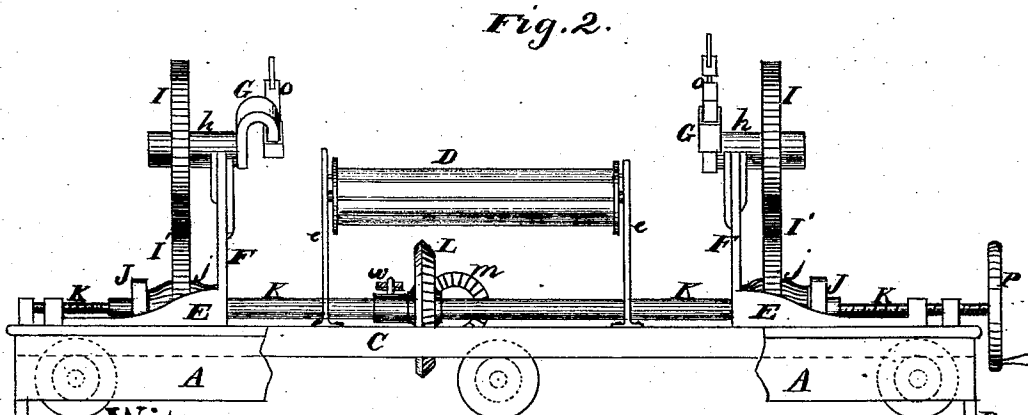
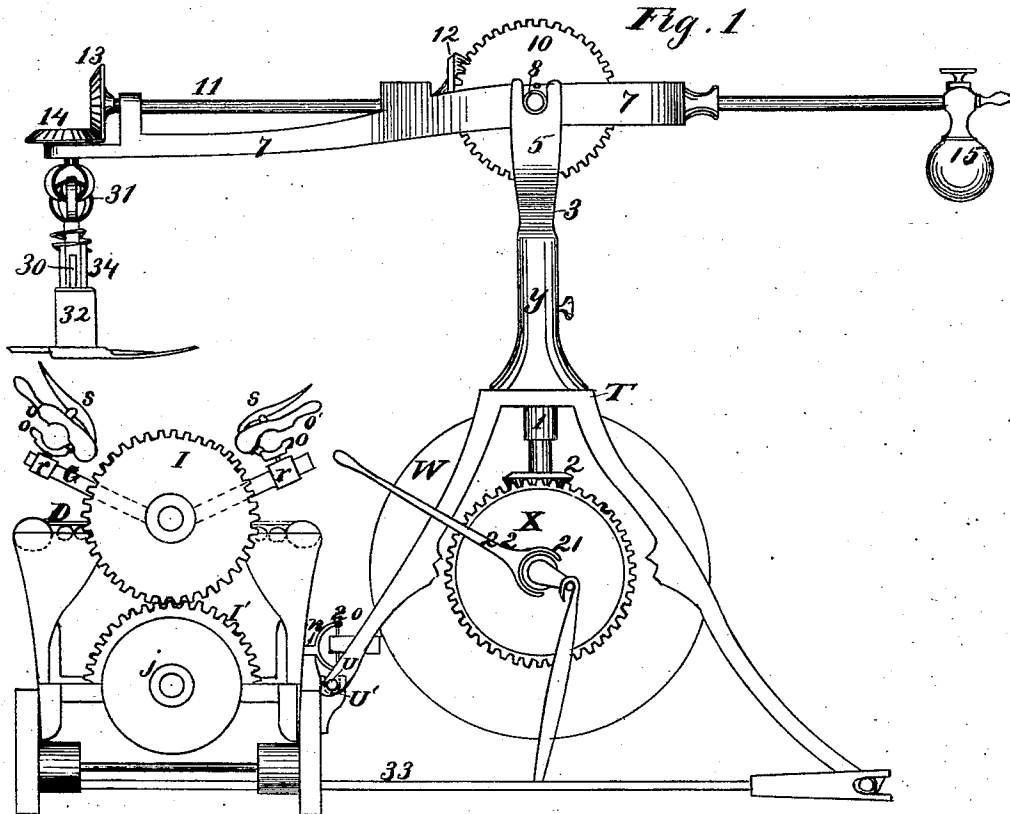


**E. CHAQUETTE.**  
**Sheep-Shearing Machines.**

No.157,157.

