

Nov. 3, 1953

C. BRANDENFELS
SCALP AND BODY STIMULATOR

2,657,686

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2 Sheets-Sheet 1

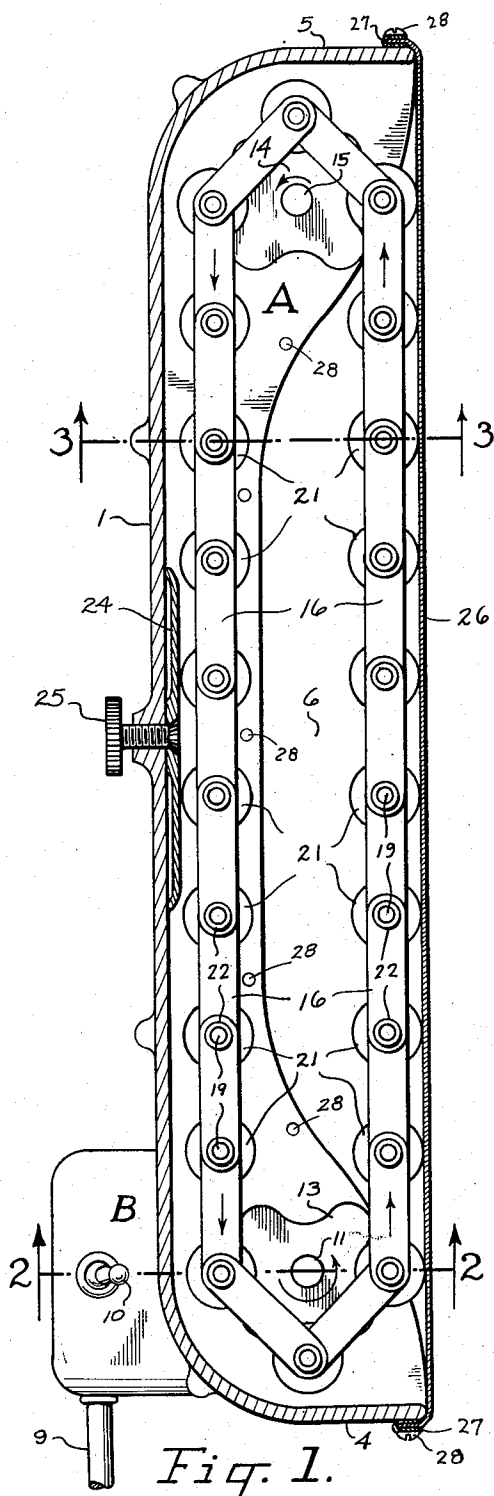
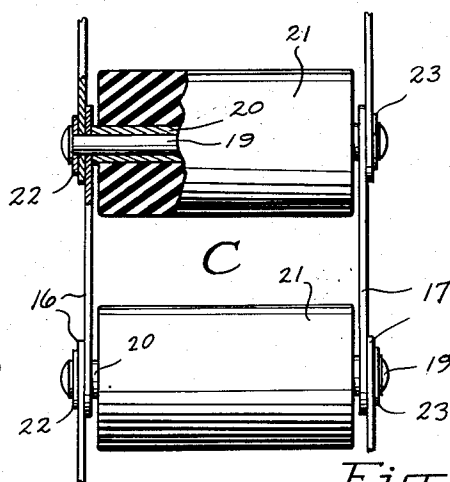


Fig. 4.

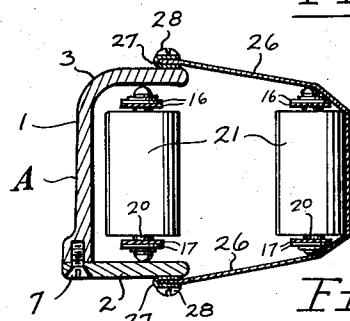


Fig. 3.

