(No Model.) 2 Sheets—Sheet 1.

A. HEDBAVNY.

MACHINE FOR REMOVING WATER HAIRS FROM PELTS.

No. 502,359. Patented Aug. 1, 1893.

FIG. 1.

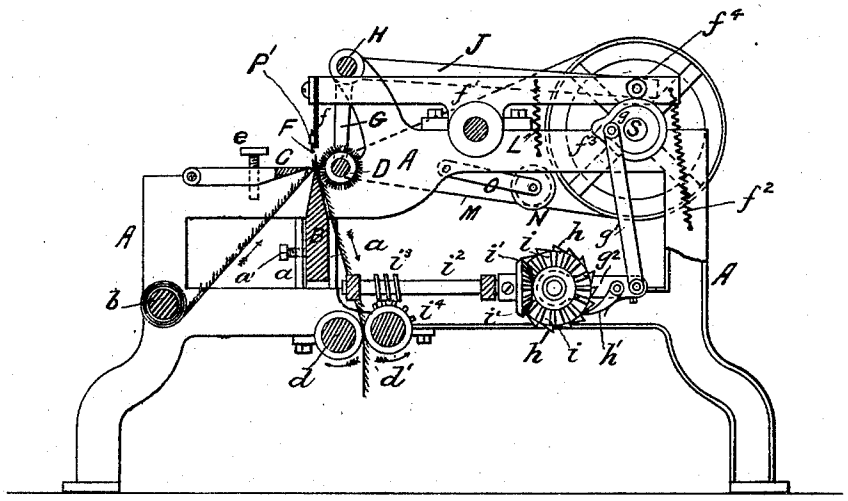
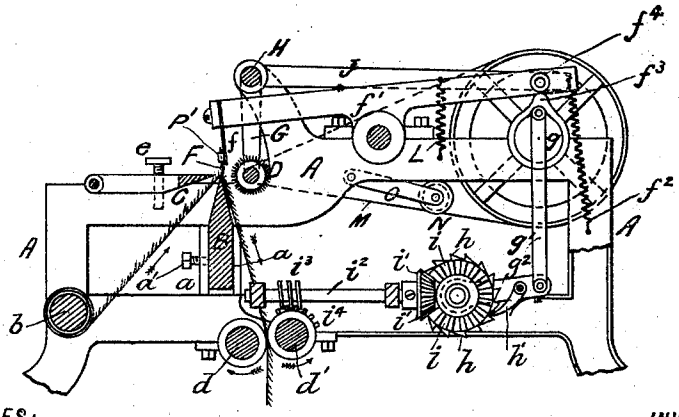


FIG. 2.



WITNESSES:
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(No Model.)

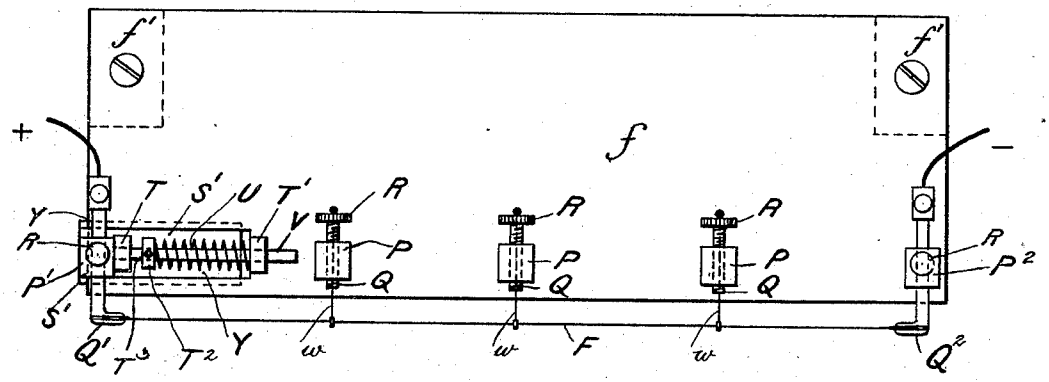
2 Sheets—Sheet 2.

A. HEDBAVNY.

MACHINE FOR REMOVING WATER HAIRS FROM PELTS.

