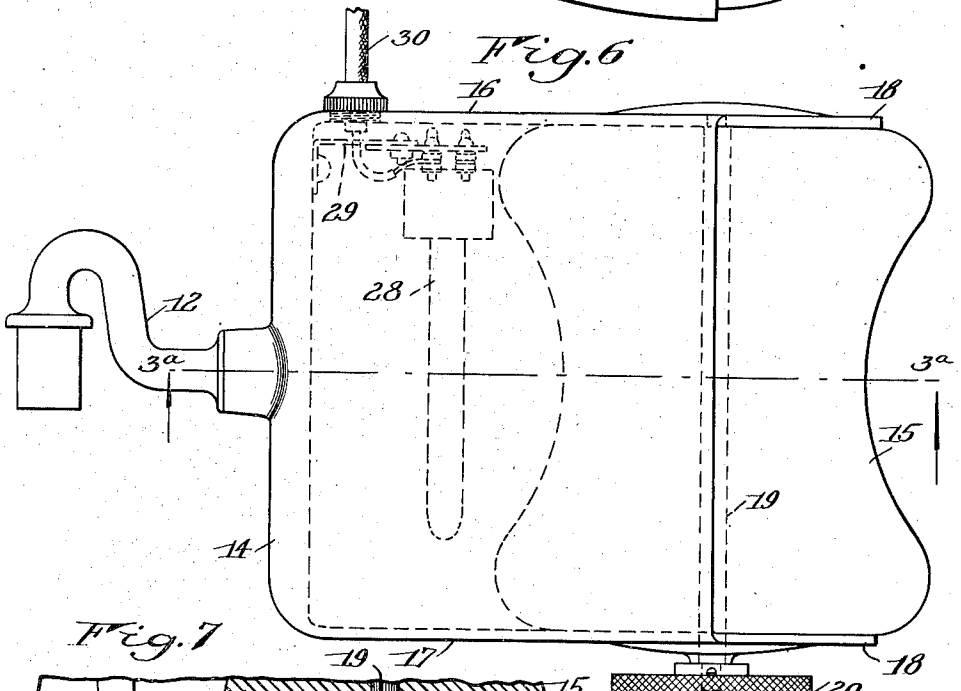
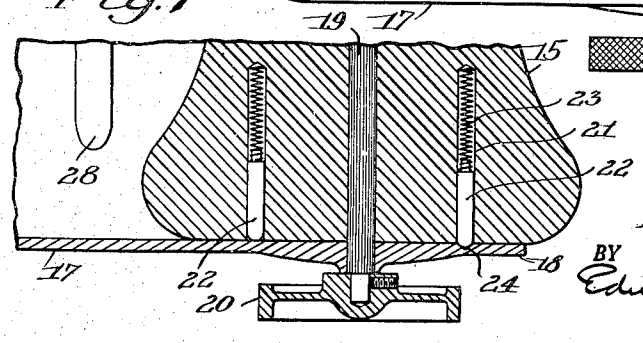