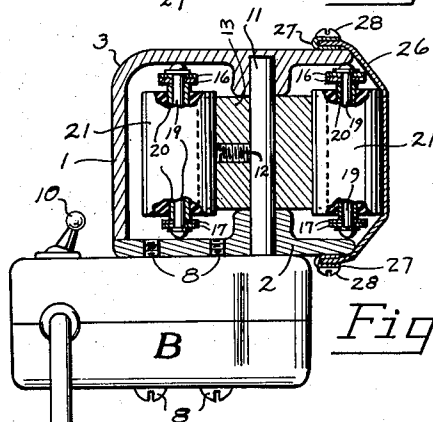


Fig. 2.

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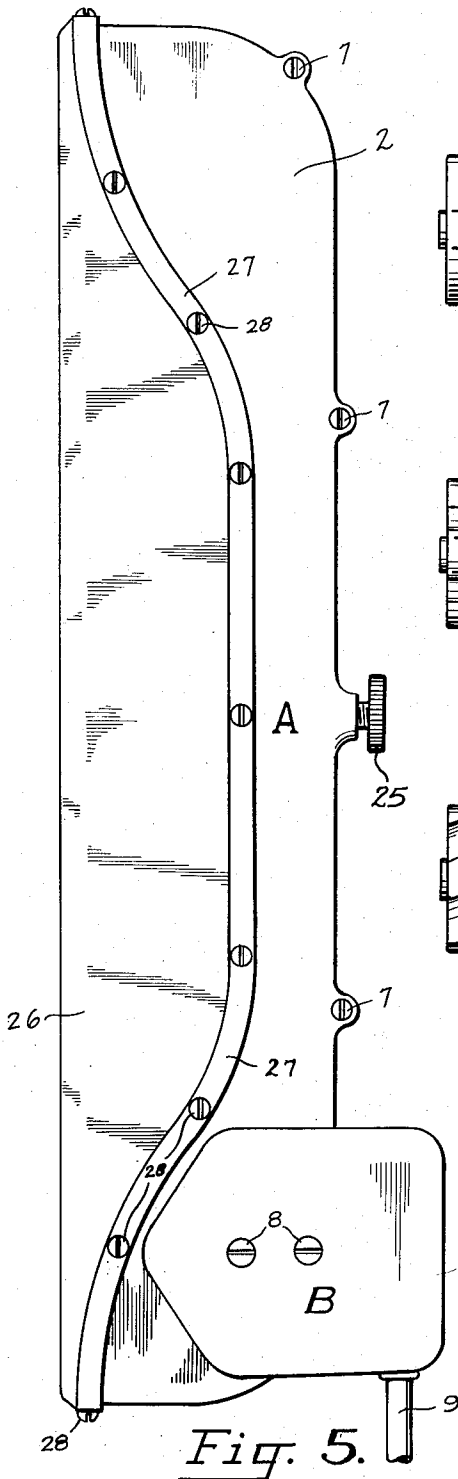
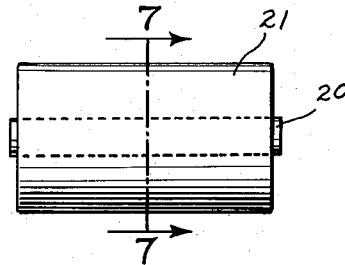


Fig. 6.

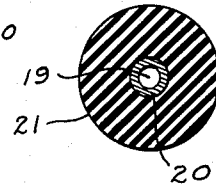


Fig. 7.

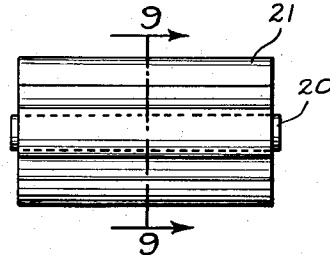


Fig. 8.

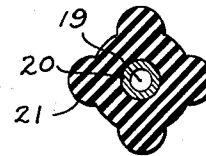


Fig. 9.

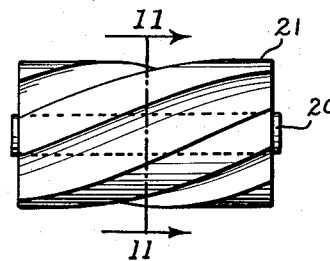


Fig. 10.

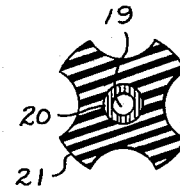


Fig. 11.

