(No Model.)

A. MORLEY.

CURLING IRON.

No. 563,783. Patented July 14, 1896.

Fig. 1.

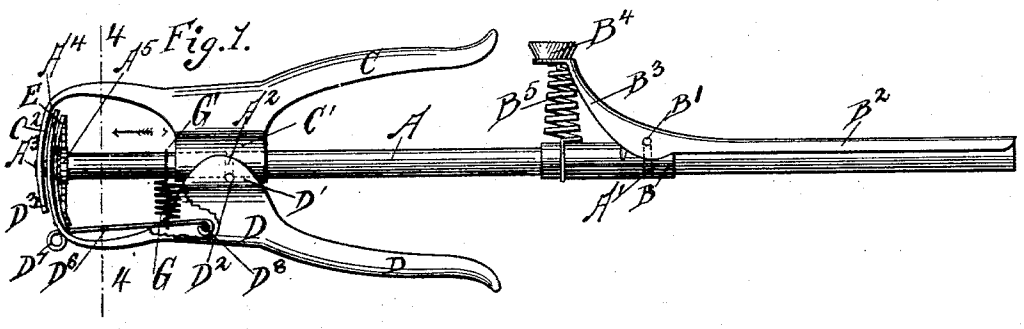


Fig. 2.

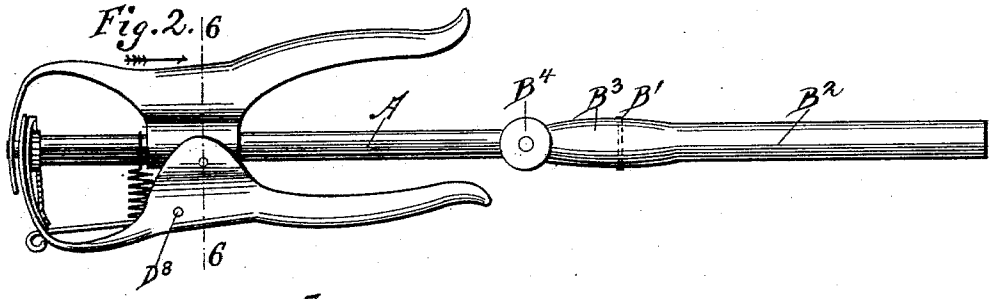


Fig. 3.

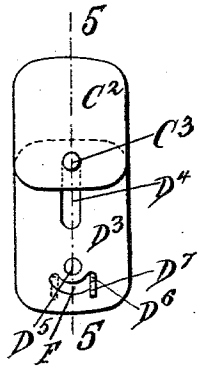


Fig. 4.

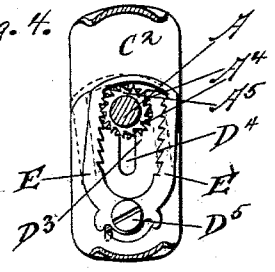


Fig. 5.

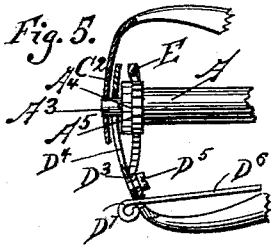
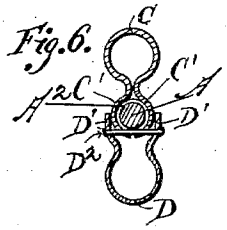


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALBERT MORLEY, OF CHICAGO, ILLINOIS.

CURLING-IRON.

SPECIFICATION forming part of Letters Patent No. 563,783, dated July 14, 1896.

Application filed August 31, 1894. Serial No. 521,781. (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 curling-irons, and has for its object to provide a new and improved curling-iron having various features of construction and elements operating in peculiar ways, as hereinafter set out.