Patented Nov. 24, 1874.



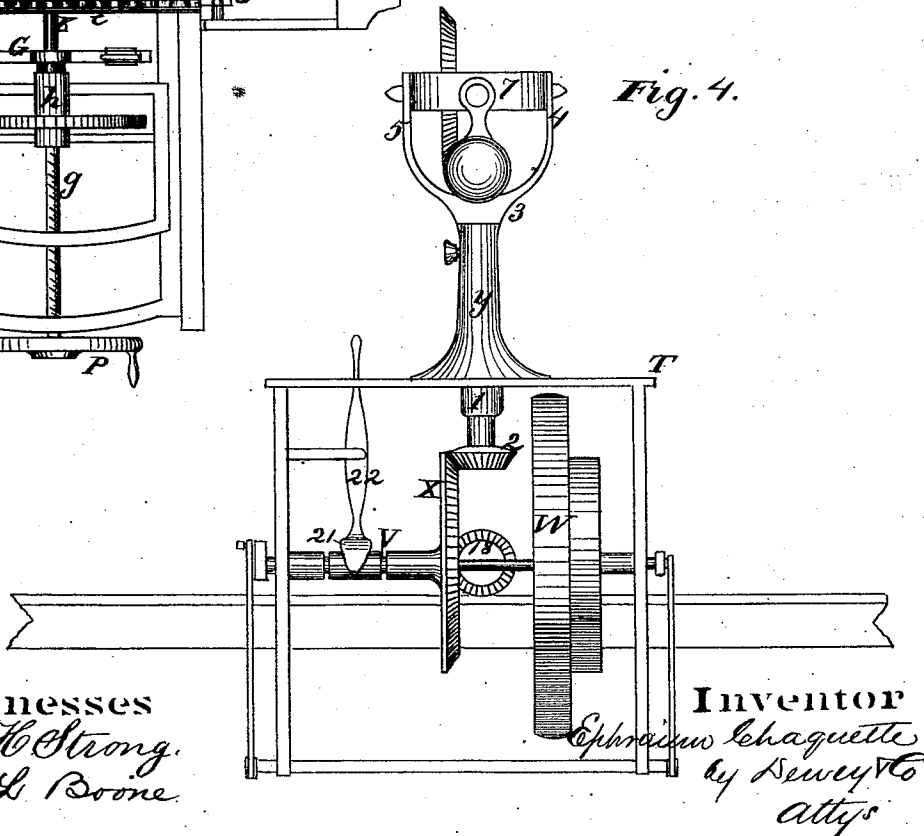
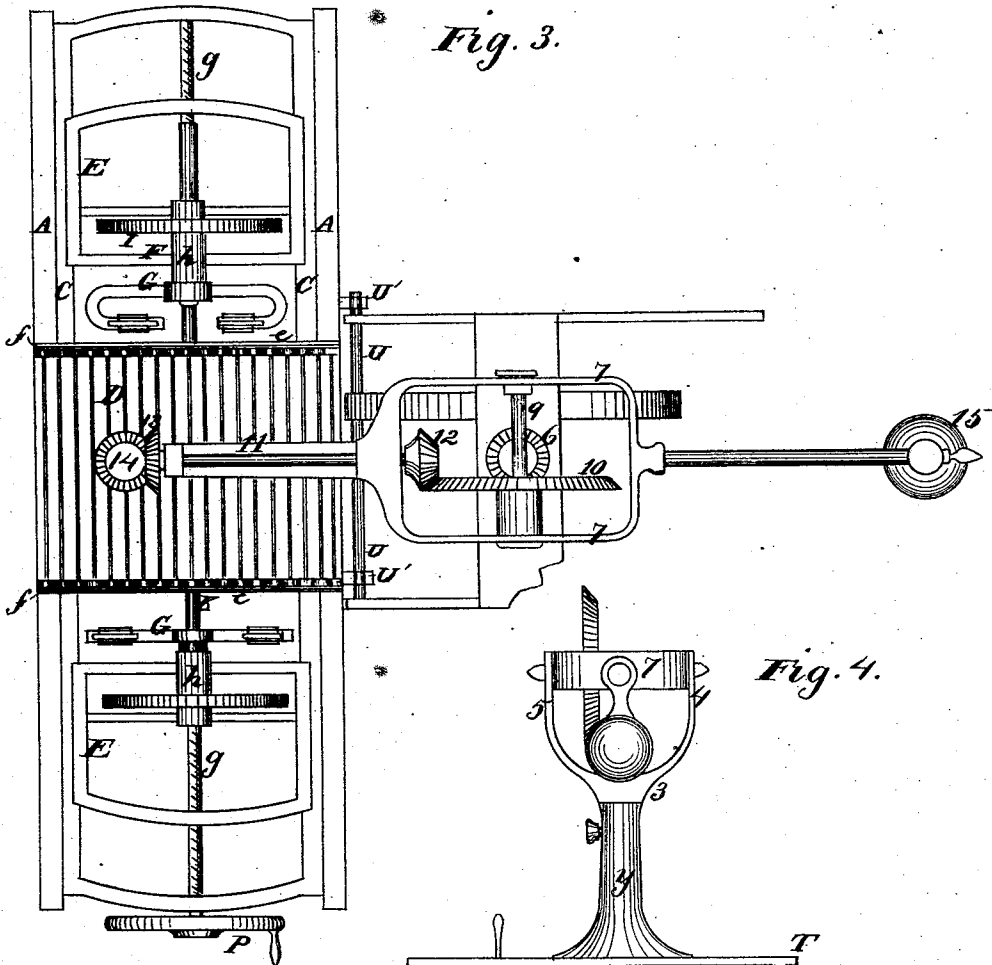
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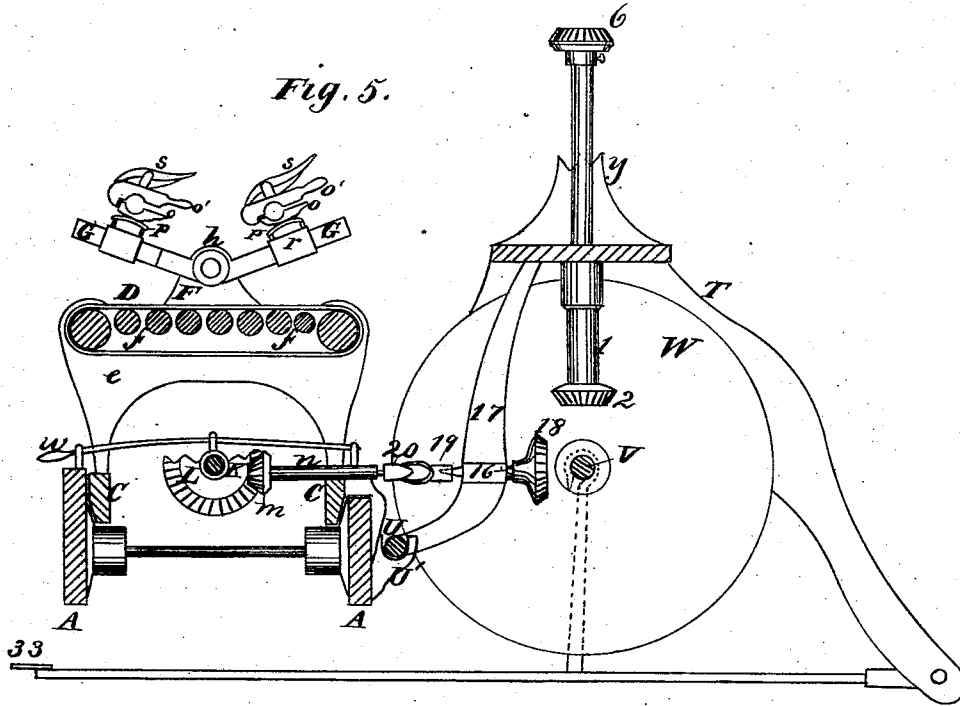