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SCALP AND BODY STIMULATOR

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7 Claims. (Cl. 128-58)

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This invention relates generally to manipulating and massaging devices for use on the limbs, body and head of a human being and is specifically related to devices for "toning" up the tissues of the human body especially the scalp tissues.

It is the principal object of my invention to provide a machine for the purpose of providing this stimulation by inducing an upwardly moving adequate supply of blood to the regions where the hair roots have not been completely destroyed and to restore circulation of this blood in the capillary system and to relieve tension in the scalp tissues.

Another object of my invention is to provide a device for inducing artificial and lasting erythema by a dilation of the vascular system in the area under stimulation without detrimental abrasive friction tending to break down the tissue or vascular system.

Another object of my invention is to provide a device for stimulating the area being treated and immediately ahead by a smooth flowing pressure coordinated with the normal heart beat which flushes blood under pressure greater than normally pumped by the heart, and without causing the skin to crawl in the process.

Still another object of my invention is to provide a compactly designed and simplified machine which may readily be employed to stimulate different portions of the human body but particularly the head and neck portions.

Other objects of the invention are to provide a device which permits the removal and replacement of that portion of the device which contacts the body and thus maintains hygienic conditions and to follow the general contour of any part of the body to which it is applied.

Other objects and advantages and the novel features of my invention and its characteristics will be more readily understood from the detailed description which follows, taken in connection with the accompanying drawings forming part thereof, and in which:

Fig. 1 is a longitudinal, vertical, sectional view of my invention;

Fig. 2 is a vertical, sectional view of my invention taken on line 2-2 of Fig. 1;

Fig. 3 is a vertical, sectional view of my invention on the line 3-3 of Fig. 1;

Fig. 4 is a fragmentary, plan view of a portion of the chain and roller assembly, partially in section and broken away to show details of construction;

Fig. 5 is a side elevation of a device embodying my invention;

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Fig. 6 is an elevational view of the preferred type of roller embodied in my invention;

Fig. 7 is a sectional, end view on line 7-7 of Fig. 6;

Fig. 8 is an elevational view of a modified form of roller;

Fig. 9 is a sectional, end view taken on line 9-9 of Fig. 8;

Fig. 10 is an elevational view of still another modified form of roller; and

Fig. 11 is a sectional, end view taken on line 11-11 of Fig. 10.

The structural details of the preferred form of the invention is revealed in the drawings and, as shown in Fig. 1, consists of a housing, designated generally by reference character A. The housing has a top 1, sides 2 and 3 and ends 4 and 5. These sides have longitudinal incurvations cut-outs as shown at 6, in order to allow that portion of the device contacting the body to fit the contour of any portion of the body to which it may be applied. The housing A, formed of two sections in order to permit assembly and quick access to the interior of the housing whenever repair or replacement of the elements confined within the housing may be required, are detachably secured to each other by any desirable means, as by threaded elements 7.

A prime mover and gear box assembly of any suitable type adapted to provide adequate power to sustain continuous movement of the rollers in coordinated relation to the normal pulsation of the heart, generally designated by reference character B, is secured to the housing A by any desirable means such as by being threadably engaged thereto, as shown at 8. A conductor cord 9, having the usual characteristics, is capable of transmitting energy to the prime mover upon the closing of a switch 10 of any well known construction.

Extending outwardly from the prime mover and gear box assembly B and into housing A, is shaft 11 which is journaled in bearings therein in a well recognized manner. Keyed, splined, or otherwise secured to shaft 11, as by the employment of a threaded member 12 is a driving sprocket wheel 13. The peripheral contour of the driving sprocket wheel, in transverse view, consists of pairs of oppositely disposed concave surfaces and pairs of oppositely disposed convex surfaces, the concavity in the sprocket being complementary to the peripheral contour of the rollers still to be described. An idler sprocket 14 having the same structural characteristics as the driving sprocket 13, is also rotatably disposed in housing

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A between the side walls thereof and in horizontal alignment to driving sprocket wheel 13, by being keyed, splined or otherwise secured to shaft 15, journaled in the recognized manner between the side walls of housing A.