It is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation. Fig. 2 is a similar side elevation with the handle compressed and the parts rotated one-quarter. Fig. 3 is an end elevation, the handle being compressed. Fig. 4 is a section on the line 4 4 of Fig. 1, looking in the direction of the arrows, the handle being again compressed. The rack-bar loop is shown in dotted lines in its second position. Fig. 5 is a sectional view on line 5 5 of Fig. 3 through the handle. Fig. 6 is a section on line 6 6 of Fig. 2, looking in the direction of the arrows.

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

A is a mandrel, preferably of the same diameter substantially throughout its entire length. It has the groove A′ and the groove A^2 and the hub A^3 and the two oppositely-faced ratchet-wheels A^4 A^5 rigid on said mandrel near its inner end.

Mounted upon the mandrel is the sleeve B, which is attached to the mandrel by means of the pin B′, which passes through the forward end of said sleeve and lies in the groove A′. The gripping part consists of the semi-cylindrical clasp B^2, which partially encircles the forward end of the mandrel, and the rearwardly and upwardly extending part B^3, which terminates in the insulated thumb-piece B^4. The pin B′ passes through the two sides of the part B^3, and thus the clasp and mandrel are secured together in such a manner that the clasp is pivoted on the sleeve. Both together rotate about but cannot move along the mandrel A.

B^5 is a spiral spring, one end of which is secured to the upper end of the part B^3 and the other end is preferably wrapped about and secured to one end of the sleeve. In its normal position this clasp is tightly pressed against the opposed surface of the rod by spring B^5. Two very similar handle-pieces C and D are mounted upon this mandrel. The handle-piece C has an inwardly-projecting loop portion C′, which encircles the mandrel, and piece D has an inwardly-projecting two-part portion D′, which partially encircles the mandrel and the loop of the handle C.

D^2 is a pin which passes through the loop and the parts D′ D′ and lies in the groove A^2, so that the handles are pivotally connected to each other and are capable of rotating about the mandrel, but are not permitted to move therealong. The handles terminate in end pieces C^2 and D^3, which are quite similar to each other and overlap at the inner end of the iron. The reduced portion or hub A^3 of the rod A is passed into a suitable aperture C^3 in the end piece C^2. Thus the mandrel A is journaled in loop C′ and the handle end C^2. This reduced end of the mandrel also passes through the slot D^4 in the handle end D^3.

E is a rack-bar loop having two inner toothed faces opposed, respectively, to the ratchet-wheels A^4 and A^5 on the mandrel A. Said ratchet-wheels are provided with oppositely-inclined teeth, so that the mandrel will be revolved in opposite directions by their alternate engagement with the rack-bar loop. This rack-bar loop is pivotally connected by the pin D^5 to the inner side of the handle end D^3, and it is provided with two notches on opposite sides of the pivot to receive the wire or rod D^6, which has the outer end D^7 formed into a loop, as shown.

F is an arc-shaped slot in the lower end of the handle end D^3, through which the wire D^6 projects. The other end of the wire D^6 is secured to a cross-pin D^8 in the handle portion D.

G is a spiral spring, one end, G′, of which is passed around so as to somewhat tightly grasp the mandrel A, and the other end of which is secured to wire D^6, so as to keep its free end tightly drawn toward the mandrel.

It is evident that considerable variation may be made in the construction of my device or in its several features, and some may be omitted or varied without departing from the distinctive features and peculiarities of

operation of the remaining devices. I do not therefore wish to be understood as limiting myself to the precise features here illustrated.

The use and operation of my invention are as follows:

In the first place, in the operation of an ordinary curling-iron it is desirable after the hair has been curled on the iron to slightly reverse the motion of rotation of the clasp, and for this reason I have given the clasp a free motion about the mandrel and have provided it with a thumb-piece which may be manipulated by the finger of the user both to free the clasp and to move it either way about the mandrel to free the hair.

