

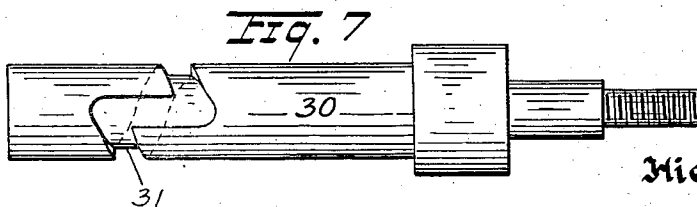
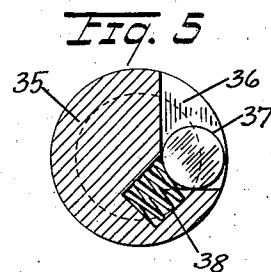
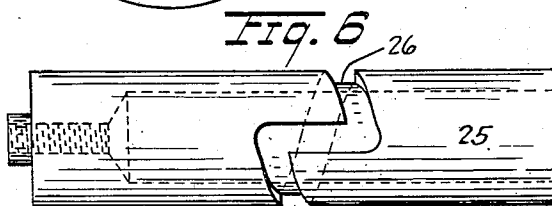
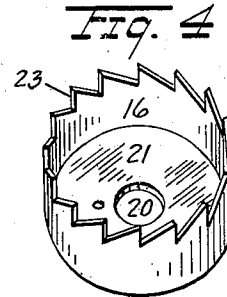
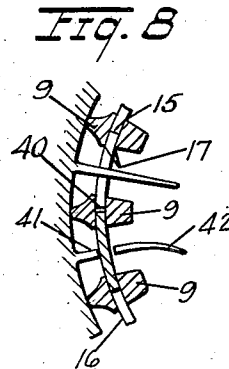
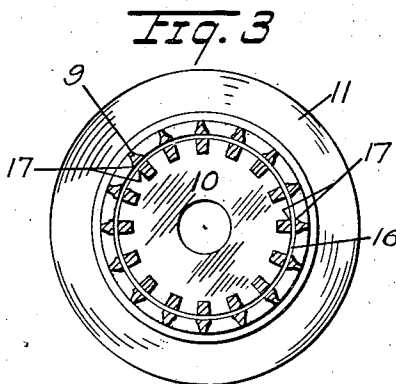
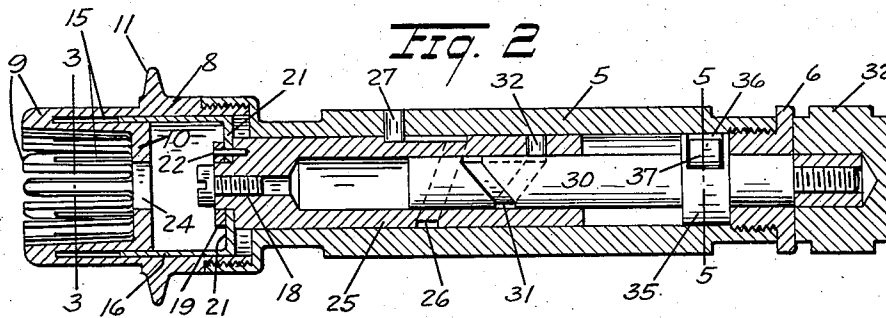
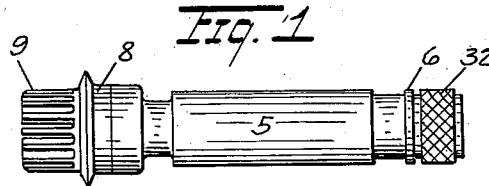
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H. SEIDERS

2,312,933

ROTARY CLIPPER

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ROTARY CLIPPER

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6 Claims. (Cl. 30-33)

My invention relates to rotary clipper devices, and more particularly to those adapted for and specially intended to clip the hairs growing in the nose and ear cavities of a person, and my object is to provide a fully protected safety device for closely clipping the hairs in such like cavities in a simple and effective manner, free from any discomfort or likelihood of harm to the delicate surrounding membrane.

