

4 Sheets—Sheet 1.

FUR CLIPPING MACHINE.

Patented Oct. 7, 1884.

John J. Bordenau

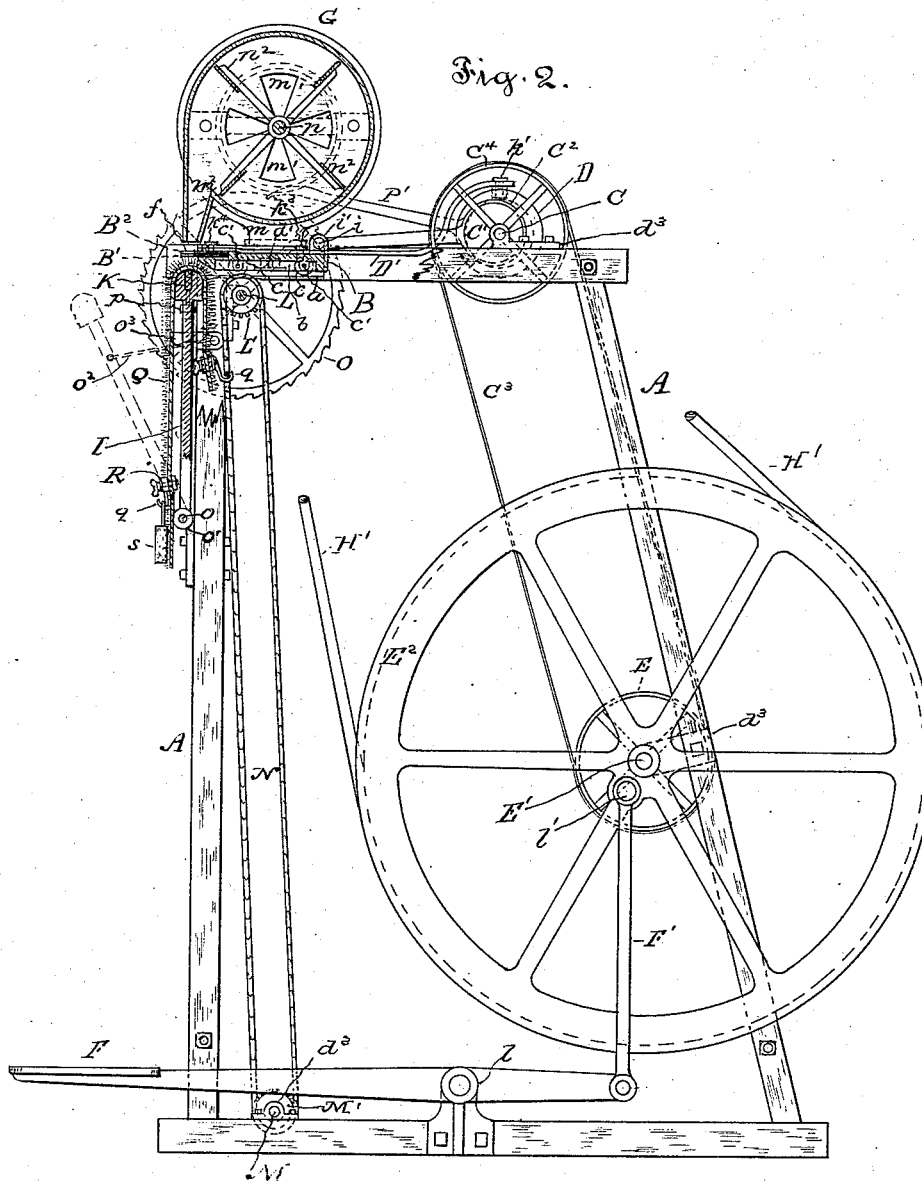
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4 Sheets—Sheet 2.

No. 306,185.

Patented Oct. 7, 1884.



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(No Model.)

