2 Sheets—Sheet 1.

L. HOLLINGSWORTH.

MACHINE FOR SEPARATING FUR FROM PELTS AND HIDES.

No. 188,295. Patented March 13, 1877.

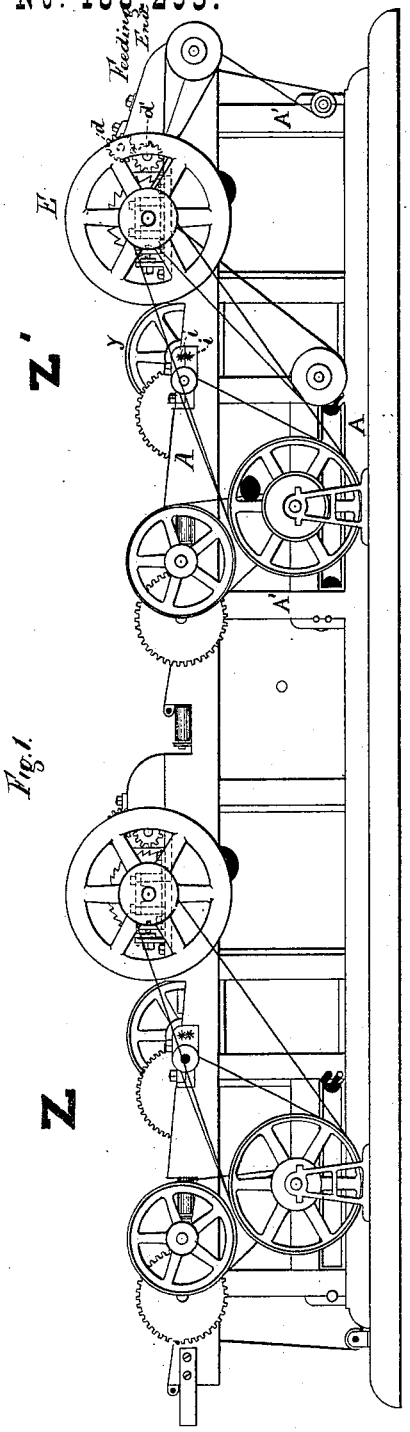

Fig. 1.

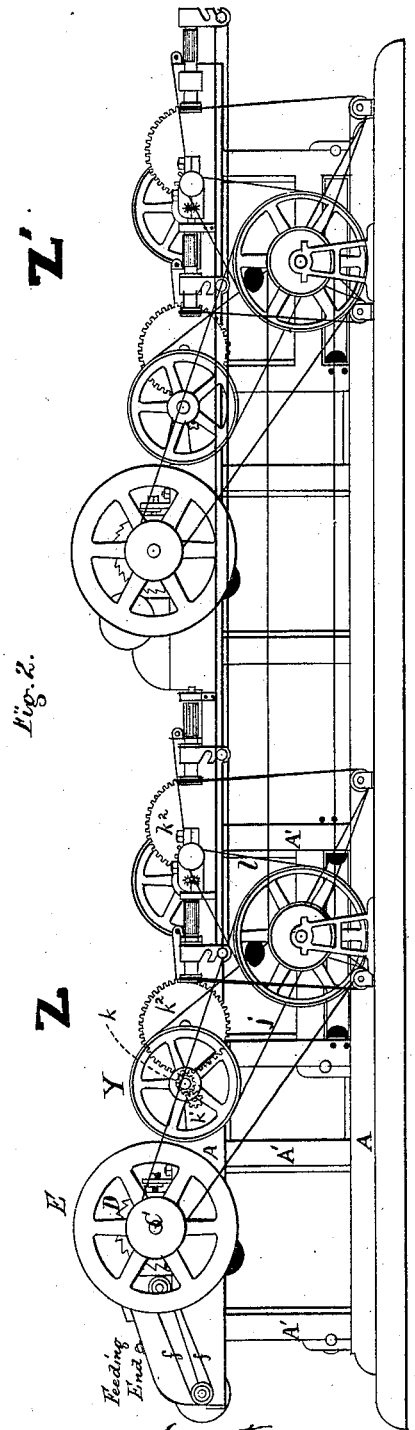

Fig. 2.

