Jan. 21, 1930. O. K. BUSINGER 1,744,443

APPLIANCE FOR TREATING SCALPS

Filed May 28, 1925

Fig. 1

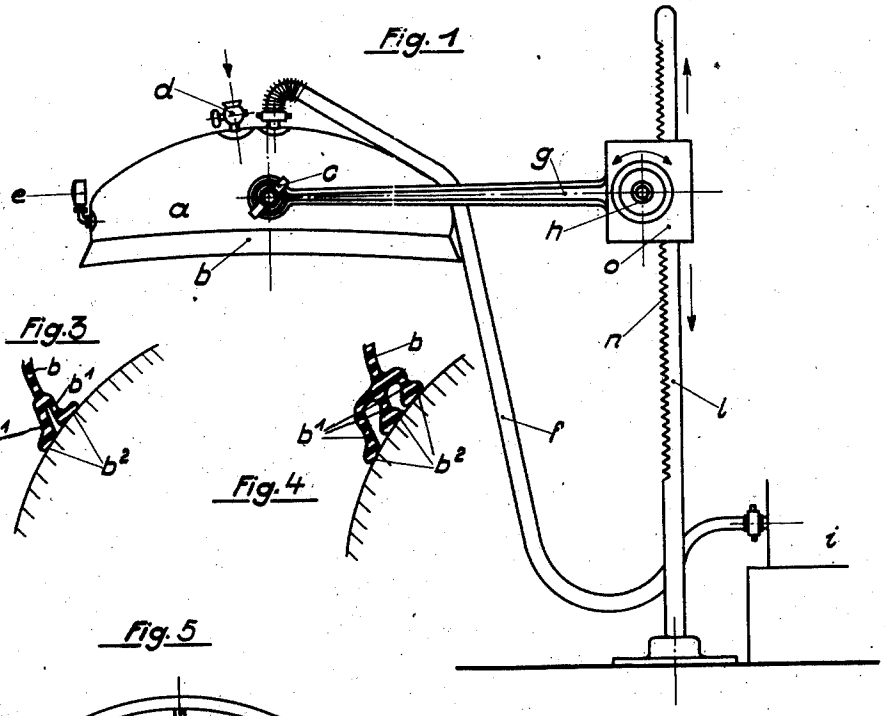


Fig. 3

Fig. 4

Fig. 5

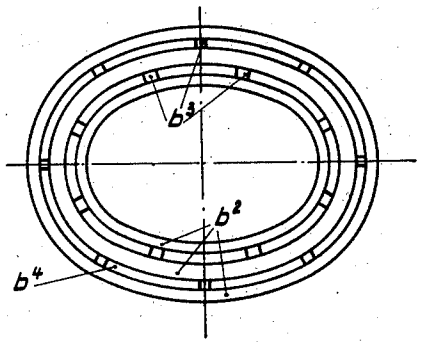


Fig. 2

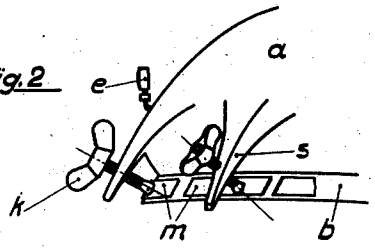
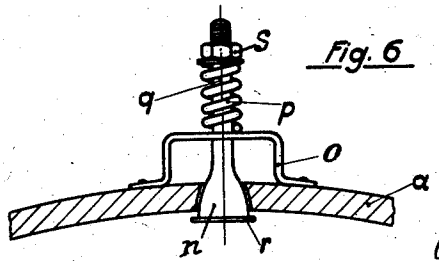


Fig. 6



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Patented Jan. 21, 1930 1,744,443

UNITED STATES PATENT OFFICE

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APPLIANCE FOR TREATING SCALPS

Application filed May 28, 1925, Serial No. 33,432, and in Switzerland June 20, 1924.

My invention relates to a method and the means for curing loss of hair and baldness.

Heretofore it has been attempted to cure loss of hair by means of chemical, thermic or electrical influences or by massage. It is an object of my invention to replace these methods by the action of reduced pressure, placing on the head of the patient a suitable airtight covering which may resemble a helmet, and producing a vacuum therein.

It is another object of my invention to vary such vacuum, if desired, instead of maintaining it constant, and to obtain by such variation an effect similar to vibration massage.

It is a further object of my invention to provide an improved cupping appliance and improved means for seating the edge of the appliance on the head.

In carrying out my novel method, I place on the head of the patient a cupping appliance resembling a helmet and made from any suitable air-tight material, and I produce a vacuum in the chamber so formed above the scalp of the patient. The means for tightly seating the airtight covering on the head may be designed in various ways. In a preferred embodiment of the new cupping appliance I provide a band of india rubber against which plates are forced from the outside so that the band is tightly held against the head. A plastic substance such as an ointment may be applied to the rubber band on the inside in order to improve the tight seating thereof.

Air is drawn from the interior of the airtight covering by any suitable suction apparatus. Preferably an automatic air inlet valve is secured on the airtight covering for admitting air when the vacuum oversteps a certain limit.

Means may also be provided for holding the airtight covering in position, for instance supports carried on the shoulders of the patient or adapted to be displaced on a stand, or the airtight covering may be suspended from the stand or the ceiling.

The airtight covering is not necessarily of such diameter as to completely cover the head of the patient but it may also have a smaller diameter so as to cover only a portion of the scalp.

