

O. E. BACKUS.
HAIR CUTTING MACHINE.
APPLICATION FILED JAN. 3, 1919.

1,326,166.

Patented Dec. 30, 1919.

Fig. 1.

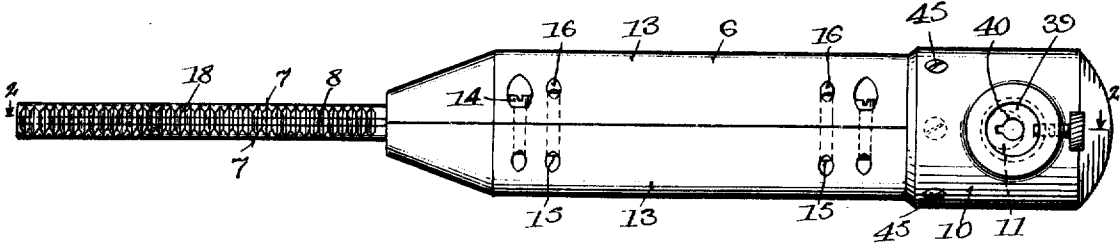


Fig. 2.

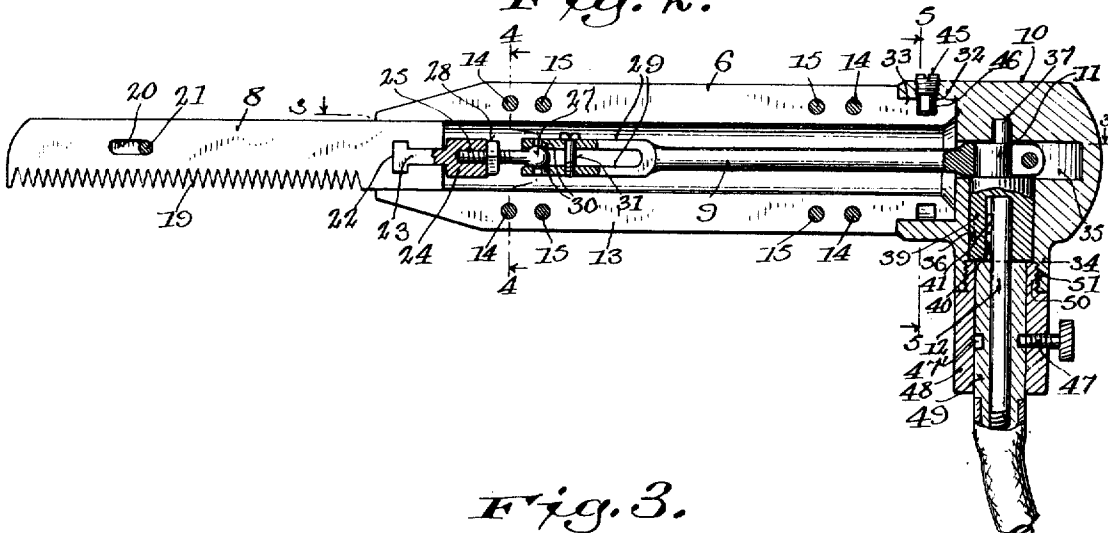


Fig. 3.

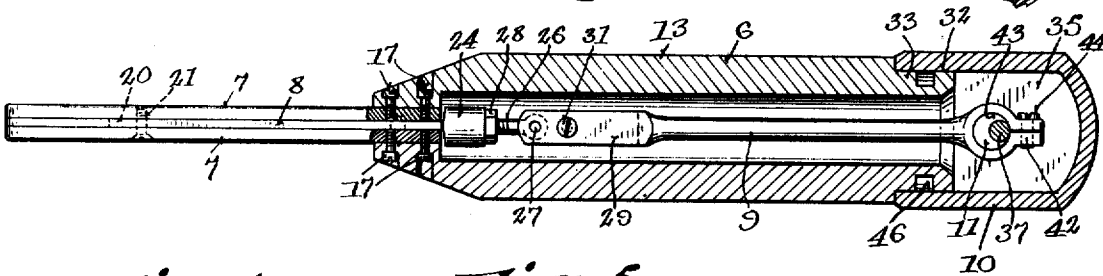


Fig. 4.

