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CONTRA OSCILLATING ECCENTRIC SKINNING IMPLEMENT

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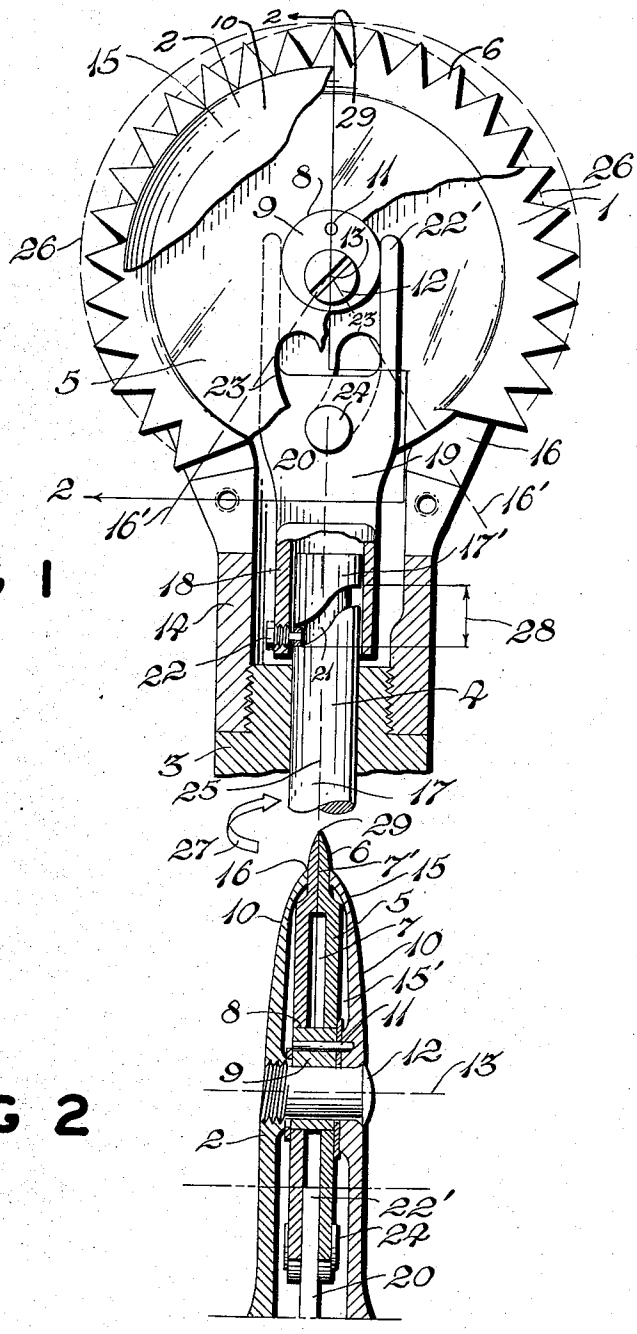

FIG 1

FIG 2

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CONTRAOSCILLATING ECCENTRIC SKINNING IMPLEMENT

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5 Claims. (Cl. 17—21)

1

My invention relates to new and useful improvements in skinning implements, particularly to the rotating knife type of implement, an object of my invention being to provide a device of the character herewithin described which includes a pair of contrarotating skinning elements eccentrically mounted to provide an improved shearing cut thereby facilitating the separation of the hide from the animal.

A further object of my invention is to provide a device of the character herewithin described which can be used with equal facility in hide removal, by either hand, and which can be operated efficiently by virtually unskilled labour thereby reducing the training period of such personnel substantially.

Another object of my invention is to provide a device of the character herewithin described which includes a novel form of drive for the cutting element readily adaptable for use with either a conventional compressed air motor or a flexible shaft driven from a remote source of power.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which—

Figure 1 is a front elevation of the head of my skinning implement sectioned in parts to show the interior thereof.

Figure 2 is a section along the lines 2—2 of Figure 1.

In the drawings like characters of reference indicate corresponding parts in the different figures.

Proceeding now to describe my invention it will be seen upon reference to the accompanying drawings that it comprises the following main components. A pair of skinning elements 1 contained within a shielding casing 2 which is attached to a manipulating handle 3 through which passes a driving assembly collectively designated 4.

