

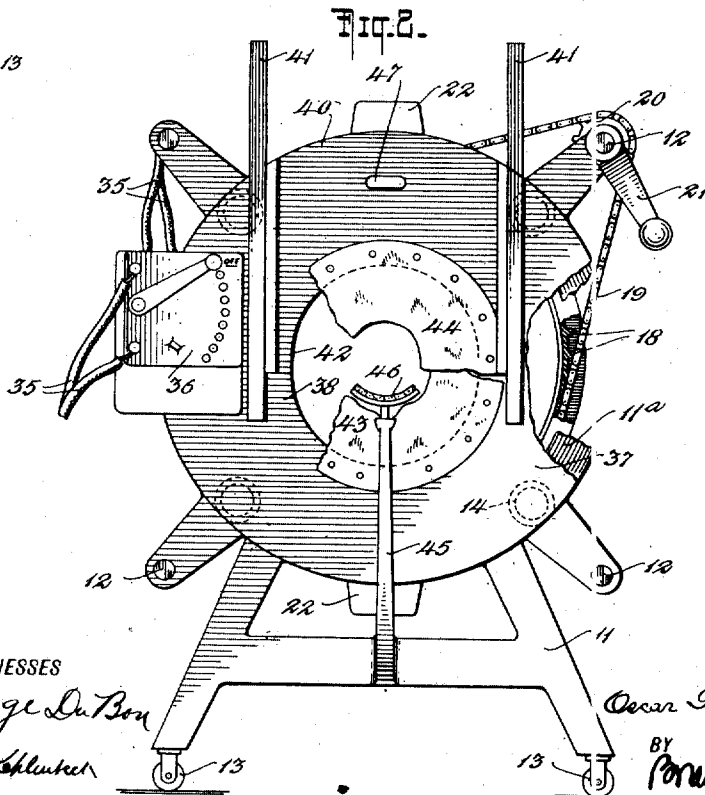
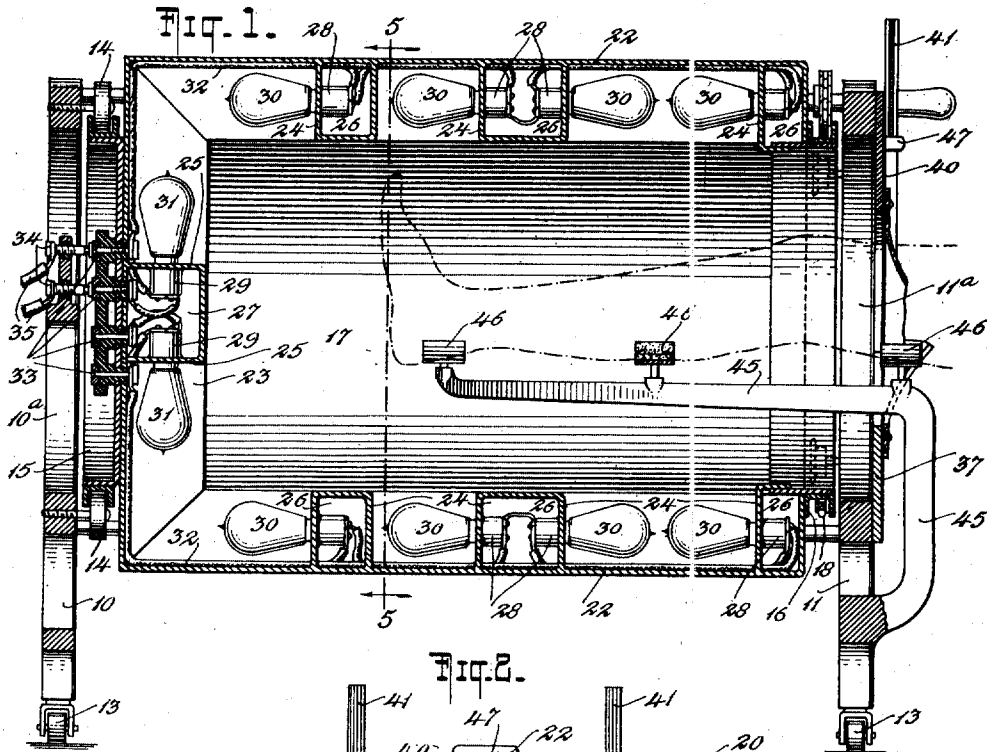
O. HAMMERSTEIN.
MEDICAL APPARATUS.