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2 Sheets—Sheet 2.

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Fig. 3.

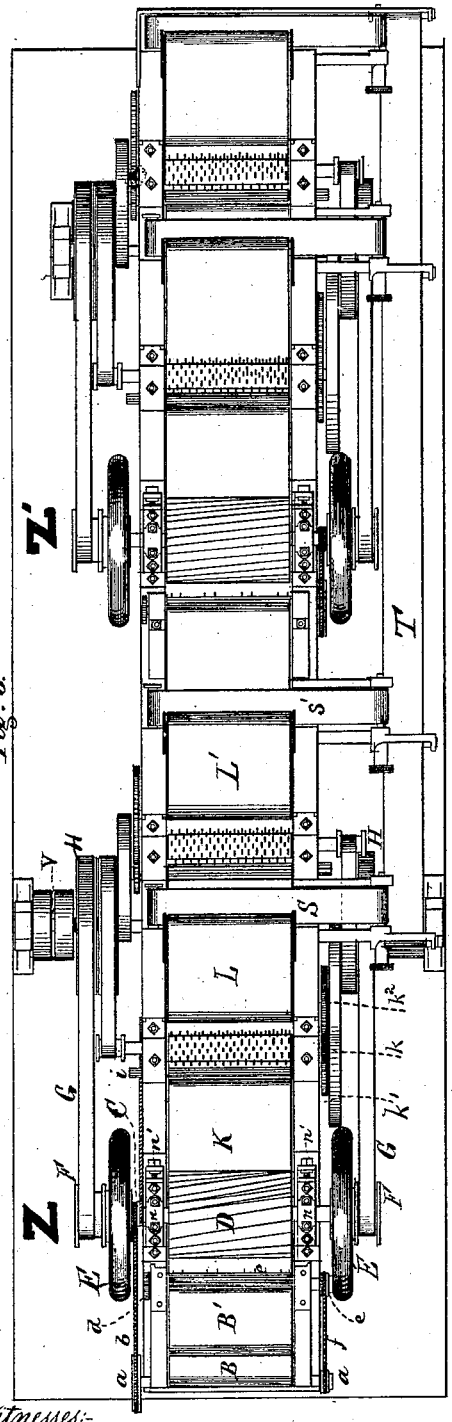
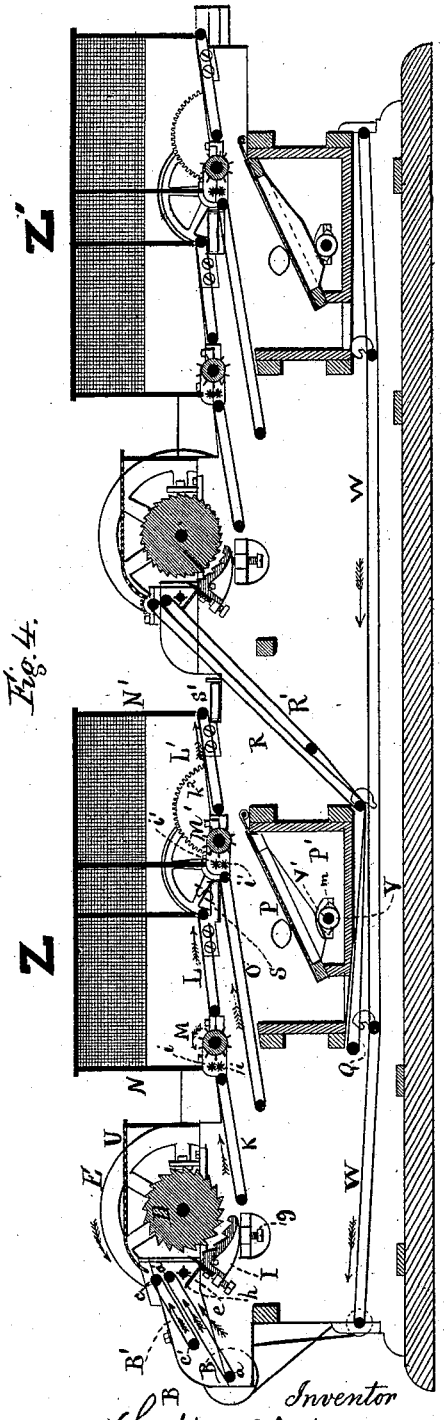


Fig. 4.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MACHINES FOR SEPARATING FUR FROM PELTS AND HIDES.