No. 502,359. Patented Aug. 1, 1893.

FIG. 3.



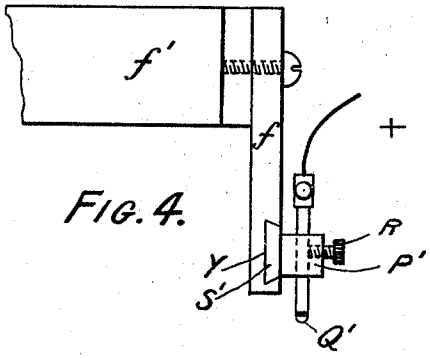


FIG. 4.

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UNITED STATES PATENT OFFICE.

ANTON HEDBAVNY, OF NEW YORK, N. Y., ASSIGNOR TO LOUIS WERNER, OF SAME PLACE.

MACHINE FOR REMOVING WATER-HAIRS FROM PELTS.

SPECIFICATION forming part of Letters Patent No. 502,359, dated August 1, 1893.

Application filed March 27, 1890. Renewed January 17, 1893. Serial No. 458,736. (No model.)

To all whom it may concern:

Be it known that I, ANTON HEDBAVNY, a citizen of the United States, residing at New York city, in the county and State of New York, have invented new and useful Improvements in Machines for Removing Water-Hairs from Pelts, of which the following is a description.

This invention relates to improvements in machines for removing water-hairs from pelts of the class illustrated in Letters Patent No. 408,879, granted to me August 13, 1889; such machines including mechanism comprising a knife-edged bar, means for intermittently feeding the pelt over said knife-edged bar, a serrated guard comb at one side of said bar, a rotary brush at the other side of the same, said brush serving to force the wool or soft fur in a downward direction away from the knife-edged bar and leave the stiff water-hairs standing thereon, and an incandescent metallic conductor suitably supported and having an oscillating movement to and from the knife-edged bar, whereby the water-hairs are burned off and removed by the hot wire.

In my present invention, I employ the same elements in combination with the following additional features of construction which consist, first, in an automatic tension device for the incandescent conductor, whereby the expansion of the same when heated, is compensated for, and the conductor prevented from sagging and always maintained in proper alignment and condition to operate upon all the water-hairs standing upon the knife-edged bar; and, secondly, in means whereby the brush is oscillated to and from the knife-edged bar, so that it will be out of contact with said bar when the incandescent metallic conductor is fed down to remove the water-hairs, all as hereinafter more fully described.

In the accompanying drawings: Figure 1, is a side elevation, partly in longitudinal vertical section of my improved machine, showing the brush in its forward or brushing position, and the metallic conductor away from and out of contact with the water-hairs. Fig. 2 is a similar view with the brush moved back and the metallic conductor in position to remove the water-hairs. Fig. 3, is a front view of the carrying plate for the metallic conductor and the tension device; and Fig. 4, is an end view thereof.

Referring to the drawings, A represents the supporting frame of my improved machine for removing water-hairs from pelts. The frame A, supports in suitable guides *a a* a knife-edged bar, B, over which the pelts to be treated are stretched, said knife-edged bar being vertically adjustable in said guides *a*, *a*, and held in such adjustment as by set screws *a'*, *a'*, tapped in said guide. The pelts are preferably basted onto a suitable apron or canvas, or other suitable fabric, and wound on a roller *b*, from which the pelt is passed over the edge of the bar B, and then in downward direction between two feeding rolls, *d*, *d'*, which serve to move the pelt intermittently over the edge of the transverse bar B. At one side of the knife-edged bar is arranged a pivoted guard plate or comb C, having a serrated edge, which is adjustable higher or lower, according to the position of the knife-edged bar, B, by means of set screws, *e*.