Hair-curling devices being intended for general use should be constructed so as to be capable of easy use in either hand or for right-handed or left-handed persons. This I have accomplished by providing upon the mandrel two oppositely-faced ratchet-wheels, and associated therewith a rack-bar loop having two oppositely-faced rack-bars on its inner side opposed, respectively, to the two ratchet-wheels. This loop is loosely pivoted, but by means of the spring-actuated rod which lies in one of the notches of said loop it is forced to one side, so as to bring one of its racks in operative connection with its opposed ratchet-wheel. If now the spring-actuated rod or wire be slipped by the finger to the other side of the loop or pivot, it will force the pivoted loop to the opposite extremity and bring the other rack and ratchet-wheel into engagement. The wire D^6, being upwardly drawn by the spiral spring G, serves in lieu of a spring to yieldingly hold either of the rack-bars against its opposed ratchet-wheel. Thus by simply slipping the end of the wire from side to side, the action of the curler may be reversed and it may be made to serve alternately for right-hand and left-hand work.

The curling-iron mandrel must be held in comparative fixity of position when the handle is free, so as to be in operative readiness for another forward rotation and so as to keep the hair under pressure. This I accomplish by means of the somewhat firm connection between the spiral spring and the mandrel, for this spiral spring encircles somewhat tightly the mandrel and keeps it from rotating when the ratchet-wheel is moved backwardly along its respective rack.

In devices of this kind it is of course desirable to have them as short and compact as possible, and it is also desirable that the hand of the operator be as free as possible from the effect of heat. Of course the forward end of the mandrel is heated, and by conduction this heat is carried well down to the other extreme of the mandrel. If the handle forward of the grasping portion or of the portion which is held in the hand is secured to the mandrel, the connection between the metal of the handle and the metal of the mandrel will be made at a point where said mandrel is very hot, and the result is that a relatively large amount of heat will be conducted to the handle, and hence the hand of the user will be subjected to unnecessary heat. This difficulty I obviate by two features of my invention. First, I attach my handle portion as nearly as possible at the rear end of the mandrel, and, second, I construct them of thin metal loops in such manner as to allow free circulation of air about the mandrel and about the point of engagement between the handle portions and the mandrel. Thus practically no heat is conducted into the handle.

There are many other features of utillty in operation and merit in construction of my device which I do not here think it important to dwell upon, as I have sufficiently shown it to enable one skilled in the art to make it.

I claim—

1. The combination in a curling-iron of a handle, a mandrel rotatably mounted therein, a hair-clamping device on said mandrel, and a connecting device to connect said clamping device with said mandrel so as to permit the clamping device to have independent motion thereabout.

2. In a curling-iron the combination of a mandrel with a handle in which said mandrel is rotatably mounted, a hair-clamping device on said mandrel, a device associated therewith to independently rotate it about said mandrel, a thumb-piece on such clamping device traveling in a path in close proximity to the handle so as to be accessible to the fingers of the hand operating the device.

3. In a curling-iron the combination of a curling-mandrel proper with a two-part handle pivoted upon the mandrel near the inner end thereof and operatively connected with said mandrel near its extreme end so as to rotate such mandrel, the handle portions projecting from the pivot in the direction of the heated or forward end of the mandrel, and being free from contact therewith.

4. In a curling-iron the combination of a mandrel with oppositely-faced ratchet-wheels thereon, and a handle part movable with relation to such mandrel and carrying a continuous rack-bar loop having two rack-bars fixed relative to one another and opposed to said ratchet-wheels.

5. In a curling-iron the combination of a handle with a mandrel rotatably mounted therein and having two oppositely-faced ratchet-wheels thereon, and a pivotally-supported rack-bar loop connected with said handle having rack-bar faces opposed respectively to said ratchet-wheels, notches on said loop on opposite sides of its pivot and a spring-actuated rod to engage said notches and thus rock the loop in either direction and yieldingly hold the operative ratchet-wheel in engagement with its opposed rack-bar.