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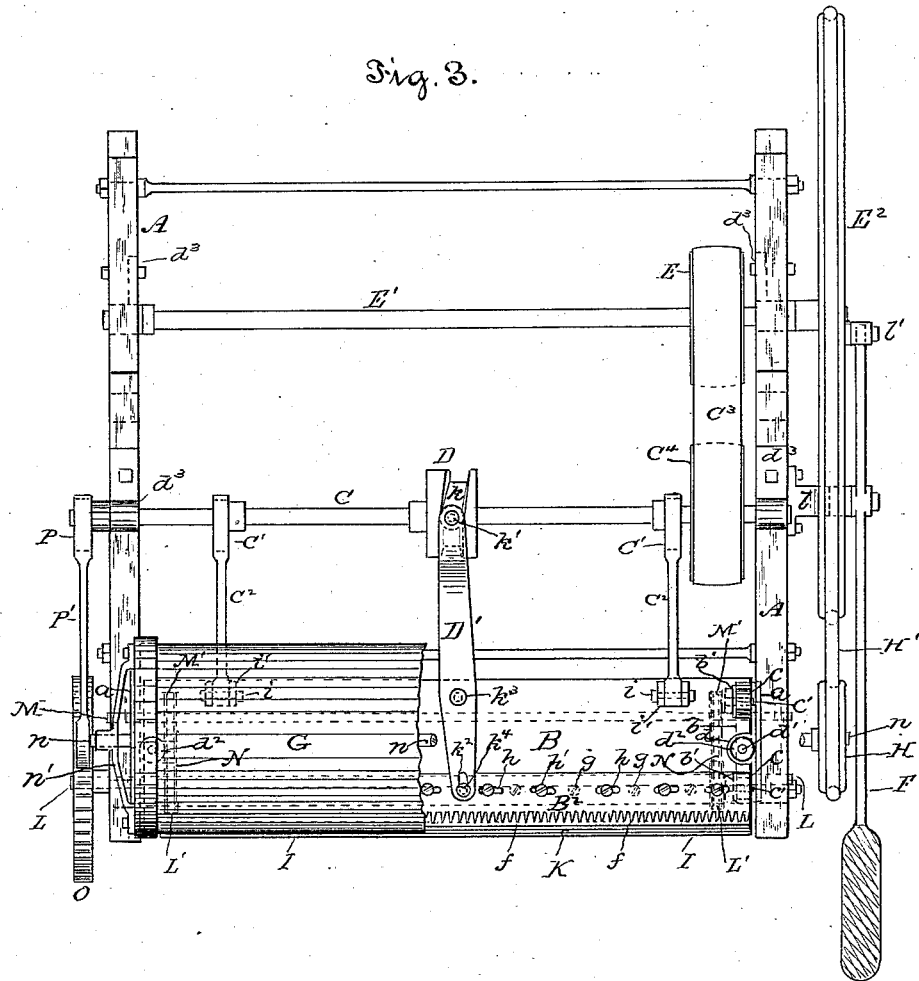
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FUR CLIPPING MACHINE.

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Fig. 3.



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4 Sheets—Sheet 4.

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FUR CLIPPING MACHINE.

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Fig. 4.

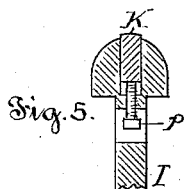
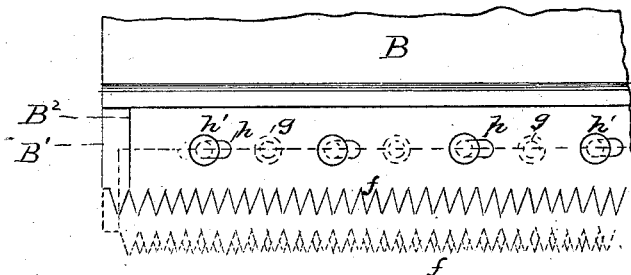
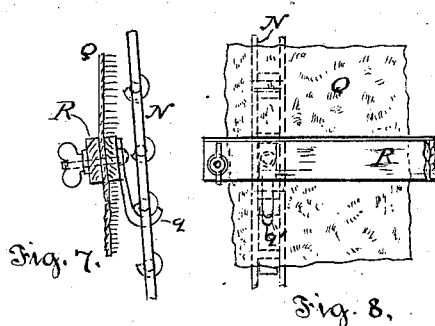
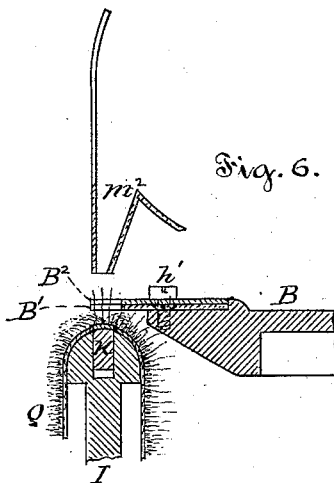


Fig. 6.