Fig. 7



INVENTOR.
Henry J. Beyer
BY
Edward K. Cumpston
his Attorney

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Fig. 8

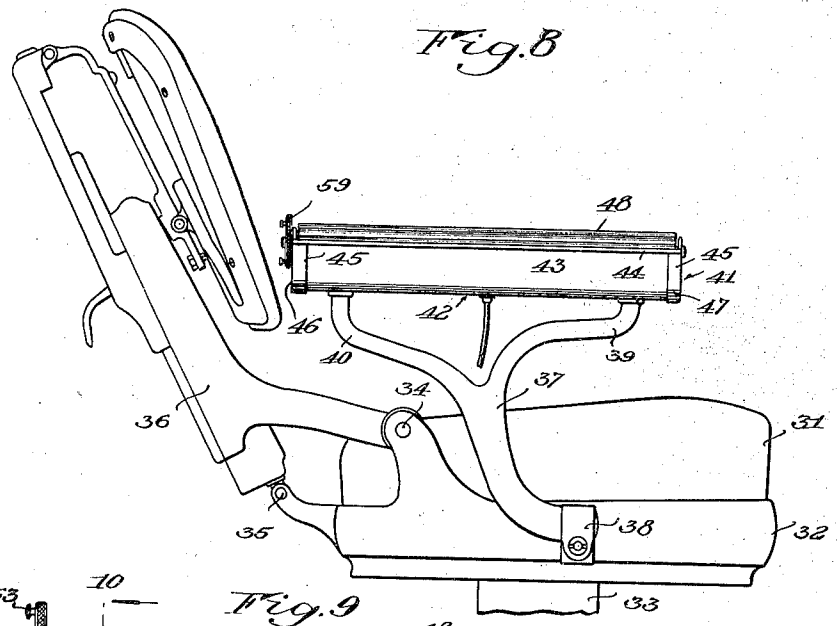


Fig. 9

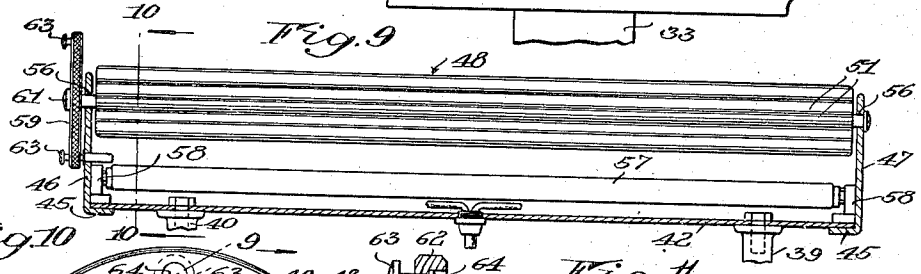


Fig. 10

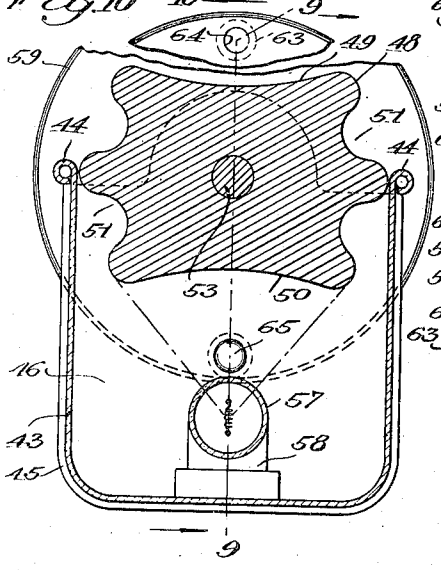
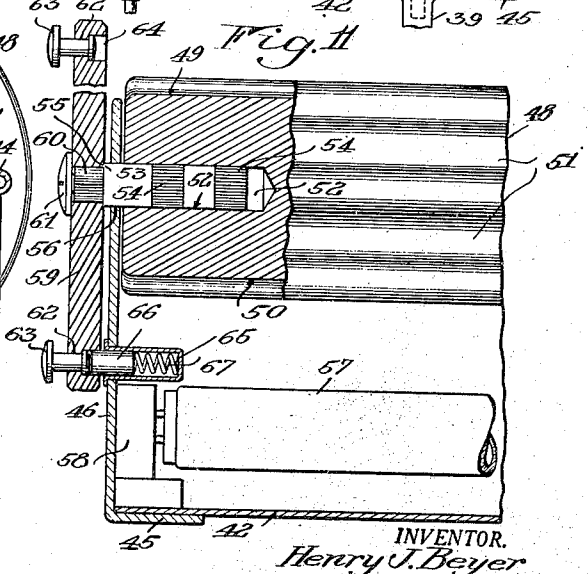


