Oct. 9, 1923. **1,469,928**

L. LAZAR

ADJUSTABLE SPOTLIGHT FOR DENTAL CHAIRS

Original Filed Feb. 5, 1920 2 Sheets-Sheet 1

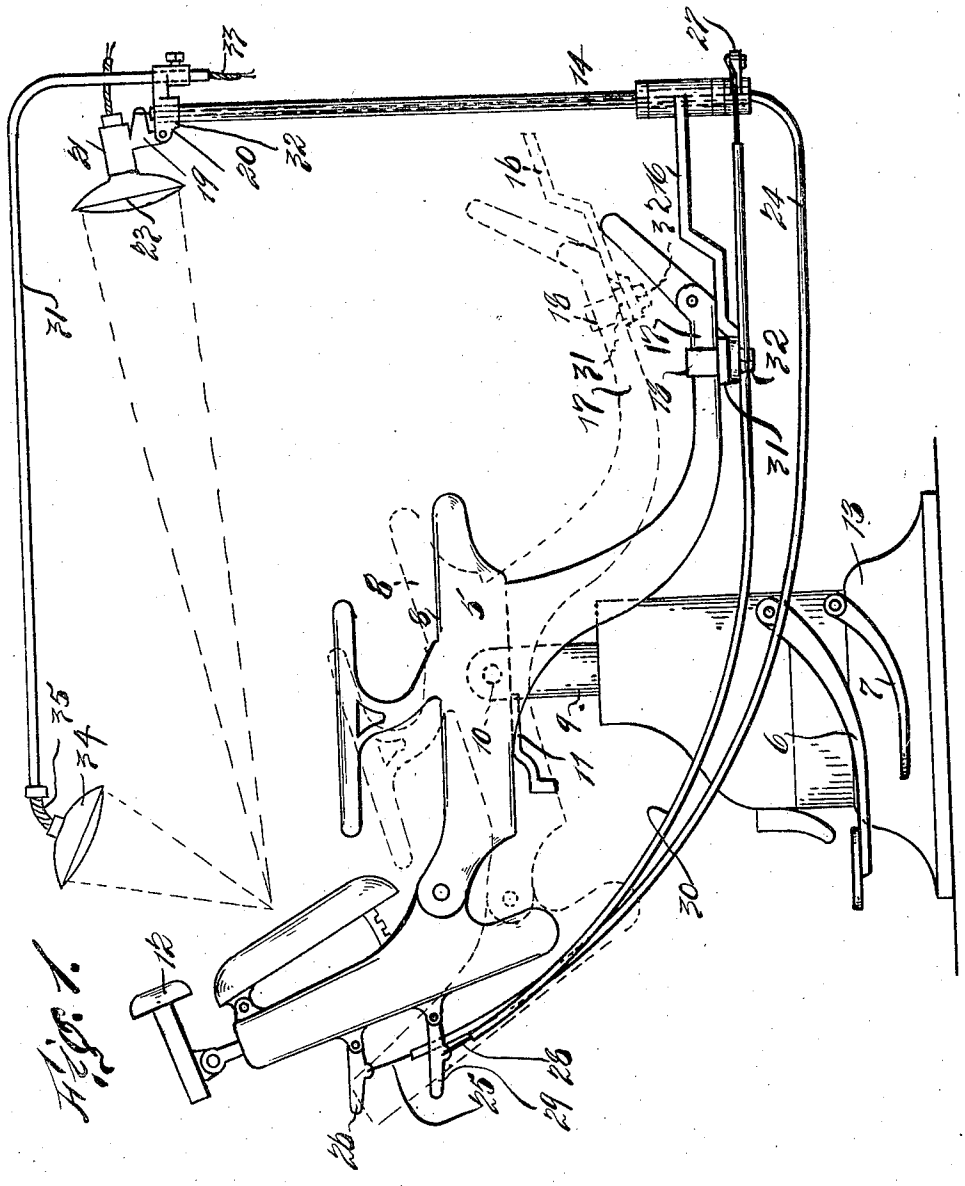


Fig. 1.

