

Aug. 6, 1929.

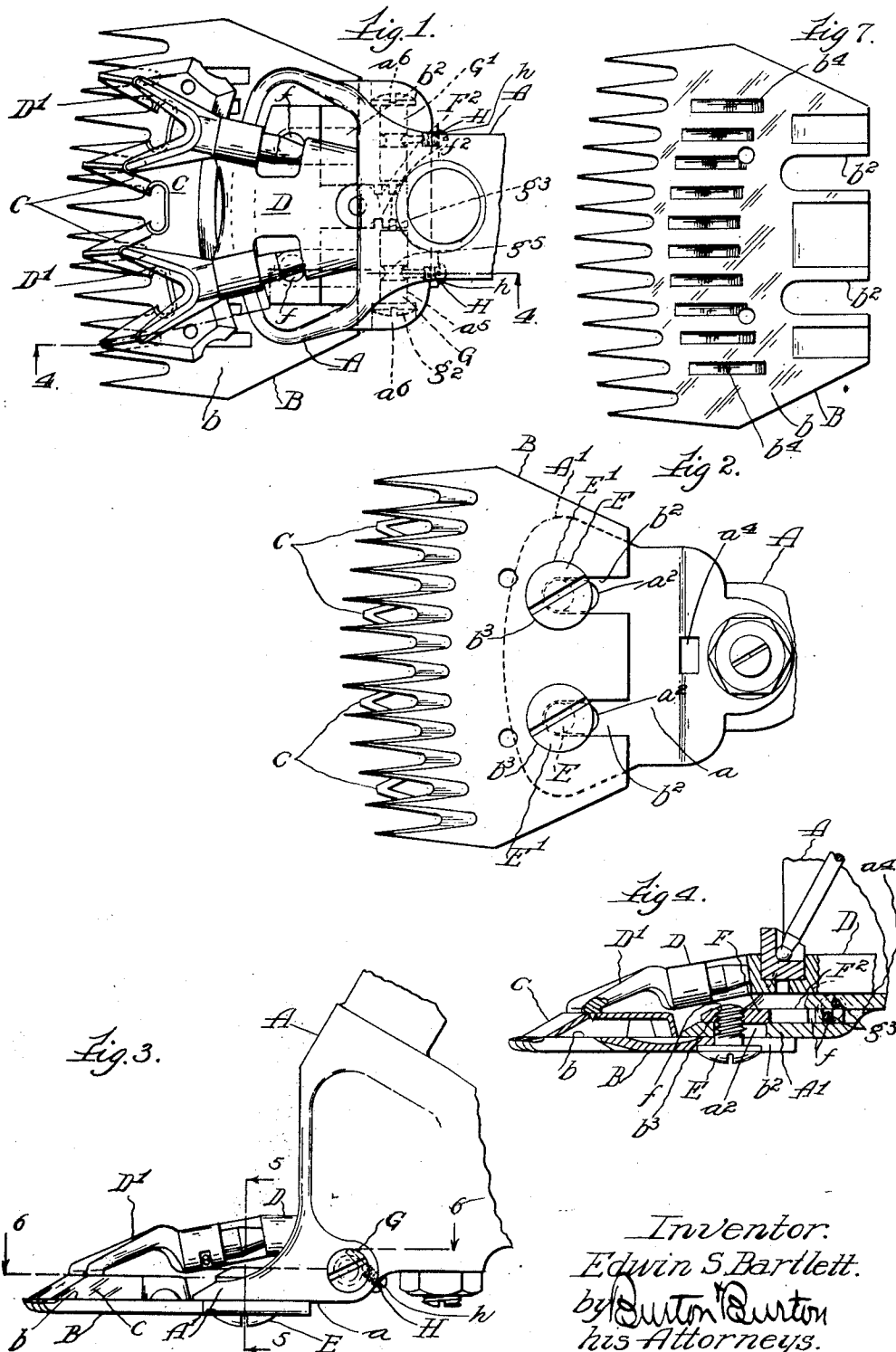
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1,723,323