The guard comb, C, serves to restrain the soft hair or wool of that portion of the pelt below the comb C, before the same passes over the edge of the transverse bar, B, as the pelt is fed forward after each operation of the metallic conductor. The guard comb, C, however, does not restrain the stiff water-hairs, but permits them to spring through and straighten up immediately as they pass the serrated edge of the blade, so as to project vertically in line with the axis of the transverse bar, B, or nearly so, in upward direction. At the opposite side of the knife-edged bar B, is arranged an oscillating rotary brush, D, which is preferably a solid bristle brush, said brush being rotated at the desired speed in bearings of the supporting frame by a belt and pulley transmission from the driving shaft, S. This brush is held and rotates in suitable bearings on lever-arms G, G, which depend from, and are adjustably fastened to the shaft H, said shaft being journaled in suitable bearings on the frame A. To the shaft H, levers J, J, are attached, these levers carrying at their outer ends rolls, which are not shown but correspond in position with the rolls f^4, hereinafter described, which rest

upon and are in contact with cams, f^3, f^3, carried on the driving shaft S, and these rolls are always kept in contact with the cams by springs L, L, which extend from the levers J, J, to the frame. As the cams f^3, f^3, rotate, they operate the rolls K, to vibrate the levers J, J, and the levers G, G, carrying the brush, are thus caused to recede from and approach to the knife-edged bar. This is a necessary and important operation of the machine, because the brush D must be away from and out of contact with the knife-edged bar, before the hot metallic conductor F, comes in contact with the water-hairs (see Fig. 2) to remove them. If the brush should be retained in its brushing position (Fig. 1) during the burning operation, it would be quickly destroyed by the hot wire. As the brush moves back to the position shown in Fig. 2, the belt, M, becomes slack, and to take up this slack and keep the belt taut, I employ a heavy idler pulley, N, of common form attached to an arm, O, pivoted to the frame.

The quick brushing action exerted by the brush D, on the pelt at the side of the knife-edged bar, brushes the soft wool or fur on that side in a downward direction, so that the water-hairs project upward and can be burned off by the metallic conductor F, which is supported transversely above the edge of the bar B, on a plate f, attached to oscillating levers f', which latter are fulcrumed to the supporting frame A, and are connected at their rear ends by suitable springs f^2, with the frame A.

The metallic conductor F, is preferably a wire and is connected with the poles of a dynamo, or other source of electricity, and kept by the current from the same in an incandescent state. The levers f' receive an intermittent oscillating motion by cams, f^3, that engage anti-friction rollers, f^4, at the rear ends of the levers f', so that the said incandescent conductor is intermittently lowered and applied to the stiff projecting water-hairs of the pelt so as to burn the same, without, however, injuring the soft wool or fur, which is retained at one side of the bar B, by the guard comb C, and at the other side by the brushing action of the rotary brush D. The cam f^3, at one side of the driving shaft S, is provided with an additional crank-disk g, connected by a pivot-link g' with an arm g^2, pivoted to the shaft of a ratchet-wheel h, which is engaged by a spring actuated pawl h', pivoted to the arm g^2, so as to be turned for a distance of one or two teeth at each rotation of the crank-disk, g, on the driving-shaft S. To the shaft of the ratchet-wheel is further keyed a bevel-wheel, i, which meshes with a pinion i', on a short longitudinal shaft i^2, that turns in bearings on the frame A, and is provided with a worm i^3, that engages with a worm-wheel i^4, (part only of the teeth of which are shown) at the end of the shaft of the feed-roller d', so as to move intermittently at each rotation of the driving-shaft S. The feed-rolls d, d', press tightly on the apron and pelts attached, so as to feed the same intermittently forward over the knife-edged bar. During the time when the pelt is at rest the metallic conductor is lowered so as to burn off the projecting water-hairs, and at the same time the brush moves back and away from the knife-edged bar. (See Fig. 2.) As soon as the burning off of the water-hairs is accomplished, on the narrow strip of pelt above the edge of the bar, the metallic conductor is moved upwardly away from the pelt and the pelt is fed forward by its intermittently operated feed mechanism, so as to bring another strip of the pelt over the edge of the bar B, the hairs of which are burned off by the incandescent conductor, and so on. At each rotation of the driving shaft, a narrow strip of pelt is thus fed over the knife-edged bar, and a new set of water-hairs burned off by the action of the incandescent conductor F, so that finally, when the entire pelt has been moved over the knife-edged bar, all projecting water-hairs of the same are burned off without injury to the soft wool or fur. The pelt is then removed from the machine, rubbed with hot sand, and then carefully washed with water, so that the burned hair and the smell of the same are removed, after which the pelts are ready for dyeing and for use.

