(No Model.)

A. MORLEY.

CURLING IRON.

No. 563,785. Patented July 14, 1896.

Fig. 1.

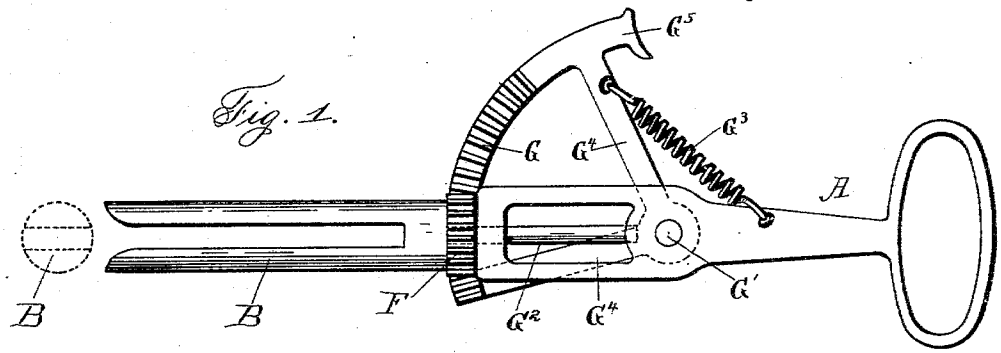


Fig. 2.

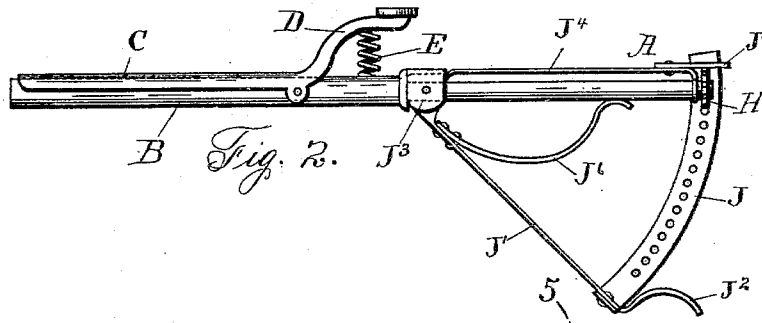


Fig. 3.

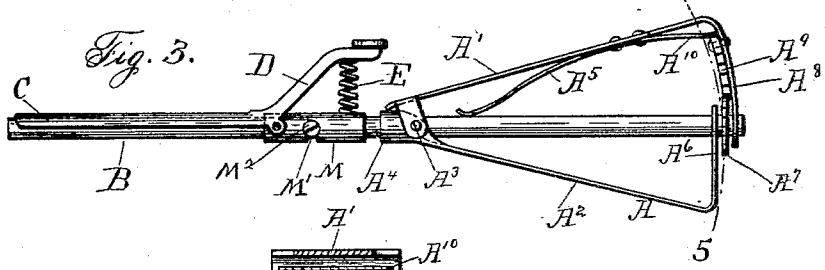


Fig. 5.

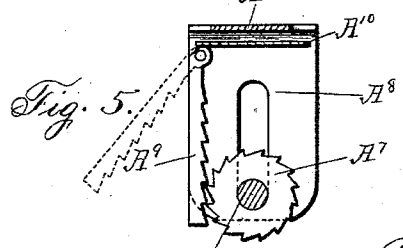
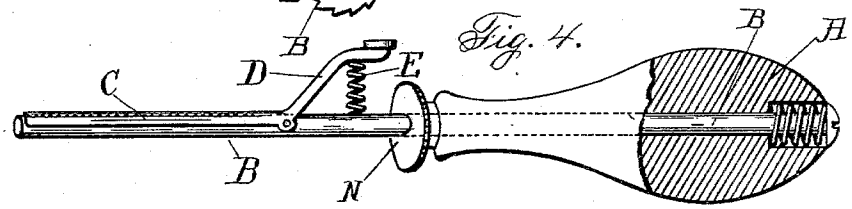


Fig. 4.



Witnesses:
Jos. H. Milans
J. E. Hutchinson.

Inventor:
Albert Morley
By Francis W. Parker
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT MORLEY, OF CHICAGO, ILLINOIS.

CURLING-IRON.

SPECIFICATION forming part of Letters Patent No. 563,785, dated July 14, 1896.

Original application filed June 13, 1894, Serial No. 514,404. Divided and this application filed December 27, 1895. Serial No. 573,526. (No model.)

To all whom it may concern:

Be it known that I, ALBERT MORLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Curling-Irons, of which the following is a specification.

My invention relates to hair-curlers such as used by ladies for crimping hair and the like. The construction shown, however, is capable of somewhat more extended use and, perhaps, for various other purposes.

I have illustrated several forms of my invention.

Figure 1 is a side view of a form of the device in which the curling-iron proper alternately rotates in opposite directions. Fig. 2 is a like view of a somewhat similar device. Fig. 3 is a side view of a device in which the curling-iron proper rotates in but one direction. Fig. 4 is a simpler form of the device in which the rotation is effected by direct application of the hand or thumb to the part to be rotated. Fig. 5 is a section on the line 5 5, Fig. 3.