Specification forming part of Letters Patent No. **188,295**, dated March 13, 1877; application filed June 6, 1876.

To all whom it may concern:

Be it known that I, LOFTUS HOLLINGSWORTH, of Scotch Plains, in the county of Union and State of New Jersey, have invented a new and useful Machine for Separating Fur from Pelts, Hides, or Skins; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain combinations of devices in a machine or apparatus for separating the fur from pelts, hides, or skins, such fur as is used in the manufacture of felt and felt hats.

The invention is illustrated in the accompanying drawings, consisting of two sheets, and in which Figure 1 is a side elevation of that side of the machine at the left hand of the operator when feeding the machine. Fig. 2 is a side elevation of the opposite side of the machine, or that at the right of the said operator. Fig. 3 is a plan or top view of the machine; and Fig. 4 is a vertical central longitudinal section thereof, and this figure also shows, in section, the covers, guards, or receivers, which prevent the fur from flying out of bounds.

The apparatus which I have illustrated consists of two similar machines, Z Z′, connected, combined, and arranged in a manner to perform a continuous operation on the material fed into it at one end, thereby dispensing with two operators. I will therefore describe and letter upon the drawings one-half of the combined machine, and, in addition, such devices as are employed for accomplishing a joint and continuous operation throughout the whole apparatus.

A designates the longitudinal, and A′ the vertical, beams of the frame-work. This frame-work is shown as closed on the sides by panels, thereby producing a box-like interior for the machine. B (see Figs. 3 and 4) is an inclined endless apron passing over shafts *a a′*, one of which, *a*, is rotated by a belt, *b*, passing over a pulley on a shaft, C; and B′ is another endless apron passing over shafts *c c′*, one of which, *c*, carries a cog-wheel, *d*, (see Fig. 1,) which engages with and is revolved by another cog-wheel, *d′*, secured to the shaft of a studded feed-roller, *e*, (see Figs. 3 and 4,) which latter is revolved by a belt, *f*, (see Figs. 2 and 3,) passing over a pulley on its end, and over another pulley on the end of the shaft *a*. D is a cutting or chopping cylinder, which is shown as provided with diagonally-arranged knives. This cutting or chopping cylinder is mounted on the shaft C, which latter is shown as provided with a balance-wheel, E, on each end, Fig. 3, and also with a pulley, F, on each end, around each of which pulleys there passes a belt, G, which belts also pass around pulleys H at opposite ends of the main driving-shaft of the machine.

The chopping-cylinder revolves toward the feed or stirring roller *e*, (see Fig. 4,) and operates, in conjunction with an adjustable concave chopping-board, I, to cut up the pieces of pelt or skin containing fur, which are delivered to the same by and between the feed-aprons B B′ and stirring feed-roller *e*.

The said chopping-board is shown as serrated or provided with teeth, and as hung at its upper end upon a pivot, its lower end resting upon regulating-screws *g*, by means of which latter the said board can be regulated to a certain extent with respect to its nearness to the said chopping-cylinder; and attached to this chopping-board I have shown an angular guard, *h*, for directing the pelt againt the chopping-cylinder D, so that it will fall between said chopping-cylinder and chopping-board.

The shaft C is journaled in sliding boxes *n*, (see Fig. 3,) which boxes may be slid longitudinally on the frame by means of set-screws *n′*, and thereby adjust the cutting-cylinder nearer to or farther from the cutting-board I and feed-roller *e*.