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UNITED STATES PATENT OFFICE.

OTTO SIMONSON AND WILLIAM SCHOTT, OF NEW YORK, N. Y.

FUR-CLIPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,185, dated October 7, 1884.

Application filed January 31, 1884. (No model.)

To all whom it may concern:

Be it known that we, OTTO SIMONSON and WILLIAM SCHOTT, citizens of the United States of North America, and residents of the city, county, and State of New York, have invented a new and useful Improvement in Fur-Clipping Machines, of which the following is a specification.

This invention relates to devices for the removal, by clipping, of coarse or water hairs from seal and other skins, and its object is to provide a machine whereby the work may be done with greater ease and celerity, and with more uniformity than by other machines in use. Some fur-clipping machines are constructed with shears for clipping the hairs, the fur or soft hairs being blown aside by intermittent air-blasts, and so held by combs while the shears operate. These shears, however, closing gradually from pivot to point along the line of hairs presented, tend to push and bend the said hairs aside and downward in advance of the closing point of the cutting-edges, so that the hairs are not so closely or cleanly cut from the skin as is desirable. Other fur-clipping machines are constructed with rotary cutters mounted on a carriage which is designed to be reciprocated to and fro from one end of the machine-frame to the other over the skin, the cutters operating on the hairs progressively as the carriage moves. In machines of this construction, however, the cutting of a row of hairs occupies considerable time, and more power is required for the reciprocation of the carriage and cutters than for the operation of shears.

Our invention comprises an improved device for rapidly clipping the hairs, and in combination therewith a device for delivering a constant and regular air-blast; and, further, comprises an adjustable straining-bar and frame for supporting the skins under the action of the cutters or knives, all of which will be hereinafter fully set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of our machine, with parts broken away to exhibit other parts. Fig. 2 is a partly sectional side eleva-

tion of the same. Fig. 3 is a plan of the same, with parts broken away to exhibit other parts. Fig. 4 is an enlarged plan of cutter-bars and supporting-plate, showing in dotted lines the position of the bars when the upper bar is moving laterally for clipping. Fig. 5 is an enlarged sectional elevation showing the straining-bar adjusted in position. Fig. 6 is an enlarged sectional elevation of certain details of the mechanism. Fig. 7 is an enlarged, partly sectional elevation, showing the clamp for and the method of securing the edge of a skin to the chains. Fig. 8 is an enlarged front elevation of the same.

A represents the frame of the machine, on the inner faces of the upper horizontal timbers of which are secured, opposite each other, iron angle-plates *a a*.

B represents a plate that supports the clipping or cutter bars *B' B'*. This plate is made sufficiently strong and rigid to prevent said bars from sagging or bending, and is made of sufficient width for the convenient attachment to it of the mechanism whereby it and the clipper-bars are moved and operated.

On the under side of the plate B, at each end thereof, is formed a strengthening-rib *b*, having two sockets, *b' b'*, in each of which an anti-friction roller, *c*, is held on a horizontal stud, *c'*, and in a socket, *d*, in each rib *b* is held on a vertical stud, *d'*, an anti-friction roller, *d'*. The rollers *c c* rest on the horizontal portions of the plates *a a*, while the rollers *d'* bear against the vertical faces thereof, so that the supporting-plate B and the clipper-bars *B' B'* may be moved back and forth with a minimum of frictional resistance. The clipper-bars *B' B'* are provided with teeth *f f*, for clipping the coarse hairs. The lower clipper-bar, *B'*, extends the whole length or distance between the sides of the machine-frame and has no lateral movement, while the upper clipper-bar, *B'*, is made shorter than the bar *B'*, so that it can be laterally reciprocated for the clipping operation. The bar *B'* is rigidly held to the supporting-plate B by countersunk screws *g g*, and the bar *B'*, which is provided with longitudinally-slotted holes *h h*, is held in place by screws or bolts *h' h'*, that pass down through said holes and through the bar *B'* into the plate B, the said slotted bolt-holes

h h permitting the required lateral movements of the upper cutter-bar, B².

