

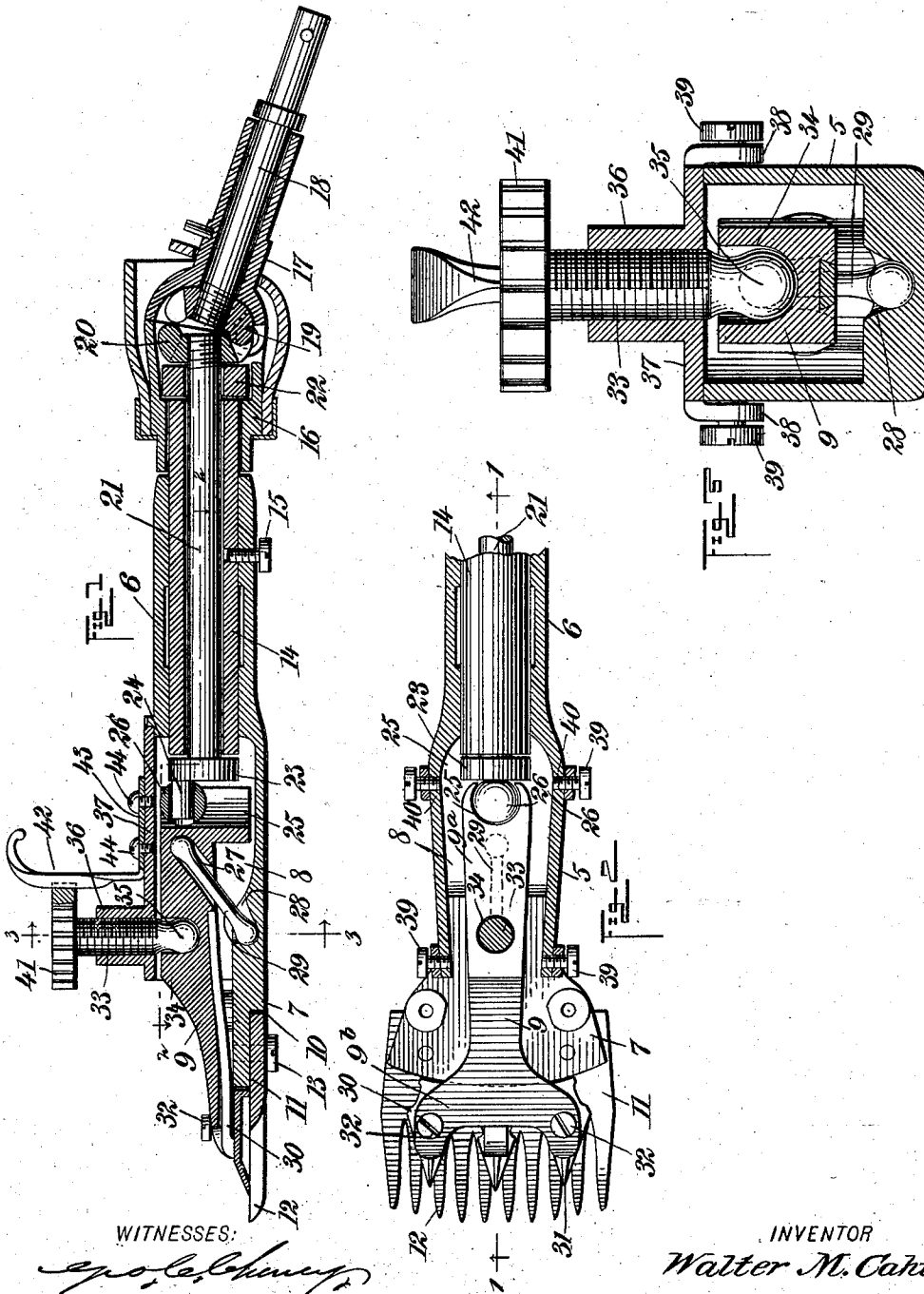
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PATENTED DEC. 29, 1903.

W. M. CAHILL.  
ANIMAL SHEARS.

APPLICATION FILED JAN. 26, 1903.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WALTER MYRON CAHILL, OF WINONA, MINNESOTA.

## ANIMAL-SHEARS.

SPECIFICATION forming part of Letters Patent No. 748,478, dated December 29, 1903.

Application filed January 26, 1903. Serial No. 140,542. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER MYRON CAHILL, a citizen of the United States, and a resident of Winona, in the county of Winona and State of Minnesota, have invented a new and Improved Animal-Shears, of which the following is a full, clear, and exact description.

This invention relates to improvements in animal-shears of that class known as "clippers," which are more particularly used for shearing sheep, although the improvements may be used generally in animal-shears.

The object of this invention is to provide an improved instrument wherein the friction of the working parts is minimized.

