

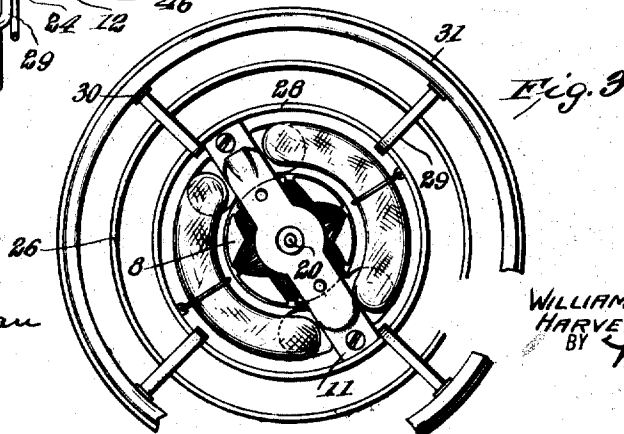
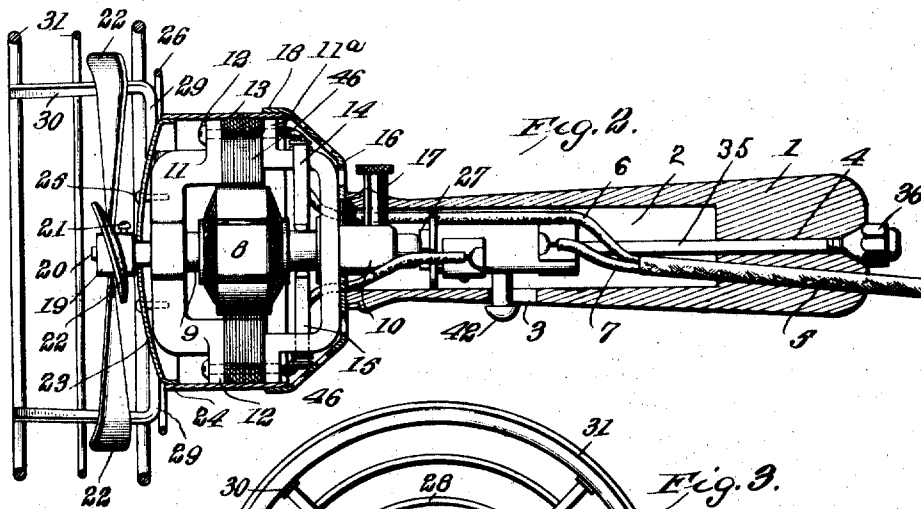
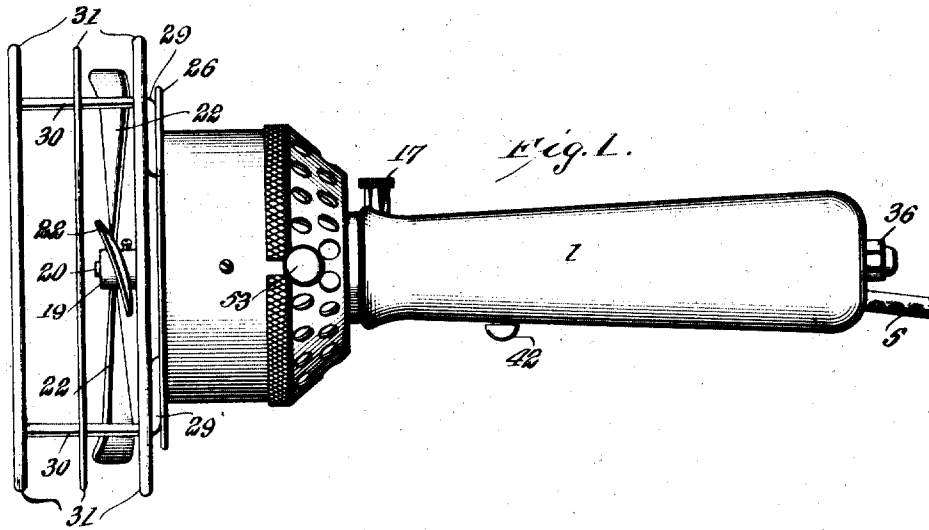
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APPLICATION FILED NOV. 30, 1909. RENEWED MAR. 25, 1911.