APPLICATION FILED JUNE 14, 1916.

1,222,945.

Patented Apr. 17, 1917.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

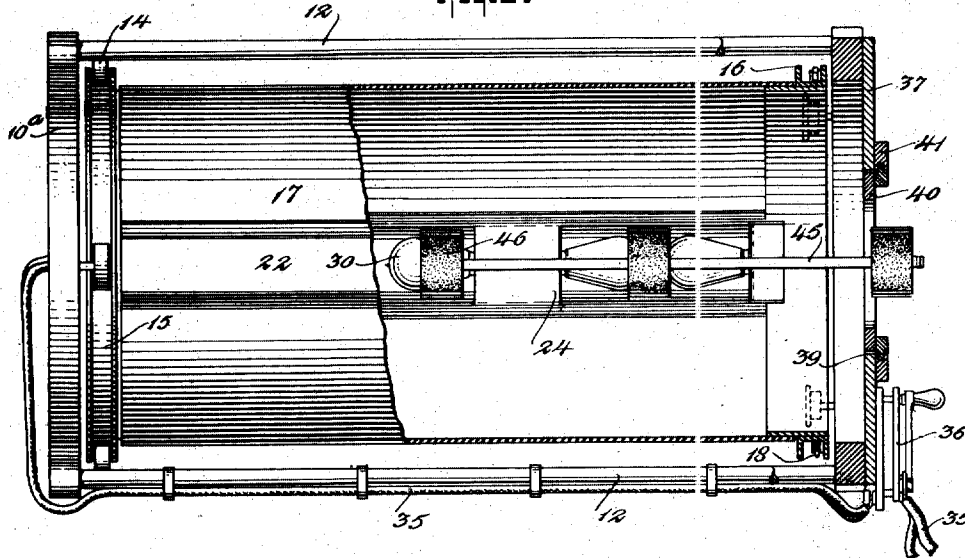
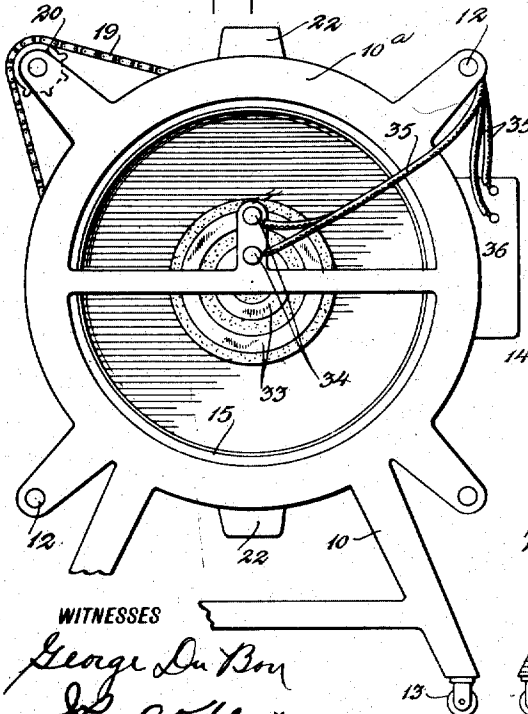
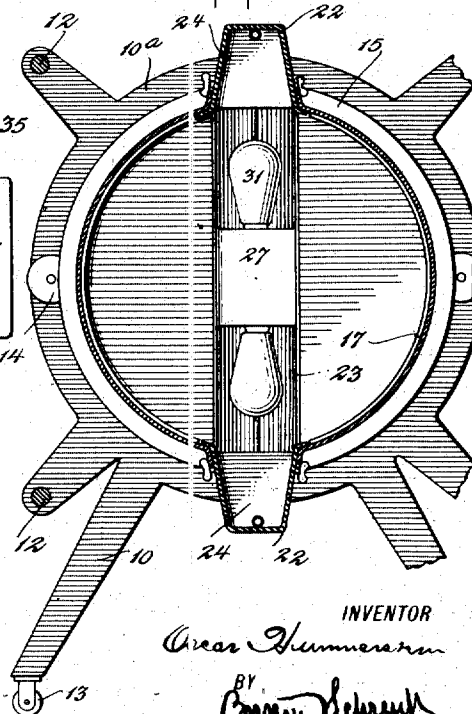


Fig. 4.



