

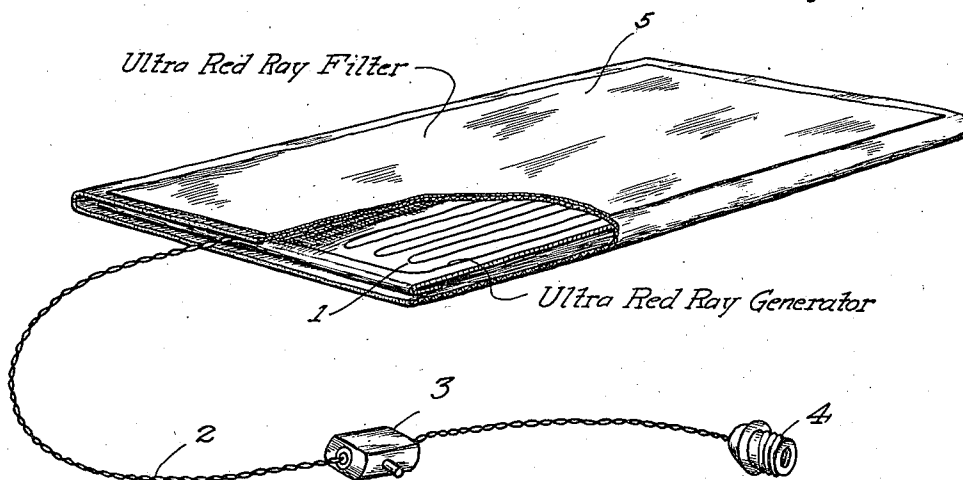
June 15 , 1926.

1,589,338

G. S. WHITE

ULTRA RED THERAPEUTIC PAD

Filed Nov. 12, 1923



INVENTOR.

George Starr White

BY

Nestall and Wallace

ATTORNEYS

Patented June 15, 1926.

1,589,338

UNITED STATES PATENT OFFICE.

GEORGE STARR WHITE, OF LOS ANGELES, CALIFORNIA.

ULTRA-RED THERAPEUTIC PAD.

Application filed November 12, 1923. Serial No. 674,187.

This invention relates to an appliance adapted to be held against the body of a subject, wherein ultra-red or infra-red rays are generated and passed through a screen which occludes all of the visible rays of the spectrum and substantially all the ultra-violet rays. The appliance comprises the combination of an ultra-red ray generator and a covering sheet adapted to be so positioned that it may be interposed between the generator and the body of the subject. Preferably the appliance is flexible so that it adapts itself to the contour of any part of the body.

Scientific investigation has proved that ultra-red rays penetrate deeply into the body and are therein converted into heat. This heat has the property of stimulating the vascular system, thereby serving as a remedial agency. Ultra-violet rays and some of the visible rays of the spectrum have a surface effect and irritate the skin. Where ultra-red rays are desirable, the irritant rays should be occluded or screened from the body in order that prolonged or intensive application of the rays may be resorted to without detrimental effect to the surface of the body.

To this end, I have herein disclosed an embodiment of my invention, best understood by reference to the accompanying drawing, wherein the figure is a perspective view of a pad constructed in accordance with my invention.

There are a great variety of ultra-red rays, and these are produced by heating certain substances. The ultra-red rays begin to be emitted increasingly as soon as the substance begins to heat. The augmentation continues for only a short time when the rays begin to decline rapidly until almost none at all are detected, then as the substance cools off the rays become more powerful. In general the ultra-red rays are produced best before the substances reach a temperature sufficient to emit visible rays. Black iron will for example produce a different ultra-red ray when heated to 200° Fahrenheit than galvanized iron heated to an equal temperature. Brass wire heated to about 300° Fahrenheit emits a ray that is very different from that given off from copper wire similarly treated. Soft red rubber emits a ray different in many respects from that given off from soft black rubber, when heated to 180° Fahrenheit. Ebonite emits a ray that is not like that given off from black hard rubber when

heated to 200° Fahrenheit. Zinc emits a ray that is not like that given off from aluminum when heated to about 200° Fahrenheit.

My invention contemplates the use of an element heated by the passage of an electrical current. Thus, a wire of bronze or other suitable metal or alloy is wound in convolutions in the manner usual in building electrical heating elements for pads. Such an element is indicated in the drawing by 1. The cord for connecting the generator to a source of electrical energy is indicated by 2. A control switch 3 is interposed in the cord circuit between the pad and a plug 4. Covering the generator is a fabric 5 which serves as a filter or screen through which the ultra-red rays may pass freely. It has been found by experiment that the permeability of the screen to any selected ultra-red ray depends upon a number of factors, such as the material of which the screen is made, its weave and its color. For illustration, the same kind of material, of the same texture and colored respectively green, blue indigo, and violet impedes the ultra-red rays in the order of the colors just given. Yellow, orange, and red are good conductors or transmitters of ultra-red. A close hard weave acts as a better transmitter of ultra-red from certain materials, while a loose, soft weave acts better with other materials. All vegetable fabrics are much more permeable to ultra-red than animal fabrics. For example, vegetable silk will transmit ultra-red much better than worm silk. In like manner cotton fabric transmits ultra-red very much more readily than woolen fabrics. Artificial leather transmits ultra-red much more readily than the real leather. Celluloid is more permeable to the ultra-red rays than ivory, horn or bone. Certain combinations of colors and of fabrics enhance the passing of ultra-red, while other combinations impede their transmission. For this reason, the material selected would be dependent upon the character of the rays that it was desired to transmit. The characteristic in common would be that the screen should be permeable to the ultra-red rays and occlude the remaining rays of the spectrum. The clinical effect of the rays can be determined by experiment and a proper pad made.

What I claim is:

1. In a therapeutic pad, the combination of a generator of rays of the spectrum including ultra-red rays in preponderance and

a covering sheet to be interposed between said generator and the body of the subject, said covering sheet being permeable to ultra-red rays and an occluder of the remaining rays of the spectrum which are irritant to the skin.

2. In a therapeutic pad, the combination of a flexible pad like generator of rays of the spectrum including ultra-red rays in pre-

ponderance, and an envelope of cushion material comprising a screen permeable to ultra-red rays and being an occluder of the remaining rays of the spectrum which are irritant to the skin.

In witness that I claim the foregoing I have hereunto subscribed my name this 24th day of October, 1923.

GEORGE STARR WHITE.