K is another endless apron, which receives the chopped-up fur from between the chopping cylinder and board D I, and conveys it up to and so as to be caught between two longitudinally-fluted feed-rollers, *i i*. The upper one of the rollers *i i* is driven by a belt, *j*, passing from a pulley, Y, on its end to a pulley on the main shaft, (see Fig. 2,) and the said upper one of the rollers *i i* drives the lower one by meshing into it. The said upper

roller *i* carries (see Figs. 2 and 3) a cog-wheel, *k*, which engages on one side with a cog-wheel, k^1, on one end of the nearest shaft of the endless apron K, and thereby operates said apron, and on the other side said cog-wheel *k* engages with a cog-wheel, k^2, upon the end of the forward shaft of another endless apron, L. In sufficiently close proximity to the fluted feed-rollers *i i* there is arranged a picking-cylinder, M, (driven by a belt, *l*, from the main driving-shaft V,) which picker catches the fur from the fluted feed rollers *i i*, and carries the light loose fur up into a receiver, N. The heavier portion of the stuff drops upon an endless apron, (see Fig. 4,) which carries it onward and feeds it between another pair of fluted feed-rollers, *i' i'*, where another picking-cylinder, M', catches a further quantity of the light loose fur and throws it up into a receiver, N'. The mechanism shown for operating the apron O, the fluted rollers *i' i'*, and picking-cylinder M', is similar to that just above described, excepting that it is on the opposite side of the machine, the wheel k^2 in this case serving to drive another endless apron, L'. The heavier and longer portions of the fur (not thrown up into the receiver N') drop upon an inclined sieve, P, arranged below it, and which may be shaken by tappets *m* (see Fig. 4) on the shaft V, in a well-known manner. The fine chopped-up and furless portion of the hide drop through the sieve P into a box, P', from which it may be cleaned out as often as required, while the portion yet containing fur, and the remaining fur, slides off upon an endless apron, Q, which delivers it in between two other endless aprons, R R', which carry it up to the second part Z' of the combined machine to be fed between another chopping-cylinder and chopping-board, to be again subjected to a similar operation to that just described with reference to the machine Z.

The loose fur thrown up into the receiver N, as before described, drops upon the endless apron L, which delivers it upon a transverse endless apron, S, (see Figs. 3 and 4,) which apron S in turn delivers said fur upon an endless carrier, T, which latter delivers it into the receptacle provided for the finished article, located at the rear or delivery end of the machine; and in like manner the loose fur thrown up into the receiver N' drops upon the endless apron L', which delivers it upon another transverse endless apron, S', which deposits said fur upon the carrier T.

I will here remark that the endless carrier T also receives the fur delivered upon it by one or both of the transverse endless aprons of the second part Z' of the apparatus Z Z'.

U (see Fig. 4) is a guard, placed over and around the chopping-cylinder D to prevent the fur from flying beyond proper limits; and the receivers N N' are for a similar purpose. The guard and receivers are preferably constructed, in part, of wire-gauze, and their arrangement will be clearly understood by reference to Fig. 4.

W is an endless apron, running from end to end of the combined machine Z Z'. Its office, as shown, is to carry forward to the feed end of the machine, for further treatment, any fur which may be delivered upon it by the sieve of the machine Z', as will be understood by reference to Fig. 4.

As has been before stated, the second part, Z', of the apparatus is a duplicate of the first part, Z; but the two parts are so combined by the endless aprons Q, R, and R', the endless delivering-carrier T, and the return endless apron W, that the operation is progressive and continuous from end to end of the combined machine Z Z'. But I will here observe that if it be desired to use only one part of the apparatus—say the machine Z—the endless aprons and carriers last above referred to may be dispensed with, and receptacles for the fur may be placed under the transverse aprons S S'; or a shorter carrier, T, may be employed.

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

1. The combination, with the chopping-cylinder D and chopping-board I, of the endless aprons B B' and studded feed-rollers *e*, substantially as and for the purposes herein specified.

2. The combination of the following elements: the feed-aprons B B', the chopping cylinder and board D and I, the endless apron K, the feed-rollers *i i*, the picking-cylinder M, the receiver N, the endless apron L, and transverse delivery-apron S, the said parts being arranged and operating substantially as and for the purposes specified.

3. The combination of the mechanism Z, the mechanism Z', the endless feeding-aprons R R', the aprons S S', and the endless delivering-carrier T, all arranged and operating substantially as and for the purpose herein specified.

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Witnesses:

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HENRY S. HOLLINGSWORTH.