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COMBINATION VENTILATING FAN WITH LIGHT AND REFLECTOR

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Fig. 1.

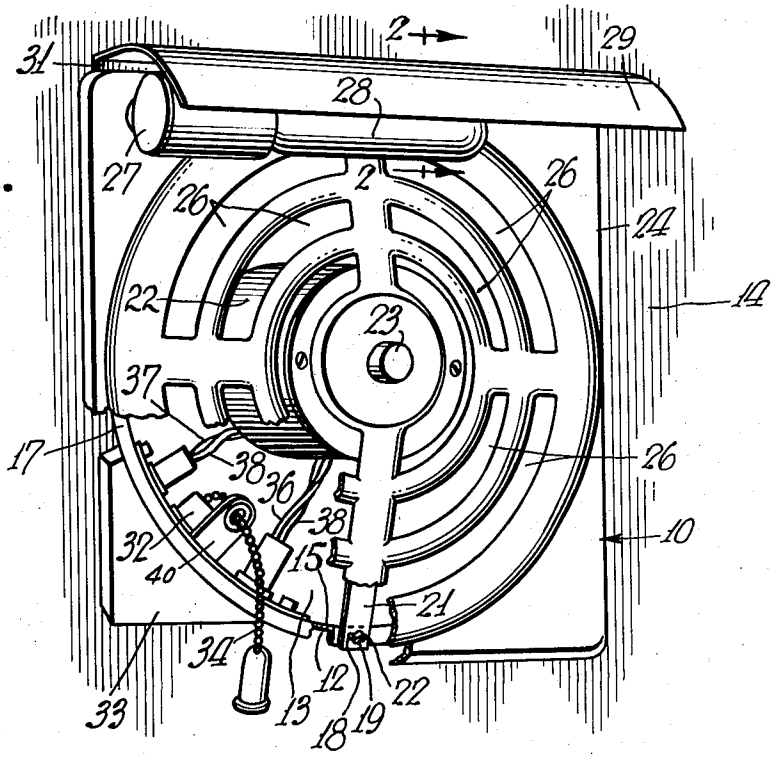


Fig. 2.

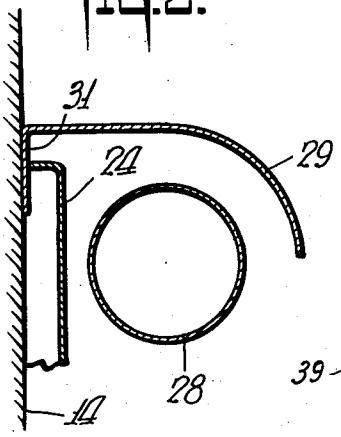
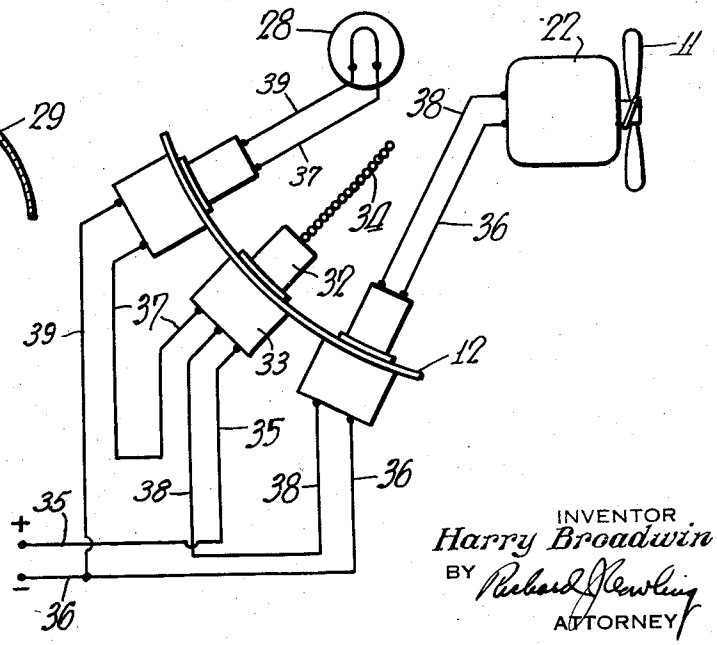


Fig. 3.



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COMBINATION VENTILATING FAN WITH LIGHT AND REFLECTOR

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1 Claim. (Cl. 230—249.5)

The present invention relates generally to ventilating fans, and it has particular relation to a wall type ventilating fan with a grilled front for installation in a kitchen over a stove, sink or lunch counter, which is provided with its own built-in light and removable reflector.