The skinning elements 1 each consist of a relatively thin disc 5 having a semi-circular toothed or serrated perimeter 6 which forms the cutting edge. Reference to Figure 2 will show that the discs 5 are dished internally as at 7 and are provided with interfacial bearing surfaces 7' adjacent the perimeters thereof which are in superficial contact when assembled. The perimeters 6 form what I define as arcuate bi-serrate skinning edges which are adapted to move in opposite eccentric-oscillatory relationship as will hereinafter be described.

2

Each skinning element is provided with an offset or eccentrically situated aperture 8 by which they are mounted for oscillatory motion upon a stationary bearing shoulder 9 located between the portions 10 of the shielding casing 2. The bearing shoulder 9 is secured to the shielding casing by means of the location pin 11 and is supported by means of a bolt 12 which extends transversely through the assembly as shown in Figure 2 of the accompanying drawings. Bolt 12 passes through the bearing shoulder 9 below the centre thereof thus forming in effect an offset cam upon which the skinning elements oscillate.

From the foregoing it will be appreciated that each skinning element will move in eccentric relationship to the centre or axis of rotation, indicated by the reference character 13, due to the aperture 8 and the bearing shoulder 9 being off centre.

The shielding casing 2 comprises a pair of opposed and predominantly circular cheek-plate portions 10 one of which has the handle attaching portion 14 co-terminus therewith. Each cheek-plate portion 10 is provided with a convexly curved perimeter 15 and is machined internally as at 15' to provide a housing for the aforementioned pair of skinning elements 1. A curvilinear perimetrical slot 16 is provided between the cheek-plates 10 extending around the major segment thereof diametrically opposite the handle 3 and is bounded by the terminal radii 16'. The perimeters 6 of the skinning elements 1 project through this slot as clearly shown in Figure 2 of the accompanying drawings.

The elongated manipulating handle 3, which is shown in fragmentary form in the accompanying drawings, is screwed to the lower end of the handle attaching portion 14 and may contain a conventional air motor or a flexible shaft which provides rotation to the primary driving element or shaft 17. The upper portion 17' of the driving member 17 rotates within a sleeve portion 18 of a reciprocating head 19. Head 19 comprises the aforementioned sleeve portion 18 which merges into a flat or planar fork portion 20 the purpose of which will hereinafter be described. A continuous helical scroll slot 21 is formed around the upper portion 17' of the shaft 17 having a configuration shown in the accompanying drawings, within which is engageable a cam follower pin or stud 22 extending internally from the sleeve 18 and which in this embodiment takes

the form of a bolt screwed therein. Rotation of shaft 17 will cause reciprocation of the head 19 due to the coaction existing between the stud 22 and the scroll slot 21.

The fork portion 20 of the head 19 extends upwardly between the skinning elements 1 and terminates in a pair of tines 22', one at each side of the aforementioned bearing shoulder 9 against which they reciprocate. Each skinning element is provided with an arcuate eccentric strapway 23 formed in the lower portion thereof and in opposition one with the other within which is engageable follower pin 24 extending from each side of the aforementioned fork portion 20 of the element 19 as clearly shown in Figure 2 of the accompanying drawings and in at least one of the appended claims I have defined elements 23 and 24 as a curvilinear track and follower action coacting between the head 19 and the skinning elements 1.

From the foregoing it will be seen that rotation of the driving element 16 will cause vertical reciprocation of the component 19 along the produced longitudinal axis 25 of the manipulating handle 3. Reciprocation of the component 19 will cause opposite oscillatory motion of the skinning elements 2 by virtue of the engagement therewith of follower 24 extending from the fork portion 20.

As the offset or eccentricity of the aforementioned bearing shoulder 9 occurs along the produced axis 25 of the manipulating handle 3 the maximum oscillatory throw of each skinning element will occur on one or the other side thereof and is indicated by the broken line 26 in Figure 1.