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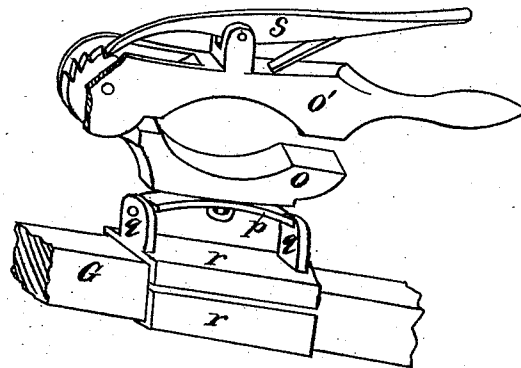
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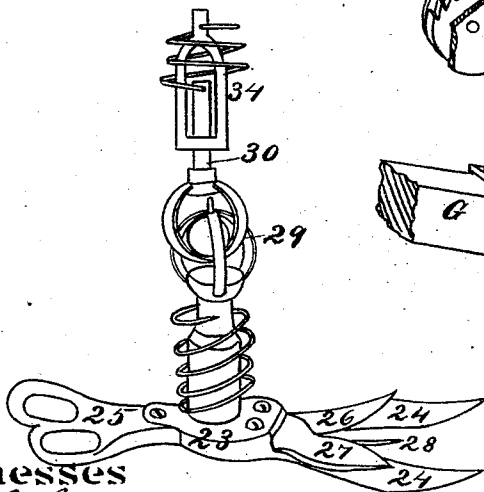
*Fig. 5.*