Rearward of the bars B' B² and journaled in boxes *d' d'* fixed on the top of the machine-frame is a horizontal shaft, C, secured on which are two or more eccentrics, C' C', whose respective straps C² extend forward and have their eyed ends hinged by bolts *i i* in lugs *i' i'*, that are rigidly secured on the rear edge of the supporting-plate B; and on about the center of the shaft C is secured a cam, D, having a peripheral irregular spiral groove, *k*. Connection is made between this cam D and the plate B and bars B' B² by a lever, D', which is constructed with a depending stud, *k'*, in one end, and a slot, *k²*, in the opposite end. The said lever D' is pivoted to the supporting-plate B near the rear edge thereof by a pivot, *k²*. Its stud *k'* is engaged in the groove of the cam D, and a stud, *k'*, projecting upward from the upper cutter-bar, B², engages in the slot *k²*; hence when the shaft C is revolved the plate B and cutter-bars B' B² are, at the first half-revolution thereof, and by the throw of the eccentrics C' C', moved forward with the teeth of the cutter-bars in the same vertical planes, with the teeth open. The extent of this forward movement is about half an inch to the point where said teeth *f f* engage the hairs which are to be clipped. Then the cam D, operating through the lever D', throws the upper bar, B², to the right (looking from the rear of the machine forward) a distance of about one-eighth of an inch, thus closing the upper edges of the upper teeth over those of the lower teeth, whereby the hairs engaged between them will be clipped. On the next half-revolution of the shaft C by the consequent reverse motion of the eccentrics C' C' and cam D, the cutter-bar teeth begin to open—that is, the upper cutter-bar, B², begins to move to the left, and, simultaneously, the two bars B' B² and plate B begin to be drawn rearward to the same extent they had before been moved forward, this reverse lateral motion of the cutter-bar B² and the rearward motions of the plate B and bars B' B² being completed at one and the same time, and in this manner the cutter-bars continue to be operated during the working of the machine.

The teeth *f f* are made quite narrow, so as to taper but slightly from gum to point, that they may, as nearly as possible, engage the hairs to be cut at right angles, and so clip them without bending them down or aside, and consequently clip them closer or shorter than is commonly done by other machines.

It will be seen that as the lower cutter-bar, B', is moved forward it operates, as do the combs in other machines of this class, to hold the fine hairs or fur down away from the cutting-teeth.

On the shaft C is a pulley, C', from which a belt, C², runs over a pulley, E, that is secured on the main driving-shaft E', which shaft E' is suitably journaled on the frame A,

and also on said shaft E' is a fly-wheel, E², to which motion is given by means of power applied to a treadle, F, pivoted in boxes *l* through pitman F' and wrist pin *l'*.

We use in combination with the cutter-bars a continuous air-blast, to blow the soft hairs or fur away or aside from the water-hairs, and the blower designed for this purpose is of peculiar construction, and is arranged above the said cutter-bars. Its drum or cylinder G, which is fixed on standards *m*, projecting upward from the frame A, has in each end a central opening provided with register-valve *m'*, to regulate the ingress of air, and its egress-nozzle *m²* is made gradually tapering or narrowing flatwise to its mouth, as shown, for the purpose of somewhat retarding the blast, and thereby equalizing its pressure at the point of delivery throughout the length of the said drum, which extends from one side to the other of the frame A. The blower fan-shaft *n*, which is journaled in brackets *n'*, secured on the ends of the drum G, extends centrally through the said drum and carries spiders provided with fans *n²*, as shown. On the outer end of this shaft *n* is fixed a pulley, H, to which power is transmitted from the fly-wheel E² by a belt, H'.

That part of our improved machine over which the skins are to be stretched or strained while being clipped consists in part of a frame, I, provided with pintles *o* at each lower corner, by which it is held in lugs *o'*, fixed on the frame A in such a manner that its top can be turned forward and downward, as shown in dotted lines, Fig. 2, for the ready and easy adjustment of a skin over it. By this device much time and trouble are saved in arranging the skins in position for clipping, and in afterward removing them. A chain or other suitable device, *o²*, attached at one end to the frame A and at the other to the straining-frame I, prevents the latter from being turned down too far, and latches *o³*, fixed on the frame A, are designed to catch and hold the frame I in an upright position during the clipping operation. A further improvement is in making the bar K, over which the skins are stretched or strained, vertically adjustable, and for this purpose the upper edge of the frame I is provided with a longitudinal groove in which the bar K is set and supported by set-screws *p p*, so that on turning said screws the bar K can be slightly raised or lowered as the thickness of the skin may demand, and be held rigidly at the desired elevation.

