IMPROVED

HAIR SPINNING AND CURLING MACHINE

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101800

PATENTED APR 12 1870

Fig. 1.

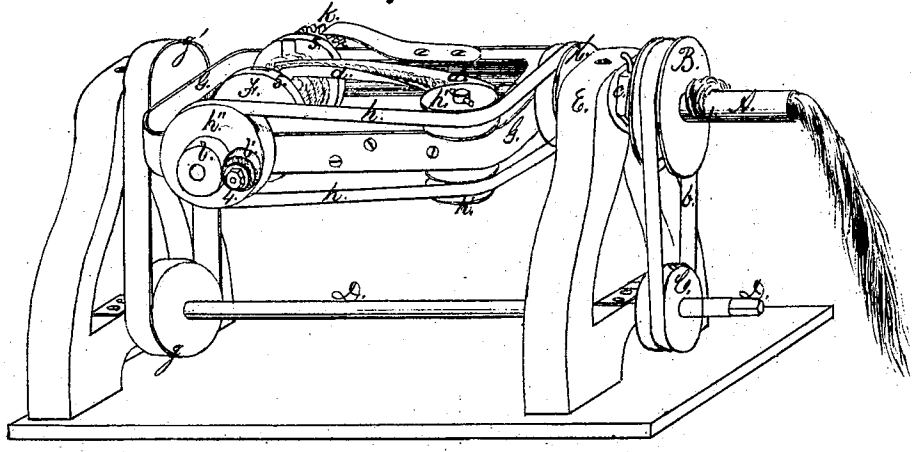


Fig. 2.

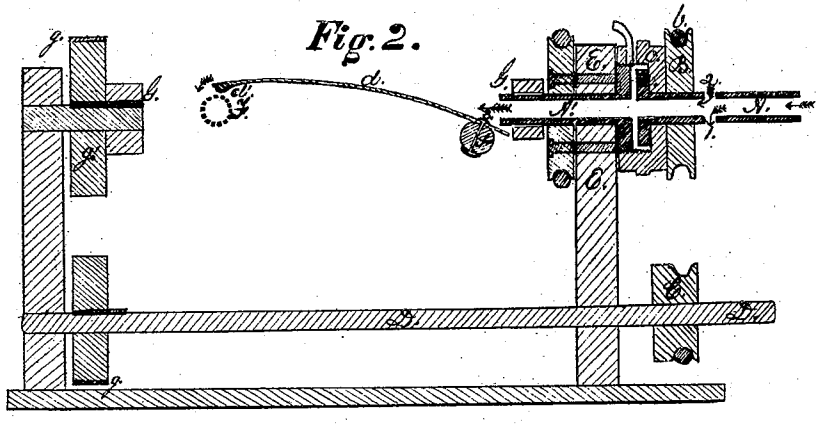


Fig. 3.

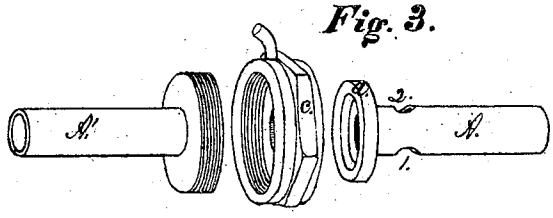


Fig. 4.

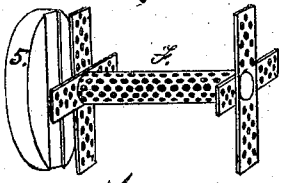
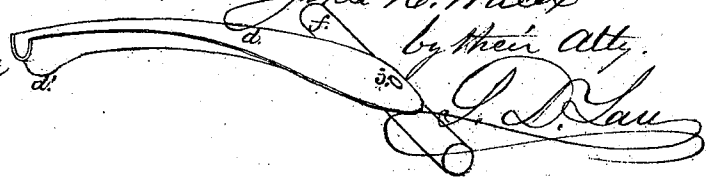


Fig. 5.



Witnesses,
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PHILIP WISDOM, OF BROOKLYN, AND JOHN H. WILCOX, OF NEW YORK, N. Y.

Letters Patent No. 101,800, *dated April* 12, 1870.

IMPROVEMENT IN MACHINES FOR TWISTING AND CURLING HAIR.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, PHILIP WISDOM, of Brooklyn, Kings county, State of New York, and JOHN H. WILCOX, of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Twisting and Curling Hair; and we do hereby declare that the following is a full, clear, and exact description thereof, and of their mode or manner of operation, reference being had to the accompanying drawings and to the letters of reference marked thereon, and making a part of this specification.

Our invention relates to the production of an improved machine for spinning and curling hair, our improvements consisting in certain combinations of devices for that purpose, as hereinafter set forth.

Figure 1 is a general perspective view of the whole machine.

Figure 2 is a vertical section lengthwise of fig. 1.

Figure 3 is an enlarged view of the twisting and curling-tube.

Figure 4 is a detached view of the reel which receives the hair after it has been twisted and curled.

Figure 5 is a detached enlarged view of the guide for distributing the hair rope upon the reel.

