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F. COUNE

1,708,359

HAIR TESTER

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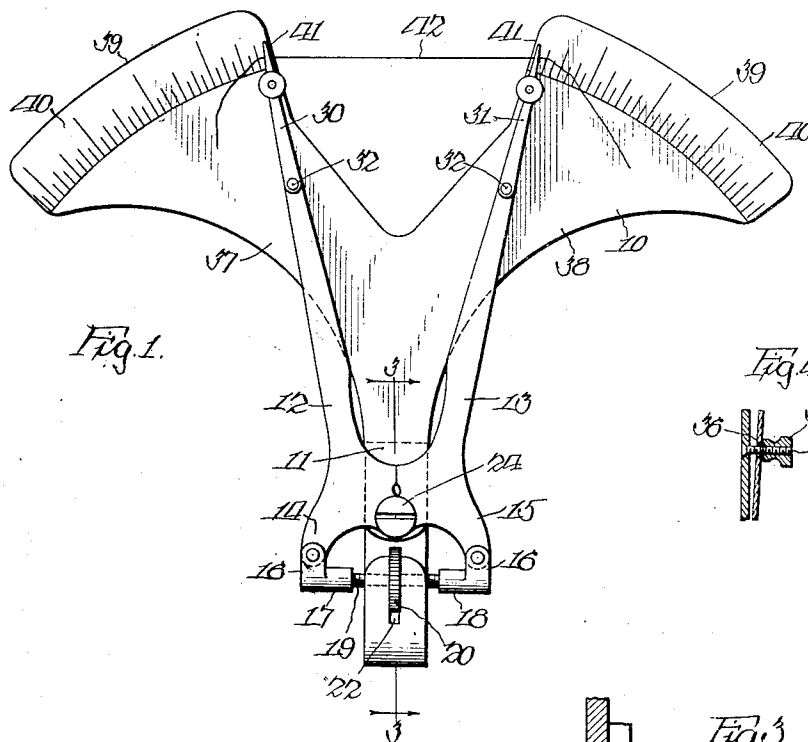


Fig. 1.

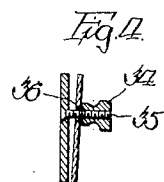


Fig. 4.

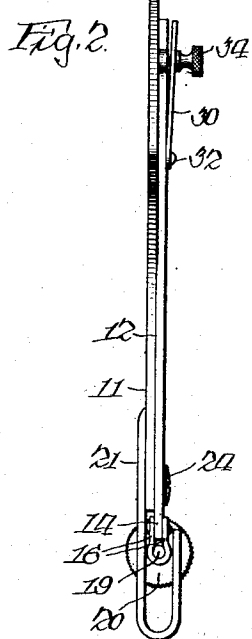


Fig. 2.

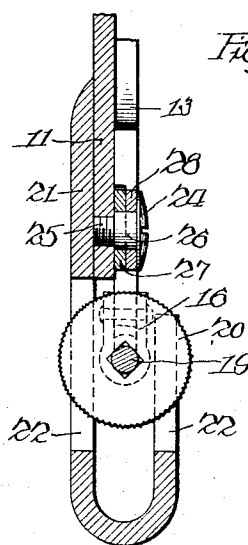


Fig. 3.

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HAIR TESTER.

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My invention broadly relates to a device for testing the tensile strength of hair.

In preparing the hair for permanent waving, as practiced at the present time the hair is divided into tufts which are wound upon bobbins, wrapped in chemically contained pads (or otherwise), and then inserted into heaters. Various conditions control the length of time the hair is allowed to remain in the heaters. If allowed to remain too long, the hair is apt to be destroyed. If not allowed to remain the proper time, the hair will not be properly waved. One of these conditions is the tensile strength of hair, namely, its ability to stretch. On a basis of a two and one-half inch scale, I have conducted experiments which show extra strong hair will stretch one inch. Strong hair will stretch three-fourths of an inch. Normal hair will stretch one-half of an inch, while poor hair will stretch one-eighth of an inch. Consequently, the heating time of the hair must vary according to the quality of the hair. Poor hair may require a heating time of ten minutes to obtain a perfect wave. Extra strong hair must be heated fourteen minutes. I have also ascertained that it is a risk to permanently wave hair which will not stretch at least one-eighth of an inch. These determinations are not fixed, but merely illustrate the importance of ascertaining the tensile strength of hair before attempting to apply a permanent wave.

One of the objects of the invention is the provision of a simple and expedient form of device for testing the tensile strength of hair, so that the operator can definitely ascertain, in advance, the length of time required to heat the hair to obtain a perfect wave.

Another object of the invention is the provision of a device of this type which is economical to manufacture and efficient in operation, the operation being simple to permit its use even by those not skilled in this art.

