June 12, 1934. C. NESSLER 1,962,518

MEANS FOR ASCERTAINING THE HAIR PRODUCTION OF A SUBJECT

Filed Nov. 24, 1928

FIG. 1.

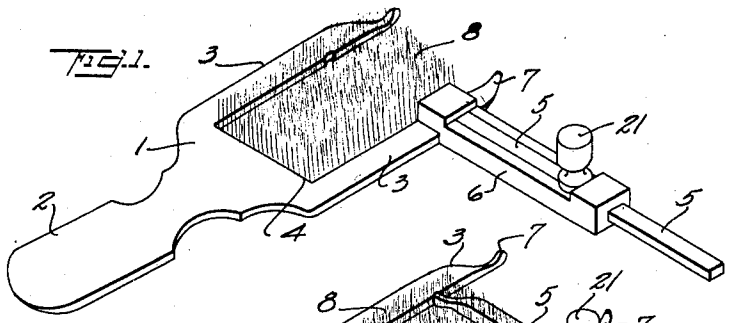


FIG. 2.

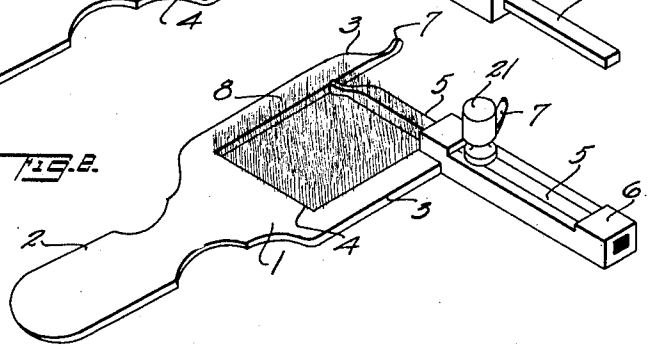


FIG. 3.

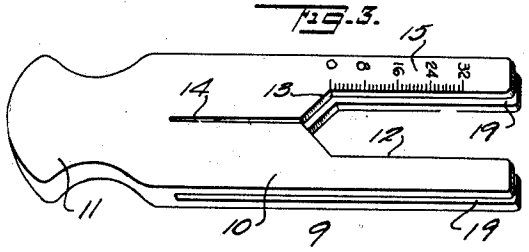


FIG. 4.

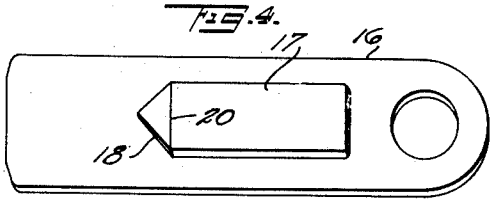
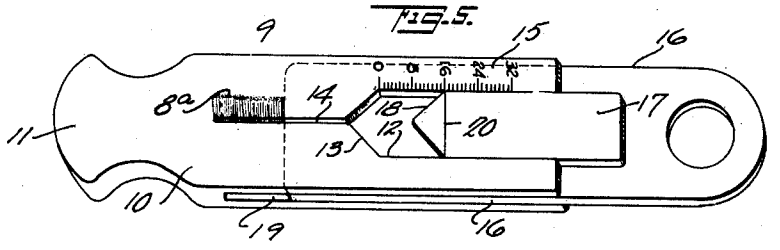


FIG. 5.



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2240-1

Patented June 12, 1934 1,962,518

UNITED STATES PATENT OFFICE

1,962,518

MEANS FOR ASCERTAINING THE HAIR PRODUCTION OF A SUBJECT

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Application November 24, 1928, Serial No. 321,698

5 Claims. (Cl. 33—174)

My invention relates in general to growing hair and has reference more particularly to means for ascertaining the yield or volume of hair produced by the various hair-growing regions of a person and especially the scalp.

