To all whom it may concern:

Be it known that I, Rebecca Olsen, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hair-Waving Devices, of which the following is a full, clear, and exact description.

The invention relates to devices for waving hair and its object is to provide a device whereby the hair on a lady's head may be waved by a single heating operation. Also such a device whereby hair may be uniformly waved every time it is used. Also a waving device which can be easily operated and without special training or skill.

The invention consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings: Figure 1 is a plan of a device embodying the invention. Fig. 2 is a side elevation. Fig. 3 is a longitudinal section. Fig. 4 is a section taken on line 4-4 of Fig. 1. Fig. 5 is a section taken on line 5-5 of Fig. 1. Fig. 6 is a detail of the indicating means, to show the positions of the combs.

The improved device comprises a portable plate 6 over which the hair will be laid. This plate is hollow, adapted to contain and to be heated by an electrical resistance element 7 of suitable construction and to which current is supplied through a flexible conductor 8. The lower face of the plate is lined with insulating material, such as asbestos 9 to prevent it from burning the head of the person whose hair is being waved. This plate is provided with a handle 10 for convenience in manipulating it. A frame 11 separable from the plate is adapted to slidably support a series of transversely extending combs 12. This frame consists of longitudinal side-bars 13 and cross-bars 14 fixedly secured to bars 15. The latter are suitably channeled, as at 15, to guide and hold the back-bars 15 of the combs 12. The upper face of plate 6 is provided with grooves 16 for the ends of the teeth of the combs. The hair to be waved is laid on the plate 6 and is combed thereon to evenly distribute, straighten and arrange the strands longitudinally of the plate. The comb-carrying frame 11 is separable from plate 6 to permit this to be easily done, and is moved into cooperative relation with the plate, as shown in the drawings, after the hair has been properly arranged on the plate. Resilient catches 17 on the plate, adapted to enter notches 18 in the side-bars 13, serve to detachably lock the plate and frame together.

The series of combs 12 adjacent one end of the plate are alternately connected for transverse movement in opposite directions to wave the hair, to a rod 20 which is slidable longitudinally of the plate, being guided by grooves 21 in the cross-bars 14, a stud 22 secured to one of said bars and a stud 22' on plate 6 which pass through slots 23 in said rod. The upper ends of these rods are provided with nuts 23' whereby the rods may be clamped so they will be held against movement relatively to the frame. Each comb 12 of the series adjacent one end of the frame is connected to operating-rod 20 by a link 24 which has one of its ends connected by a pivot 25 to a comb and its other end to said rod by a pivot 26, so that said rod is adapted to simultaneously operate one series of combs. The links of this series extend alternately in opposite directions, so that when the rod is shifted the adjacent combs will be operated in opposite directions to wave the hair. A slot 28 is formed in each cross-bar 14 for one of the pivots 26. The combs of the series adjacent the other end of the plate are similarly connected by links 28 to a rod 28 and for like operation thereby. Said rod 28 is slidable mounted for convenience in supporting, on the rod 20, being held and guided thereon by a stud 29 which passes through a slot 28 and by the stud 29' which passes through a slot 31 in said rod. A handle 32 is provided at one end of rod 28 and a handle 33 is provided on rod 28. In practice, it is desirable in some instances to shift some of the combs less than others, either to produce graduated or different wave-effects with the hair or when operating a series of combs to prevent too great a strain on the hair nearest the head, and to effect differential movement of the combs for these purposes, the links, where less shift is desired, will be connected to the crank somewhat farther from the operating bars, as exemplified by links 29' and 32'. In operation, the hair will be straightened and arranged on the plate 6 while the comb-carrying frame is removed. Then the latter will be locked into position on the plate, the teeth of the combs passing between the strands of hair. Next, the rod 20 will be
operated to simultaneously shift the series of combs nearest the head and this will cause the combs of that series to move in opposite directions and wave the hair between them. Next, the rod 28 will be shifted to similarly operate the other series of combs and wave the end-portions of the hair. These rods, when the combs have been thus set, will be secured in set position by nut 23'. The device will be left in this position until the hair has been heated by the resistance element in plate 6 for a sufficient period to form the desired waves. Then, the comb-carrying frame will be removed to release the waved hair. So that the user may note the position of the rods when they are set for the waves desired, and so that the same effect may be produced, if desired, an indicator 33 on the plate 6 and scales 36 and 37 on rods 20 and 28 are provided.

The invention exemplifies a device whereby the hair of a person may be waved in a single heating operation, whereby the same wave effect may be uniformly produced, and which may be operated without expert skill.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

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

1. In a hair waver, the combination of a substantially flat plate over which the hair may be laid and substantially continuous so that the hair may be combed thereon, a cooperating supporting member movable relatively to the plate, and a series of combs movable transversely in said member to wave the hair on the plate.

2. In a hair waver, the combination of a substantially flat plate over which the hair may be laid and substantially continuous so that the hair may be combed thereon, a cooperating supporting member movable relatively to the plate and a plurality of series of combs movably mounted in said member, the combs of one series being movable relatively to the other series to wave the hair on the plate.

3. In a hair waver, the combination of a plate on which the hair may be laid and a cooperating supporting member movable relatively to the plate and a plurality of series of combs slidably mounted in said member and means for conjointly shifting each series of combs independently of the other.

4. In a hair waver, the combination of a plate over which the hair may be laid, a cooperating supporting member movable relatively to the plate, a series of combs slidably mounted in said member, and means for differentially and conjointly shifting the combs of the series to graduate the waves of the hair.

5. In a hair waver, the combination of a substantially flat plate over which the hair may be laid and on which it may be combed, a cooperating supporting member movable relatively to the plate, and a plurality of series of combs slidably mounted in the member, and means for conjointly and differentially shifting each series of combs independently of the other to graduate the waves.

6. In a hair waver, the combination of a plate over which the hair may be laid, a cooperating supporting member, a series of combs slidably mounted in the member to wave the hair, and means to indicate the position of the combs so that the deflection of the hair may be ascertained.

7. In a hair waver, the combination of a plate over which the hair may be laid, a cooperating supporting member movable relatively to the plate, a plurality of series of combs slidably mounted in the member and means for indicating the positions of both plural series of combs so that the deflection of the hair may be ascertained.

8. In a hair waver, the combination of a plate over which hair may be laid, a cooperating supporting member movable relatively to the plate, a series of combs slidably mounted in said member to move transversely to the hair, a bar slidably mounted on said member, links between said bar and said combs for conjointly shifting them, and means for locking the bar to secure the combs in assigned position.

9. In a hair waver, the combination of a plate over which hair may be laid, a cooperating supporting member movable relatively to the plate, a series of combs slidably mounted in said member to move transversely to the hair, a bar slidably mounted on said member, differentially operating links between the combs and the bar to shift the combs differentially to graduate the hair waves, and means for locking the bar to secure the combs in assigned position.

10. In a hair waver, the combination of a plate over which the hair may be laid, a cooperating supporting member movable relatively to the plate, a plurality of series of combs mounted to slide in said member and transversely to the hair, a plurality of bars slidably mounted on said member each connected to said series of combs, and means for locking said bars to secure the combs in assigned position.

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