SHEEP SHEAR

Filed Nov. 11, 1927

2 Sheets-Sheet 1



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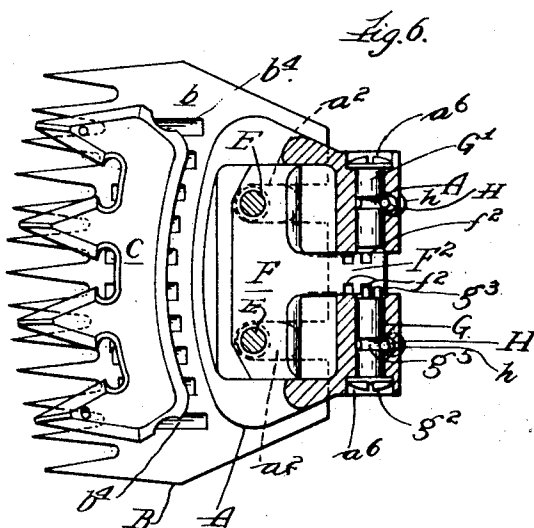
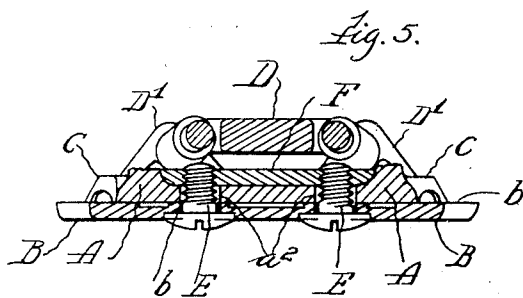
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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SHEEP SHEAR.

Application filed November 11, 1927. Serial No. 232,529.

The purpose of this invention is to provide an improved construction for a sheep shear, particularly designed with a view to maintaining the line of cut on the fixed comb and cutter member at desired position with respect to the comb teeth throughout range of change in the length of the teeth of the reciprocating cutter blade which results from grinding the latter for sharpening it as it wears. It consists in the elements and features of construction shown and described as indicated in the claims.

In the drawings:

Figure 1 is a top plan view of the forward part of a power-operated sheep shear embodying this invention.

Figure 2 is a bottom plan view of the same.

Figure 3 is a side elevation of the same.

Figure 4 is a vertical fore-and-aft section at the plane indicated by the line 4—4 on Figure 1, and also indicated at the line 4^a—4^a on Figure 2 for identifying said plane in relation to the means for holding the fixed cutter and comb member on the body.

Figure 5 is a section at the line 5—5 on Figure 3.

Figure 6 is a top plan view of the operating parts with the connections for operating the vibrating blade removed, section being made at the line 6—6 on Figure 3.

Figure 7 is a top plan view of the fixed comb and cutter detached from the body.

In the construction shown in the drawings, A represents the body member of the sheep shear; B is the fixed comb and cutter member; C is the vibrating cutter; D is the actuating and pressure lever by which the vibrating cutter is reciprocated over the fixed comb and cutter. The body member is formed at its lower forward part with a flat face, *a*, at the lower side of the forwardly projecting web, A¹, of said body member for seating thereon, the fixed comb and cutter member, B, which laps under said web, A¹, a sufficient distance for obtaining rigid securement of said fixed comb and cutter protruding forwardly beyond the forward margin of said web, A¹, and having the upper surface, *b*, of its forwardly protruding portion adapted for seating thereon and co-operating therewith for shearing action of the vibrating cutter, C.

For securing the fixed cutter and comb

rigidly to the body member at the lap of the rear portion of said fixed comb and cutter under the web, A¹, the latter has bolt holes or slots, *a*², elongated in the fore-and-aft direction, and the comb and cutter member, B, has correspondingly positioned slots or notches, *b*², leading in from its rear edge for the necessary distance to properly register with the lap under the said elongated bolt slots, *a*²; and there is provided for lodgment on the upper side of said web, A¹, a clamping bar, F, having threaded holes, *f*, *f*, for engagement of the threaded ends of clamping bolts, E, which are provided and dimensioned for insertion through the slots, *b*², of the fixed comb and cutter, and the elongated slots, *a*², of the body member web, and threaded for engaging the threaded apertures, *f*, of the clamp plate. Desirably for the purpose hereinafter explained, the fixed comb and cutter member, B, is recessed at the under side around the forward ends of the slots, *b*², as seen at *b*³, to receive and engage the heads, E¹, of the bolts, E, so that the said comb and cutter may be carried with the bolts, E, and the clamp plate, F, in the fore-and-aft adjustment hereinafter described. The reciprocating cutter blade is of a familiar type consisting of a steel stamping having a cavity at its under side which extends into the teeth which are thereby hollow at the under side, the cutting edges being formed at the boundary of the cavities and the teeth being each in its entirety tapered narrowing from the cutting edges upward transversely of the teeth and thinning forwardly to points. This form of tooth,—that is, tapered widening from the point rearward, and thickening from the point rearward, whether hollow underneath or solid, is substantially necessary for proper shearing operation and in order that the cutter teeth as well as the comb teeth may properly enter between and under the fibers of the wool to be severed. Such a cutter blade is sharpened by grinding its flat under face, which of course gradually narrows the teeth and shortens them by reason of the taper narrowing upwardly and thinning forwardly. Such shortening of the teeth in the absence of preventive means would cause the line of cut on the teeth of the fixed cutter and comb to be receded gradually as the reciprocating cutter being ground from time to time has the teeth thinned and short-