A further object is to simplify the construction of the shears by the elimination of certain friction parts which are present in some prior kinds of shears, and to thereby promote the efficiency of the instrument and decrease the cost of manufacture.

Further objects and advantages of the invention will appear in the course of the subjoined description and the novelty will be defined by the annexed claims.

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

Figure 1 is a vertical longitudinal section through an animal-shears embodying my invention, the plane of the section being indicated by the dotted line 11 of Fig. 2. Fig. 2 is a horizontal sectional plan view taken in the plane indicated by the dotted line 2 2 of Fig. 1, and Fig. 3 is a vertical transverse section in the plane of the dotted line 33 of Fig. 1.

5 designates the body of the implement, 40 having a rearwardly-projecting extension 6 and a flat plate 7, the latter being made in one piece with the body and extending beyond the front edge thereof. The body 5 is provided with an internal chamber 8, adapted to contain a part of the actuator 9 and the means for driving the same, as will presently appear. The forwardly-extending plate 7 constitutes a continuation of the bottom of the chambered body, and in the free edge of this plate is an undercut recess 10, which receives the heel of the comb-plate 11, the latter being provided with the forwardly-ex-

tending teeth 12, said comb-plate being fastened rigidly and detachably to the recessed under side of the plate 7 by screws 13 or their equivalents. In the tubular extension 6 of the body is arranged a longitudinal bearing-sleeve 14, held in place by a screw 15. One end of this sleeve is prolonged or extended beyond the tubular body extension 6 in order that it may receive a member 16 of a flexible coupling, the other member of which coupling is indicated at 17 and has pivotal connection with the member 16, said members being similar to couplings which are ordinary in this art. In the coupling member 17 is carried a shaft 18, adapted to be driven from any suitable source of power, and this shaft is provided with a bevel-gear 19 of peculiar pattern, the same adapted to always have intermeshing engagement with another bevel-gear 20. This bevel-gear 20 is secured firmly to an end portion of a vibrator-shaft 21, which extends longitudinally through the bearing-sleeve 14 and is held against endwise movement in one direction by means of the collar 22. Said shaft 21 has its opposite end portion extended into the chamber 8 of the body, and on this end of the shaft is fixed a crank disk or head 23, the same being provided with a crank-pin 24. (See Fig. 1.)

An essential feature of the present invention consists in the vibrator 9 and the means for mounting the same within the body 5. This vibrator is made in the form of a one-piece fork, having an elongated shank 9<sup>a</sup>. The heel or rear end of this vibrator-shank is provided with a curved recess 25, constituting a socket, which loosely receives a ball-shaped slide 26, said slide being approximately circular in shape, as shown by Figs. 1 and 2, to minimize the friction and provided with an axial opening. The globular slide 26 is fitted loosely on the crank-pin 24, so as to partake of the rotary motion thereof, in a path eccentric to the axis of the shaft 21, and this globular slide communicates the motion of the shaft to the vibrator 9 in a way to make it traverse the comb-plate 11.

The vibrator is provided on its under side and at a point just in advance of the socket 25 with an inclined socket 27. (See Fig. 1.) The inclined socket is closed at its upper end, while its lower end opens through the

under face of the vibrator. A step-bearing 28 is formed in the bottom of the chamber 8 at a point directly below a vertical screw 35, to be described, said step-bearing opening 5 through the upper face of the bottom and being disposed in opposing relation to the socket 27 of the vibrator. The socket 27 and the step-bearing 28 accommodate the end portions of a rocker-spindle 29, which is disposed in an inclined position across the longitudinal axis of the implement. This rocker-spindle is provided at its ends with enlarged rounded heads, one of which fits snugly in the socket 27 of the vibrator, while the other 15 occupies the step-bearing 28. This rocker-spindle maintains the heel of the vibrator 9 in an elevated relation to the bottom portion of the chambered body, and it will be noted that the vibrator is held free from frictional engagement with the chambered body 5, the 20 only parts of bearing being those afforded by the rounded ends of the rocker-spindle. The area of frictional surface is minimized by interposing the rocker-spindle between the 25 body and the vibrator, because the rounded ends of the spindle afford the points of suspension or support for the vibrator within the chambered body.