Beneath the plate B, and extending across the frame A on which it is suitably journaled, is a horizontal shaft, L, having fixed on it near each end sprocket-wheels L' L'; and journaled on the lower part of the frame A is a shaft, M, provided with two sprocket-wheels, M' M'. Chains N N, for drawing the skins over the bar K, are passed about the wheels L' M'.

On the outer end of the shaft L is a ratchet-wheel, O, and on the corresponding end of the

shaft C is an eccentric, P, whose strap P' serves as a pawl and engages with the ratchet-wheel O, as shown, to give it motion; hence as the shaft C revolves continuously the shaft L is made to revolve and the chains N N to move intermittently.

When the machine is to be operated, a skin (represented at Q, Fig. 2,) is adjusted on the bar K, and a clamp, R, provided with hooks *q*, is fastened along one edge thereof, while weights *s* are secured on the opposite edge of said skin to keep it at a proper tension. Then the clamp hooks *q* are engaged in links of the chains N N. Then, when the machine is put in operation, the cutter bars being drawn back to permit the feeding of the skin over the straining-bar K, the skin is intermittently drawn over the said bar K, the air-blast continually blowing aside the soft fur that is presented along the line of the said bar, leaving the stiff hairs erect, and at each intermittence of the motion of the said skin the cutter-bars B' B² complete their forward motion and their teeth engage the hairs that are to be clipped, and at the completion of this forward motion the upper bar, B², moves to the right, whereby all the stiff or water hairs along the line of the upper edge of the bar K are simultaneously cut off by and between the upper and lower teeth *f f*.

In the devices for transmitting motion to the cutter-bars, to the fan, and to the skin that is to be operated upon, we do not confine ourselves to the precise construction herein shown and described, as it is obvious that other devices for these purposes may be employed without departing from the spirit of our invention. The straining-frame may also easily be made vertically adjustable instead of the straining-bar being so arranged.

We are aware of the patents of Rasmus, of Dutton, and of Ciniotte for fur-clipping machines, of Coldwell for machine for clipping hats, furs, &c., and of Armstrong for machine for cutting up pelts, and we do not claim their devices or methods; but

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

1. A fur-clipping machine comprising the

following elements: a cutter bar adapted to be reciprocated forward and backward, a cutter-bar adapted to be reciprocated forward, backward, and laterally, a device adapted to give a continuous air-blast, an adjustable straining-frame, an adjustable straining-bar, and suitable mechanisms for feeding and straining the skin or fur, all constructed and arranged substantially as set forth.

2. In a fur-clipping machine, as a means for removing the water-hairs from skins or furs, toothed cutter-bars adapted to be reciprocated, substantially as set forth.

3. In a fur-clipping machine, the combination, with the machine-frame, the straining-frame, and the fur-clipping mechanism arranged above the straining-frame, of a blower fixed on the machine-frame, and adapted and arranged to apply a continuous air-blast upon the fur, to blow and hold aside the soft fur when the machine is in operation, substantially as herein shown and described.

4. In a fur-clipping machine, a straining-frame adapted and arranged to be swung downward, substantially as and for the purpose described.

5. In a fur-clipping machine, the combination, with devices for clipping the coarse fur or hairs, and with a straining-frame incapable of vertical adjustment, of a straining-bar fixed on and above the said straining-frame and devices for vertically adjusting the said bar, substantially as herein shown and described.

6. In a fur-clipping machine, means, substantially as herein shown and described, for straining a fur or skin over the straining-bar, consisting of movable endless chains N N, clamp R, hooks *q*, and weights *s*, all arranged and operating as set forth.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 18th day of January, 1884.

OTTO SIMONSON.
WILLIAM SCHOTT.

Witnesses:

JACOB J. STORER,
JOHN J. BORDMAN.