July 4, 1950 F. KEMP 2,514,244

MECHANICAL HAIR CURLER

Filed Sept. 26, 1947

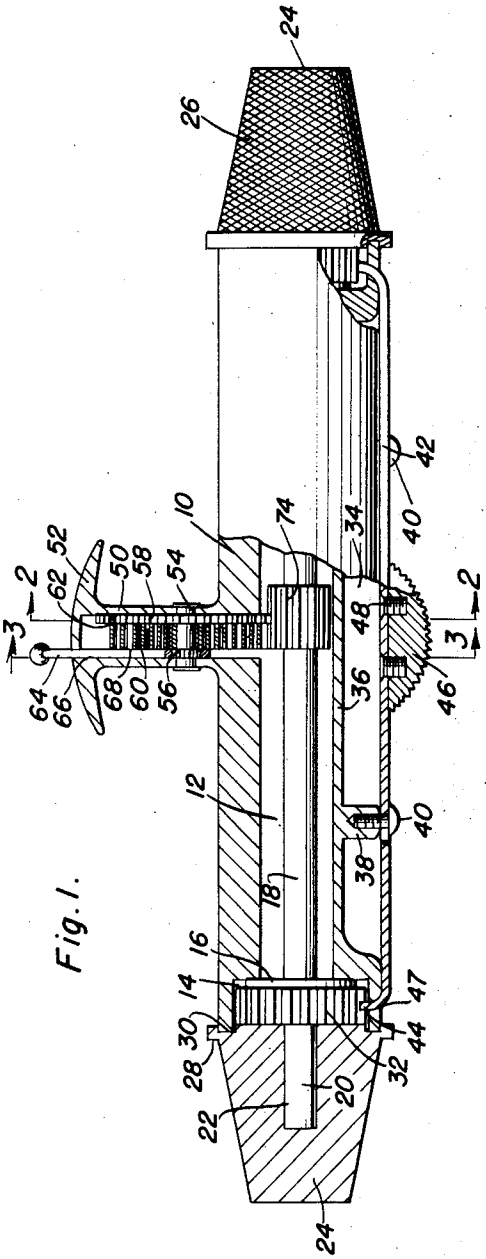


Fig. 1.

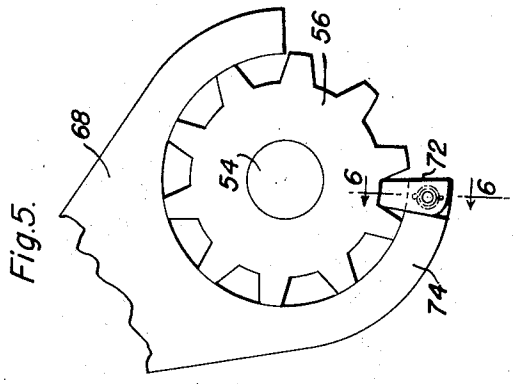


Fig. 5.

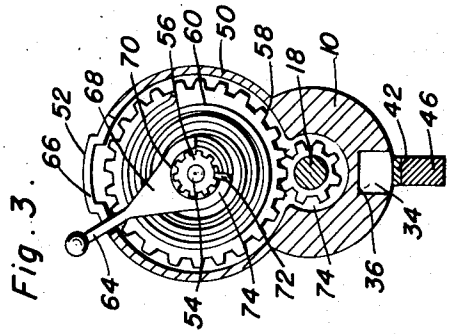


Fig. 3.

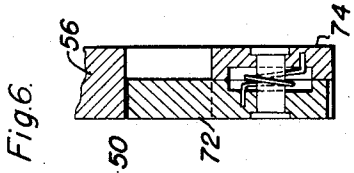


Fig. 6.

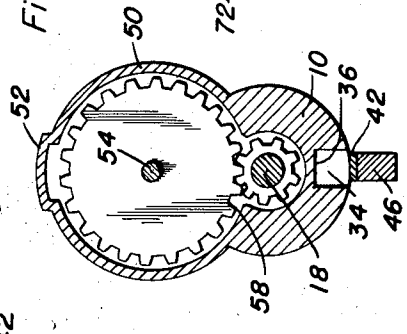


Fig. 2.

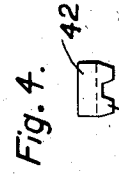


Fig. 4.

Inventor

Franklin Kemp

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

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MECHANICAL HAIR CURLER

Franklin Kemp, Bath, N. Y.

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2 Claims. (Cl. 132—34)

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This invention relates to new and useful improvements in hair curlers and more particularly to mechanical hair curlers.

The primary object of the present invention is to provide a mechanical hair curler that will engage a lock of hair in such a manner as to retain the hair in a more tightly rolled and more neatly curled position than was heretofore possible by finger means.

Another important object of the present invention is to provide a mechanical hair curler that will effectively curl a lock of hair in a professional manner and in a quick and convenient procedure.

A further object of the present invention is to provide a mechanical hair curler including novel and improved means for actuating the same and for selectively preventing actuation of the mechanical mechanism embodied herein.