The spinning and curling mechanism are combined together; or, more correctly, these results are produced by one device or mechanism, which consists of a hollow tube, A, which is rapidly revolved by means of a wheel or pulley, B, to which motion is given by means of a band, *b*, passing over a pulley, C, fixed to the main power-shaft D.

Into such revolving or rotating tube or spindle A the hair is fed, and is twisted by the rotation thereof, and the curling is effected, and at the same time with the twisting, by causing the twisted rope to pass out of such tube or spindle through an opening, 1, in one side of such tube, and to again pass into such tube, after having taken about a half turn around the same, through another and similar opening, 2, and, as the rope passes from out the tube A or its continuation, it is carried to and delivered upon the reel.

By causing the twisting rope to take the bends or turns required in passing out of and into the openings 1 and 2, a short curl is given to the hair, instead of the long spiral-like curl produced by ordinary curling mechanism, and the whole body of the hair is thus more completely and permanently curled, and better fitted for the purposes for which used.

Connected with such twisting and curling-tube, or a continuation thereof, is a similar tube, A′, from which the twisted and curled rope is delivered into the guide *d*, which leads it to and distributes it upon the reel F.

In the drawings the tube A′ is represented as fixed in the frame E, and having no rotation, and held in proper position, with respect to the tube A, by means of a nut, *c*, which screws onto the tube A′, and having a recess or cavity therein to fit loosely over a flange or head, *a*, on the end of the rotating tube A′, so as to allow such tube to freely rotate in such nut.

Instead, however, of having such rotating tube and its extension in two parts, and having the latter fixed, the whole may be made a single tube, rotating in suitable sleeves fixed in the frame E and in the reel-frame G.

The guide *d*, which receives the twisted and curled rope as it passes from the tube A or its extension, is made concave, so as to prevent the rope slipping off, and is supported at its end nearest such tube on a bearing, *f*, by means of a pivot or pin, 3, on which it can turn, the other end of such guide extending to and resting over the reel F, and having on its under side a half-round or oblong projection or lip, *d′*, which rides between the rope-strands as they are wound upon the reel. As the reel is revolved this lip causes the guide to traverse from one end of the reel to the other, and thus causes the rope to be wound evenly over the whole extent of the reel, filling it to its greatest capacity.

The reel F and the parts connected therewith are supported in a horizontal frame, G, which is rotated from the shaft D by means of a pulley and band, *g g′*, and by such rotation a further twisting is given to the rope after it leaves the twisting and curling mechanism. The rotating of the reel-frame G imparts a revolution to the reel F on its axis through the band *h*, which passes over a pulley, H, fixed to the frame E of the machine, and thence over the guiding-wheels *h′ h′*, supported on the reel-frame, and then around a pulley, *h″*, upon the axle of the reel, a pawl and ratchet, K, preventing the reel turning backward by reason of the pull or strain of the rope.

To prevent the reel being revolved too rapidly, and thus draw too fast the rope through the curling mechanism, the pulley *h″* is loose upon the axle of the reel, and can move without necessarily giving any motion to the reel. To secure, however, the necessary revolution of the reel that is sufficient to draw the hair through the twisting and curling-tube, and prevent the too easy slip of the wheel *h″*, there is placed upon the axle of the reel, outside of the loose wheel *h″*, another wheel or pulley, *l*, which is fixed to such axle, and which, as it is revolved, carries the reel with it.

Such pulley *l* is revolved by frictional contact from one or more wheels, *l′*, which are placed on the side of the loose pulley *h″*, and which are made of or covered with vulcanized rubber or other elastic material, with a conical or expanding nut or bolt, 4, in their centers, so that they can be expanded or diminished in size, and the degree or force of the frictional contact be increased or diminished.

The reel F is supported by and between two disks, 5 5, which are fixed to short side axles, one of which has the pulley *l* attached to it. Such reel consists of a central hollow shaft or axle, *m*, which should be perforated with numerous holes, as shown in fig. 4, or which may be made of rods with spaces between them, and the side arms of such reel should also be perforated, as also shown in fig. 4. Such construction of reel renders it possible to take the hair as it is wound upon the reel, and without being removed therefrom, and subject it to the necessary treatment and manipulation to cleanse and purify it, the liquid passing through such openings or perforations in the shaft and arms into the hair from every direction, and effectually cleansing it. The same perforations, when the hair is baked, permit the heat to act upon all portions of the rope.

What is claimed is—

1. In a machine for twisting and curling hair, the combination of the revolving tube A, having side openings 1 2 communicating with the central cavity, to both spin and curl the hair, with a reel, F, having a double motion, or motion in two directions, to further twist the hair rope after it leaves the tube A, and also cause it to be drawn through such tube and wound upon the reel.

2. In combination with the tube A and reel F, constructed and operating as described, the arrangement of the oscillating guide *d*, for distributing the spun and curled rope on the reel, substantially as set forth.

3. The combination and arrangement of the wheels *h''*, *l*, and *l'*, for revolving the reel on its axis and regulating its motion, substantially as and for the purposes set forth.

4. A machine for twisting and curling hair, its several parts constructed, arranged, and operating severally and together, substantially as described, and for the purposes set forth.

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Witnesses:
FRED. B. SEARS,
S. D. LAW.