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DENTAL FILM DRIER

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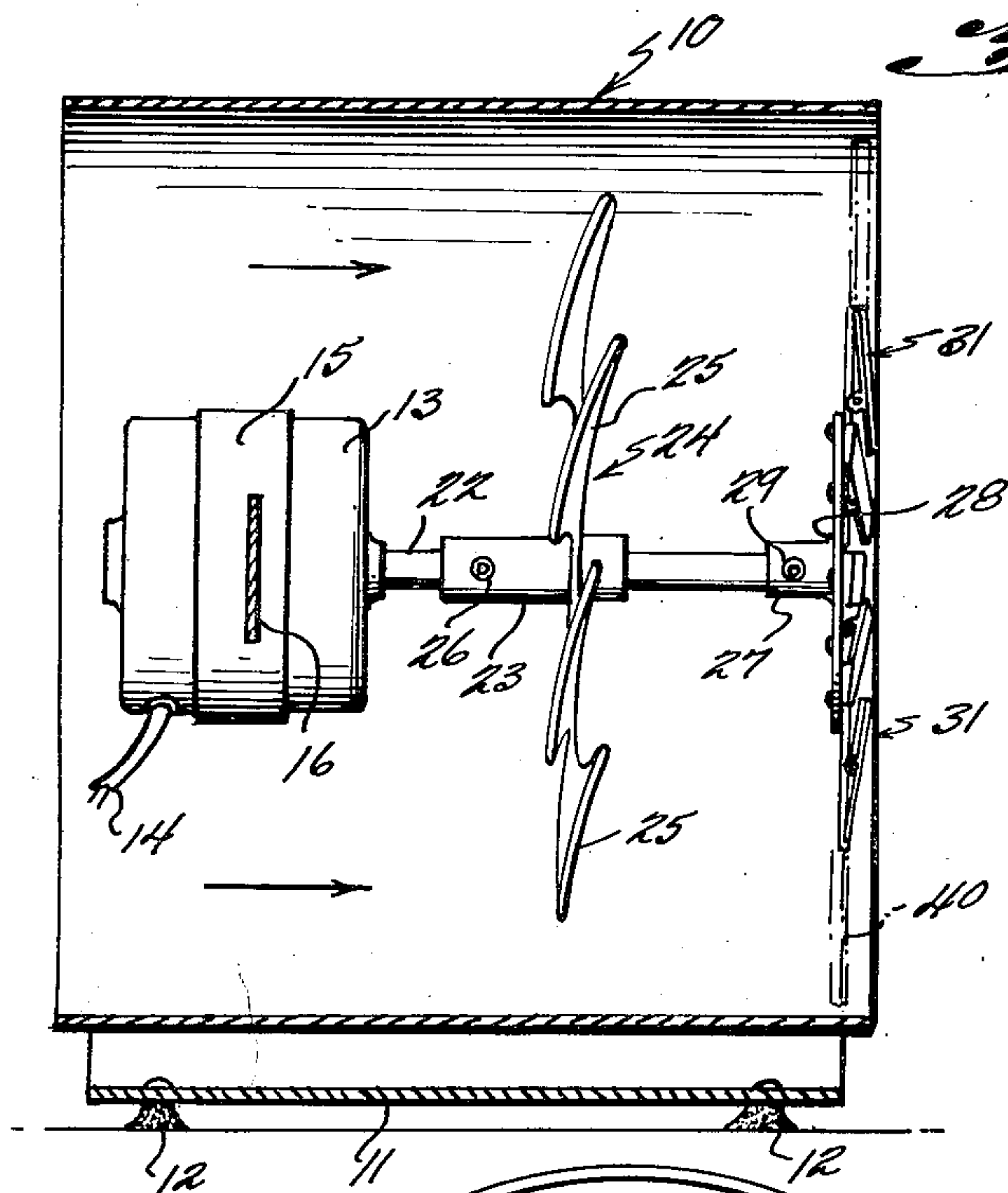


