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J. ZABEL

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FUR BRUSHING AND IRONING MACHINE

Filed April 14, 1928

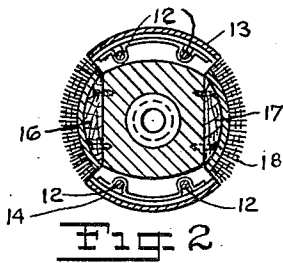
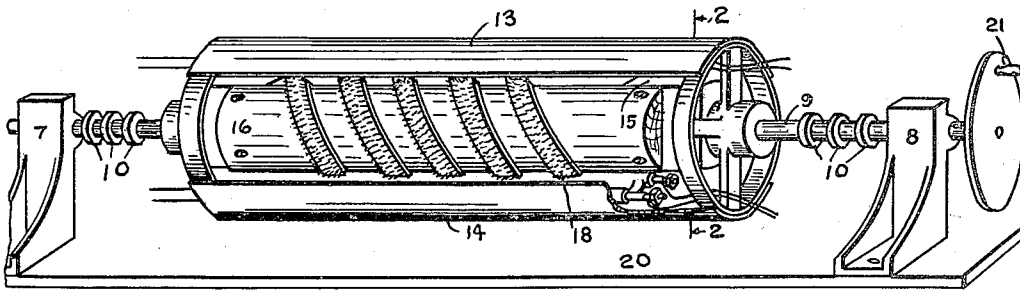


Fig-1

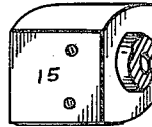


Fig-3

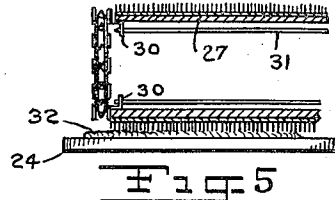


Fig-5

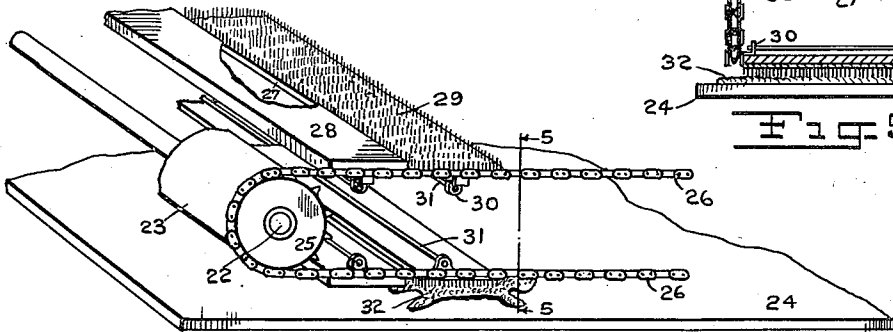


Fig-4

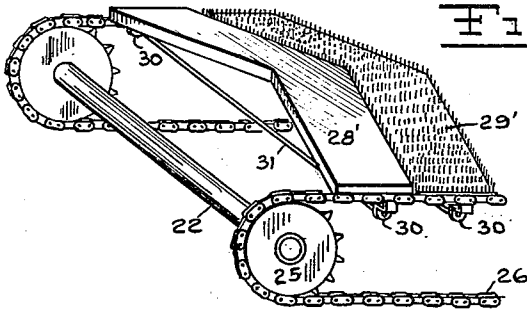


Fig-6

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UNITED STATES PATENT OFFICE.

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FUR BRUSHING AND IRONING MACHINE.

Application filed April 14, 1928. Serial No. 270,132.

This invention relates to a fur treating method and apparatus, and more particularly to a method of and apparatus for brushing and ironing furs and similar pile fabrics.

5 In finishing furs or like pile fabrics, the operations of brushing and ironing have been carried out independently and separately by hand guided instrumentalities or by separate machine elements. Hand methods
10 for practicing these operations are objectionable because of the non-uniform results produced due to the fallibility of the human factor. With hand methods even with highly skilled help it is difficult to work with uni-
15 form heating speeds so that the heat is concentrated locally on various sections of the furs, leading to overheating and to singeing in local spots, which singeing is not only detrimental in itself, but produces varying
20 discoloration effects in the finished fur. When carried out by hand, the brushing and ironing steps are, moreover, of a superficial character, since the hairs or nap of the fur are not treated to the roots; and while repetition of hand brushing and ironing
25 partially rectifies this objection, this is done at the risk or danger of discoloring the fur due to local overheating or singeing. While the use of machine elements as heretofore
30 practiced overcomes some of the objections incident to hand methods, the use of separated brushing and ironing elements for separately carrying out the brushing and ironing steps at different sections of the fur
35 suffers the disadvantage of producing a comparatively poor and incompletely finished product.

