

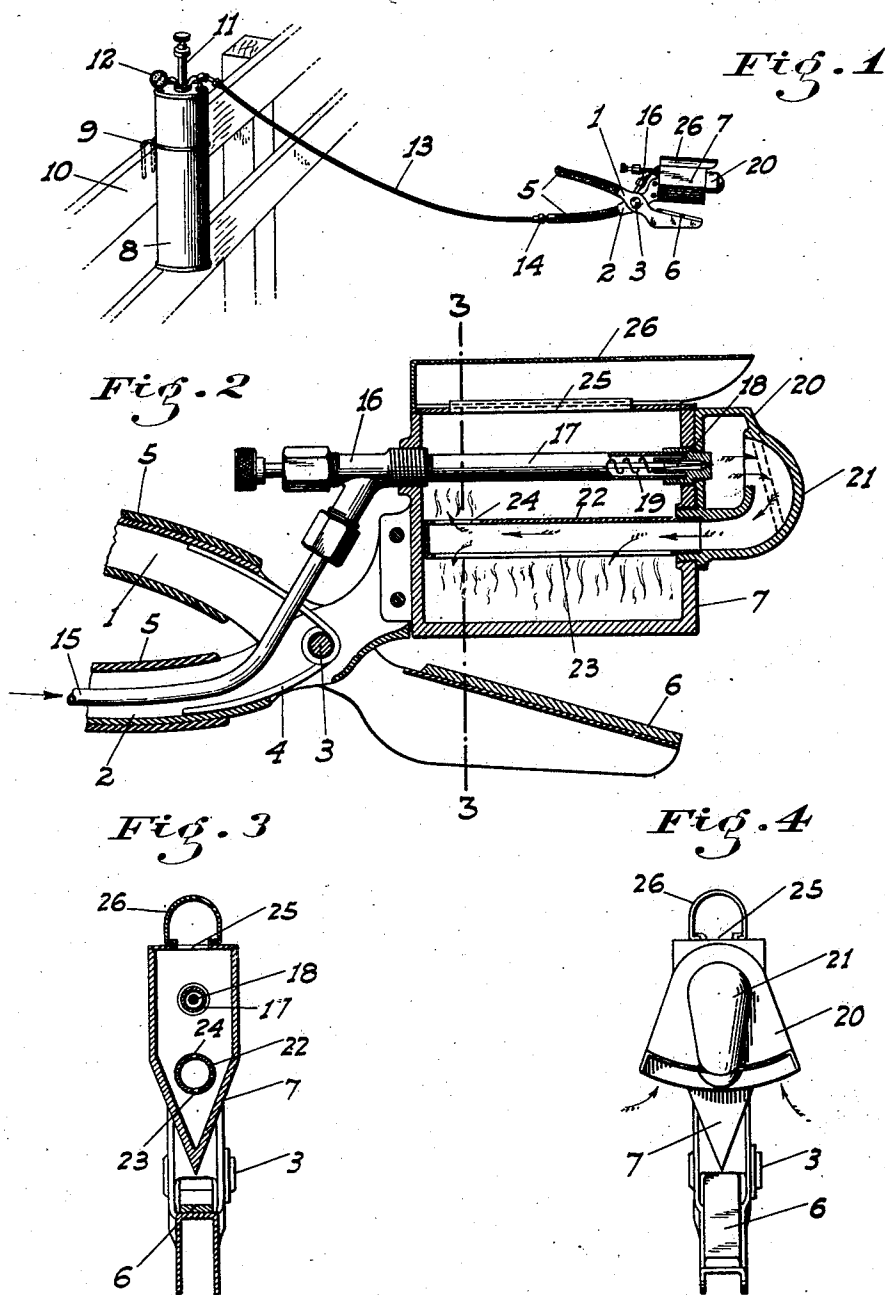
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FLESH CUTTING AND SEARING SHEARS

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FLESH CUTTING AND SEARING SHEARS

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This invention relates to flesh cutting shears, especially for cutting and searing the tails of lambs, and particularly represents modifications and improvements over the structure shown in my Patent No. 1,456,639, dated May 29th, 1923.