By reference to Figs. 1 and 2 it will be seen 30 that the rear portion of the vibrator-shank is housed within the body; but the enlarged or fork-shaped end portion 9<sup>b</sup> of this vibrator extends beyond the chambered body 5 and its plate 7. This exposed fork-shaped end of 35 the vibrator carries the cutter that is adapted to traverse the upper face of the comb-plate 11 and its teeth 12. This cutter is a steel plate 30, provided with a series of forwardly-projecting blades 31, three in number, as 40 shown by Fig. 2, although the particular number is not material. The cutter-plate is disposed in underlapping relation to the forked end 9<sup>b</sup> of the vibrator, and these parts are secured firmly together by screws 32. The 45 cutter-plate is thus attached directly to the vibrator, so as to move therewith and traverse the teeth 12 and the spaces therebetween of the comb-plate 11; but the cutter-plate may be readily detached by removing 50 the screws 32, thus making provision for easily resharpening the cutter-plate by grinding the same or in any other preferred way. The employment of the rocker-spindle 29 is of decided advantage, because it enables the 55 vibrator to accommodate itself to any position which the cutter-plate may assume with relation to the comb-plate, such irregularity in the position of the cutter-plate being due in some cases to the irregular grinding of the 60 under surface of the cutter-plate.

The fulcrum of the vibrator is afforded by a screw 33, which also furnishes the means whereby the frictional engagement between the cutter-plate and the comb-plate is regulated. Said vibrator 9 is provided in its upper 65 side and at a point intermediate of its length with a socket 34, the walls of which

are smooth and adapted to receive the ball-shaped lower end 35 of the screw 33, which ball-shaped end of the screw minimizes the 70 frictional engagement of the screw with the vibrator and allows the latter to move freely, particularly when using a worn cutter or a new cutter. The screw has threaded engagement with a female threaded tubular bearing 75 36, which is preferably made in one piece with a removable top plate 37, the latter being fitted over an open side of the chambered body 5, so as to close the chamber 8 therein. Said removable plate is provided with depending 80 ears 38, which overlap the sides of the body and which also support the fasteningscrews 39, the latter being adapted to screw into threaded openings 40, which are provided in the side walls of the body 5. (See 85 Fig. 2.) The upper end of the screw 33 is furnished with a notched head 41, with which is adapted to engage a spring locking-post 42, the same having an angular foot 43, which rests on the removable plate 37 and is fastened 90 detachably thereto by the screws 44.

The end of the spindle 29 engages the body bottom at a point in line with the vertical axis of the screw 33, which enables me to secure uniform tension on the vibrator and 95 cutter.

It is evident that the post 42 may be pressed by hand from engagement with the notched head 41 and that the screw 33 may be turned in a downward direction for the purpose of depressing the vibrator 9 and forcing the cutter 100 into the desired frictional engagement with the comb-plate and the teeth thereof, after which the spring-post is released to have interlocking engagement with the notched head 105 and prevent the adjusting-screw from turning accidentally in its bearing afforded by the sleeve 36. It will be observed that the rocker-spindle 29 engages with the under side of the vibrator, while the fulcrum and adjusting screw 33 has socketed engagement 110 with the upper side of said vibrator. When the shaft 21 is in motion, the crank-pin 24 and the head 26 operate on the heel of the vibrator to move it transversely within the chambered 115 body, and this vibrator turns on the axis afforded by the smooth lower end 35 of the fulcrum and adjusting screw 33, thus giving the traversing motion to the forked end of the vibrator and the cutter attached 120 thereto. During this traversing movement of the vibrator the rocker-spindle 29 is free to turn in the bearings provided for its reception in the vibrator and the bottom of the chambered body, said rocker-spindle conforming 125 easily and readily to the changing positions of said vibrator and also accommodating itself to the transverse adjustment of the vibrator obtained by the rotation of the screw 33.

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

1. An animal-shears having a body pro-

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vided with a step-bearing in the inner face of its bottom, a comb-plate, a vibrator provided in its upper side with a socket in vertical alinement with the step-bearing of the body and in its lower side with an inclined socket, an inclined rocker-spindle engaging the step-bearing of the body and the inclined socket of said vibrator, and an adjusting and fulcrum screw mounted in the body and fitted in the socket in the upper side of the vibrator.

2. An animal-shears having a body, a comb-plate, a vibrator provided with a cutter and having a socket in its upper side, a fulcrum-screw supported by the body and engaging the socket of the vibrator to adjust the latter and serve as the fulcrum or pivot for said vibrator, a rocker-spindle having its end portions seated in the body and the vibrator and disposed in an inclined position relative to the screw with its forward end in alinement with the said screw, and means to impart a traversing motion to the vibrator.

3. Animal-shears, comprising a body having a step-bearing in the inner face of its bottom and provided with a removable cap-plate, said cap-plate being provided with an internally-threaded tubular bearing projecting from its upper face, a comb-plate on the body, a fulcrum-screw in said bearing, a vibrator having a socket in its upper face in vertical alinement with the step-bearing of the body and an inclined socket in its lower face in rear of the socket in its upper face, a cutter carried by the vibrator, an inclined spindle having enlarged ends one end of the spindle engaging the step-bearing of the body and its other end the inclined socket of the vibrator, and means for operating the vibrator.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER MYRON CAHILL.

Witnesses:

FILEX CIESUSKI,  
CHARLES F. MUNETT.