In order to explain the operation of the device it is to be assumed that the primary driving shaft 17 is rotated slowly in the direction of arrow 27. This will cause head 19 to move upwardly in relation to Figure 1 governed by the vertical distance 28 between the upper and lower limits of the scroll slot 21. The engagement of follower 24 within the strapways 23 of the skinning elements will cause said elements to move clockwise and counterclockwise respectively as lateral movement of the fork portion 20 is prevented by the engagement of tines 22 around bearing shoulder 9. Due to the offset mounting of the skinning elements upon this shoulder the perimeters of the skinning elements will move outwardly or eccentrically with relation to the axis of rotation 13. Continued rotation of driving element 16 causes the oscillating component 19 to move downwardly thus causing opposite oscillation of the skinning elements which return to the position shown in Figure 1. During one complete cycle the skinning edges 6 have moved in combined linear and rotary shearing relationship thereby increasing the efficiency of the cutting action thereof.

The maximum eccentricity or maximum oscillatory throw of each skinning element occurs substantially at right angles to the produced axis 25 of the manipulating handle 3 reducing to zero at the point 29 which I designate as "the crest of eccentricity." In this context it is to be noted that the eccentricity of the skinning elements has been accentuated for clarity and that there is no recess or depression at 29 although it appears to be the case in the accompanying drawings. In the accompanying claims I have defined the maximum oscillatory throw as the linear eccentric displacement of the perimeters of the skinning elements from concentricity with respect to the axis of rotation, at the crest of eccentricity thereof. This maximum oscillatory throw occurs in angular relation to what I have defined in certain of the claims appended hereto as the predominant direction of thrust or progress of the implement when in use thereby permitting maximum utilisation of the cutting edges.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. A skinning implement comprising in combination a shielding casing, a pair of skinning elements each having a semi-circular serrated perimeter, said elements being in superficial contact such as to provide an arcuate bi-serrate skinning edge said skinning elements being eccentrically mounted with respect to each other, and means operatively connected to said elements for imparting motion to at least one of said elements whereby the serrated perimeter thereof moves in eccentric, shearing relationship to the other.

2. A skinning implement comprising in combination a shielding casing, a manipulating handle and a pair of thin, substantially discoid skinning elements each having a perimeter at least semi-circularly serrated, said elements being in co-planar contact to provide a semi-circular bi-serrate skinning edge said skinning elements being eccentrically mounted with respect to each other and means operatively connected to said elements for imparting motion to at least one of said elements whereby the serrated perimeter thereof moves in eccentric shearing relationship to the other.

3. A skinning implement comprising in combination a shielding casing, a manipulating handle and a pair of skinning elements each having a semi-circular serrated perimeter, said elements being in superficial contact such as to provide an arcuate bi-serrate skinning edge said skinning elements being eccentrically mounted with respect to each other, and means operatively connected to said elements for imparting opposite oscillatory motion to said elements whereby said serrated perimeters move in combined linear and rotary, shearing relationship, the maximum oscillatory throw as herewithin defined of each skinning element occurring on one of the other side of the produced axis of said handle.

4. A skinning implement comprising in combination a shielding casing, a manipulating handle and a pair of thin, substantially discoid skinning elements, each having a perimeter at least semi-circularly serrated, at least one of said elements being eccentrically pivoted, said elements being in co-planar contact to provide a semi-circular bi-serrate skinning edge and means operatively associated with said elements for imparting oscillatory motion to said elements whereby the serrated perimeters thereof move in eccentric shearing relationship.

5. A skinning implement comprising in combination a shielding casing, an elongated manipulating handle and a pair of thin, substantially discoid skinning elements each having a perimeter at least semi-circularly serrated, at least one of said elements being eccentrically

pivoted, said elements being in co-planar contact to provide a semi-circular bi-serrated skinning edge and means operatively associated with said elements for imparting oscillatory motion to said elements whereby the serrated perimeters thereof move in eccentric shearing relationship, the axis of said manipulating handle being parallel with the plane of said elements, said shielding casing being formed of a pair of opposing and predominantly circular cheek-plates attached to one end of said handle, said plates having a perimetrical slot the segment enclosed by the terminal radii of which is diametrically opposite said handle, a portion of said bi-serrate skinning edge projecting through said slot, the pivotal mounting of said oscillating elements spanning said plates, said means for imparting oscillatory motion consisting of a reciprocating head, a handle mounted shaft for operating the same via scroll slot and said means coacting between said shaft and head, said means for imparting oscillatory motion also including a curvilinear track and follower action coacting between said head and pivoted skinning elements for effecting the eccentric movement of said skinning elements as aforesaid upon reciprocation of said head.

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