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Fig. 5.



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MEDICAL APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OSCAR HAMMERSTEIN, a citizen of the United States, and resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Medical Apparatus, of which the following is a specification.

My invention relates to medical apparatus and has for its object to provide a simple and efficient machine whereby various parts of the human body and more particularly the limbs thereof may be subjected to the influence of heat, or to the effects of light rays or both in a comfortable manner and under the direct control of the patient. My improvement further contemplates the provision of a simple apparatus which may be readily utilized in the cure of many ills and which is cheap to manufacture, easy to install and in which the danger of disarrangement and injury to the patient is reduced to a minimum. Other objects of my invention will appear from the description herein-after and the features of novelty will be pointed out in the claims.

In the accompanying drawings which illustrate an example of my invention, Figure 1 is a longitudinal vertical section of my apparatus; Fig. 2 is a front end view thereof; Fig. 3 is a plan view partly in section; Fig. 4 is a rear end view and Fig. 5 is a cross-section on the line 5-5 of Fig. 1.

As shown in the drawings the apparatus comprises a supporting frame consisting of a rear end member 10 and a front end member 11 located at a distance from each other and in alinement and connected for instance by means of rods 12 as shown in Fig. 3, said supporting frame, if desired, being mounted upon casters 13 carried by the two end members 10 and 11. The latter at their upper portions 10^a and 11^a are circular in form and are provided with rollers 14 located at spaced intervals on the circular portions 10^a and 11^a, which rollers 14 serve to support circular guide or bearing members 15 and 16 preferably channeled in cross-section so as to be held against any appreciable axial movement relatively to said rollers 14 as shown in Fig. 1. The bearing member 15 is secured, in any suitable manner, to the closed rear end of a cylindrical drum 17 while the bearing member 16 is fastened in any convenient way to the forward open end of said drum which thus extends between and is

carried by said bearing members 15 and 16. The said drum 17 with this arrangement is therefore rotatably supported upon the supporting frame or rather upon the rollers 14 thereof. To provide for the ready rotation of said drum any suitable mechanism may be provided; for instance as shown in the illustrated example the bearing member 16 may be formed with or carry sprocket teeth 18 for the accommodation of a sprocket chain 19 or said chain may simply engage said member 16 frictionally and in some cases may be replaced by a simple belt, and in either case is operatively connected with a sprocket wheel 20 or its equivalent carried for instance by one of the rods 12 as illustrated in Figs. 2 and 4. In order to facilitate the actuation of said sprocket wheel 20 or its equivalent it may be provided with a suitable operating handle 21, it being understood that with the described and illustrated arrangement the particular rod 12 carrying said sprocket wheel 20 will be rotatable wholly or in part as desired. When the illustrated construction is followed the front rollers 14 will be suitably shaped to accommodate the sprocket chain 19 or its equivalent and yet firmly support the drum at its front end as shown by dotted lines in Fig. 1.

The drum 17 is formed with a plurality of radially and outwardly extending recessed portions 22 preferably located at diametrically opposite points and extending lengthwise of the drum 17, these recessed portions 22 at their rear ends being connected by a similar recessed portion 23 extending diametrically across said drum at its rear end. A plurality of walls 24 and 25 are located at spaced intervals in said recessed portions 22 and 23 respectively and form chambers 26 and 27 as shown best in Fig. 1, said walls 24 and 25 serving as supports for electric lamp sockets 28 and 29 which extend through said walls into the chambers 26 and 27 as also clearly shown in said figure. These sockets 28 and 29 respectively are adapted to receive and support the electric incandescent lamps 30 and 31 and are connected by means of wires 32 with contact rings 33 suitably insulated and secured to the rear closed end of said drum 17, and describing circles about the axis of the drum as a center. The said contact rings 33 are located in surface engagement with stationary contact members 34 suitably insulated and mounted upon the rear end member 10

of the supporting member, said contact members 34 being connected by wires 35 with a suitable source of electrical energy. In the preferred arrangement a rheostat 36 is included in the electrical circuit for the purpose of regulating and adjusting the same so that any desired degree of resistance may be obtained or said rheostat may be replaced by a simple switch for opening and closing the electrical circuit, it being understood that both the rheostat and switch may be included in the construction if desired.