6. In a curling-iron the combination of a handle with a mandrel rotatably mounted therein and having oppositely-faced ratchet-wheels thereon, a pivotally-supported rack-

bar loop connected to said handle and provided with rack-bar faces opposed to said ratchet-wheels respectively, a rod or wire adapted to bear on said rack-bar loop on opposite sides of the pivot of said loop and thus swing the loop in either direction, a spring connected with such wire at one end and at the other end encircling the mandrel, whereby such spring serves as a drag on the mandrel and also serves to elastically hold the operative ratchet-wheel in engagement with its opposed rack-bar.

7. In a curling-iron the combination of a handle with a mandrel rotatably mounted therein, having oppositely-faced ratchet-wheels thereon, a pivotally-supported rack-bar loop connected to said handle and having rack-bar faces opposed to said ratchet-wheels respectively, a rod or wire adapted to bear on said rack-bar loop on opposite sides of the pivot of said loop and thus swing the loop in either direction, a spring connected with such wire at one end and at the other end encircling the mandrel, whereby such spring serves as a drag on the mandrel, and also serves to elastically hold the operative ratchet-wheel in engagement with its opposed rack-bar, said rod or wire connected with the handle portion so that the spring also keeps the handle portion in its extended position.

8. A curling-iron comprising a mandrel with a two-part handle, one portion of which is provided with an end in which the extremity of the mandrel is journaled, and the handle portions projecting from the pivot in the direction of the heated or forward end of the mandrel and being free from contact therewith.

9. A curling-iron comprising a mandrel rotatably mounted in a two-part handle, one part of which is provided with an end slotted to permit it to move across the extremity of the mandrel and with an intermediate projection thereon, and a pivotal connection between said projection and the mandrel, whereby it is pivotally connected at a distance from its extremities with the said mandrel, the handle portions projecting from the pivot in the direction of the heated or forward end of the mandrel and being free from contact therewith.

10. A curling-iron comprising a mandrel rotatably mounted in a two-part handle, one part of which is provided with an end slotted to permit it to move across the extremity of the mandrel, an intermediate projection on said handle part, a pivotal connection between said projection and the mandrel, a rack-bar loop on said handle provided with oppositely-situated rack-bar faces, and two oppositely-faced ratchet-wheels on said mandrel and opposed to said rack-bar faces, the handle portions projecting from the pivot in the direction of the heated or forward end of the mandrel and being free from contact therewith.

11. A curling-iron comprising a mandrel rotatably mounted in a two-part handle, one part of which is provided with an end slotted to permit it to move across the extremity of the mandrel, and provided also with an intermediate projection, a pivotal connection between said intermediate projection and the mandrel, a rack-bar loop on said handle provided with two rack-bars fixed with relation to each other and having oppositely-situated rack-bar faces, two oppositely-faced ratchet-wheels on said mandrel, opposed to said rack-bars, and a spring to yieldingly hold said rack-bar loop in either of two positions, and to keep the pivoted handle portion in its normal position.

12. In a curling-iron the combination of a mandrel rotatably mounted in a two-part handle, the two handle portions lying on opposite sides of the mandrel and provided with overlapping ends, the extremity of the mandrel passing through a slot in the end of one handle portion and journaled in a hole in the end of the other, said handle portions pivotally connected together and secured to the mandrel, the handle portions projecting from the pivot in the direction of the heated or forward end of the mandrel and being free from contact therewith.

13. In a curling-iron the combination of a clasp, a mandrel with a sleeve thereabout, said sleeve rigidly connected to said mandrel with relation to longitudinal movement by means of a pivot which passes through the sleeve and clasp and lies in a groove about the mandrel so as to connect said sleeve with the mandrel in such a manner that it may be rotated independent of the rotation of said mandrel.

14. In a hair-curling implement, the combination of a handle, a mandrel journaled to rotate independently therein, a ratchet-wheel secured to the mandrel near its rear end and operated by a movable member of the handle, two rack-bars adapted to engage the ratchet-wheel on opposite sides thereof, and a switch device for throwing either rack-bar into engagement with the ratchet-wheel at will, whereby the mandrel is rotated independently of the handle and at will in either direction.

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