A further object of the invention is to provide a meter tester comprising a mounting having hair receiving members, which are relatively movable with respect to each other, and which are provided with means for varying the distance between them. A scale may be conveniently formed on the mounting which will indicate the amount of stretching the hair undergoes before breaking.

Other objects and advantages will be apparent from the following detailed description when taken in connection with the accompanying drawings, which form a part hereof.

In the drawings:

Figure 1 is a front elevation of a device embodying my invention;

Fig. 2 is a side view thereof;

Fig. 3 is an enlarged sectional view taken on line 3—3 of Fig. 1; and

Fig. 4 is a sectional detail view of the hair receiving means.

Referring in detail to the construction herein illustrated, the hair tester comprises a mounting plate 10 of substantially Y formation, having a vertically downwardly extending leg 11 for carrying a pair of relatively movable arms 12 and 13. These arms are preferably pivotally mounted at a central point at the lower end of leg 11 and are provided with outward extensions 14 and 15, to which are pivoted upstanding lugs 16 formed on internally threaded sleeve nuts 17 and 18. These sleeve nuts are carried by a feed screw 19 operated by a wheel 20.

A U-shaped strap 21 is suitably secured to the rear face of the vertical leg 11 in any suitable manner to provide a slot 22 in which the wheel 20 may operate. Sleeve nuts 17 and 18 are furnished with right and left hand internal threads, so that rotating the wheel 20 will rotate the screw 19 to move the sleeve nuts outwardly or inwardly, simultaneously, to vary the distance between the upper free ends of relatively movable arms 12 and 13.

These arms are pivoted to the lower portion of vertical leg 11, as hereinbefore explained, by means of a set screw 24 having a reduced threaded portion 25 threading into vertical leg 11. An enlarged bearing portion 26 of screw 24 passes through apertures in overlapping ends 27 and 28 of arms 12 and 13, respectively, so as to furnish a suitable pivot for these arms when operated by wheel 20.

Suitable hair receiving means may be furnished on arms 12 and 13. For the purpose of the present disclosure, I have illustrated flexible strips 30 and 31 fixed at their lower ends to the arms by means of pins 32. These flexible strips normally tend to spring away from the arms, but are moved thereagainst to furnish a clamping engagement for the ends of hair by means of a thumb nut 34 car-

ried upon a threaded pin 35 fastened to the arms 12 and 13 and projecting through an aperture 36 in the flexible strips 30 and 31.

The upper Y-shaped legs 37 and 38 of mounting plate 10 terminate into a fan-shaped rim 39, on which scales 40 are furnished for the purpose of determining the distance the hair receiving means 30 and 31 are moved apart when the arms 12 and 13 are actuated by the wheel 20.

Each of the arms 12 and 13 move outwardly from the starting edges 41 of the scales, and consequently, each scale registers one-half of the total stretching of the hair 42, as indicated in Fig. 1 in the hair receiving means 30 and 31. To determine the exact distance the hair is stretched, it is then, of course, understood that the operator will double the reading on any one of the scales, which is the equivalent of adding together the indications of both scales.

While I have shown both arms movable, it is to be understood that an arrangement may be provided, and is contemplated by this invention, wherein one arm is held stationary and the other arm is movable, so that the entire stretching of the hair will be indicated by a single scale.

It is further understood that the hair receiving means 30 and 31 may take different forms structurally and also that they need not be provided on the pivotal arms such as I have shown, but may be so located on a mounting that either one or both are movable to stretch the hair. By providing the mounting in the form of a thin and lightly constructed plate, the device will more readily be used and may more economically be manufactured. I find it more preferable to

furnish the mounting in the form of a plate than a heavy casting, inasmuch as it may be readily transported or carried about in the shops. On the other hand, its use will be extended to individuals in the homes, whereas if the mounting is in the form of heavy casting, its sale would be limited to the permanent hair waving shops only.

The screw feeding means for actuating the arms may vary in construction, but I find this form very simple and economical to make. On the other hand, the simplicity of this screw feeding means renders it practically impossible to become inoperative or worn in the course of time.

Various modifications and arrangements of the parts of the device herein shown may be made without departing from the spirit and scope of my invention.

I claim:

1. In a device of the class described, the combination with a mounting, of relatively movable pivoted arms on said mounting, hair securing means provided on each arm, and means for varying the distance between said arms at said hair securing means.

2. In a device of the class described, a plurality of relatively movable arms, a mounting for said arms, there being calibrations with which said arms cooperate, means for securing hair substantially at the ends of said arms, and means for imparting relative movement to said arms whereby to indicate at said calibrations the amount of stretching the hair undergoes.

In witness whereof, I have hereunto subscribed my name.

FELIX COUNE.