In this previous device a hydrocarbon burner was provided as the source of heat, with a fuel supply therefor carried in one of the handles. Not only was the burner as shown inadequate to evenly and properly heat the cutting blade, but only a quantity of fuel could be carried sufficient to last a very short time. The device as then constructed therefore was not feasible for commercial use, in which operations when once started must frequently be carried on continuously for a good many hours at least.

The principal object of my present invention is to avoid the above defective features by providing the shears with a hydrocarbon burner of increased capacity having a supply of fuel directly associated with the shears but separated therefrom so that ample fuel for several hours operation at least is had, without interfering with the ease of operation of the shears or increasing the weight thereof.

A further object is to construct the burner so that it will be very efficient in spite of the openly exposed conditions under which operations are apt to be carried out.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views;

Fig. 1 is a side elevation of my improved shears shown in connection with the fuel supply apparatus, the latter being mounted in its operative position.

Fig. 2 is an enlarged fragmentary sectional elevation of the shears.

Fig. 3 is a transverse section on the line 3—3 of Fig. 2.

Fig. 4 is an outer end view of the shears.

Referring now more particularly to the characters of reference on the drawings, the numerals 1 and 2 denote a pair of hollow handles pivoted adjacent one end as at 3 and normally separated by a spring 4, the handles being preferably covered by tubular heat resisting sheaths 5.

The handle 1 beyond the pivot is secured to a narrow flat pad 6, the outer face of which is disposed in a plane parallel to the pivot. The handle 2 beyond the pivot is secured to a hollow cutting blade 7 of considerably greater size than the pad 6, having a sharp edge along one side which is adapted to flatly engage the surface of the pad 6 from end to end thereof when the handles are brought together. When operating the shears they are manipulated so that the member to be cut rests on the pad and extends at right angles thereto, and the blade is then brought toward the pad, cutting through said member.

The hollow blade constitutes a housing in which the heating member is mounted, and such heating member and the parts associated therewith are arranged and constructed as follows:

A fuel tank 8 of any desired capacity is provided with hanger rods or hooks 9 by which said tank may be supported at an upright position from a fence rail 10 or other member of the corral in which the cutting operations are being carried on. The tank has an air pump 11 associated therewith of a similar nature to that provided on an ordinary blow torch, so that the fuel therein may be placed under suitable pressure, and an air gage 12 so as to determine what such pressure may be. A flexible conduit 13 of suitable length extends from the top of the tank to a fitting 14 by which detachable connection is made with a rigid tube 15. This tube passes along and in the handle 2 and then in front of the pivot 3 to a connection with a Y fitting 16 secured in the end of the blade 7 nearest the handle and near the face thereof furthest from the cutting edge.

A gas generating tube 17 connected to the inner end of the fitting projects lengthwise in the blade in spaced relation to the sides there-

of and through its opposite end; a needle valve 18 controlled from the outer end of the fitting 16 cooperating with the outer end of the generator tube to control the flow of fuel therefrom. A small spiral spring 19 or the like is preferably mounted about the needle valve stem inside the tube, which acts to break up and retard the flow through said tube. The needle valve end of the tube opens into a housing 20 forming a mixing chamber which is disposed outwardly of the blade and is opened only to the bottom, or toward the sharp edge of the blade.

A gas passage member 21 secured in connection with said housing and the adjacent end of the blade is disposed so that its upper end is open to the housing and in longitudinal alinement with but in spaced relation to the adjacent end of the tube 17. Its lower end is secured in the blade centrally of its width and some distance below the tube 17. The opening from the atmosphere into the chamber 20 is as far removed from the path of flow of the gases between the members 17 and 21 as possible, so that there is no possibility of the wind blowing across the housing from interfering with the proper passage of the gases across the space in the mixing chamber. Said opening facing downwardly relative to the normal position in which the shears are held, also aids in preventing the wind from blowing up into the mixing chamber.