Part of the mechanism just described comprises those features of my machine which are necessary to its operation but do not form part of my present invention, excepting as they are combined with the oscillating brush, and also with my improved tension device for the metallic conductor, which I will now proceed to describe.

Referring to Figs. 3 and 4 of the drawings, S′, designates a metal plate dovetailed into a recess, Y, in one end of the plate f, and sliding freely in said recess. T, designates a projection or lug, fast to the plate S′, and T′, designates a similar projection on the plate f. The projection T, is preferably recessed to receive one end of a rod V, the other end of which projects through a perforation or aperture in the projection T′, which, as stated, is fast to the plate f. A compressed spring U, is coiled or spirally wound around the rod V, having its bearing at one end against the projection T′, and at the other end against a collar T^2, adjustably fixed on the rod V, as by a set screw T^3. The incandescent wire or metallic conductor F, is suspended from set screws Q by loops of metal w, and is rigidly fastened at each end to metal rods Q′, Q^2. The set screws Q, are adjustable in screw threaded insulating blocks P, and the rods Q′, Q^2, are also adjustable in insulating blocks P′, P^2, by their set screws R. The blocks P, P^2, are fast to the plate f, and the block P′, is fast to the sliding plate S′. The action of this mechanism is as follows, viz: When a current of electricity is sent through the metallic conductor or wire F, the wire is heated and expands, and as it expands, the sliding plate S′, is automatically pushed out-

wardly by the compressed spring U, carrying with it the rod Q′, thus taking up any slack or sag of the wire F, and keeping the wire at the proper tension and alignment. The importance of this will be obvious when it is understood that in a machine of this character, it is essentially necessary that the wire when heated and operated to remove the water-hairs, must be held taut and in substantially perfect alignment or parallelism above the knife-edged bar over which the seal or other skin is stretched so that when the heated wire is moved downwardly to come in contact with the water-hairs standing upwardly upon said bar, it will, at one operation, singe or remove all the water-hairs standing up on said bar, without coming in contact with the soft wool or fur. The set screws Q, and the supporting rods Q′, and Q^2, are made adjustable as before described, so that the wire F, can be set at any desired distance above the pelt to be operated upon.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with means to support a body, such as a pelt, to be singed, of a metallic conductor adapted to be rendered incandescent by an electric current, supports for such conductor and means for adjusting such supports vertically; a tension device for automatically compensating for the expansion of said conductor, and means to bring said conductor into operative conjunction with the body to be treated, substantially as described.

2. The combination with means to support a body, such as a pelt, to be singed, of a metallic conductor adapted to be rendered incandescent by an electric current, a plate and a vibrating frame therefor, a support fixed to one side of said frame and receiving one end of the conductor, a movable plate at the other side of such frame, a support for the other end of the conductor secured to such plate, and means for automatically adjusting such plate and support correspondingly with the expansion of the conductor, substantially as described.

3. The combination of an incandescent electric conductor, a knife-edged bar over which a body to be treated is stretched, means for intermittently moving said conductor toward and from said bar, a rotary brush, and means for oscillating such brush, substantially as described.

4. The combination of a knife-edged bar, means for intermittently feeding the body to be treated over said bar, a guard comb at one side of said bar, a rotary brush at the other side of said bar, and means for oscillating said brush; an incandescent electric conductor arranged above said bar, and means for intermittently oscillating the said conductor, substantially as described for the purpose set forth.

5. The combination of an incandescent electric conductor, a tension device for automatically keeping said conductor taut, a knife-edged bar over which the body to be treated is stretched, means for intermittently moving the said conductor toward and from the bar, a brush, means for rotating the same, and a vibrating or oscillating frame in which said brush is supported, substantially as described.

6. The combination of a knife-edged bar, means for intermittently feeding a body to be treated over said bar, a guard comb at one side of said bar, a brush at the opposite side and means for oscillating said brush; an incandescent electric conductor arranged above said bar, means for intermittently oscillating said conductor, and a tension device for said conductor operating automatically by the expansion and contraction of the conductor, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of March, A. D. 1890.

ANTON HEDBAVNY.

Witnesses:

EDMOND C. BROWN,

ERNEST C. WEBB.