Inventor
Leon Lazar
By his Attorney

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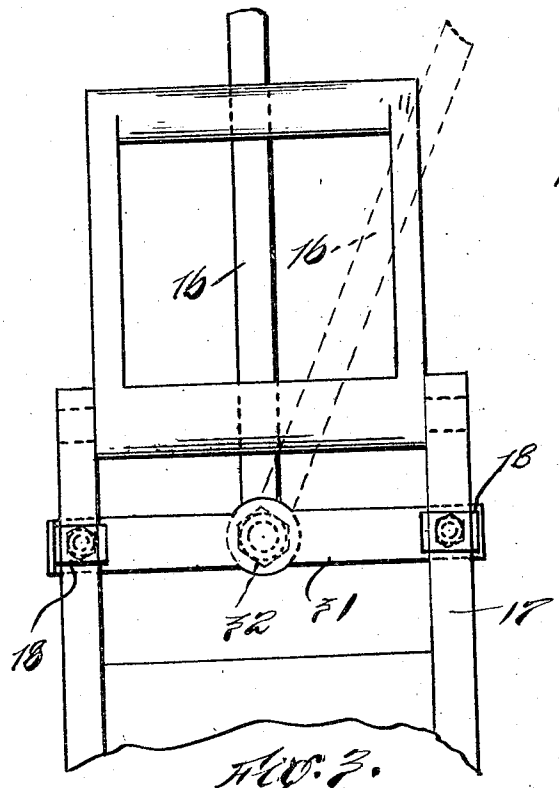


Fig. 3.



Fig. 4.

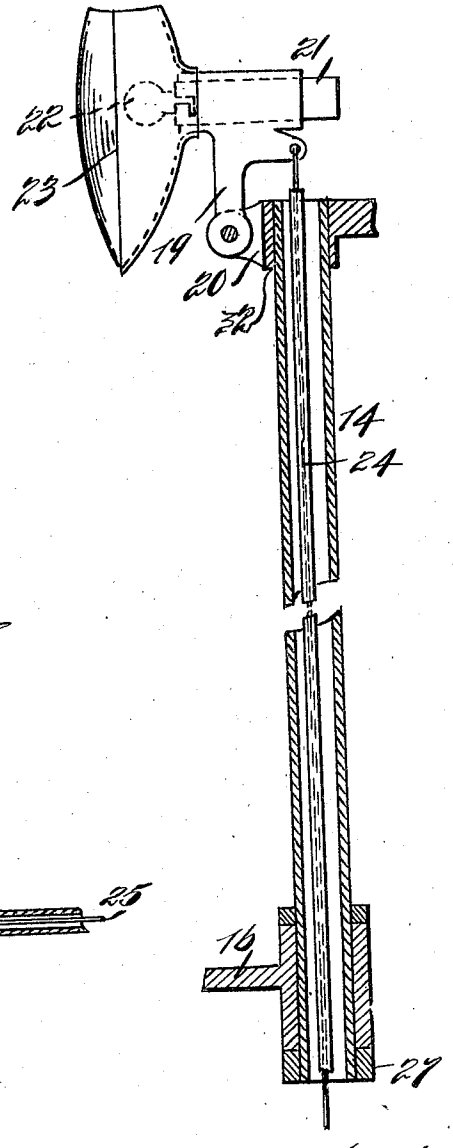


Fig. 2.

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Patented Oct. 9, 1923. 1,469,928

UNITED STATES PATENT OFFICE.

LEON LAZAR, OF NEW YORK, N. Y.

ADJUSTABLE SPOTLIGHT FOR DENTAL CHAIRS.

Application filed February 5, 1920, Serial No. 356,376. Renewed March 2, 1923.

To all whom it may concern:

Be it known that I, LEON LAZAR, a citizen of the United States of America, residing at New York city, county and State of New York, have invented certain new and useful Improvements in Adjustable Spotlights for Dental Chairs, of which the following is a full, clear, and exact description.