A burner tube 22 secured to and communicating with the lower end of the gas passage member projects lengthwise in the blade to adjacent the opposite end thereof, having a narrow slot 23 extending for practically the full length thereof and facing downwardly toward the edge of the blade. Said burner tube also has a short slot 24 in the top facing the tube 17 above and disposed at the end of the burner tube furthest from the member 21.

The top of the blade has a long opening 25 covered by a removable U-shaped cap 26 which overhangs the housing and is opened only at such end.

In operation the liquid fuel under pressure passes from the tank 8 to the tube 17, the latter being initially heated as is usual in burners of this character in any suitable manner so as to cause an initial vaporization of the fuel as it passes through the tube. The vaporized gas emerging past the needle valve and passing into the passage 21 across the mixing chamber draws in a supply of air from said chamber, so that the gas as delivered to the burner tube will be in a properly combustible condition. The opening 25 and cover 26 not only provide a flue for the products of combustion from the burner, but the cover being removable enables the generating tube to have direct engagement with an exterior source of heat when initially heating

the tube to form the gas. The cover 26 also prevents foreign matter from dropping into the hollow interior of the blade and avoids the possibility of a wind extinguishing the fire. The main flame from the burner tube being directed toward the sharp edge of the blade keeps the same in an adequately heated condition, while the auxiliary flame at the slot 24 causes the fuel in the tube 17 to be constantly vaporized as it passes there-through.

The side faces of the blade having considerable area and being substantially flat, and being of course also heated provide means for easily searing the cut member should this be necessary.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. A flesh cutting shears including a cutting blade, a hydrocarbon burner mounted in fixed connection with said blade, a fuel tank remote from the shears, and passage means between the tank and burner including a flexible conduit from the tank to the shears and means on the tank for removably supporting the same from a fence rail or the like in clearance relation to the ground.

2. A flesh cutting shears including a hollow blade whose sides converge toward each other to form a cutting edge, and a hydrocarbon burner tube extending lengthwise in the blade from one end thereof and having an opening therealong facing the plane of convergence of the sides.

3. A structure as in claim 2, in which an opening is provided along the edge of the blade opposite to the sharp edge thereof.

4. A flesh cutting shears including a hollow blade whose sides converge toward each other to form a cutting edge, a hydrocarbon burner tube extending lengthwise in the blade from one end thereof and having an opening facing the plane of convergence of the sides, a generating tube in the blade disposed parallel to the burner tube and between the burner tube and the edge of the blade opposite the sharp edge, said generator tube being adapted at one end for connection to a source of fuel supply, and passage means between the opposite end of the generating tube and one end of the burner tube.

5. A structure as in claim 4, in which said burner tube has an opening in its side facing the generating tube.

6. A flesh cutting shears including a hollow blade whose sides converge toward each other to form a cutting edge, a hydrocarbon burner tube extending lengthwise in the blade from one end thereof and having an opening facing the plane of convergence of the sides, a generating tube in the blade disposed parallel to the burner tube and between the burner tube and the edge of the blade opposite the sharp edge, said generator tube being adapted at one end for connection to a source of fuel supply, a mixing chamber outwardly of the blade and open to the atmosphere and with which the opposite end of the generating tube communicates, and passage means from said chamber to the adjacent end of the burner tube.

7. A flesh cutting shears including a hollow blade whose sides converge toward each other to form a cutting edge, a hydrocarbon burner tube extending lengthwise in the blade from one end thereof and having an opening facing the plane of convergence of the sides, a generating tube in the blade disposed parallel to the burner tube and between the burner tube and the edge of the blade opposite the sharp edge, said generator tube being adapted at one end for connection to a source of fuel supply, a mixing chamber outwardly of the blade and open to the atmosphere and with which the opposite end of the generating tube communicates, and a passage member leading from the chamber in axial but spaced relation to the adjacent end of the burner tube; the opening from the chamber being in a plane removed from the path of the flow of fuel from the generator tube to the passage.

In testimony whereof I affix my signature.

CELESTIN I. LAGIER.