*Fig. 7.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

EPHRAIEM CHAQUETTE, OF INDEPENDENCE, CALIFORNIA.

## IMPROVEMENT IN SHEEP-SHEARING MACHINES.

Specification forming part of Letters Patent No. 157,157, dated November 24, 1874; application filed October 12, 1874.

*To all whom it may concern:*

Be it known that I, EPHRAIEM CHAQUETTE, of Independence, Inyo county, State of California, have invented a Sheep Holding and Shearing Machine; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to a machine for holding and shearing sheep.

The machine consists of a novel device for holding and turning the sheep while it is being sheared; an endless belt or table for supporting the body of the sheep, which is caused to travel by the movement and weight of the sheep while it is being turned, thus causing it to carry the sheared fleece to the front of the machine; and also in other devices, hereinafter more fully set forth.

In the construction of my sheep-shearing machine I employ two frames, which can be readily coupled together or disconnected at will. One single frame might be used; but for convenience in moving the machine from place to place I prefer to make it in two frames, so that it can be taken apart, packed in a small space, and readily put together again, when required, without materially disarranging the various parts. One of these frames supports the devices for holding, stretching, and turning the sheep while it is being sheared, while the other contains the driving and operating mechanism, and they are connected and operated in the manner more fully described in the following specification, in which reference is had to the accompanying drawings.

Figure 1, Sheet 1, is a side elevation of my machine. Fig. 2, Sheet 1, is a front elevation of a part of the machine. Fig. 3, Sheet 2, is a plan or top view. Fig. 4, Sheet 2, is a back view. Fig. 5, Sheet 3, is a transverse section, showing the belt-table upon which the sheep lies. Fig. 6, Sheet 3, is an enlarged view of the cutter. Fig. 7, Sheet 3, is an enlarged view of the holding device.

A A is a stationary frame, consisting of two horizontal timbers supported at the proper