991,367.

Patented May 2, 1911.

2 SHEETS—SHEET 1.



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Fig. 4.

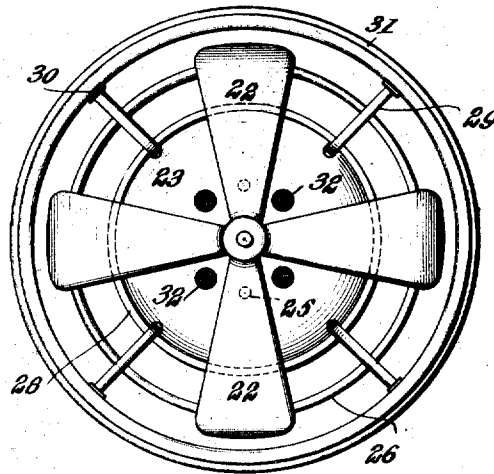


Fig. 5.

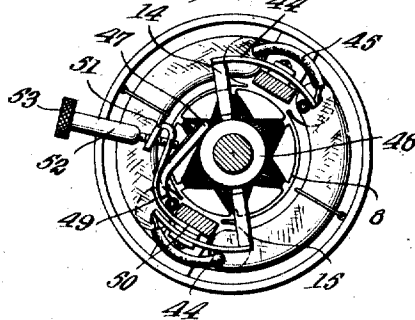


Fig. 6.

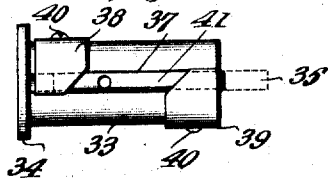
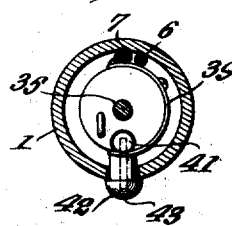


Fig. 7.



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991,367.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WILLIAM F. PRIMLEY and HARVEY E. BAER, citizens of the United States, and residents of Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Fans, of which the following is a specification.

Our invention is an improvement in fans, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

The object of the invention is to produce a device of the character specified, especially adapted for use in barber shops, beauty parlors, etc., which may be held in the hand and manipulated about the face and hair for drying the same, and which may be operated in close proximity to the face or hair without danger of injury to the person operated upon.

Referring to the drawings forming a part hereof:—Figure 1 is a side view of the improvement. Fig. 2 is a longitudinal section. Fig. 3 is a front view partly broken away, and with the cover plate removed. Fig. 4 is a similar view with the cover plate in place. Fig. 5 is a rear view of the motor. Fig. 6 is a side view of the switch, and Fig. 7 is a transverse section of the handle, on the line of the switch.

The embodiment of the invention shown in the drawings is composed of three connected portions or sections, the handle, the fan, and the operating mechanism. The handle 1 is of suitable non-conducting material, such as rubber, gutta percha, wood or the like, circular in cross section, and is recessed longitudinally, as at 2, at its outer end.

A slot 3 leads from the recess to the side of the handle, and a longitudinal opening 4 connects the recess 2 with the opposite end of the handle. The leads 6 and 7 from the feed circuit also pass through an opening 5 in the handle into the recess 2, and are connected with a switch therein, to be described.

The armature 8 of the motor is supported on a shaft 9, which is journaled in bearings 10, in the motor frame, the said frame consisting of sections 11 and 11^a secured together by screws 12, and the frame is arranged within a ring casing 13. The armature shaft is freely rotatable in its bearings, and the feed wires 6 and 7 are connected with the respective brushes 14 and 15.

A substantially conical perforate shield 16 is provided with a central opening registering with the recess 2 of the handle, and with a lateral flange 17 encircling the opening and engaging the handle. The peripheral edge of the shield is also laterally flanged, as at 18, and the said flange engages the ring casing 13 of the motor.

The fan consists of a hub 19 fitting on a reduced portion 20 of the armature shaft, and secured in place by a screw 21, and a plurality of blades 22 extending radially from the hub, and twisted as shown in the usual manner. A circular cover plate 23 is provided with a lateral marginal flange 24 fitting within the ring casing, and with a central opening for the armature shaft, and is secured to the motor frame by screws 25.