Like parts are indicated by the same letter in all the figures.

This is a divisional application containing part of the subject-matter originally filed with my application for curling-irons, Serial No. 514,404, filed June 13, 1894.

A is the handle portion, adapted to be grasped by the hand and upon which the mechanism is supported.

B is the mandrel or curling-iron proper, which in Fig. 1 is illustrated as composed of two bars arranged in the manner of a tuning-fork. In each of the other figures the curling-iron proper consists of a rod or mandrel upon which is pivotally mounted the half-cylindrical clamp C or the like to engage or clamp the rod and thus grasp the hair. This clamping portion is provided with an outer end having the thumb-piece, as indicated at D, and it is preferably supplied with the expansion-spring E, which tends to clamp the cylinder upon the rod.

Referring to Fig. 1 there is mounted upon or associated with the mandrel B the wheel or pinion F, which engages the arc-shaped rack G, which is pivoted on the handle at G'. The rod G^2, made continuous with and joining the mandrel, extends into suitable bearings in the handle. G^3 is the retracting-spring, which restores the parts to the position indicated in Fig. 1. The rack is, of course, associated with suitable radial arms G^4 G^4 and should have the thumb-piece G^5 at the end.

Referring to Fig. 2, the mandrel B is extended to and terminates in the wheel or pinion H, which engages the rack-bar or perforated arc-shaped piece J, one end of which is secured rigidly to the handle portion J', which has the finger-piece J^2 at its outer end. This handle-piece is pivotally connected to the coupling part J^3, on which is the opposed handle-piece J^4, having the guide J^5 for the arc-shaped piece. J^6 is a flat spring which tends to restore the parts to their normal position. The mandrel B and its continuation are journaled in the coupling-piece.

Referring to Fig. 3, the handle consists of the two parts A' A^2, pivoted together at A^3, and one of them finished at A^4, so as to furnish a bearing for the prolonged curling rod or mandrel B. The handle-pieces are kept normally extended by means of the action of the spring A^5, which bears upon the rod B and is secured to the handle-piece A'. At the outer end the curling-rod B is journaled in the extended arm A^6 of the part A^2 of the handle and carries a ratchet-wheel A^7. The arm A^8, projecting from the handle portion A', carries a pivoted pawl made, preferably, in the form of a rack-bar A^9, which is normally held in operative relation with the ratchet-wheel by the end A^{10} of the flat spring A^5.

The teeth of the rack-bar and the ratchet-wheel are so set relative to each other that when the bar is moved in one direction the teeth interlock and the wheel and mandrel are turned, but when the bar moves in the opposite direction the teeth thereof slide over the wheel without imparting motion thereto, this being permitted by reason of the rack-bar being pivoted and held against the ratchet-wheel with a yielding force.

In Fig. 3 the crimping cylindrical clamp portion is mounted upon the collar M and is free to have a certain amount of rotary mo-

tion thereon. The collar M is slotted at M' to permit the passage of the screw M^2, which permits and yet limits such motion.

It will be observed that the two parts of the handles of those forms of the implement shown in Figs. 2 and 3 are pivotally connected near their inner ends and adjacent to the thumb-piece of the clamp C. This is advantageous because it permits the operator to easily grasp the handle and reciprocate the parts thereof, so as to rotate the mandrel, and at the same time disposes the thumb-piece of the clamp so that it may be conveniently reached at all times by the thumb of the user, and so that it will also turn or circle around the inner pivoted ends of the parts of the handle without striking them when the mandrel is being rotated.

In Fig. 4 I have simplified the device somewhat by extending the mandrel-bar B through the handle and providing it at the forward end of the handle with the thumb-piece N, which may be operated by the thumb to rotate the crimping-iron.

It will be observed that in each of the forms of my invention shown there is a wheel rigidly connected with the mandrel, by which the latter is rotated and arranged adjacent to the handle of the implement. Thus in Fig. 1 the wheel is shown as being the spur-pinion F, in Fig. 2 the pin-wheel H, in Fig. 3 the ratchet-wheel A^7, and in Fig. 4 the thumb-piece or milled edge disk or wheel N.

The forms of my invention in which there is a pivoted handle portion should be provided with means for limiting the movement imparted to such pivoted handle part by the spring, and in Fig. 5 is indicated a construction which limits the movement of this part, the part A^8 of the pivoted handle being provided with a slot through which passes the mandrel B, this slot permitting the free movement of the handle, and yet limiting the outward movement imparted by the spring A^5.

It is evident, of course, that there may be considerable variation in the construction and relation of these several parts without departing from the spirit of my invention, and I do not wish to be limited to the precise construction shown.

Some of the features of my invention may be employed without employing others.

The use and operation of my invention are as follows:

Briefly considered the invention consists of a crimping-iron provided with a mandrel adapted to be rotated on its axis by the user without releasing the grasp of the handle of the device.