A still further aim of the present invention is to provide a device of the aforementioned character that is simple and practical in construction, strong and reliable in use, neat and attractive in appearance, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a front elevational view of the present hair curler, and with parts thereof broken away and shown in section;

Figure 2 is a transverse vertical sectional view taken substantially on the plane of section line 2—2 of Figure 1;

Figure 3 is a transverse vertical sectional view taken substantially on the plane of section line 3—3 of Figure 1;

Figure 4 is an end view of the brake means used in conjunction with the present invention;

Figure 5 is an enlarged detail view showing the lever and the pivotal pawl member of Figure 3; and,

Figure 6 is an enlarged sectional view taken on the plane of section line 6—6 of Figure 5.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a cylindrical body or barrel which is open at both ends. This barrel is provided with an axial bore 12 that terminates at each end of the barrel in an

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enlarged recess 14 in which there is fixedly secured a bushing or journal bearing 16 supporting a rotatable driven shaft 18. The ends of the driven shaft 18 project outwardly from the recesses 14 and fixedly engage longitudinal sockets 22 provided in a pair of substantially frustoconical hair engaging members or mandrels 24. The mandrels 24 each include a knurled outer surface 26, an annular flange 28 about their bases and an annular groove 30 in their bases, adjacent the flanges 28, that rotatably receive the ends of the barrel. The inner reduced ends of the members 24 are provided with a plurality of ratchet teeth 32 that are loosely positioned in the recesses 14 for rotation with the driven shaft and the members 24.

A longitudinal chamber or slot 34 is provided in the lower periphery of the barrel 10 and projecting outwardly from the inner wall 36 of the chamber 34 is a pair of fulcrums 38, one of which is shown in Figure 1 of the drawings. Removably secured to the fulcrums, by fasteners 40, adjacent each of its ends, is an elongated resilient brake member 42 the outer face of which is normally spaced outwardly from the periphery of the barrel. The outer extremities of this brake member are turned inwardly to provide teeth or pawls 44 that extend through openings 47 provided in each end of the barrel. The pawls 44 normally engage the ratchet teeth 32. For actuating the brake member so that the pawls 44 disengage the ratchet teeth 32, there is provided an arcuately formed knurled surface finger receiving member 46 that is secured to the center of the brake member by removable fasteners 48.

Integrally formed with the upper periphery of the barrel 10 at the longitudinal center thereof, is a preferably cylindrical housing or casing 50 that also provides a finger receiving portion having outwardly projecting finger stops 52.

A driven shaft 54 is journaled for rotation in the housing 50 and supports a fixed ratchet plate 56, a drive gear 58 that is rotatably mounted on the shaft 54, and one end of a spiral main spring 60 that is secured to the shaft 54 and which provides the necessary power for actuating the drive gear 58. Obviously, the free end 62 of the spring 60 is fixedly secured to the drive gear 58 so that when the spring is tightly wound and is caused to unwind the same will effectively rotate the drive gear 58.

The numeral 64 represents a lever that is mounted loosely in an arcuate transverse slot 66 provided in the housing 50. The inner enlarged end 68 of the lever is provided with an arcuate

opening 70 that loosely embraces the ratchet plate 56. A pawl 72 is pivotally mounted on one end 74 of the enlarged end of the lever adjacent the opening 70 and engages the teeth of the ratchet plate 56, so that the shaft 54 may be rotated in one direction for tightening or winding the spring 60, and the pivotal pawl 72 will remain engaged with the ratchet plate and thereby impart rotation to the gear 58 during the unwinding of the main spring 60.

Rigidly secured to the driven shaft 18 at its center, is a driven gear 74 that engages the teeth of the drive gear 58 so that the driven shaft 18 will be rotated as the main spring is unwound and hence impart a rotation to the hair engaging members or mandrels 24.

In practical use of the present invention, the brake member 42 is normally spaced outwardly from the periphery of the barrel 10 and the teeth 44 at the ends of the brake member extend through openings 47 to engage the ratchet teeth 32, thus holding the shaft 18 against rotation and likewise the drive gear 58 against rotation. By actuating the lever 64 back and forth in the transverse slot 66, the driven shaft 54 is rotated in one direction in a step-by-step movement, and since one end of the spring 60 is fixed to the drive gear 58, which is held against rotation, the spring 60 will become wound under tension with the pawl 72 preventing unwinding of the spring. When an inward pressure is applied to the brake member 42, the teeth 44 will disengage the ratchet teeth 32, whereby the shaft 18 and drive gear 58 are no longer held against rotation and the spring 60 will effect a rotation of the drive gear 58 and a like rotation of shaft 18 and mandrels 24. A lock of hair is then placed against one of the mandrels 24 and wound about itself once to form a closed loop. The mandrels 24 are then rotated, by releasing the brake member 42, to effectively roll or wind the hair about itself to form a curl. After the curl has been formed, the mandrel may be withdrawn so that the curl will remain to engage bobby pins or the like.

It should be noted that when the lever 64 is actuated to wind the main spring 60 it is necessary that the brake pawls 44 engage the ratchet teeth 32 so as to prevent rotation of the driven shaft or the gear 58.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A mechanically actuated hair curler comprising a barrel, a driven shaft journaled for rotation in said barrel, a housing carried by said barrel, a drive shaft journaled for rotation in said housing, gears operatively connecting said drive shaft to said driven shaft, spring means for actuating said gears, substantially conical hair engaging mandrels fixedly carried by said driven shaft at each end, and a brake for selectively preventing rotation of said hair engaging mandrels.

2. A mechanically actuated hair curler comprising a barrel, a driven shaft journaled for rotation in said barrel, a housing carried by said barrel, a drive shaft journaled for rotation in said housing, a driving connection between said drive shaft and said driven shaft, a spiral spring for actuating said driving connection, substantially conical hair engaging mandrels fixedly carried by said driven shaft at each end, ratchet teeth carried by said mandrels, a resilient brake arm mounted on said barrel, and ratchet teeth engaging means carried by said brake arm normally spaced adjacent said ratchet teeth.

FRANKLIN KEMP.

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