A plurality of arms 29 are secured to the ring casing on its inner surface, and extend radially therefrom, beyond the ends of the fan blades 22, and are then bent laterally and substantially parallel with the axis of the armature shaft, as at 30.

A plurality of rings 31 are secured to the portions 30 of the arms, in spaced relation, and a ring 26 is secured to the radial portions, and the rings and the arms form a guard for the fan, the said guard extending some distance in front of the fan, as shown in Figs. 1 and 2, so that it would be impossible to engage the fan with the body of the person operated upon.

The cover plate 23 before mentioned is also provided with perforations 32, as shown in Fig. 4, and while forming a shield for the motor, permits the air to pass therethrough, to prevent overheating of the same. The perforations in the shield 16 also assist in this purpose, and permit the fan to draw a current of air through and over the motor whenever it is in operation.

A cylindrical block 33 of insulating material is mounted in the recess 2 on a rod 35 which extends through the longitudinal opening 4 in the handle, the outer end of the rod being threaded and engaged by a nut 36 outside of the casing. The outer end of the nut is polygonal in cross section, and the inner end is conical, and engages a similarly shaped recess in the end of the handle. The inner end of the rod 35 is threaded onto the end of the bearing 10 of the section 11^a, and is held in place by a lock nut 27.

The end of the block adjacent to the motor bears against an insulating ring 34, which

encircles the rod 35, and the ring engages the inner face of the recess, and the block is provided with a longitudinal groove 37. A pair of segmental shells 38 and 39 are supported on the block, and one of the leads or feed wires 7 is interrupted, the ends of the wire being secured to the respective segments.

The segments are secured to the block by screws 40, and a rod 41, of copper or other conducting material, is slidable in the groove 37 of the block, and is operated by a lug or finger piece 42 secured to the rod by a screw 43. The rod is adapted to connect the segments and complete the circuit, the resiliency of the segments making a good contact with the rod.

The brushes 14 and 15 are secured to one end of arc-shaped plates 44, connected to the motor frame by screws 45, the feed wires being connected to the opposite ends, and the magnets 46 are also supported by the said frame. A speed regulator is also provided for the motor. The said regulator comprises a shoe 47 engaging an enlargement 48 of the armature shaft, and supported by a resilient bar 49 secured to the motor frame by one end, as at 50. The free end of the bar is bent over upon itself, as at 51, and a screw 52 is threaded through the two portions of the bar.

The inner end of the screw engages the outer face of the shoe and presses the said shoe against the enlargement, when the screw is turned, and the outer end of the screw is provided with a milled head 53 for convenience in manipulating the same. It will be understood that the current conducting portions of the apparatus are suitably insulated from the remainder of the mechanism.

The bearing 10 for the armature shaft in the section 11^a of the frame is provided with an oil cup 55, which extends through an opening in the handle, and is adapted to re-

ceive a lubricant, to lubricate the armature shaft.

In operation, the improvement is grasped by the handle 1, and approached toward the object or surface to be dried. The lug 42 is then shifted to complete the circuit, and the fan is passed over the surface to be dried. The guard effectually prevents the engagement of the fan with the body of the person operated upon, so that no injury can result, even in the hands of a careless operator.

The improvement is light, compact, easily handled and operated with one hand, and absolutely safe with the most careless person. It may be constructed at a comparatively small cost, and since all of the parts are covered, is not liable to become injured or broken.

We claim:—

A device of the character specified, comprising a handle having in one end a recess, a motor casing connected with said end, a motor in the casing, the shaft of the motor extending beyond the casing, and having an enlarged portion in the recess, a fan detachably connected with the other end of the shaft, a guard for the fan comprising a cover plate secured to the casing, radial arms extending from the plate, the ends of the arm being bent laterally substantially parallel with the axis of the shaft, rings secured to the arms and encircling the fan, feed wires extending through the handle, a switch in the recess for connecting the wires with the motor, means outside of the handle for operating the switch, and means engaging the enlarged portion of the shaft for regulating the speed of the motor.

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