More specifically my invention relates to an improved rotary clipper device having a safety cutting head, with a cutter blade movably mounted thereon, and means for operating said blade in a successive cycle of spirally projected rotations.

The nature of my improvements and the manner of their operation will be more fully described hereinafter in connection with the accompanying drawing, and the novel features set forth in the appended claims.

Fig. 1 is a side elevation of a rotary clipper embodying my invention.

Fig. 2 is a longitudinal sectional view, on an enlarged scale, of the clipper device shown in Fig. 1.

Fig. 3 is an enlarged cross sectional view of the safety cutting head, taken on the line 3-3 of Fig. 2.

Fig. 4 is a separate perspective view of the rotary cutter blade or thimble shear knife.

Fig. 5 is an enlarged cross sectional view of the ratchet lock for the cam spindle, taken on the line 5-5 of Fig. 2.

Fig. 6 is a separate side elevation of the cylindrical cam shown in Fig. 2, and

Fig. 7 is a similar separate side elevation of its cooperating cam spindle.

Fig. 8 is a diagrammatic view showing the manner of cutting the hairs.

Referring to the specific showing in the drawing, 5 indicates the outer casing or housing cylinder, closed at one end by apertured plug 6, and its larger open opposite end being shown as internally screw-threaded to receive the screw threaded inner end of the safety cutting head 8.

Cutting head 8 may, for economy of material and convenience in machining, be made up of several parts welded together, but is shown in the drawing as an integral cylinder with the wall at its free end thickened and radially slotted to form a circle of comb-like teeth or prongs 9 extending rearwardly to an interior cross-partition 10 intermediately dividing the inner length of said head 8, and to an exterior guard ring 11, 55

limiting the distance said prongs 9 may be inserted into a nose or ear cavity.

The outer end of head 8 is interiorly circularly slotted as shown at 15, beginning at the partition 10 and extending close to the outer ends of prongs 9; the outer diameter of said slot conforming with the inner diameter of the head 8, rearward of said partition, and forming a guide-way extension of such inner diameter for a rotary shear knife thimble or cutter blade 16 as shown. This circular slot 15 is interrupted by the spacings between said prongs 9, and forms hair cutting edges 17, 17 on the side walls of said prongs for cooperation with said cutter blade 16 as hereinafter described.

The cutter blade 16 is shown in the form of a thimble shear knife fitted within the cylinder head 8 and rotatably and longitudinally movable in guide way 15, as controlled by a cylinder cam 25, to which it is secured by a screw bolt 18 engaging through an interposed washer 19 and an aperture 20 in the base wall 21 of said thimble. A dowel pin 22 insures rotation of cutter blade 16 with cylinder cam 25, and cutting teeth 23 are formed on the annular edge of said cutter blade 16. Cross partition 10 is shown as apertured at 24 for insertion of a screw driver to tighten and loosen screw bolt 18.

Cylinder cam 25 is mounted to rotate and move longitudinally in housing cylinder 5, and is formed with a cam groove 26 engaged by a stud pin 27 set into the wall of said housing cylinder 5. Cylinder 25 is shown as receiving the end of a rotatable cam spindle 30, also formed with a cam groove 31 engaged by a stud pin 32 set into the wall of cam cylinder 25. The outer end of cam spindle 30 extends through apertured plug 6, and has secured to it a turn knob 32, as shown.

In order that cam spindle 30 may be turned only in one direction, the drawing shows said spindle with an enlarged collar portion 35 rotatably mounted in housing cylinder 5, and having a cam recess 36 in which a pawl roller 37 seats against a compression spring 38. When spindle 30 is rotated in one direction, pawl roller 37 seats at the base of its cam recess 36, but an attempt to reversely turn spindle 30 causes the pawl roller 37, under tension of its spring 38, to ride up the cam face of its recess 36 so as to frictionally engage against the inner wall of housing cylinder 5 and prevent rotation of spindle 30.