This invention relates to improvements in lighting devices used in dentistry, one of its objects being to provide an improved spotlight arranged to cast rays upon a patient in a dental chair to facilitate dental operations, the rays of light being cast upon the face of the patient and into his or her mouth. For successful dental operations a light cast into the mouth is of great benefit, but so far as I am aware no provision has heretofore been made to mount a spotlight in such manner as to be adjustable directly from the chair to cause the rays of light to be cast directly upon the face of a patient from the front of the dental chair regardless of the position of the chair, that is to say, whether the chair is raised or lowered or tilted.

To carry out my invention I provide a device that can be attached to the adjustable portion of a dental chair, said device being provided with an electric light-bulb and a suitable parabolic reflector. The reflector and bulb will be attached to a suitable bracket which is adjustable, means being provided to operate the adjustable bracket, said operating means being preferably located upon the framework of the chair and at the rear of the seat, as I find that this position is the most convenient.

In practice the light will be adjusted to cast rays where needed by means of the operating device at the rear of the seat. As the light is carried by a post or frame secured to the chair, said light will be raised and lowered with the chair. After a patient has been placed in a chair and the light properly adjusted, it will remain so, whether the chair be afterwards raised or lowered.

One of the features of my invention is that the light need be adjusted but once, when a patient is placed in a chair. While performing dental operations, vertical adjustments of the chair are frequently necessary. When a fixed spotlight is used the said spotlight has to be adjusted after each vertical adjustment of the chair, thus making it necessary for the dentist to leave the side of his patient. With my improved device the spotlight can be adjusted without the necessity of the dentist leaving the side of his patient. As the dentist usually sits at the right side of his patient he can manipulate the adjusting means for the adjustable spotlight with the left hand, while seated. Furthermore, as the modern dental chair is arranged to be tipped backward, my improved arrangement will nevertheless not be thrown out of focus, as it will move with the body of the chair.

I will now proceed to describe my invention in detail, the novel features of which I will point out in the appended claims, reference being had to the accompanying drawings, forming part hereof, wherein:—

Fig. 1 is a side view of a dental chair provided with my improved adjustable spotlight;

Fig. 2 is an enlarged sectional view of the supporting post for the light;

Fig. 3 is an enlarged detail view illustrating one way to secure the post to the foot-rest of the chair; and

Fig. 4 is an enlarged detail view of one form of means to actuate the adjustably mounted light.

In Fig. 1 of the drawings, I have illustrated, in a general way, a modern dental chair arranged for the vertical adjustment of the seat 5, said seat being also arranged to be tilted backward, as indicated by dotted lines. The chair herein illustrated is of the usual hydraulically operated variety, that is to say, the seat 5 is raised by hydraulic power, a pump being used, operated by means of a pedal 6, to raise the chair. When the chair is to be lowered, the pump cylinder will be exhausted after the pedal 7 has been operated. The seat 8 of the chair is carried by a plunger 9 and is pivotally secured thereto as at 10. To lock the seat against movement, that is to say, pivotal movement, a suitable releasable lock, indicated by 11, is used. These chairs are provided with a head-rest indicated by 12. The pump mechanism for raising the seat is located within the base 13. The illustration of a chair embodying the above features is diagrammatic, and and I have not attempted to enter into the details of construction thereof, as such chairs and their construction are well known.

In connection with a chair embodying the

features above enumerated, I employ a post, frame or standard 14 preferably formed out of tubing, said post or frame being preferably supported by an arm 16 releasably secured to the foot rest 17 by clamps 18.

The post or standard 14 will be preferably pivotally supported by the arm 16 in order that said post or standard can be partly rotated for a purpose to be described. The upper end of post 14 carries a bracket 19 pivotally supported by ears 20 carried by post 14. The bracket 19 carries a socket 21 for a lamp or bulb 22 and a reflector 23 for said lamp or bulb.