At the present time it is customary to equip a kitchen with a wall type ventilating fan, which is mounted generally in the sidewall of a kitchen directly behind and above the stove. Since most stoves are positioned in a corner of a kitchen and frequently under a cupboard, it is also necessary or advisable to install a light over said stove.

New homes being built today are almost always equipped with a ventilating fan, and new modern stoves installed in such homes are equipped with built-in lights. However, a ventilating fan in a kitchen has proven to be so advantageous not only for the removal of fumes, grease and dust, but to prevent discoloration of the decorated surfaces of a kitchen that most owners of old homes, when redecorating, are having ventilating fans installed, and, in many cases, separate lights are being installed for improved illumination. The installation of separate fans and lights, with their respective outlet boxes, increases the cost considerably.

With the present invention, I have provided a ventilating fan with a built-in light fixture, and the combination has been so designed and constructed that it can be used as a fan only, a light only, or both where both are desired at the same time. With this novel combination, it is apparent that both units may be obtained for use either separately or together with only one installation and one electrical outlet required.

An object of the present invention is to provide a combination wall type ventilating fan having a grilled front with a light, which is simple, durable and inexpensive to make and install as compared to corresponding separate units.

A further object of the invention is the provision of a combination wall type ventilating fan and light which is so constructed and wired that it may be used either as a fan, a light or a combination of both.

Another object of the invention is to provide a simple, efficient and durable combination ventilating fan and light with a removable reflector for said light, which facilitates cleaning when desirable.

Other and further objects and advantages of the invention, which result in simplicity, economy and efficiency, will be apparent from the following detailed description, wherein a preferred form of embodiment of the invention is shown, reference being had for illustrative purposes to the accompanying drawings, forming a part hereof, wherein like numerals indicate like parts, in which:

Figure 1 is a front elevational view of the combination ventilating fan, light and removable reflector, the same being shown mounted in a sidewall of a building and having a portion broken away to show the mounting of the junction box and switch member;

Figure 2 is a slightly enlarged fragmentary sectional view of the combination ventilating fan, light and reflector shown in Figure 1, the same having been taken substantially along the line 2—2 thereof, looking in the direction of the arrows; and

Figure 3 is a view showing the wiring diagram of the combination ventilating fan and light, whereby the same may be used as a fan alone, a light alone and/or a combination light and fan together.

Referring now to the drawings and particularly to Figure 1 thereof, there is shown a combination ventilating fan and light fixture **10**. The fan **11** is positioned within a metal tubular structure **12**, having a circular passageway **13** therethrough. The tubular structure **12** is adapted to be mounted in an open cut between adjacent uprights of the sidewall **14** of a building, such as a house, said opening being of the cross-sectional size and shape of the tubular structure **12** so that the latter may fit snugly therein. The space between the edges of said building opening and said tubular structure **12** may be caulked in any accepted manner to keep out the weather. The tubular structure **12** has a sleeve **15** mounted concentrically therein, which is adjustable axially thereof in any suitable manner. The adjustment permits the tubular structure **12** and its sleeve **15** to fit snugly on opposite sides of the sidewalls of a building, which sidewalls are adapted to vary in thickness. The back or outside end (not shown) of the tubular structure **12** may be provided with any suitable type of closure member, as for example, a hinged door or louvers built into a downwardly extending chute. The door or louvers may be kept closed normally by gravity, but will be opened by the air stream flow from the fan **11** when the same is being operated. This invention is not concerned with the method or structure used in closing out the weather from the outside of the building.

The sleeve **15** on its front side, which is that side facing the interior of the kitchen or building, is provided with a relatively short and outwardly extending radial flange **17**. The flange **17** is provided with a pair of oppositely spaced threaded openings **18** for receiving fastening screws **19**. The fastening screws **19** secure a vertically and diametrically extending cross-bar **21** to the flanged edges of the sleeve **15**, which cross-bar **21** has a pair of slotted openings **22** for permitting minor adjustments and alignment with the threaded openings **18**. The cross-bar **21** has an opening therethrough (not shown), which is in axial alignment with the opening **13** through the sleeve **15**. A motor **22** and the fan **11** are adapted to be mounted on said cross-bar **21** so that they are positioned axially of the opening **13** in said sleeve **15**. The motor **22** may be bolted or otherwise fastened to the cross-bar **21** in any suitable manner. The cross-bar **21** has a stud (not shown) projecting forwardly thereof, which has its forward end recessed axially and threaded internally for receiving a fastening member.