A plurality of links 16, made of metal or other desirable material and possessing identical dimensional characteristics, are positioned in end to end relationship and hingedly connected to form a closed chain belt. A plurality of links 17, possessing the same dimensional characteristics and equal in number to links 16, are also positioned in end to end relationship and hingedly connected to form another closed chain belt. These flexible articulated dual chain belts possessing identical characteristics are, in turn, joined to each other in spaced relation by a plurality of identical pins 19 forming the connecting hinge between the links of each chain belt and between the respective pairs of links in both chain belts. A bushing 20, made of any desirable material but preferably of a material which has self lubricating characteristics surrounds each pin, is freely rotatable in relation thereto and defines the maximum spacing between the dual chain belts.

Rollers 21, the length of which is slightly less than bushings 20, are fixedly mounted on the bushings so that the pins 19 act as shafts for the rollers. These rollers are spaced at well defined distances on the dual chain belt in order for them to apply pressure on the critical portions of the vascular system in coordination with the normal pulsation of the heart. Rollers 21 may be made of any unyielding material, such as a synthetic substance possessing the characteristics of durability, lightness in weight and with any desired peripheral configuration provided the surface creates a minimum of frictional resistance. The preferred form of roller, as shown in Figs. 6 and 7, is cylindrical in cross section and has a smooth peripheral surface, although the peripheral surface may be fluted, as shown in Figs. 8 and 9, are spiraled, as shown in Figures 10 and 11. Of course other peripheral contours may be employed if desired.

The pins 19 passing through the pairs of links 16 and 17 are fastened in rivet fashion against washers 22 and 23 at their free ends so that free but intimate movement is permitted at the link hinge joints.

The roller and chain assembly, as hereinbefore described and generally designated by reference character C, passes over and has rollers 21 progressively engaged by driving sprocket wheel 13 and idler sprocket wheel 14, and travels within housing A in the direction indicated by the arrows shown on the sprockets and the chain and roller assembly C. By this arrangement the lowermost portion of the chain and roller assembly C is substantially in lateral alignment with the open bottom of the housing while the uppermost portion of the chain and roller assembly is fully confined between the sidewalls of housing A.

There is sufficient flexibility in the dual chain and roller assembly C to permit the rollers to follow the contour of that portion of the body to which the device may be applied. However, it may be desirable to control the degree of flexibility of the dual chain and roller assembly coming in contact with the body and if desired, to take up the slack due to normal wear of the sprockets and rollers. To accomplish this, a plate 24, the width of which is substantially equal to the space between the sidewalls 2 and 3 of hous-

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ing A, is positioned below the top 1 and is vertically movable in relation thereto. A threaded member 25, threadably disposed through the top 1 of housing A is secured to the plate 24 and permits the adjustment of the plate in relation to the dual chain and roller assembly C.

A diaphragm member 26, having high inherent flexibility and made of a natural or synthetic substance impervious to water or body and other oils, has its ends fixedly anchored within the annular channel of collar 27 which, in turn, is removably secured to the sides 2 and 3 and ends 4 and 5 of housing A by any desirable means, as by a plurality of threaded members 28. By this arrangement the diaphragm member 26 forms a skin or cover without stretch or stress but in a taut relationship to the ends and to the sides of housing A and in normal intimate contact with the rollers 21 on the lowermost portion of the chain and roller assembly C, as illustrated in Figs. 1 and 5.

From the foregoing description it is clearly evident that when the device is employed against any portion of the body with the diaphragm member contacting the surface of the body, the pressure applied on the device is transmitted to the diaphragm member and as the dual chain and roller assembly travels in the direction indicated by the arrows in Fig. 1, the diaphragm member is stressed sufficiently to produce a progressive waving motion and irrespective of the pressure applied, the skin of the body cannot be abraded or otherwise damaged. As it has been previously pointed out, the speed of the motor and the position of the rollers on the dual chain has been predetermined in order to create this progressive waving motion in heartbeat rhythm so that when the device is applied to a critical portion of the vascular system, such as the arteries immediately adjacent to the ears, the upward movement of the rollers under the diaphragm member induces the blood in the artery toward the scalp area in a rhythm coordinated with the pulsations of the heart. In this manner an adequate blood supply is furnished to the hair roots and scalp tissue and thus by proper treatment, the scalp is toned up and hair growth is stimulated.