Fig. 11



INVENTOR.
Henry J. Beyer
BY
Edward W. Cumpston
his Attorney

Patented July 27, 1948

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UNITED STATES PATENT OFFICE

2,445,869

SANITARY BODY REST FOR CHAIRS

Henry J. Beyer, Rochester, N. Y., assignor to Ritter Company, Inc., Rochester, N. Y., a corporation of Delaware

Application April 29, 1946, Serial No. 665,652

5 Claims. (Cl. 155—176)

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This invention relates to body rests for chairs such as the head and arm rests commonly provided for dental and medical operating chairs, one object being to provide such a rest in a more simple, effective and sanitary type of construction.

Another object is to provide such a rest for body members having a sterilizing means combined therewith and capable of being sterilized while in position on the chair.

A further object is to provide a rest such as described embodying a source of germicidal rays arranged to sterilize the body supporting portion of said rest after each use thereof and without removal from the chair.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a side elevation of a head rest embodying the present invention;

Fig. 2 is an enlarged elevation of the head supporting portion thereof as viewed from the right in Fig. 1;

Fig. 3 is a sectional elevation thereof on the line 3*a*—3*a* in Fig. 6;

Fig. 4 is a sectional elevation on the line 4*a*—4*a* in Fig. 3;

Fig. 5 is an enlarged side elevation of parts shown in Fig. 1;

Fig. 6 is a top plan view of the same;

Fig. 7 is a fragmentary, enlarged, sectional view of certain operating parts on the line 7*a*—7*a* in Fig. 5;

Fig. 8 is a side elevation of a modified embodiment, showing the invention as embodied in an arm rest;

Fig. 9 is an enlarged elevation, partially in section, on the line 9*a*—9*a* in Fig. 10;

Fig. 10 is an enlarged section on the line 10*a*—10*a* in Fig. 9, partly broken away, and

Fig. 11 is an enlarged elevation corresponding to a portion of Fig. 9, with additional parts in section.

The present invention provides an improvement in sanitary rests for portions of the body for use with medical, dental, or other chairs and in the preferred embodiment, herein disclosed by way of illustration, provides a sanitary head rest. This embodiment is disclosed and claimed in my copending application, Serial No. 553,903, filed September 13, 1944, Sanitary head rest (abandoned September 9, 1947), of which the present

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application is a continuation in part and comprises means for attachment to the back of an operating chair, such as disclosed, for example, in the United States patent to Adam J. May, No. 1,817,755. Such means includes a bracket 10 mounted on the chair back and engaged in a socket in the lower end of a clamping link 11. The link has at its upper end a second socket in which is movably mounted a bracket 12 for supporting the head rest proper, a handle 13 being provided for operating parts within the link 11, as well understood in the art, for immovably clamping the parts together, with the head rest in desired position.

The present invention resides in the head rest proper, comprising, in the present instance, by way of illustration, a hollow casing 14 fixed on and supported by the bracket 12. As viewed from the side, the casing preferably has the semi-elliptical profile shown in Figs. 1 and 5, its wall being open at the end thereof opposite the bracket 13 for the reception therein of the head engaging member 15 hereafter described. The side walls 16 and 17 of the casing are preferably flat and vertical, as shown, with semi-circular extensions, as at 18, for enclosing and mounting the ends of the head supporting member 15. Casing 14 may be made of metal, plastic, or other suitable material for constructing the same with relatively thin but strong walls and light weight.