An important feature of my improvements, insuring positive and clean cutting of the hairs without danger of pulling them out by their roots, is that the cutting blade 16 shall both project

and retract longitudinally and rotate across the cutting edges 17, 17 of the prongs 9, preferably in a spiral projecting and straight retracting cycle of movement. To this end cam groove 26 and its stud 27, and cam groove 31 and its stud 32 cooperate as they are rotated by turn knob 30, spindle 30 merely rotating, but cylinder 25, to which the cutter blade 16 is secured, both rotating and moving longitudinally back and forth in housing cylinder 5, so as to spirally project and retract cutter blade 16. This cooperative action of the cam grooves 26 and 31 insures positive spiral projection and retraction of cutting blade 16 without fail, as might otherwise be the case were a single cam groove of the figure eight variety employed necessitating a cross-track traverse of the stud pin.

This spiral projecting rotation of cutter blade 16 insures positive and clean clipping of the hairs, by its cutting teeth shearing out an intermediate section 40 in the hair length, leaving a short stub 41, and an end cut-off section 42, as clearly seen in diagrammatic Fig. 8. This overcomes any tendency to pull out the hairs, likely to occur when scissor cutting blades are used. And my cutter blade, movable in the guide way 15, is fully protected and safe from any danger of pinching or cutting the delicate membrane lining such cavities. The prongs 9 are preferably rounded at their closed outer ends as shown and smoothly finished to facilitate entrance into a cavity without harm.

From the foregoing description, it will be clearly seen that my clipper device is fool proof and safely cuts the hairs without pull or danger of harming the cavity membrane, which is sensitive and subject to dangerous inflammations and disorders when injured.

The specific detail shown and described may of course be modified within the scope of my invention as defined in the following claims:

What I claim is:

1. A rotary clipper device comprising a cylindrical cutting head having a circular series of spaced-apart prongs each partially longitudinally slotted to jointly form a circular guide way for a cooperating cylindrical cutter blade mounted to rotate and move longitudinally in said head, said prong slots forming longitudinal cutting edges, and said cutter blade having cooperating end cutting teeth, and means for spirally projecting said cutting teeth across said prong slot cutting edges.

2. A rotary clipper device comprising a cylindrical cutting head having a circular series of

spaced-apart prongs each having a closed end and a transverse slot below the latter jointly forming a circular guide way within said prongs opening rearwardly into the interior of said cylindrical cutting head, a cooperating cylindrical cutter blade mounted in said head and rotatably and longitudinally movable in said guide way, said prong slots forming longitudinal side wall cutting edges, said cutter blade having end cutting teeth cooperating with said cutting edges, and means for spirally projecting and retracting said cutting blade in said guide way to move its cutting teeth across said prong slot cutting edges.

3. A rotary hair clipper device comprising a cutter head having a circular series of spaced prongs each partially longitudinally slotted to form spaced side wall cutting edges in the respective prongs and to cooperatively form a cylindrical guide way extending into and immediately crossing said spaced prongs, and a cylindrical cutter blade mounted to rotate in said guide way and having end teeth progressively passing through each prong so as to sever intermediate sections of hairs extending radially between said prongs.

4. A rotary hair clipper device comprising a cutter head having a circular series of spaced prongs each partially longitudinally slotted to form spaced side wall cutting edges in the respective prongs and to cooperatively form a cylindrical guide way extending into and immediately crossing said spaced prongs, a cylindrical cutter blade mounted to rotate and move longitudinally in said guide way and having end cutting teeth adapted to successively pass through each prong so as to sever intermediate sections of hairs extending radially between said prongs, and a cam spindle mechanism having a turn knob for operating said cutter blade in a succession of spirally projected and retracted rotary cycles.

5. In the construction set forth in claim 4, said cam spindle mechanism comprising a rotary cam spindle and a cooperating rotating and longitudinally movable cam cylinder secured to said cutter blade, and said cam spindle having a ratchet mechanism to prevent reverse rotation thereof.

6. In the construction set forth in claim 3, said cutter head having an exterior encircling guard ring defining its depth of projection into a body orifice.

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