A knowledge of his hair production and its current condition and yield, are of great importance to the individual from the point of view of health and also personal appearance. From extensive and close observation and numerous experiments, I have discovered that there is an intimate connection between the growing hair and the fundamental instincts and characteristics of the individual, and that the producing capacity and conditions of the hair serve as signposts of such characteristics as vitality and reproductive force.

I find that human hair is eliminated by the recognized channels, the hair follicles, in a continuous flow of connected cells of such strength in each individual as his constitution is able to create or engender.

While I have found that the average yearly scalp hair production of a white person is approximately 4½, ounces, the variations in individuals range, however, from approximately less than 1 ounce per year to 7 ounces. The scalp or first periodic elimination finds its exit mainly through the follicles of the scalp during early youth, for which reason we have accustomed ourselves to its profuse presence there and often speak of "hair loss" in cases of what is commonly termed "premature baldness", when in reality the baldness is merely due to a diversion of the substance; in other words, migration through other outlets, for instance, on the forearms, legs and chest.

These facts have not been ascertained before my invention owing to the absence of measuring methods pertaining to the yield or volume of hair growth, and thus the importance of my present improvements can therefore be realized. For the same reason the effect of different treatments could never be traced formerly and persons often continue to use treatments over long periods of time under the most doubtful circumstances. With my invention, a person is enabled to follow and check on his hair loss as readily as he has been able to follow his weight, and at all times he can observe the effect of any hair treatment which he may be undergoing.

I employ the same standard or unit of measurement, a square-inch, for measuring the quantity or yield of the growing hair where ever desired. For this, I prefer to use a gage or measuring instrument having a space into which the hair is introduced and the space then regulated or contracted to one square-inch. The hair thus collected or disposed in this square-inch dimension, is then formed into a strand which is then compressed or squeezed laterally into a smaller measuring space or slot, say for example, $\frac{1}{32}$ of an inch wide and 1 inch long, under a pressure of say 8 ounces, to compact the hair strand, freeing it from inter-spaces and making it practically solid, thereby enabling me to secure a substantially accurate cross-sectional measurement of the hair-strand, in rectangular or squared measurement. In this way I obtain the cross-sectional area of a given hair strand formed from a given sized growing-hair plot, which being multiplied by the total number of such sized plots contained in said scalp, gives me in square inches the amount yielded by the scalp, provided the hair growth is substantially uniform.

As an alternative procedure, I may measure the hair of all of the one square-inch plots of the whole scalp and add them together.

In some cases, after measuring the cross-sectional area of the hair strand furnished by several selected plots scattered over the scalp, I take the average area measurement and multiply it by the total number of such sized plots contained in the scalp. Thus, if the average is ten-thirty-seconds according to the scale of the measuring gage (which is equivalent to 10/1024ths area), and the number of the plots is 120, their product would be 1200/1024ths, or 1 inch and 176/1024ths in cross-section.

This result is then converted into cubic measurement or bulk, by multiplying the same by the ascertained growth in length of the hair in a given period of time, say one-year. Assuming the length growth to be at the rate of six-inches, per year, a total of 7200/1024ths would result, which reduced would give 7.03 cubic inches.

For mere hair treatment observation purposes, it is not necessary to compute the hair production in weight. All that is needed is to ascertain the quantity growth of a few certain sized plots on different parts of the scalp, and preferably on the top where depletion first begins and commonly continues and this will furnish sufficient data from which to judge the hair growing status. I measure these plot yields or productions in either of the ways hereinabove described.

In many cases I prefer to examine a few plots at selected places on the scalp and then reexamine them at regular intervals of time and compare the resulting data thus obtained. In order to be sure that the growth of such representative plots can at all times be followed and that the plots

measured at first can be subsequently accurately located, I employ a plot locating or finding device which may be readily applied to the scalp.

The periodic measurings of the hair production of the selected scalp-plots, are carefully recorded so that the change in quantity production is always definitely established and this is accomplished before the eye could perceive the change in the strength or thickness growth of the hair.