The head engaging member 15 is preferably in the nature of a roller of generally toric shape, smoothly curved circumferentially and also longitudinally toward a reduced diameter at its waist, as shown, so as to conform to and engage the rear base portion of the patient's head, to firmly and comfortably support the same. The opposite ends of roller 15 are closely fitted between the extensions 18 of the casing, one of which is formed with an opening, as shown in Fig. 7, for rotatably mounting a spindle 19, the other end of which is rotatably mounted in an opening in the opposite extension 18 of the casing. Spindle 19 has a tight fit in a central bore in roller 15, the spindle being preferably knurled to prevent rotation in the roller. One end of the spindle has fixed thereon a knob or knurled wheel 20, by means of which it may be conveniently rotated to rotate the roller in the opening of the casing. The adjacent end of the roller is preferably formed with a pair of eccentrically and diametrically positioned, longitudinal bores 21, each housing a plunger 22 pressed outwardly by a compression spring 23 in the bore and rounded at its outer end for yielding engagement in a re-

cess 24 formed in the inner face of the casing extension 18, for the purpose of yieldably retaining the roller in a desired position of rotary adjustment in the casing.

The outer side of the adjusting wheel 20 is provided on its periphery with diametrically arranged markings 25 and 26 and the casing is provided, at one side of the wheel, with an index marking 27. It will be apparent from this construction that wheel 20 can be turned to rotate roller 15 through 180° to bring first one and then the other of the plungers 22 into retaining engagement with the recess 24 in the casing and thereby interchanging in position the portions of the roller 15 located inside and outside the casing, such adjustment being indicated by bringing one of the markings 25 or 26 in place of the other into registry with the index marking 27 on the casing.

The invention comprises the combination with a roller head rest such as described of a source of germicidal rays, such as one of the known mercury vapor gaseous conduction lamps, although any other suitable source of ultra-violet rays may be employed in the casing for treatment of the roller. Such a source is shown in the present instance at 28, Figs. 3, 4, and 6, mounted on a bracket 29, fixed to the casing wall, with the lamp tube positioned, as shown, for projecting its germicidal rays on the surface portion of the roller disposed at any given time within the casing. At 30 is a flexible conducting means, such as an ordinary electric cord, for connecting the lamp with control means of any known or suitable variety and with a power supply line. While the source of germicidal rays of the known tubular variety is shown in the present instance, it is obvious that it may be replaced by other known and suitable sources for such rays.

The top and bottom walls of casing 14 terminate, as shown, adjacent diametrically opposite points of roller 15 and are so shaped, adjacent the roller receiving opening of the casing, as to conform closely to the curved shape of the roller, as best shown in Fig. 2, so that the roller closes the casing opening against the escape of the germicidal rays. As will be seen from Fig. 3, those rays from the lamp which fall tangent to the opposite sides of the roller strike the walls of the casing slightly inwardly from its opening so that none of the rays can escape between the casing and roller.

The head supporting roller 15 is constructed of any suitable material which is impervious to ultraviolet rays, such as wood or one of the known plastic substances, and is readily formed into the desired shape and with the desired openings or bores for its associated parts. The remaining parts of the device are likewise simple and practical in construction, so as to be easily and economically manufactured and assembled for use.

In operation, the supporting bracket means are readily adjusted, as well understood in the art, to bring the head supporting member 15 to position for suitably engaging and firmly supporting the patient's head. By means of handle 20, roller 15 is rotated through 180° to expose a portion thereof which has been subjected to the germicidal rays and thoroughly sterilized. The only portion of the head rest thus engaging the head is completely sterilized in advance and after each use, the roller is turned to move the used surface portion into the casing for sterilization and interchange it with a portion which has been sterilized ready for use. By means of this simple and effective construction, the head engaging portion of the rest is quickly and conveniently sterilized after each use to maintain it in a thoroughly sanitary condition.

The invention is adaptable as well to rests for other body members, such as the arm rest, for example, shown in Figs. 8 to 11, inclusive, and claimed in the copending application of Clarence G. Maxson, Serial No. 557,569, filed Oct. 7, 1944. This modified form is shown as applied to a chair of known construction for medical and dental operating use, comprising a seat 31 on a frame 32 mounted on a pedestal 33. Pivotally connected to the seat frame as at 34 and 35, is an adjustable back portion 36 of any known and suitable construction which forms no part of the present invention and requires no description in detail.