A prime object of my present invention, therefore, centers about the provision of a
40 method of and apparatus for finishing furs in which the brushing and ironing steps are carried out with uniformity and efficiency to an extent which yields a superior finished product. By the method of the invention
45 the uniformity of the ironing and brushing steps obtained produces a better and homogeneous luster and a more uniform color when compared with the products of prior known methods. In accordance with the
50 method of the present invention the hair or nap of the furs or similar pile fabrics are subjected to alternating brushing and ironing steps in a continuous operation, the

brushing producing the combing, cleaning, uncurling and electrifying of the fur and
55 the ironing producing the ironed or glazing effect, these operations, one immediately following the other effecting the desired uniform and superior results. Due to the continuity of the motion and the corresponding
60 uniformity of the brushing and heating steps, the brushes acting first as a straightening medium for the hair prior to heating and then as a cooling medium for the hair after heating, singeing or overheating in local spots is prevented and a homogeneous
65 luster is obtained.

Other objects of my invention reside in the provision of a fur treating apparatus which includes means for uniformly brush-
70 ing the hairs or nap of pile fabrics, such as furs and uniformly ironing or glazing the same, by moving brushing and ironing elements, one immediately following the other relatively to the hair or nap of furs or similar pile fabrics continuously, uniformly and
75 in succession of alternate operations, the brushing and ironing elements being contiguous and within the limits of the length of the hairs or nap of the fabric, the successive operations being such as to overcome
80 the natural tendency of the hairs or nap to reassume any predetermined curled condition after brushing and prior to heating and so that brushing is carried out just when the
85 fur has been heated and ironing or glazing while the filaments, hairs or nap are still stretched or uncurled.

To the accomplishment of the foregoing and such other objects as will hereinafter
90 appear, my invention consists in the elements and their relation one to the other, as hereinafter more particularly described and sought to be defined in the claims; reference being had to the accompanying draw-
95 ings which show the preferred embodiments of my invention, and in which:

Fig. 1 illustrates in perspective a suitable form of device embodying an application of my invention; 100

Fig. 2 is a cross-section thereof taken in the plane of the line 2—2 of Fig. 1;

Fig. 3 is a detail in perspective;

Fig. 4 is a view taken in perspective and showing a modified form of the apparatus 105 of the invention;

Fig. 5 is a cross-sectional view taken in the plane of the line 5—5 of Fig. 4; and

Fig. 6 is a perspective view of a still further modification.

5 Referring now more in detail to the drawings and having reference first to Figs. 1 to 3 thereof wherein is shown a suitable form of apparatus for carrying out the objects of the invention, the apparatus comprises 10 the supporting standards 7 and 8 having bearings for a shaft 9 upon which contact rings 10 are secured for furnishing energy to a plurality of electrical heating units 12, 12 arranged beneath the curved smoothing 15 or ironing surfaces 13 and 14. The ironing surfaces 13 and 14 are supported by a block 15 which extends longitudinally upon and is fixed to the shaft 9, the said block also serving as a support for a plurality of brush 20 bases 16 and 17 suitably secured thereto. These brush bases are provided with brush elements or bristles 18 preferably arranged at an angle as shown. The brush elements 16 and 17 and the heating elements 13 and 25 14 thus comprise, when fixed to the supporting block 15, a rotatable drum with the heating and brushing elements arranged in close contiguity and in alternation.

Cooperating with this drum assembly and 30 fixed to the standards 7 and 8, there is provided a table or platform 20 which serves as a table or support for the fur or like fabric to be treated. For rotating the drum assembly there is provided a handle or other 35 suitable motor 21 secured to the shaft 9 so that as the fur is fed beneath the drum and on the table or support 20, the fur is subjected to the alternating action of the brushes 18 and the ironing elements 13 and 40 14 in a continuous operation.

It will thus be observed by arranging the electrical ironing surfaces 13 and 14 alternating with the brushing elements 18, that 45 I have provided a device for brushing hairs or nap of pile fabrics such as furs, and simultaneously ironing or glazing the same, the device being characterized by carrying out these operations in succession and in alternation, one operation immediately following 50 the other whereby the hairs or nap are brushed and while so brushed to straighten the hair are ironed or glazed. These operations are carried out alternately so that the ironing or glazing is carried out while the 55 hairs are still in a straightened condition before any recurving or springing back of the hair to normal condition can take place and so that the hair or nap is again quickly brushed while the same is in heated condition 60 after the heating step.