The front end member 11, in the illustrated example, carries a plate 37 which is formed with a recess 38 of approximately semicircular shape and with a communicating opening 39 extending therefrom to the upper periphery of said plate and interrupts the continuity thereof. This opening 39 is arranged to be closed by a slide 40 vertically movable in upright guides 41 secured to or forming part of the plate 37 as shown in Fig. 2, said slide 40 being formed with a recess 42 adapted to register with the recess 38 and form therewith an axial opening communicating with the interior of the drum as also illustrated in Fig. 2. To seal this axial opening about the part of the patient being treated and while the apparatus is in operation, the plate 37 and slide 40 are provided with flexible flaps 43 and 44 which are suitably cut out to closely fit about the part of the patient without discomfort and which respectively project beyond the peripheries of the recesses 38 and 42 as shown in Fig. 2.

In addition to the parts so far described the apparatus includes a stationary member 45 which is secured to or forms part of the front end member 11 and extends from the exterior of the device into the drum 17 as shown in Figs. 1 and 2. That portion of said member 45 which is substantially horizontal and projects into the drum 17 is provided at spaced intervals with rests 46 suitably shaped and padded and arranged to comfortably support for instance a leg of the patient at the thigh, calf and foot as shown by dotted lines in Fig. 1. A suitable handle 47 may be provided for facilitating the actuation of the slide 40.

For descriptive purposes it will be assumed that the apparatus is being used as a medium for treating the lower leg and foot of a patient. In such cases the slide 40 is first raised by means of the handle 47 to free the opening 39 after which the patient, who may be seated in front of the machine, places the leg to be treated in position upon the rests 46 and within the drum 17 for instance as shown by dotted lines in Fig. 1. In this condition the leg is comfortably supported with the affected parts within the drum and the patient is comfortably seated in front of the apparatus and within easy reach of the handle 21 and the rheostat 36.

The slide 40 is now returned or lowered to normal position so that flaps 43 and 44 surround the leg and hug the same without discomfort to the patient, thus closing the axial opening of the drum and sealing same as will be readily apparent. The rheostat 36 is now actuated to close the electrical circuit and to produce the desired degree of resistance whereby the degree of heat generated by the lamps 30 and 31 is controlled and regulated to meet the requirements of each specific case and the handle 21 is rotated by the patient. This brings about a rotation of the drum 17 upon the rollers 14 and moves the lamps 30 in circular paths about the patient's leg which is stationary and at the same time rotates the lamps 31 opposite the sole of the patient's foot as will be apparent from an inspection of Fig. 1. The operation and use of the apparatus is continued as long as necessary or desired in each instance. It will be seen that the lamps 30 and 31 heat the interior of the drum so that all portions of the leg within said drum are subjected to the effects of the elements 30 and 31 which may always be of a nature to exert a beneficial effect in the cure of many ailments. Owing to the fact that the drum 17 may be constantly or intermittently rotated during the continuation of the treatment, the heat generated by the lamps 30 and 31 is not specifically directed against any one part of the leg but is diffused and creates a heated zone which is even throughout and which evenly reaches all parts of the leg positioned within the drum and whereby the heat is caused to penetrate all parts of the affected leg in a manner easily borne by the patient without discomfort. During the rotation of the drum 17 the contact rings 33 travel along the contact members 34 and thus maintain the continuity of the electrical circuit whereby the lamps 30 and 31 are energized.

If desired the bulbs of the lamps 30 and 31 may be of colored glass or said lamps may be otherwise constructed to produce light rays having special characteristics as to color or effect so that the leg in addition to being baked and heated may be subjected to the effects of such colored or other special light rays, which by the rotation of the drum are also diffused and consequently are not concentrated upon any particular part or parts of the leg under treatment. In some cases the apparatus may be used entirely as a medium for applying specific light rays to the affected part or parts and may be so arranged that the degree of heat generated by the light producing media will be negligible.