ened at each grinding. Such change in the relation of the line of cut to the comb teeth is undesirable and the purpose of this invention is to obviate such a defect, which is accomplished by mounting the fixed comb and cutter on the body member as described, so that it can be adjusted in fore-and-aft direction, and providing means for so adjusting it which can be readily operated without requiring the operator to pay any attention to the position of the comb with respect to any possible change of position laterally or with respect to the proper direct fore-and-aft trend of the teeth, these points being taken care of by the guidance of the comb on the body in the fore-and-aft adjustment. This provision enables the operator in adjusting the fixed comb and cutter member to devote his attention to bringing that member to rest in the fore-and-aft adjustment at such point that the line of cut will be in the most desirable position with respect to the cutter teeth. For effecting this fore-and-aft adjustment by the operator, the clamp plate, F, is formed with a rearwardly projecting stem, F², for which a guideway is provided as seen at a⁴, in the body member; and there is formed in the body member transversely of said guideway, a journal bearing seen at a⁵, for a small pinion shaft, G, which is inserted into said bearing from the side of the body, as seen at a⁶, and provided with a slotted head, g², to adapt it to be rotated by a screw-driver or like tool. This pinion shaft at its inner end has two pin teeth, g³, g³, and the stem F², of the clamp bar is formed with rack teeth, f², f², at either edge properly positioned for rack-and-pinion cooperation between the two parts so that the operator rotating the pinion shaft in the manner indicated may adjust the clamp plate in fore-and-aft direction, and said clamp plate, by means of the bolts, E, screwed into it and having their head, E¹, engaged in the recesses, b², of the comb plate, carries the latter with the clamp bar in the adjustment thus effected. For retaining the pinion shaft, G, in its journal bearing with freedom for rotation as described, said pinion shaft has a circumferential groove, g⁵, positioned for engagement by a screw, H, set through the heel of the body member as seen at a³, the end of the screw being dimensioned for engaging the groove, g⁵, and for being stopped by its head, h, when it is screwed in deeply enough for such engagement without engaging the pinion shaft against rotation.

To accommodate equally left handed and right handed operators in respect to the use of screw pressure for adjusting the pinion shaft, the stem, F², has rack teeth, f², f², at both lateral edges, and the journal bearing, a⁵, is suitably formed at both sides of the guideway, a⁴, so that the pinion shaft, g,

may be inserted in the journal bearing at either side of the body and secured by a screw, H, which is provided at both sides; and for closing the journal bearing at the other side there is provided a plug, G¹, without means for engaging the rack, but having the groove, g⁵, for engagement by the retaining screw, H.

The fixed cutter and comb member, B, has its upper face provided with a plurality of fore-and-aft extending grooves, b⁴, in the area over which the vibrating cutter reciprocates, which serve without materially weakening the member, the purpose of receiving any grit, hair or wax, or gummed oil, or other substance, which might accumulate between the two cutters, but which would be wiped off into these grooves in the reciprocation of the vibrating cutter.

It should be understood that the invention is not limited to the specific means described for clamping the comb plate to the body member, nor to the specific means for guiding the comb plate in fore-and-aft adjustment, nor to the specific means for engaging the comb plate with the operating means for said adjustment; and the specific means shown insofar as they are claimed specifically, are thus specifically calimed merely as preferred and not essential means for the several purposes.