distance apart, and held parallel with each other by connected legs or end pieces B at each end, so as to provide a low frame of the desired length. Inside of these timbers a horizontal table, C, is arranged, so that it can be adjusted back and forth, either in ways or upon rollers. I prefer to employ rollers, as represented, as they permit the table C to move easily, and with but little friction, so that the same can always be adjusted to the shears, as may be desirable. Upon the middle of this sliding table C, I construct a table by securing two parallel upright side pieces, *ee*, transversely across the table C, and extending rollers *ff* between them, so that the journals of the rollers will bear in the upper edges of the side pieces. An endless slat-belt, D, is then secured around these rollers, so that it will present an upper flat surface, as represented, and thus provide a bed for the body of the sheep to lie upon. At each end of the sliding frame C, and upon each side of the table, above described, I place a sliding head, E. Both of these heads are arranged to slide upon the side rails of the table C, and are operated simultaneously by right and left hand screws cut on opposite ends of a rod, *g*, which extends longitudinally through the middle of the table C, and which is operated by a crank-wheel, P, at one end of the frame, so that the two heads can be moved toward or from each other by turning the hand-wheel. Each head E has an upright standard, F, next to the table, and in the upper end of these standards a box, *h*, is secured, in which a short journal or shaft turns. On the inner end of this shaft, next to the table, a two-armed casting, G, is secured, one of which has the ends of its arms bent inward toward the table in the form of a U, as and for the purpose hereinafter described. The end of the shaft on the opposite side of the standard carries a spur-wheel, I, which engages with a spur-wheel, I', below. This spur-wheel I' has a hollow hub, *j*, which projects upon either side of the wheel, and one end of this hub bears in the lower end of the standard F, while its opposite end bears in a cross-beam, J, which extends across the head E. The spur-wheel I' is driven by a tubular shaft, K, which is long enough to extend

through the hubs *j* of both spur-wheels, near each end of the table *C*, while the screw-rod *g* passes through it, as shown. This tubular shaft *K* passes through the hollow hub of a bevel-gear wheel, *L*, near its middle, which moves on a feather on the shaft, so that it can be thrown in or out of gear by means of a lever, *w*, with a bevel-pinion, *m*, on the end of a tumbling-rod, *n*, which is driven as hereinafter described. Upon the arms of the casting *G*, at each side of the table or endless belt, I secure the clamps which hold the legs of the sheep. Each of these clamps consists of two jaws, *O O'*, which are hinged together at one end. The lower or fixed jaw, *O*, is fastened by a swivel-bolt to the middle of a plate, *p*, and the plate *p* has a journal formed on each end, which bears in lugs *q*, formed on the end of a square tube, *r*. The tube *r* is just large enough to slip on over the end of the arms of the casting, where they can be fastened at any point along their length desired by any suitable fastening. The movable or opening jaw *O'* of the clamp has a proper handle, which can be readily grasped with the hand to open and close the clamp. The portion of the hinge which pertains to the fixed jaw is formed into a ratchet, and a lever-pawl, *s*, is attached to the opening or movable jaw, so as to engage with the ratchet. A spring keeps this pawl closed down upon the ratchet, so that when it is desired to open the movable jaw the pawl-handle must be pressed against the handle of the opening jaw, and the moment its handle is released the spring will force the pawl into engagement with the ratchet again. A depression is made in each of the jaws of the clamp opposite each other, so that when the two jaws are closed together an opening will be provided, in which the leg of the sheep is held, and this opening will be cushioned or lined with sheep-skin to protect the leg from injury. These clamps are secured upon the outer bent portion of the U-shaped arms at one side of the table. The object in thus bending the arms and applying the clamps upon the outer ends is to provide a space between the extremities of the bent arms for the head of the sheep to occupy, as hereinafter described.

It will be observed that by the construction and arrangement of these clamps they are adjustable and movable, so that they will adapt themselves to any position easily.

*T* is a strong frame, having two of its supporting-legs upon one side shorter than the opposite two. The lower ends of these short legs are connected by a rod, *u*, which rests in hooks *u'*, and are secured to the rear timber *A* of the horizontal frame, thus equalizing their height with the height of the opposite or longer legs, and connecting the two frames together. A shaft, *V*, passes across this frame, and carries a combined balance-wheel and driving-pulley, *W*, and a toothed bevel-wheel, *X*, which has a smaller bevel-toothed rim close