Fig. 1

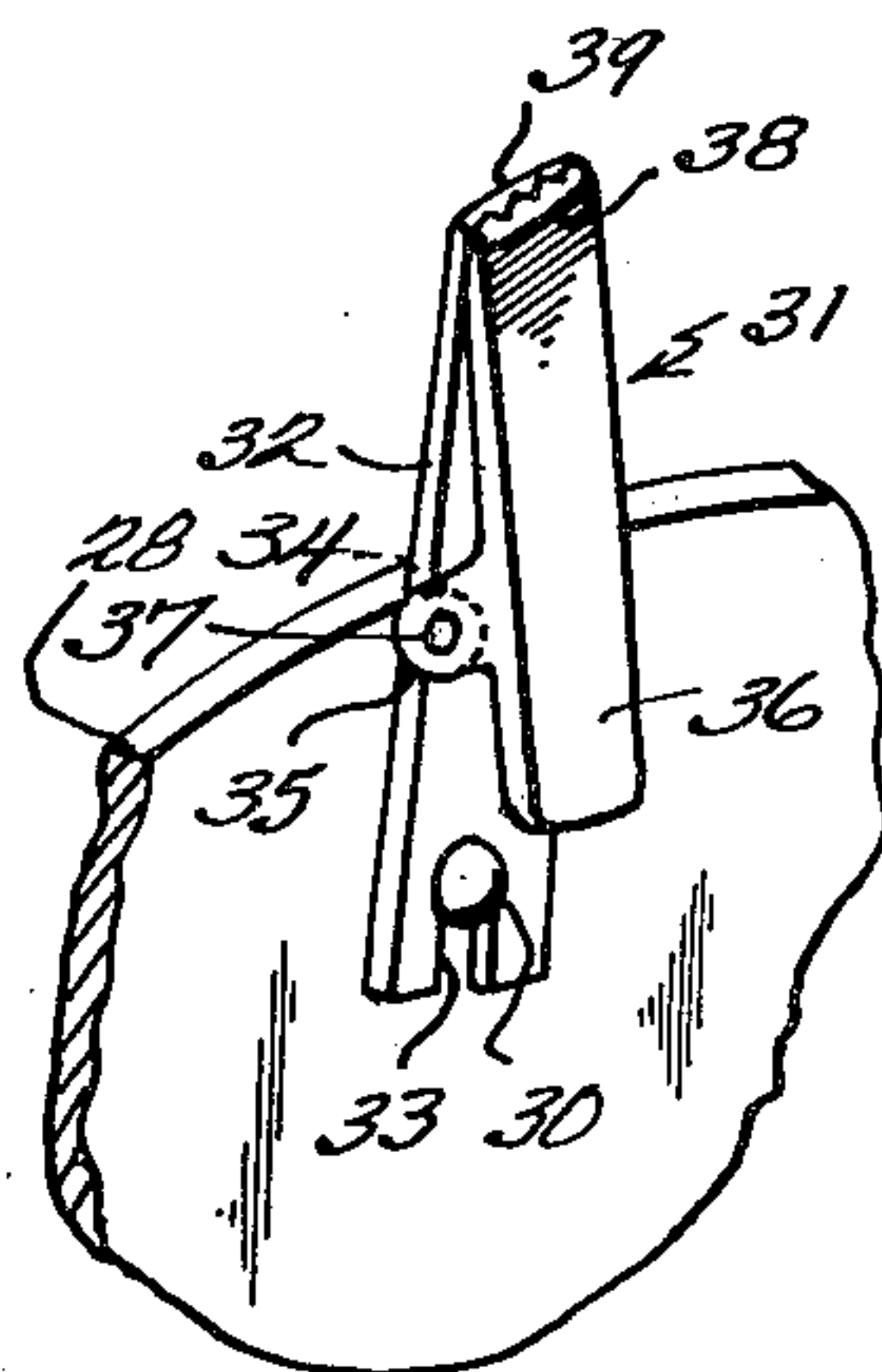


Fig. 3

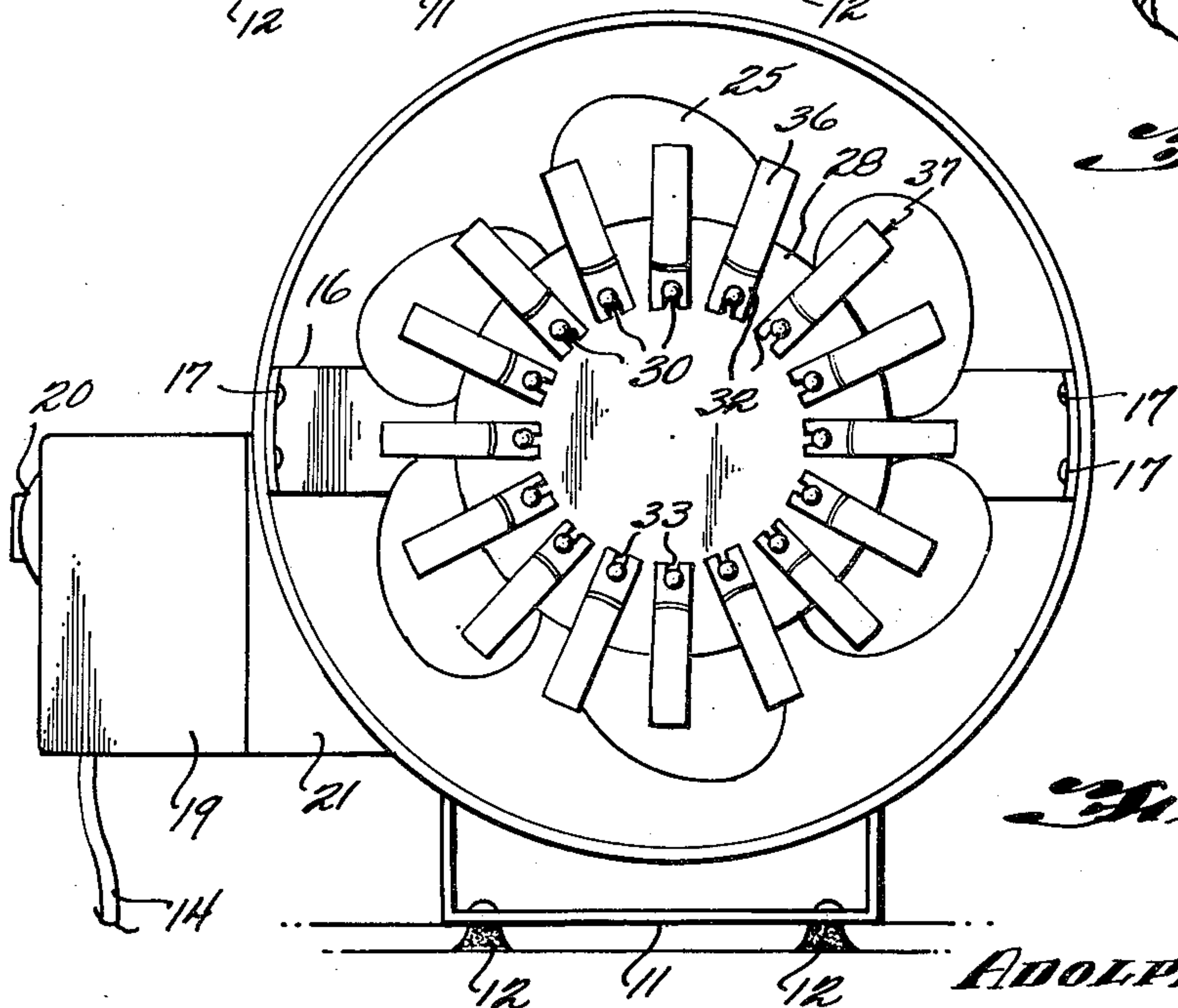


Fig. 2

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DENTAL FILM DRIER

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1 Claim. (Cl. 34—58)

This invention relates to a film drier, and has particular application to a drier for dental X-ray films, of both regular and reduced size.

A primary object of this invention is the provision of an improved drier carrying a single shaft, a fan and a disc for carrying films to be dried, both contained in a housing, whereby the films are rapidly dried by a combination of centrifugal force and forced air.

An additional object of the invention is the provision of such a device provided with a plurality of clips mounted on a rotary disc at an angle, whereby the possibility of adjacent films adhering to one another is substantially reduced.

An additional object of the invention is the provision of a simplified mounting for the individual clips on the device, the arrangement being such that the clips, together with the films, may be readily removed from or applied to the disc.

Still another object of the invention is the provision of a device of this character which is enclosed in a duct, which precludes water splash as the wet film rotates, and simultaneously confines the air impelled by the fan to direct the same over the film.

Still another object of the invention is the provision of such a device which is sturdy and durable in construction, reliable and efficient in operation, and relatively simple and inexpensive to manufacture, assemble and utilize.

Still other objects reside in the combinations of elements, arrangements of parts and features of construction.