This modified embodiment preferably comprises an arm rest in the form of a standard 37 adjustably fixed at its lower end on the seat frame 32 as by means of a clamping bail 38. Standard 37 is preferably bifurcated at its upper end to provide branching arms 39 and 40 on the spaced ends of which the arm rest 41 is mounted. As the arm rest is the same for each side of the chair, of course, a description of one will suffice for both.

The arm rest comprises, preferably, a metal casing 42 of elongated channel shape with its open side disposed upwardly, as shown. The casing is conveniently made, in the present instance, of a one-piece, channel shaped body portion 43, the upper side edges of which are preferably rolled and stiffened as at 44. The ends of portion 43 are preferably seated within flanges 45 formed on end plates 46 and 47 which form the ends of the casing.

The arm supporting member proper is preferably an elongated solid member, or bar, 48, having opposite, lateral, arm receiving portions or surfaces, 49 and 50, suitably curved to comfortably engage and support the arm of the occupant of the chair. The other opposite sides of member 48 are preferably fluted as shown at 51, although it will be appreciated that the particular cross sectional shape may be varied as desired.

Arm rest member 48 is located and movably mounted in the described opening at the top of casing 42, so as to closely engage the side and end walls and close the opening, as shown. To this end, member 48 preferably has each end thereof formed with a concentric bore 52 in which a stud 53 is secured by a driving fit, the stud being formed with knurled portions 54, if desired, to more securely fix it in the member 48. Each of thes studs 53 has a cylindrical section 55 immediately beyond the end of member 48 and this section is rotatably mounted in a bearing opening 56 in the adjacent end wall of the casing, thus supporting the arm rest member 48 for rotation in the casing opening.

Housed within each casing 42 is a sterilizing means, preferably in the form of an elongated source of germicidal rays, such as one of the known mercury vapor, gaseous conduction tubular lamps 57, although any other suitable source of ultra violet rays may be employed in the casing for germicidal treatment of the arm rest surfaces. In the present instance, casing 42 contains at each end thereof a supporting socket means 58, of any known and suitable construction, in which the usual contact pins at the ends of the lamp tube 57 are received and engaged by contacts, for closing and energizing the cir-

cuit through the tube, as well understood in the art. This circuit includes any known and suitable controlling means which may be located on the chair or at some distant point. It will be seen from Figs. 10 and 11 that the several parts are so associated and arranged that the arm supporting surface 50 is subjected to direct treatment by sterilizing rays from the lamp while the opposite surface 49 is disposed in arm supporting position. Member 48 may be constructed of plastic, glass, or other known material adapted for the purposes indicated, including the obstruction of the ultra violet rays so as to prevent them from escaping from casing 42.

Means are preferably provided for retaining arm rest member 48 in each of its adjusted positions, comprising, in the present instance, a circular disk 59 fixed on one of the trunnions 55 of the arm rest member 48. For this purpose, the trunnion projecting outwardly through the end 46 of casing 42 is formed with an angular or square section 60 which is received in a correspondingly angular opening in disk 59, the latter being held on the stud as by means of a cap screw 61. Disk 59 is equipped at oppositely spaced points with openings 62 in which a pair of spools 63 are slidably retained. The outer head of each spool is large enough to be conveniently grasped in the fingers, while its reduced inner head slides in the enlarged inner end 64 of the spool receiving opening 62. Fixed in the casing head 46 is a socket tube 65 in which a cylindrical plunger 66 is slidably housed and pressed outwardly by a coiled compression spring 67 within the tube, as shown. As disk 59 is rotated to bring one of the spools 63 opposite the plunger 66, the latter is projected into the enlarged end 64 of the spool receiving opening 62, thus retaining the disk and arm rest member 48 in adjusted position. To release the disk for adjustment, the lower spool is pushed in to push back the plunger 66 and thus release the disk for turning by means of the spool as a handle.