Although I have found in actual practice that the device as shown and described is efficient and satisfactory in operation, it is obvious that various changes may be made in the details of construction and arrangement of parts which will come within the scope of this invention, and therefore I do not wish to limit myself to the exact construction and arrangement herein shown, except as specified in the following claims, in which I claim:

1. In a body stimulating device, the combination of a portable housing, a pair of sprockets rotatably journaled in said housing, a motor mounted outside the housing, gearing for driving one of the sprockets, a pair of transversely aligned endless chain-belts joined together in spaced relationship, rotatable members supported between said chain-belts, said members extending around and coacting with the sprockets to actuate the chain belts and mounted in relation to said sprockets to permit the chain belts to yield longitudinally to the housing in order to allow the rotatable members to conform to the contour of the body as the device is moved over and pressed thereagainst, and guard means secured to the housing and extending substantially to the plane of the lower reaches of the chain belts.

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2. In a body stimulating device, the combination of a portable housing, a pair of sprockets rotatably mounted in the housing, a pair of endless chain belts transversely aligned and linked together in spaced relationship to each other, rotatable members disposed between the chain belts at each point of juncture of said chain belts, said members coacting with the sprockets to give movement to the chain belts, the rotatable members being provided with peripheral surfaces adapted to aid in the stimulation of the body, said chain belts and members being mounted in relation to said sprockets to permit them to yield and flex longitudinally so they will conform to the body contours, as the device is moved over and pressed thereagainst, a flexible element secured to the housing in intimate relation to the rotatable members, and power operated means carried by the housing for continuously driving one of the sprockets.

3. In a scalp stimulating device, the combination of a portable housing, a pair of sprockets rotatably mounted in the housing, a pair of transversely aligned endless chain belts linked together in spaced relationship to each other and provided with rotatable elements between them at each point of juncture of said chain belts, said rotatable elements coacting with the sprockets to transmit motion to the chain belts and mounted in relation to said sprockets to permit them to yield longitudinally as the device is moved over and pressed against the scalp, and power operated means carried by the housing for continuously driving one of the sprockets.

4. In a scalp stimulating device, the combination of a portable housing, a pair of sprockets rotatably mounted in the housing, a pair of transversely aligned chain belts linked together in spaced relationship provided with rotatable elements between them at each point of juncture of said chain belts, said elements co-acting with the sprockets to impart motion to the chain belts and mounted in relation to said sprockets to permit them to yield longitudinally as the device is moved over and pressed against the scalp, and power operated means carried by the housing for continuously driving one of the sprockets in one direction.

5. In a scalp stimulating device, the combination of a portable housing, a pair of sprockets

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rotatably mounted in the housing, a pair of transversely aligned chain belts linked together in spaced relationship provided with rotatable elements between them at each point of juncture of said chain belts, said elements co-acting with the sprockets to actuate the chain belts and mounted in relation to said sprockets to permit them to yield longitudinally as the device is moved over and pressed against the scalp, power operated means carried by the housing for continuously driving one of the sprockets in one direction, and means for determining the extent of the longitudinal yield of said chain belts.

6. In a scalp stimulating device, the combination of a portable housing, a pair of sprockets rotatably mounted in the housing, a pair of transversely aligned chain belts linked together in spaced relationship provided with rotatable elements between them at each point of juncture of said chain belts, said chain belts being mounted in relation to said sprockets to permit them to yield longitudinally as the device is moved over and pressed against the scalp, means for determining the extent of the longitudinal yield of said chain belts, a diaphragm like member surrounding the lower reaches of the chain belts and disposed in intimate relation thereto, and power operated means carried by the housing for continuously driving one of the sprockets in one direction.

7. A device characterized as in claim 6 wherein the means for determining the extent of the longitudinal yield of the chain belt comprises a plate mounted in the housing adapted for contact with the peripheries of the rotatable elements mounted between the belts, and a member threadably disposed in relation to the housing and cooperatively mounted in relation to the plate for adjusting the same to the peripheries of the rotatable elements.

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Number	Name	Date
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