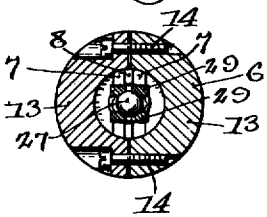
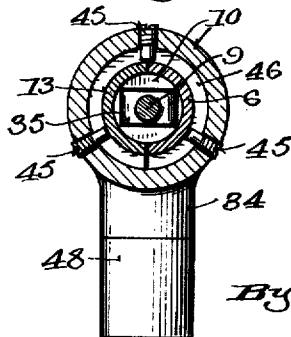


Fig. 5.



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UNITED STATES PATENT OFFICE.

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HAIR-CUTTING MACHINE.

1,326,166.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OSCAR E. BACKUS, a citizen of the United States, and resident of West Allis, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Hair-Cutting Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The invention relates to a hair cutting machine, and consists in the novel parts and combination of parts hereinafter described and shown in the accompanying drawings in which:

Figure 1 is a side view of the device embodying the invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 2; Fig. 4 is a section taken on the line 4—4 of Fig. 2; Fig. 5 is a section taken on the line 5—5 of Fig. 2.

In the drawings the numeral 6 designates the handle, 7 the fixed blades, 8 the movable blade, 9 the connecting rod operatively connected to the blade 8 as hereinafter described, 10 an end cap or housing forming part of the handle, 11 an eccentric journaled in the cap 10 and upon which the rod 9 is mounted, and 12 a portion of the drive shaft.

The handle 6 consists of complementary semi-cylindrical shells 13 secured together by screws 14, one of said shells carrying dowel pins 15 engaging in recesses 16 in the other shell.

One of the fixed blades 7 is secured at its rear end to the front end of one of the shells 13 by means of screws 17 and the other blade 7 is secured in like manner to the other shell, the blades thus secured being spaced apart due to their connection with the shells. Each of these blades is provided with cutting teeth 18.

The movable blade 8 is disposed between and guided by the fixed blades 7 and is provided with cutting teeth 19. Said blade is also provided with a longitudinally extending guide slot 20 through which a guide screw 21 secured to the fixed blades passes.

The blade 8 has a T-slot 22 in its rear end detachably receiving the T-shaped end 23 of a coupling member 24. The other end

of this member is provided with a threaded bore 25 adjustably receiving a threaded pin or bolt 26 having a ball-shaped end 27, said pin being secured in adjusted position by means of a lock nut 28. The front end 29 of the connecting rod is bifurcated, the bifurcations preferably extending at right angles to the plane of the blades and being provided with concave recesses 30 in which the end 27 of the pin 26 is universally movably mounted and detachably secured by means of a clamping screw 31 passing through said forks and secured thereto.

The cap 10 is provided with a bore 32 in which the cylindrical end 33 of the handle 6 is mounted and with lateral extension 34. A slot 35 is formed in the cap and extends outwardly to the bore 32, and a bore 36 in the extension 34 and main body of the cap leads to this slot. The eccentric 11 has a shaft end 37 journaled in the cap and a shaft end 39 journaled in the bore 36, said end 39 being provided with a key slot 40 in which the shaft 12 carrying the key 41 is detachably mounted. The eccentric itself rotates in the slot 35 and the connecting rod 9 has a split end 42 provided with a bore 43 in which the eccentric is mounted, a screw 44 being provided in said split end to adjust its bearing upon the eccentric. The cap carries set screws 45, the inner ends of which are seated in an annular groove 46 in the end 33 of the handle and said screws are preferably so adjusted as to permit a free turning of the handle with respect to the cap though they may be adjusted to lock said cap to said handle.

The shaft 12 is the end of a flexible shaft of usual construction which may be connected up to the drive shaft of any suitable motor and said shaft is detachably secured against withdrawal from the machine by a set screw 47 in a coupling member 48 engaging in an annular groove 47' in the end casing member 49 of the flexible shaft. The coupling 48 has a threaded end 50 engaging in a threaded bore 51 in the extension 34.