Another important advantage derived from my invention is that a detected decrease in production of the hair of the subject, indicates or is a symptom of hair migration to other parts of the body, or that a lowered vitality is causing a lesser production, so that in the latter case, the health should be looked after.

In order to carry out my invention for ascertaining the amount or yield of hair being produced by a person, I have invented certain apparatus which includes means for gathering or grouping in a certain sized space or plot on the hair growing region, the particular lot of hair present therein, so that the hair may be formed into a strand which may then be operated upon by another device in which the hair strand is forced into a gage under pressure and then its cross-sectional area or the size of the strand or extent to which it is compressed is measured by said gage while the hair strand is under pressure.

I have illustrated a type of said apparatus in the accompanying drawing, wherein;

Figure 1 shows in perspective my improved hair gathering device or fork, with the gate thereof shown as open when the fork is pushed into the hair to fill the fork.

Figure 2 shows a perspective view similar to Fig. 1, with the fork-gate closed to confine the hair therein in a definite sized space.

Figure 3 shows a perspective view of the gage for measuring the cross-sectional area of the hair-strand.

Figure 4 shows a perspective view of the sliding plunger which coacts with the gage, the two being shown as separated for the introduction of the hair-strand into the gage.

Figure 5 shows a perspective view of the gage and its plunger, assembled, and the plunger forced inwardly to compress the hair-strand for measurement.

Referring to the drawing, 1 indicates a flat and relatively thin plate, with a handle 2, having a slight up turn out of the horizontal. The other end of the plate is formed into a fork having prongs 3, 3, between which is a rectangular shaped opening or space 4, which in the present case is one inch wide and of indefinite length. On one of the fork-prongs near its outer end is mounted a sliding gate or closure 5, which slides endwise in a bracket 6, secured on said fork-prong. This gate is positioned so as to close the fork space 4, one inch distance from the bottom, in order to provide a square-shaped opening 4, one-inch square, though of course any other dimensional size may be used for this opening. The ends of the prongs 3, likewise the gate 5, are tapered and bent upwardly as at 7, to permit easy entrance of the same through the growing hair, indicated at 8. A finger knob 21 is secured to the gate to manipulate it in operation.

The fork is applied flatly against the scalp with the gate open, as in Fig. 1, and the bent handle stands conveniently away from the scalp. The fork is pushed into the hair at the desired place and when filled with hair, the gate is closed, as in Fig. 2, when an inspection can then be made to see if substantially all the hairs within the square-inch dimension or plot on the scalp, are properly disposed within the closed fork. The hair thus grouped by the fork is then arranged into a strand and the fork removed, or it may be left in position, while the gage 9, is brought into place and the strand entered in the same.

The gage comprises a frame 10, having at one end a handle 11, with the opposite end provided with a passage or opening 12, into which the hair-strand collected by the fork is placed. The inner end of said passage is contracted at 13, and a gage-slot 14, communicates at this point with the passage 12, which serves to feed the hair-strand laterally into said slot. Along one edge of the passage 12, is arranged a measuring scale 15, on said frame 10, and the scale is graduated from zero at the inner end of the wide part of the passage, to 32 near the outer end of said passage, the graduations being in terms of 32nds of an inch—the gage-slot being 1/32nd of an inch wide and 32/32nds long, so that the scale reads for the length of said slot and fractions of its length.

The sliding plunger 16, for pushing the hair strand through the passage 12, and feeding it into the gage-slot 14, under pressure, is mounted to reciprocate endwise on the said frame 10, and is provided with a central longitudinal rib 17, having its inner end pointed at 18, to fit the contraction 13, at the inner end of the passage, when the plunger is fully closed.

The plunger 16, works in guide-ways 19, in the frame 10, which are provided by forming an unobstructed opening or crotch through said frame from side to side thereof at right-angles to the passage and gage-slot. The plunger is inserted in its guide-ways from the outer end of the frame and is centered in place by means of the rib 17, which forms a sliding fit with the side walls of the passage 16.