To adjust the bracket 19, or move it backward or forward, I provide a tubular casing 24 through which a flexible wire 25 is threaded. One end of wire 25 is secured to bracket 19, the other end being connected to a lever 26 on the back of the chair. As can be seen, the tubular casing extends from a point adjacent the lever 26 to a point adjacent the bracket 19, said tubular casing being threaded through the post 14. The post 14 will be preferably smooth on the exterior surface thereof in order to avoid projections that might catch the table upon which the dentist places his instruments. Should the table mentioned be pushed against said post, the vertical movement of the post will not be hampered. Dental chairs have associated therewith a table or shelf which is pivotally mounted adjacent the chair and capable of being shifted from one position to another. Should said table be caused to contact with post 14, the movement of the post, when chair 5 is adjusted, would not be interferred with.

To partly rotate post 14, I provide same with an arm 27, at the lower end thereof, which is connected by a wire 28 to a lever 29 on the back of the chair, said wire being threaded through a tubular casing 30 similar to casing 24. After a patient has been placed in the chair, the rays of light cast by the reflector 23 can be directed upon the face of the patient by manipulating lever 26 which in turn will act upon wire 25 to move bracket 19 forwardly or backwardly to properly focus or locate the rays of light. The bracket 19 can be adjusted by the dentist without the necessity of his leaving the side of his patient, as lever 26 will be within easy reach as he stands beside the chair. To partly rotate post 14, if desirable, lever 29 will be manipulated, which in turn will act upon wire 28 to actuate arm 27. It will, therefore, be apparent that bracket 19 and also post 14 can be adjusted by means, located on the back of the dental chair, which is within easy reach of the dentist without the necessity of his leaving the side of his patient.

The arm 16 is preferably radially movable in order that the post 14 can be moved to the right or left of the chair to cast the rays of light on to the face of a patient from the right or left of the chair. To accomplish this result, I provide a cross bar 31 secured by the clamps 18 to the foot rest 17 (see Fig. 3). The arm 16 will be pivotally connected to bar 31, and arranged to be moved to the right or left of the chair. If desirable, the arm 16 can be locked in an adjusted position by tightening the nut 32.

In conjunction with the post 14 I may employ an arm 31 carried by bracket 32 on post 14. The arm 31 will be tubular and has threaded therethrough a conducting cable 33 for a light 34 supported by a flexible tube 35 secured to the free end of the arm 31. The flexible tube 35 may be adjusted to cause the rays of light from the light 34 to be directed downwardly upon the face of the patient and into his lower jaw. By means of the adjustable lights 22 and 34 I am able to illuminate the upper and lower jaws of the patient; in other words, an operator standing beside the chair can adjust both the lights 22 and 34 without leaving the side of the patient. Of course it will be understood that for some purposes the light 34 and arm 31 can be omitted.

Having described my invention, what I claim and desire to secure by Letters Patent is:—

1. A dental chair provided with a seat movable on a horizontal pivot and with a foot rest movable with said seat, and a spotlight mounted on said foot rest and directed toward said chair above said seat.

2. In combination with an adjustable dental chair, a post rotatably connected to the chair, a spotlight adjustably secured to the post at the upper end thereof, levers carried by the chair, a wire connecting said spotlight and one of the levers, and a wire connecting the other lever to said rotatable post.

3. The combination with a dental chair, of a plurality of lights carried by and movable with the chair, one light positioned so that it illuminates the upper portion of the patient's mouth and the other light positioned so that it illuminates the lower portion of the patient's mouth.

4. The combination, with a dental chair, of a plurality of lights carried by and movable with the chair and separately dirigible to positions so that one light illuminates the upper portion of the patient's mouth and the other light illuminates the lower portion of the patient's mouth.

Signed at New York city, N. Y., this 31 day of January, 1920.

LEON LAZAR.

Witnesses:
EDWARD A. JARVIS,
MAURICE BLOCK.