With the construction above described the rotation of the drive shaft will, through the eccentric 11, connecting rod 9 and universal joint connection with the blade 8, reciprocate said blade back and forth between

the fixed blades to perform the hair cutting operation, and owing to the fact that the movable blade is protected on both sides by the fixed blades the machine may be used with either side against the hair and the revoluble connection between the cap and handle also permits changing the inclination and position of the cutter at will without changing the position of the flexible drive shaft. Another important feature of this invention is the disposition of the blades in line with the handle which greatly facilitates its use in cutting hair as it is more easily guided and controlled by the operator.

I am aware that a single fixed blade may be used with the movable blade and that the construction of other features hereinbefore described may be varied, so that I do not wish to be understood as limiting the scope of my invention to the specific arrangement herein shown, but such structures as come within the scope of the appended claims I deem to be within the spirit of my invention.

What I claim as my invention is:

1. In a hair cutting machine, the combination, with a handle comprising complementary semi-cylindrical shells, of a cutting blade fixed to each shell at one end and disposed in line with the handle, a movable cutting blade disposed between said fixed blades and cooperating therewith, and means for actuating said movable blade.

2. In a hair cutting machine, the combination with a supporting member, of a fixed cutting blade and a movable cutting blade cooperating therewith, means for reciprocating said movable blade comprising a drive shaft and a driving connection between said shaft and movable blade including a universal joint, and a bearing for said drive shaft revoluble with respect to said supporting member.

3. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable cutting blade carried thereby, a connecting rod, a universal joint connection between said rod and said movable blade, and means rotatable with respect to said handle for reciprocating said connecting rod.

4. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable cutting blade carried thereby, a driving element, and a universal joint connection between said element and said movable blade, whereby the handle may be freely rotated without effecting the operation of the cutting blades.

5. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable cutting blade carried thereby, a member mounted on and turnable about said handle, a drive shaft mounted in said member, and a connection between said

drive shaft and said movable blade including a universal joint.

6. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable cutting blade carried thereby, a cap rotatably secured to the handle, an eccentric journaled in said cap, a drive shaft connected to said eccentric, a connecting rod mounted at one end upon said eccentric, and a universal joint connection between the other end of said rod and the movable blade.

7. In a hair cutting machine, the combination, with a handle comprising complementary semi-cylindrical shells, of a cutting blade carried by each shell near one end and in a line therewith, said cutting blades being in spaced relation, a movable cutting blade disposed between said first mentioned blades, a cap member rotatably engaging the end of the handle remote from the cutting blades, a drive shaft having one end disposed in the cap member, and means connecting said drive shaft and the movable blade to actuate the same.

8. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable blade carried thereby, said movable blade having a T-slot in its inner end, a coupling having a T-head engageable in the T-slot of the movable blade, a connecting rod in the handle and having one end engaged with said coupling, and driven means engaging the other end of said connecting rod.

9. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable cutting blade carried thereby, a coupling member engageable with the inner end of the movable blade, a pin having one end secured in said coupling and its other end ball-shaped, a driven shaft, and a connecting rod operated by the driven shaft and having one end engaged with the ball-shaped end of said pin to actuate the movable blade, said handle being capable of rotation without disturbing the drive connection between said driven shaft and said connecting rod.

10. In a hair cutting machine, the combination, with a handle, of a fixed cutting blade and a movable cutting blade carried thereby, a coupling member engageable with the inner end of the movable blade, a pin having one end secured in said coupling and its other end ball-shaped, a connecting rod having one end bifurcated and engaging the ball-shaped end of said pin to provide a universal joint therebetween, and a driven shaft connected with the other end of the connecting rod to reciprocate the same and actuate the movable blade, said handle being capable of rotation without disturbing the drive connection between said driven shaft and said connecting rod.

11. In a hair cutting machine, the combination with a handle, of a pair of spaced apart complementary cutting blades having their inner ends fixed to said handle, said
5 blades being in line with the longitudinal axis of the handle, a movable cutting blade mounted in the space between the fixed blades and cooperating therewith, a reciprocating member connected with the movable blade, and means rotatable with respect to
10 the handle for reciprocating said reciprocating member.

In testimony whereof, I affix my signature.
OSCAR E. BACKUS.