Other objects will in part be obvious, and in part be pointed out hereinafter as the description of the invention proceeds, and shown in the accompanying drawing, wherein:

FIGURE 1 is a side view, partially in elevation and partially in section, disclosing a preferred embodiment of this inventive concept.

FIG. 2 is an end elevational view of the device of FIG. 1, and

FIG. 3 is an enlarged fragmentary detail perspective view of a constructional element.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Having reference now to the drawing in detail, there is generally indicated at 10 a tubular housing, which is cylindrical in cross section, and open at both ends.

The housing is provided with a base portion 11, to the lower side of which may be secured a plurality of suction cups 12 for mounting the device on a selected flat surface. Interiorly of the housing 10 there is positioned a motor 13, which is supplied with current from any desired source through a cable 14. The motor may be secured centrally of the housing by means of a band 15 surrounding the same, from the opposite sides of which extend transverse supporting plates 16, suitably secured as by rivets or the like 17, to the sides of the casing or housing 10. A conventional timer 19 of any desired type provided with a control knob 20, and through which the cable 14 extends to the source of electrical energy 14, is

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suitably secured to the outside of the casing 10 as by means of a mounting plate 21.

The motor 13 is provided with a driven shaft 22 upon which is mounted a hub 23 of a fan generally indicated at 24, and provided with a plurality of radially disposed inclined blades 25, which are inclined to draw air into the housing over the motor and force the same out the other open end of the housing, the air being drawn in the direction indicated by the arrows in FIG. 1. A suitable set screw 26 is provided to secure the hub 23 in fixed relation on the shaft 22.

The shaft 22 extends completely through the hub 23, and at its outer extremity engages the hub 27 of an aluminum film carrying disc 28, the hub 27 being secured in position as by means of a set screw 29.

The disc 28 is provided with a plurality of radially disposed headed pins or studs 30 upon which are adapted to be mounted film holding clips, generally indicated at 31, each of which includes a base plate 32, which is provided with an end notch 33 adapted to engage in the head and about the shank of a stud 30. Preferably the base plates are inclined to dispose the clips angularly relative to the plane of the disc, as indicated in FIG. 1 to preclude overlapping engagement and consequent sticking of adjacent films. Each plate 32 is provided with a pair of upstanding ears 34, which are overlapped by depending ears 35 extending from opposite sides of a clip plate 36. An axle 37 extends through suitable aligning apertures in the ears 34 and 35 for pivotally mounting the clip plate 36, and a suitable spring (not shown) of conventional design surrounds the axle 37 for biasing the toothed end 38 of the clip plate 36 into engagement with the corresponding toothed end 39 of the base plate 32.

In the use and operation of the device, a plurality of X-ray films 40 are suitably secured individually by each clip, and when the desired number are positioned, in non-overlapping relation, due to the angular disposition of the clips as previously described, the motor 13 is started, which rotates the fan blades 25 and the disc 28 and its associated clips 31 and films 40 simultaneously at a predetermined rate of speed.

The centrifugal action exercises a material drying effect on the films 40, while the simultaneous drawing of air through and into housing 10 and over the motor 13, which imparts a slight heating effect thereto, and over the films 40, also serves to dry the same.

The switch or timer 19 may be set in the conventional manner so that the device will only run for a predetermined time sufficient to dry the films, thus obviating the necessity of the operator returning to shut off the motor.

In practice it has been found that when the device of the instant invention is employed, films will dry in approximately three minutes, leaving no water marks.

From the foregoing it will now be seen that there is herein provided an improved film drier which accomplishes all of the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it will be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

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What is claimed is:

A film drying device comprising a circular open-ended housing, a motor centrally mounted in said housing, a shaft driven by said motor axially of said housing, a disc mounted at the end of said shaft within said housing, a plurality of radially disposed headed pins mounted in a circular row in said disc adjacent the periphery thereof, film holding clips having open ended slots positioned at the end thereof for engagement with the headed pins in said disc, whereby said clips are detachably mounted on said disc, a multi-bladed fan mounted on said shaft interiorly of said housing between said motor and said disc, the diameter of said fan exceeding the diameter of said disc, whereby air impelled by said fan is passed around

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films held radially of said disc by said clips, said clips being positioned angularly relative to the plane of said disc, and a timer mounted on said housing and connected to said motor for controlling the duration of operation of said motor.

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