to the shaft. A hollow standard, *y*, extends upward from the top of the frame *T* to the desired distance, and a shaft, *1*, passes vertically through this standard. The lower end of this shaft carries a bevel-pinion, *2*, which engages with the outside toothed rim of the bevel-wheel *X*, while its upper end extends above the standard. A swivel casting, *3*, rest upon the upper end of the standard *y*, and has two spreading arms, *4* and *5*, extending upward from it. The vertical shaft *1* extends through this casting *3*, and carries a bevel-pinion, *6*, on its upper end. *7* is a balance-beam, which is mounted between the spreading arms *4* and *5* upon hollow trunnions *8*, which rest in recesses in the upper ends of the arms. The middle of this beam is made in the form of a square, as shown, so that the sides of the square come inside of the arms, leaving a large opening between them. A shaft marked *9* extends across this opening, its ends bearing in the hollow trunnions of the beam *7*, and on this shaft is a bevel-toothed wheel, marked *10*. *11* is a shaft, which extends along one end of the beam *7*, bearing in suitable boxes, and carrying a bevel-pinion, *12*, at one end, inside of the opening between the upright arms *4* and *5*, so as to engage with the bevel-wheel *10*. The outer end of this shaft also carries a bevel-wheel, *13*, which engages with a bevel-wheel, *14*, and the bevel-wheel *14* is fixed to the upper end of a vertical shaft, which passes through the end of the beam, and serves to drive the shearing apparatus. The opposite end of the beam *y* is simply a rod, upon which a sliding weight, *15*, is arranged to move, so that the beam can be balanced on its trunnions.

It will be seen from the above-described mechanical arrangement that power applied to the driving-pulley *W* on the shaft *V* will drive the shaft *1* through the bevel-wheel *X* and *2*, while the pinion *6* on the upper end of the shaft *1* drives the bevel-wheel *10* and shaft *9*, and bevel-wheel *10* drives the shaft *11* and its connected gearing.

The balance-beam *7*, being mounted upon the swivel casting *3*, can be turned horizontally to any point of a circle without disconnecting its gearing, and can also be moved vertically upon its trunnions, thus providing a universal movement of the beam.

A horizontal shaft marked *16* is supported from a hanger, *17*, opposite to and at right angles with the shaft *V*, and this shaft carries a bevel-wheel, *18*, on its inner end, so as to engage with the smaller bevel-toothed wheel, which is formed on the side of the bevel-wheel *X*. The opposite end of this shaft is made square, so that it can be entered into a socket, *19*, which is connected with the tumbling-rod *n* of the first-described frame by a universal-joint connection, *20*. I thus connect the two frames so that by engaging a sliding clutch, *21*, which moves on a feather on the shaft *V*, with the hub of the bevel-gear *X*, all of the

mechanism of both frames will be driven from the same shaft V. A lever, 22, serves to operate the clutch 21, and extends out far enough to be within easy reach of a person standing upon the opposite side of the frame A A.

The shearing-tool which I use operates in a different manner from any of the sheep-shearing implements heretofore in use.

The body of the tool is marked 23, and consists of a flat case having two pointed guards, 24, extending out in front of it, the points of which are turned up in the usual way, while a handle, 25, is secured to the opposite side. This handle is constructed in a convenient manner to be grasped by the hand of the operator, so that he can guide and control the movements of the shears. Below the case is an oil box or chamber, in which a lubricant is contained, for the purpose of lubricating the shaft where it bears in the under side of the case.

The lower cutting-blade 26 is made with two prongs in the form of a V, the inner curved edges of which only are sharpened, while the upper blade 27 is two-edged. These blades are secured by a pivot in the usual way, and are operated by separate cams inside of the flat case. The blades 26 and 27 have an alternate vibrating motion, so that the upper blade meets the cutting-edge of each prong of the lower blade just as it passes inside of the guard, over which it vibrates, and thus gives a regular shearing cut. A point, 28, extends out as far as the ends of the shear-blades between the two guards 24, so as to separate the wool and give each blade its proportion, thus avoiding any overfeeding or choking of the blades. The guards 24 are wide enough to protect the movement of the lower blades, so that they cannot get into the wool outside of the guards.

The shaft which operates the cams inside of the case extends upward a short distance above the case, where it is connected, by means of a universal joint, 29, with a short extension-shaft, 30, and this short extension-shaft connects at its upper end, with a universal joint, 31, with the lower end of the vertical shaft, which passes through the outer end of the balance-beam. This shaft is provided with an extensible and flexible section, 34, at its middle, which is not only readily rotated in operating the shears, but permits the latter to be extended beyond their normal position when desired.