Owing to the fact that the apparatus is capable of being operated by and under the direct control of the patient himself, or by an assistant under his direction, the appli-

cation of the treatment may be continued, adjusted and varied at will to produce the most beneficial results and to prevent the same from having any unintended injurious effect upon the particular parts being treated.

At the completion of each treatment or application the slide 40 is again raised to permit the leg to be easily withdrawn from the drum and the rheostat 36 is actuated to break the electrical circuit.

The apparatus is simple in construction, easily operated, cheap to manufacture and is not likely to become readily disarranged. It will, of course, be understood if the apparatus is to be used solely for the application of heat that other heat generating devices may be substituted for the incandescent electric lights if desired.

Various changes in the specific form shown and described may be made within the scope of the claims without departing from the spirit of my invention.

I claim:

1. An apparatus of the kind described comprising a movable container adapted to receive and inclose the affected part and provided with internal recesses, heat generating means located within said recesses, the walls of the latter being constructed to concentrate the heat and deflect it inwardly toward the center of the container and means for moving said container about the affected part.

2. An apparatus of the kind described comprising a hollow member adapted to receive and inclose the affected part, heat generating means carried by said member and means for moving said member with said heat generating means about said affected part.

3. An apparatus of the kind described comprising a rotatable container adapted to receive the affected part and provided with an internal recess, and electrically energized means located within said recess, the walls of the latter being arranged to deflect the effects of said means inwardly toward the center of said container.

4. An apparatus of the kind described comprising a support, a hollow drum adapted to receive the affected part and rotatably carried by said support for producing light rays and for generating heat, means carried by said drum and located interiorly thereof and means for rotating said drum about the affected part.

5. An apparatus of the kind described comprising a support, a hollow drum adapted to receive the affected part and rotatably carried by said support, heat generating devices within said drum and rotatable therewith and means controlled by the patient for rotating said drum and heat generating devices about the affected part.

6. An apparatus of the kind described comprising a support, a hollow drum adapted to receive the affected part, and rotatably carried by said support, means for producing light rays within said drum and rotatable therewith and means controlled by the patient for rotating said drum and light producing means about said affected part.

7. An apparatus of the kind described comprising a support, rollers carried by said support, a drum rotatably mounted on said rollers, electrically energized devices carried by said drum and located interiorly thereof, means within said drum for supporting an affected member, and means controlled by the patient for rotating said drum relatively to said supporting means and about said affected member.

8. An apparatus of the kind described comprising a support, rollers carried by said support, a drum rotatably mounted on said rollers, electrically energized devices carried by said drum and located interiorly thereof, means within said drum for supporting an affected member, means for rotating said drum relatively to said supporting means and about said member, cooperating devices on said support and drum respectively whereby the continuity of the electrical circuit is maintained during rotation of the drum and means controlled by the patient for regulating the electrically energized devices.

9. An apparatus of the kind described comprising a support, rollers carried by said support, a drum rotatably mounted on said rollers, electrically energized devices carried by said drum and located interiorly thereof, means within said drum for supporting an affected member, means for rotating said drum relatively to said supporting means and about said affected member and sealing means carried by said support for encircling said affected member at approximately the point where it projects exteriorly of the drum.

10. An apparatus of the kind described comprising a support having spaced front and rear end members, a drum rotatably mounted thereon between said members and having a closed rear end and an open front end, said drum being further provided with opposite lengthwise extending internal recesses and with a transverse internal recess at its rear end, a plurality of electrically energized devices within said recesses, contact rings carried by said drum at its closed end in electrical circuit with said devices, stationary contact members on said support cooperating with said contact rings and connected with a source of electrical energy, a rheostat in said electrical circuit whereby said devices are controlled, a stationary supporting rest within said drum adapted to support an affected member therein, a plate

carried by said support opposite the open
end of said drum and provided with an open-
ing through which access to the interior of
said drum is had, a slide adapted to close
5 said opening, said plate and slide being pro-
vided with cooperating recesses adapted to
form an axial opening through which said
affected member projects into the drum,
flexible flaps carried by said plate and slide
10 and adapted to surround and hug said af-

ected member whereby said drum is sealed
and means controlled by the patient for ro-
tating said drum and electrically energized
devices relatively to said supporting rest,
plate and slide and about said affected mem- 15
ber.

In testimony whereof I have hereunto set
my hand.

OSCAR HAMMERSTEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."