It will also be observed that due to the separation between the heating and brushing elements, the brushes function as a cooling medium effective intermediate the heating steps, 65 the contact of the fur with the cooling

brushes resulting in setting the hairs or filaments of the fur and in preventing overheating or singeing. Furthermore, as the operation obtained between alternations is produced by uniformly moving mounting means, 70 the operations of ironing and brushing are uniform; and when associated, as described, to be carried out in rapid succession by alternate brushing and ironing, a homogeneity and uniformity of shade and luster without 75 local underbrushing or overheating is obtained.

In the modification shown in Fig. 4 of the drawings, the shaft 22 is provided with a roller 23 above a fur supporting platform 80 24 and is also provided with a sprocket wheel 25 carrying the sprocket chain 26. For supporting the brushing and heating units there is provided a belt 27 of canvas or other suitable material which passes over the roller 23 85 and over a similar roller at the opposite end of the structure (not shown), the said belt supporting alternately and contiguously spaced heating plates 28 and brushes 29. These plates 28 and brushes 29 are provided 90 with lugs 30 extending from opposite ends and penetrated by bars 31 which are employed to affix the heating and brushing units to the chain 26. The skin or pelt is indicated as 32 supported on the platform 24 95 and when so supported the skin is subjected to the alternating action of the brushes and heating plates as the rollers 23 are operated from any suitable motor.

In the modification shown in Fig. 6 of the 100 drawings, it will be observed that the plates 28' and the brushes 29' are irregularly shaped approximating a V-shape, this being capable of producing an action upon the pelt somewhat similar to the angularly 105 mounted brushes 18 in the apparatus of Fig. 1 of the drawings.

With the apparatus of the invention made in accordance with any of these forms, it will be seen that in one operation I may practice 110 the method previously set forth wherein there is accomplished a combined brushing and ironing operation. The effect produced is superior to brushing and ironing when the method is practiced by hand or when 115 practiced by machinery wherein the brushing and ironing elements are arranged at separated points to operate upon separated regions of the fur.

The operation, as carried out, serves to 120 produce a uniform luster and glazing effect free from any tendency to produce uneven shades such as is due to the overheating or singeing incident to prior methods.

While I have shown and described my invention in the preferred forms, many changes and modifications may be made in the structure disclosed without departing from the spirit of the invention, defined in the following claims. 125 130

I claim:—

1. In a device of the class described, a support for the work, a roller above the same, and means for applying the same thereto, said roller divided into circumferential sections, one of which is a brush, the other a smooth surface and a heating element for said surface.
2. In a device of the class described, a support for the work, a roller above the same, and means for applying the same thereto, said roller divided into circumferential sections, one of which is a brush, the other a smooth surface and a heating element for said surface, said brush separated longitudinally into sections extending in a direction between the axis and transverse of said roller.
3. In an apparatus of the character described, means for mounting a pelt or the like, a brushing member and a pressing member, and means for moving said brushing and pressing members relatively to said pelt in successive and uniform repeats.
4. In an apparatus of the character described, means for mounting a pelt or the like, brushing and ironing members arranged in close contiguity and means for moving said brushing and ironing members relatively to said pelt alternately in successive repeats.
5. In an apparatus of the character described, means for mounting a pelt or the like, a brushing member and a pressing member, means for mounting the same contiguous to each other within the limits of length of the filamentary hairs of the pelt, and means for moving said brushing and pressing members in one direction relatively to said pelt alternately in successive and uniform repeats.
6. In an apparatus of the character described, means for mounting a pelt or the like, a rotatable drum having brushing and ironing members thereon arranged in alternating contiguity and means for rotating said drum relatively to said pelt so as to move the brushing and ironing members alternately in successive repeats relatively to said pelt.
7. In a fur treating device, a work holding portion for mounting the pelt or the like, a rotatable member, means for mounting said rotatable member relatively to said work holding portion, means on said rotatable member for brushing and pressing the fur and heating means for said pressing means.
8. In a fur treating device, the combination which comprises a work holding portion, a rotatable member and means for rotatably mounting said member relatively to said work holding portion, said rotatable member including alternately spaced brushing and pressing members peripherally disposed on said rotatable member, and electrical heating elements for said pressing members arranged interiorly of said rotatable member.

In testimony whereof I hereunto affix my signature.

JACOB ZABEL.