To prevent the wool from getting entangled with the universal joint 29, I surround it with a coiled wire from the case up to and above the joint, and then cover the wire with cloth, as at 32, thus providing a flexible case or cover which will effectually protect the joint.

The machine can be driven by foot-power, if desired, and I have applied a treadle, 33, which can be easily detached from the machine when it is to be moved, or when other power is to be used.

In the operation of this machine, the sheep is thrown upon the bed or table, which is formed by the upper flat surface of the belt D, so that it will lie transversely across it, with its head hanging down between the ends of the U-shaped arms of the casting G. The movable jaws O' of the clamps being thrown back, the legs of the sheep are placed one in each clamp, and fastened by closing the jaws, its body resting on the belt or table. The crank-wheel P is then turned, so as to move the sliding heads E toward the ends of the table C in opposite directions, and thus stretch the legs of the sheep until it is rendered incapable of moving voluntarily. The operator, by means of lever 22, moves the clutch 21 into engagement with the wheel X, so as to start the shearing mechanism into motion. He then grasps the handle of the shears with his right hand, and inserts the point of the shears into the wool, and guides them in the ordinary manner of shearing sheep. As soon as the shears begin to cut, the operator, either with his left hand or knee, moves the lever W, so as to throw the gear-wheel L into gear with the pinion m. This causes the tubular shaft K and its spur-wheels I' to rotate, and, as the spur-wheels I' engage with the spur-wheel I, the castings G on both sides of the bed or table will be rotated simultaneously. Now, as the legs of the sheep are firmly held in the clamps upon the arms of the castings, they will be carried around in a circle, still maintaining their relative positions, and causing the body of the sheep to rotate upon the bed or table, in the manner of turning a piece of wood in a turning-lathe. The castings G will turn slow enough to permit the operator to shear the fleece as it turns.

The weight of the body of the sheep upon the endless belt and its rotation will cause the endless belt to travel toward the front of the machine, and as the fleece is cut and falls upon the belt it will be carried automatically to the front of the machine, and deposited, when entirely severed, upon the ground.

As the sheep's head will hang below the level of the table while it is being sheared, the wrinkles in its neck will be stretched out, so that no difficulty will be encountered in shearing it, and the stretching process to which the sheep's body is first subjected will accomplish the same result for the body.

I thus provide a machine which will hold and shear sheep with great facility. The speed with which the work is accomplished prevents the sheep from becoming fatigued by reason of its peculiar situation, and, as the operation does not hurt or injure the sheep, it will not attempt to struggle while in the stocks. The great flexibility of the parts of the machine renders the work of shearing simple and easy.

The balance-beam can be swiveled to any point, and fixed in place by a set-screw, when desired.

It can also be used for shearing pelts, by employing a table to place the pelt upon, and swiveling the beam around to the proper position.

A full-sized shearing-machine will be comparatively light, and it can be easily taken apart and put together again when desired.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The sliding table C, provided with the heads E and the right-and-left-hand screw *g*, in combination with the belt-table D and rotating castings G, substantially as and for the purpose set forth.

2. In combination with the belt-table D, consisting of an endless belt fitting around the rollers *ff*, the sliding heads E, with their rotating castings G and adjustable clamps *r*, and means for rotating the castings G, substantially as and for the purpose set forth.

3. The clamps consisting essentially of the jaws O O' and ratchets *s*, the said jaws O' be-

ing connected to the plates *p*, which latter are journaled in lugs in the sliding tube-boxes *r*, as and for the purpose set forth.

4. The means herein described for automatically turning the sheep, consisting essentially of the sliding gear L, the gear *m*, tubular shaft K, gears I J, and castings G, substantially as above set forth.

5. The shearing implement consisting of the guards 24, point 28, and the vibrating shear-blades 26 and 27, inclosed in a proper case, and provided with a suitable handle, and with means for operating the same, in the manner above described.

6. In a sheep-shearing machine, a pendant for supporting the shears, consisting essentially of the joints 29 and 31, and the yielding connection 34, substantially as and for the purpose set forth.

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