In Fig. 1, the hair having been attached to the crimping rod or mandrel, the latter is rotated to wind the hair upon itself by pressure upon the thumb-piece G^5, the thumb of the hand which holds the handle being employed. Of course, the iron must be withdrawn from the hair before the pressure is released upon the thumb-piece G^5, or otherwise the action of the spring would be to unwind the hair which had been curled. Of course, this action in some cases might be desirable, but as a rule it is preferable to withdraw the iron longitudinally. The operation of the device shown in Fig. 2 is substantially the same. In either it would be very difficult to arrange the parts so that on the return action the rack and pinion would be disengaged, but in Fig. 3 I have shown, I think, a simpler way of accomplishing the same result. Here the rod or mandrel is suitably mounted, and when the two parts of the handle are forced together by the action of the user the rack-bar engages the ratchet-wheel and rotates the curling-iron proper about its axis. When the grasp is released, the curling-iron being held somewhat rigidly in position, for example, by the frictional action of the spring A^5, the rack-bar which is held by the spring against its ratchet-wheel, the teeth being inclined, as indicated, slides over the ratchet-wheel, and no motion is imparted to the rod. In releasing the grasp upon the hair it is sometimes desirable to loosen the end portions of the curl first, and this I provide for by mounting the clamping part on the movable collar M. During the process of curling this collar will be, of course, at the limit of the excursion permitted by the slot, but when the rod comes to rest the collar may be slightly moved in the opposite direction, and thus the curl be loosened from about the iron and the iron be then withdrawn.

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

1. In a curling-iron, the combination of a mandrel, a handle, in which the mandrel is journaled, consisting of a plurality of parts adapted to be moved toward each other, a spring arranged to normally hold the said parts separate or apart, the mechanism connecting the handle and the mandrel whereby when the parts of the handle are moved toward each other the mandrel is rotated.

2. In a curling-iron, the combination of a rotatable mandrel, a pivoted clamp, and a collar to which the clamp is pivoted, such collar being mounted upon the mandrel and free to turn thereon to a limited extent.

3. In a curling-iron, the combination of a curling-mandrel with a handle consisting of movable parts, a spring on the handle adapted to bear upon the mandrel and tending to keep it from rotation, and mechanism connecting the handle and mandrel so that by the movement of parts of the handle with reference to each other the mandrel is rotated.

4. The combination in a curling-iron with a rod or mandrel and a pivoted clamp, of a handle part in which the said mandrel is rotatably mounted, another handle part pivoted to the first-named handle part, a ratchet-wheel fixedly mounted on the mandrel, a spring-actuated pawl upon the pivoted part of the handle which normally engages with

the ratchet-wheel on the mandrel whereby, when the handle is actuated, the pawl and ratchet-wheel operate the mandrel in one direction only, and a spring for forcing said handle-piece outward, substantially as described.

5. In a curling-iron, the combination with the mandrel and pivoted clamp, of a handle in which said mandrel is mounted, a ratchet-wheel fixedly mounted on the mandrel, a spring-actuated pawl mounted on a pivoted part of the handle, which pawl normally engages the ratchet-wheel to operate the mandrel in one direction only when the pivoted handle is actuated, a spring for forcing the pivoted handle out, and means for limiting the outward movement of the pivoted handle imparted by the thrust of the spring, substantially as described.

6. In a curling-iron, the combination of a central rotatable mandrel, a two-part compressible handle, the parts of the handle being arranged on opposite sides of the mandrel and pivoted to each other, and supported on the mandrel at one end, and a ratchet connection between the mandrel and the said compressible handle, whereby when the parts of the handle are moved in one direction, the mandrel will be rotated by the said ratchet connection and when they are moved in the opposite direction the mandrel will not be rotated thereby.

7. In a hair-curling instrument, the combination of a rotatable mandrel, a pivoted clamp C having the thumb-piece D, supported by the mandrel and rotatable therewith, a two-part handle on which the mandrel is mounted so as to be free to turn therein, the parts of the handle being pivotally connected at their inner portions and adjacent to the thumb-piece of the clamp, and movable toward and from each other, and gearing connection between one of the said parts of the handle and the mandrel, whereby the mandrel and the clamp are caused to be rotated together by moving the two parts of the handle toward and from each other, substantially as set forth.

8. In a hair-curling implement, the combination of a rotatable mandrel upon which the hair may be wound, a handle in which the said mandrel is mounted, and a wheel rigidly connected to the mandrel adjacent to the handle by which the mandrel may be turned, substantially as set forth.

9. In a hair-curling implement, the combination of a handle, a mandrel upon which the hair may be wound rotatably mounted in the said handle, and means connected with the mandrel whereby the latter may be rotated by the hand which grasps the handle, substantially as set forth.

10. In a curling-iron, the combination of the rotatable mandrel, a handle in which the mandrel is mounted, having a plurality of movable parts, and a wheel rigidly connected to the mandrel with which one of the parts of the handle has operative connection, whereby when the parts of the handle are moved with reference to each other, the mandrel is rotated, substantially as set forth.

ALBERT MORLEY.

Witnesses:
DONALD M. CARTER,
LILLEY JOHNSTONE.