A grilled front plate **24**, which forms the front cover plate for the opening **13** through the sleeve **15**, is adapted to be mounted removably on the projecting end of the stud by means of the fastening member **23**, which is a bolt having a threaded shank and an enlarged knurled head for facilitating manipulation by the fingers instead of requiring the use of tools to fasten and unfasten the same. The grilled front cover plate **24** is rectangular in shape and made of thin metal, and is provided with a series of suitable apertures **26**, which form an attractive design or embellishment for the unit. The grilled front plate **24** may be finished with baked enamel or paint to match the interior finish of the room in which it is installed.

Mounted on the grilled front plate **24** and extending transversely thereof is an elongated electric light socket

27, provided with an elongated electric light bulb 28. An arcuate reflector 29 is mounted detachably above the light socket 27 and light bulb 28. The reflector 29 extends transversely of said grilled front plate 24, and, in the illustration shown, is curved downwardly to substantially the longitudinal axis of said socket 27 and bulb 28. The reflector 29 is made of thin sheet metal covered with baked enamel or painted surface to match the surface of the grilled front plate 24. The reflector 29 is made with a relatively short vertical depending flange 31, in the illustration shown, which flange is formed integrally with a horizontal connecting intermediate portion having a downwardly extending arcuate reflector plate forming its free outer end. The vertical depending flange 31 is adapted to be inserted behind the grilled front plate 24 and between it and the sidewall 14 of the building for supporting the same detachably in a reflecting position over the light bulb 28. Of course, it could be mounted detachably in many other ways, as for example, by screws to the grilled front plate 24. It is advisable to make the reflector 29 removable since it will have a tendency to collect grease and dirt, which must be removed frequently. By making the reflector 29 readily detachable, this cleaning can be accomplished very easily as it may be taken down and washed when dirty.

Referring now to Figure 3 of the drawings, there is shown a simple wiring diagram for a switch 32, which controls the energization of the motor 22 for the fan 11 and the light bulb 28. The switch 32 is mounted on the outside of a switch or junction box 33 secured in any convenient manner to the outside of the tubular structure 12, as best shown in Figure 1. The incoming current enters the switch 32 through the wire 35, and, when the chain 34, which permits manipulation of the switch 32 through the grilled front plate 24, is pulled once, it energizes the wire 38, leading to the motor 22 of the fan 11, forming a circuit and causing the motor 22 to operate, thereby driving the fan 11.

When the pull-chain 34 is pulled a second time, the switch 32 breaks its electric circuit with the wire 38, de-energizing the fan motor 22 but at the same time energizing the wire 37, leading to the electric light bulb 28, causing it to form a circuit with the wire 39, whereupon the light 28 is lighted.

When the pull-chain 34 is pulled a third time, the switch 32 forms an additional circuit to the motor 22 of the fan 11, through energization of the wire 38, causing the motor 22 to operate and drive the fan 11 while continuing the light in the bulb 28.

When the pull-chain 34 is pulled a fourth time, the switch 32 breaks all electric circuits, de-energizing the motor 22, thereby stopping the fan, and de-energizing the circuit to the light bulb 28, thereby causing it to be extinguished.

In the illustrations shown in the drawings and the description hereinabove set forth, it will be appreciated that the fan 11 will be operated by the first pull on the chain 34 leading to the switch 32; that the second pull on the chain 34 will turn-off the fan 11 and turn on the light bulb 28; that the third pull on the chain 34 will maintain the light bulb 28 and again turn on the fan 11 so that both will be operated at the same time; and that the fourth pull on the chain 34 will turn off both the fan 11 and light bulb 28. It is to be understood, however, that this sequence is unimportant to the present invention and that any other sequence desired may be used, which sequences can be accomplished readily by merely changing the wiring to the switch 32. Such changes in wiring are well within the skill of an electrician and need not be shown and described in detail.

The switch 32 is of a conventional construction and readily available on the open market. It is therefore not believed necessary to show and describe the details of its construction since they form no part of this invention. The pull chain 34 operates through a conventional ring-type supporting bracket 40 mounted on the inside of the sleeve 15, and then passes through one of the apertures 26 in the front grilled plate 24.

Although I have described in detail only one modification which the invention may assume, it will be readily apparent to those skilled in the art that the same is not to be so limited, but that various other modifications may be made therein without departing from the spirit thereof or from the scope of the appended claim.

What I claim is:

In combination with a wall type ventilating fan of the character described, a front cover plate for said fan having a grilled apertured design formed therein, an electric light mounted on said cover plate and above said apertured design, an arcuate reflector mounted above said light to cause its rays to be reflected downwardly over said grilled apertured design, said reflector adapted to be mounted removably above said light and over the top edge of said cover plate by inserting its vertical depending flange between the back of said cover plate and the wall in which the fan is mounted, and an electric switch mounted behind said apertured cover plate having a pull chain extending outwardly through an aperture thereof for operating the fan and/or the light and/or both.

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