The operation of this modification has been indicated in connection with the description of its construction. After use of one of the arm receiving surfaces, as 49, the lower spool 63 of disk 59 is pressed inwardly to eject detent plunger 66 from the spool receiving opening, thereby freeing disk 59 for rotation through 180°, whereby the opposite spool of the disk is brought opposite the detent plunger which thereupon springs into its opening in the disk and yieldably locks the disk in a position to locate the used surface 49 in the casing and replace it by the surface 50 previously sterilized by subjection to the germicidal rays from the lamp source 57. The used surface 49 is thus brought to position for sterilization in the casing in the preparation for a repetition of the cycle.

The invention thus supplies a supporting attachment for chairs comprising supporting or rest surfaces for the body members so constructed and arranged as to be progressively sterilized as they are subjected to use, without removal from the chair which is at all times maintained, therefore, with sterilized and sanitary surfaces for engagement by the head, arms, hands, or other parts of the body. The invention is embodied, furthermore, in a simple and practical type of construction capable of being readily and economically manufactured and assembled with a chair.

It will thus be seen that the invention accomplishes its objects and while it has been herein described by reference to the details of a preferred embodiment, it is to be understood that such disclosure is intended as illustrative, rather than in a limiting sense, as it is contemplated that various changes in the construction and arrangement of the parts will readily occur to those skilled in the art, within the spirit of the invention and the scope of the appended claims.

I claim:

1. A supporting attachment for chairs comprising a casing on said attachment having an opening therein, a source of germicidal rays in said casing, a unitary support for a body member of an occupant of the chair located in said casing opening and having a portion positioned outside said casing for engagement with a member of the patient's body and also a portion positioned inside said casing and exposed to said rays, said portions forming integral and relatively immovable parts of said support, and means for movably mounting said support in said casing opening, said support being movable to interchange said portions thereof and maintain said support in sterile condition.

2. A supporting attachment for chairs comprising a casing on said attachment having an opening therein, a source of germicidal rays in said casing, a unitary support located in said casing opening with a portion thereof extending outside said casing for engagement with a member of a patient's body and a portion located inside said casing and subjected to said rays, and means mounting said support for rotation in said casing opening to move said portions thereof directly and alternately to body supporting position outside said casing and to sterilizing position inside said casing for progressively sterilizing each portion of said support after use.

3. A head rest for chairs comprising a support for attachment to said chairs, a hollow casing on said support having an opening in a side thereof, a source of germicidal rays in said casing, a roller formed of material impervious to ultra-violet rays and shaped to conform to and comfortably support a patient's head, said casing having its walls shaped to fit closely about the opposite sides and ends of said roller with said roller substantially closing said opening, means for rotatably mounting said roller in said opening for successively rotating different portions thereof directly and alternately into head supporting position outside said casing and ray receiving position inside said casing to maintain said roller in sterile condition, and means for indicating the rotary positions of said roller in said casing.

4. A head rest for chairs comprising a support for attachment to said chairs, a casing on said support having an opening therein, a source of germicidal rays in said casing, a spindle supported at its ends by said casing and extending substantially parallel with the plane of said opening, and a unitary head supporting member on said spindle having an integral portion thereof positioned outside said casing for engagement with the patient's head and also an integral portion positioned inside said casing and exposed to said rays, said member being rotatably supported by said spindle for successively moving said inner portion thereof directly into head supporting position and said outer portion into said rays in said casing to sterilize the same after use.

5. A head rest for chairs comprising a support for attachment to said chairs, a hollow casing on said support having an opening in a side thereof, a source of germicidal rays in said casing, a spindle supported by opposite sides of said casing

and extending across said opening therein and a unitary head supporting member on said spindle and closing said opening to prevent the escape of said rays therethrough, said member being rotatably supported by said spindle for successively moving an integral portion of said member directly to head supporting position outside said casing and another integral portion thereof into said rays in said casing to sterilize the same after use.

HENRY J. BEYER.

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