In the drawings affixed to this specification and forming part thereof, a device embodying my invention is illustrated diagrammatically by way of example. In the drawings

Fig. 1 is an elevation of the complete apparatus,

Fig. 2 is a detail view drawn to a larger scale and showing tightening plates and screws for applying them to a rubber band,

Figs. 3 and 4 are cross-sections of rubber bands, and

Fig. 5 is an illustration of a complete rubber band viewed from below.

Fig. 6 is a partly sectional elevation of a modified form of an air inlet valve.

Referring now to the drawings, *a* is the airtight covering which is here shown as a helmet and *b* is a rubber band secured to its edge so as to make it fit tightly on the head of the patient. *f* is a flexible tube connecting the interior of the helmet *a* with a suction device such as an air pump, an ejector or the like which is indicated diagrammatically at *i*. *d* is an air inlet valve and *e* a pressure gauge. Instead of a cock *d* as shown a substantially conical valve *n* may be provided. A bracket *o* is secured on the outside of the apparatus and serves as a support for a spring *p* which surrounds the stem *q* of the valve and tends to hold it on its seat. A flange *r* on the valve prevents the valve body from fitting in the wall of the appartus *a* so that an air passage between the valve and the wall is always open. The pressure of the spring *p* is regulated by a nut *s*.

The helmet is suspended on pivots *c* in a fork-shaped holder *g* which is integral with or secured to a bracket *o*, adapted to be displaced on a standard *l* by means of a pinion (not shown) which engages teeth *n* provided on one face of the standard and is operated by a hand wheel *h* so that the bracket can be raised or lowered.

Means for exerting pressure on the rubber band are indicated in Fig. 2, plates *m* being secured on the band *b* and brackets *s* being formed on the helmet *a* in which screws *k* are inserted. By turning the screws the pres-

sure acting on the ring b can be varied as desired.

In order to provide a tighter fit of the rubber band on the head of the patient, such band may be provided with two or more annular ribs b^1 having air chambers formed between them. Preferably such ribs are flanged at b^2. Fig. 3 shows a band having two ribs, and Fig. 4 shows a band having three ribs b^1. The ribs b^1 in which the margins of the covering terminate are in the form of thin depending lips with a groove of substantial depth between the adjacent lips. Since the material of the lips is of soft rubber or similar material, they are enabled to yield freely relative to each other so as to conform exactly to the contours of the scalp. This being the case, the groove, which is closed at the top, is closed as effectively as possible at the bottom by the scalp so that extremely efficient contact is secured.

When a vacuum is produced in the helmet a corresponding vacuum will also be produced in the chamber or chambers formed between the ribs b^1 and atmospheric air is excluded from the interior of the apparatus except for the inevitable leakage through the hair of the patient. This leakage which is subject to considerable variations during the treatment, is made up for by a comparatively high output of the vacuum pump i which must therefore be designed for a considerable power margin. This power margin, on the other hand, involves the danger of an excessive vacuum being generated in the appliance if the leakage is comparatively unsignificant and, to prevent this, the valve d or n is provided. Both types of valves are permanently open during the operation but the opening is varied in accordance with the vacuum. In the case of a cock as shown at d the vacuum is read at the gauge e and the cock d is adjusted by hand accordingly. The same function is performed by the valve n but automatically after the spring p has been adjusted by hand. Both valves are never closed completely during the operation of the apparatus.

It has already been proposed to provide relief valves in cupping appliances for admitting atmospheric air but these valves are designed on the principle of safety valves and will only open at a definite pressure. This pressure is adjusted by a spring in the known devices but the valve will not be in permanent operation. It will be understood that with such a valve it is impossible to control the vacuum during all stages of the operation. The valve will either be open or closed but it will never admit a certain quantity of air permanently which it also regulates permanently in proportion to the existing vacuum. Preferably the chambers enclosed between the ribs are subdivided by partitions b^3, as shown in Fig. 5, and these partitions are preferably staggered when more than two ribs b^1 are provided. This is done for the purpose of localizing any leakage which may arise. If a leakage occurs, for instance in the chamber b^4, it will not act on the entire chamber but only on that portion which is situated between adjacent partitions. Moreover the staggering of the partitions compels inflowing air to move along a sinuous path, thereby increasing the safety against the entrance of air.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:—

1. Cupping appliance comprising an air-tight covering adapted to tightly fit the head of the patient, means for reducing the air pressure within such covering, an automatic adjustable air inlet valve, packing means at the base of the covering, plates surrounding said packing means and screws carried on said covering and adapted to exert pressure on said plates.

2. Cupping appliance comprising an air-tight covering adapted to tightly fit the head of the patient, means for reducing the air pressure within such covering, an automatic adjustable air inlet valve, a packing ring of resilient material and a plurality of concentric annular packing strips, transverse walls connecting said strips.

3. Cupping appliance comprising an air-tight covering adapted to tightly fit the head of the patient, means for reducing the air pressure within such covering, an automatic adjustable air inlet valve, a packing ring of resilient material and a plurality of concentric annular packing strips, staggered transverse walls connecting said strips.

4. In a cupping appliance for the treatment of scalps, a covering of air-tight material adapted to fit over the scalp, the margins of said covering terminating in a plurality of thin, flexible, depending, circumferential lips forming a groove of substantial depth between them, said groove being open only at the bottom, said lips being relatively yieldable to conform to the scalp contours and thereby close said groove.

In testimony whereof I affix my signature.

OTTO KURT BUSINGER.