The plunger is provided with an index mark 20, on the rib 17, which cooperates with the graduated gage scale 15 as shown in Fig. 5. When the inner end of the plunger which engages the hair-strand 8^a, and pushes it laterally into the gage-slot, reaches the outer end of said gage-slot, the index 20, registers with the numeral "32" on said scale, and as the plunger compresses the hair-strand in the gage-slot, the reading on the scale drops down until the point of full compression of eight-ounces on the hair strand has been reached, at which time the scale reads "16", as shown in Fig. 5. This shows that the hair-strand under treatment or measurement, measures, in its area, one 32nd of an inch wide by 16/32nds long.

Experience shows that a compression of eight-ounces weight, against the hair-strand taken from one square inch plot of the scalp, when exerted laterally thereon with the hairs substantially parallel in the strand, is sufficient to remove any undesirable looseness or inter-spaces between the hairs. This compression may automatically be exerted by the plunger by having the same eight-ounces in weight and mounting it so loosely in the frame that when held in a vertical position, all of this weight will be imposed on the engaged hair strand in the gage-slot. Of course, more weight may be employed if desired and a heavier plunger used.

In the case where a plurality of places on the

scalp are under observation, say four places, two of them preferably on the median line of the head and one to each side of such line, I employ a device not shown and which forms no part of the present invention, for accurately locating such places and then finding or relocating them when after a given period of time they are to be reexamined and the hair again measured in order to compare the data obtained with that of previous examinations.

By virtue of my invention and new technique, a person is able to have his hair surveyed or examined periodically to ascertain its producing capacity and to keep the records of the results thus obtained in order to check on the productivity, to detect any variation in density of growth and make practical beneficial use of such information. The diagnostic value of my invention is also of great importance, as I avail myself of definite symptoms as manifested by the strength or quantity growth of the hair.

I wish to be understood as not limiting my invention to the specific features herein set forth in illustration of my invention, as it is manifest that modifications may be made in the same, without, however, departing from the spirit of my invention.

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

1. In apparatus for ascertaining the production of growing hair in a plot of given size, means for receiving in strand form the hair of a hair growing plot of predetermined size in area and said means being provided with a gage-slot having its measuring capacity calibrated in square-inch measurement, means for forcing the hair strand into said gage-slot and compressing it therein transversely of its length, and a graduated scale cooperating with said compressing means.

2. In apparatus for ascertaining the production of growing hair contained in a given sized plot, means provided with a passage into which a strand of collected hair is introduced laterally, there being a gage slot leading from said passage and closed at its inner end and into which the hair may be passed from said passage, means for forcing the strand of hair from said passage into said gage slot and compressing it therein transversely of its length to measure its cross-sectional area, and a graduated scale cooperating with said compressing means.

3. In apparatus for ascertaining the production of growing hair contained in a given sized plot, a gage device provided with a hair-strand receiving passage open at its outer end and a gage-slot leading from said passage and having its inner end closed, a plunger adapted to be moved successively into said passage and thence into said communicating gage-slot, when a hair-strand is introduced into said passage, and acting to force said hair-strand through said passage and into said gage-slot and compress the strand therein transversely of its length, a graduated-scale adjacent said passage and equal in length to that of the gage slot, and an index on said plunger cooperating with said scale.

4. In apparatus for ascertaining the production of growing hair, a frame having an elongated passage for receiving a strand of hair laterally therein and having a gradually contracting inner end, there being a gage slot formed in said frame and communicating with the contracted end of said passage, a plunger for forcing the strand of hair through said passage into said gage-slot and compressing therein the hair strand transversely of its length.

5. In apparatus for ascertaining the production of growing hair, a frame having an elongated passage for receiving a strand of hair, said frame being provided with a gage-slot communicating with said passage for receiving the hair therefrom, a plunger cooperating with said frame and guide-ways extending laterally from said passage and gage-slot for said plunger to reciprocate in, said plunger gradually closing said passage and gage-slot in the inward movement thereof.

CHARLES NESSLER.