I claim:

1. In a sheep shear and the like in combination with a body member, a fixed comb and cutter member mounted on the under side of the body member and protruding forwardly thereof; a vibrating cutter lodged on the upper side of the fixed comb and cutter at the part of the latter which protrudes forwardly of the body; operating connections overhanging and engaging the vibratory cutter for reciprocating it over the fixed comb and cutter, the body member being apertured at the area of the lap thereon of the fixed comb and cutter, the latter being adjustable in fore-and-aft direction on the body member; a clamping bar lodged above said apertured area, and clamping bolts engaging under the fixed comb and cutter and extending in the body aperture for engaging the comb in longitudinally adjusted position on the bottom face of the body member; whereby the line of cut may be maintained at the desired point on the fixed comb and cutter throughout changes in the length of the teeth of the vibrating cutter due to grinding the latter.

2. In the construction defined in claim 1, the aperture in the body member being elongated in fore-and-aft direction for the adjustment of the bolts therein, the bolts and the fixed comb member being co-operatively formed for engagement of the comb member by the bolts for carrying the comb with the bolts in the fore-and-aft adjustment for the purpose stated.

3. In the construction defined in claim 1, a fore-and-aft guideway for the clamping bar in the body member, and manually operable means for actuating the clamping bar along said guideway. 5

4. In the construction defined in claim 1, the body member having its apertures elongated in fore-and-aft direction to permit the adjustment of the bolts therein, and the bolts and comb being co-operatively formed for engagement of the comb by the bolts for carrying the comb with the bolts in fore-and-aft adjustment for the purpose stated; a fore-and-aft guideway for the clamp bar in the body member, and manually operable means for operating the clamp bar along the guideway. 10 15

5. In the construction defined in claim 1, a fore-and-aft guideway for the clamping bar in the body member, and manually operable means for actuating the clamping bar along said guideway, said means comprising a shaft extending transversely in the body having pinion teeth, the clamping bar having rack teeth for engagement by said pinion teeth, whereby the shaft upon rotation actuates the clamping bar along said guideway. 20 25

6. In a sheep shear and the like in combination with a body member, a vibrating cutter and a co-operating non-vibrating comb and cutter member mounted on the body member, adjustable in the longitudinal direction of the comb teeth; means for actuating the comb member for such adjustment; means for guiding the comb member on the body member in said adjustment, and means for securing the comb member in adjusted position; the body member having at its forward part a web under which the comb member is mounted, said web being longitudinally slotted, a bar lodged above said web, and connections from the comb member extending through the slots and engaged with the bar, means for actuating the bar in fore-and-aft direction to adjust the comb and hold it in adjusted position. 30 35 40 45

7. In the construction defined in claim 6,

the body member having a fore-and-aft guideway for the bar, and means mounted in the body member engaging the bar for adjusting it along said guideway to adjust the comb in the longitudinal direction of the comb teeth. 50

8. In a sheep shear and the like in combination with a body member, a fixed comb and cutter member mounted on the underside of the body member and protruding forwardly thereof, a vibrating cutter lodged on the upper side of the fixed comb and cutter at the part of the latter which protrudes forwardly of the body; a vibratory cutter lodged on the upper side of the fixed comb and cutter at the part of the latter which protrudes forwardly of the body; operating connections overhanging and engaging the vibratory cutter for reciprocating it over the fixed comb and cutter; means for adjusting the fixed comb and cutter member in fore-and-aft direction on the body member to maintain the line of cut at the desired point on the fixed comb and cutter throughout changes in the length of the teeth of the vibrating cutter due to grinding the latter, said means comprising a rack bar engaged with the fixed comb and cutter member, and a shaft and pinion journaled in the body with the pinion co-operatively related to the rack, and with the shaft exteriorly accessible for rotating it at will to effect said adjustment. 55 60 65 70 75

9. In the construction defined in claim 8, the rack bar having rack teeth accessible to the pinion at both sides, and the body having the journal bearing of the shaft leading in from both sides of the body, the pinion shaft being adapted to be inserted at either side of the body for the engagement of the pinion with the rack at either side, and means for engaging the shaft with the journal bearing at either side of the body. 80 85

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 8th day of November, 1927. 90

EDWIN S. BARTLETT.