June 12, 1956 C. SCAROULIS 2,750,104

ELECTRIC BATTERY-OPERATED HAND FANS

Filed July 18, 1955

FIG. 1

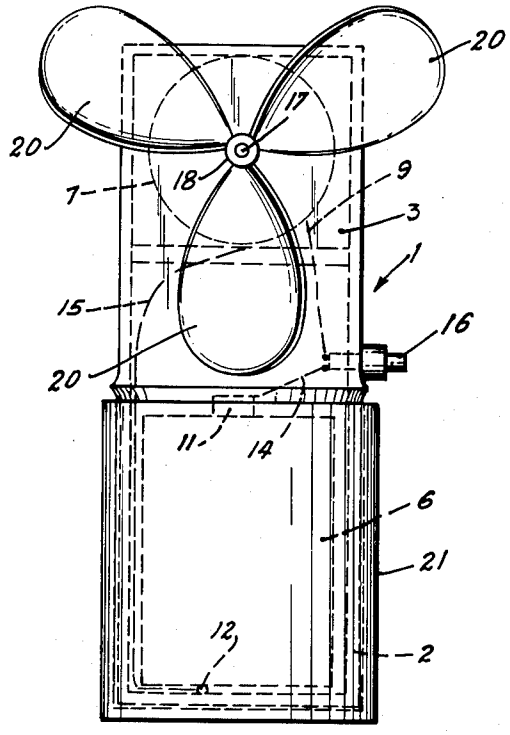
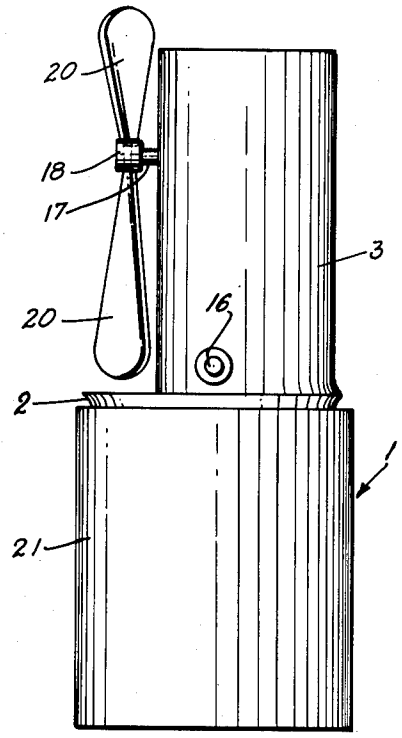


FIG. 2



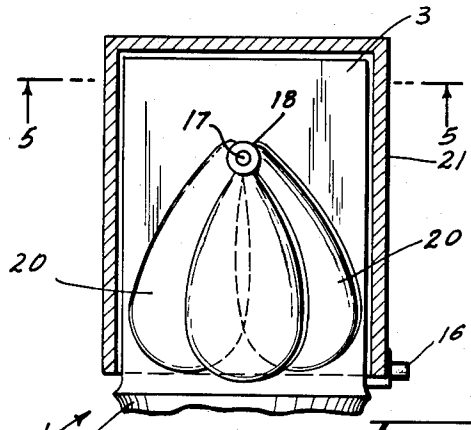


FIG. 3

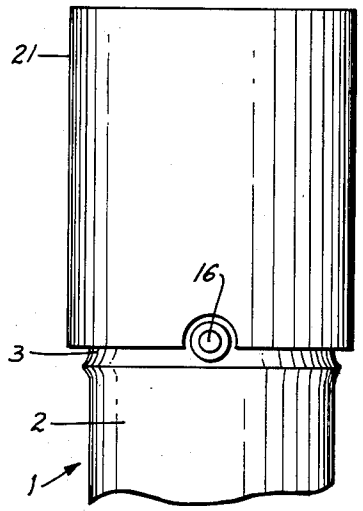


FIG. 4

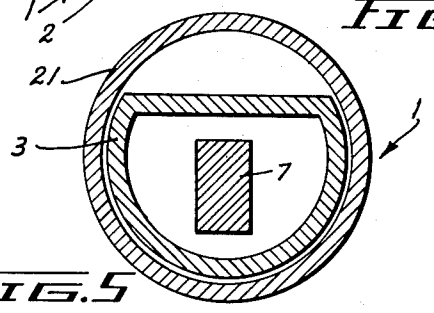


FIG. 5

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ELECTRIC BATTERY-OPERATED HAND FANS

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2 Claims. (Cl. 230—259)

The present invention relates to improvements in hand fans and, more specifically, to a new and improved portable fan which is operated electrically through a battery of the type used in flashlights or other portable electric devices.

One object of the present invention is the provision of a device of the character described which is small in size and so light in weight that it can be carried conveniently in a lady's handbag or in a pocket of a garment, but which nevertheless is so constructed that if offers a highly effective fan action, fully sufficient for one person even in very hot weather, and during a considerable period of time without requiring a change of batteries.

Another object of the present invention is the provision of a device of the character described which has a fan blade and cover member arrangement for completely covering the fan blades while the device is not in operation, so that the device can be carried in a bag or a pocket without damaging the fan blades or any other movable parts of the device.

A further object of the present invention is the provision of a device of the character described which is simple in construction and inexpensive to manufacture, but which is also sturdy, durable and well adapted for withstanding the rough usage to which devices of this type ordinarily are subjected.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangements of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing a preferred form of the invention has been shown.

In said drawing:

Figure 1 is a front elevation of a preferred embodiment of my invention as it appears when ready for operation;

Fig. 2 is a side view thereof;

Fig. 3 is a fractional front view of the device with a cover member shown in longitudinal section, illustrating the device as it appears when its movable parts are covered, so that the device can be carried in a pocket of a garment or the like;

Fig. 4 is a fractional side view of the device of Fig. 3; and,

Fig. 5 is a cross-sectional view on the line 5—5 of Fig. 3.

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

In the drawing the numeral 1 denotes a housing of plastic material or the like, which preferably is tubular and has a cylindrical main portion 2 and an upper portion 3 that is reduced in cross-section to an arc-on-cord portion so as to consist of a flat wall section and a curved wall section, as may be seen in Figs. 2 and 5.

A flashlight battery 6 (Fig. 1) or any other suitable source of electric current, for instance two or more batteries or the like as used for portable radios or the like, is contained in the main portion 2 of the housing 1. An electric motor 7 mounted in the upper portion 3 of the housing 1 has its terminals 8 and 9 connected to the terminals 11 and 12 of the battery 6 by means of wires 14 and 15 within the housing 1. The wire 14 is interrupted by an electrical switch 16 mounted on the housing 1. A motor shaft 17 extends through the flat wall section of the upper portion 3 of the housing 1, and a hub member 18 is secured to that portion of the shaft 17 which is located outside of the housing 1. Flexible fan blades 20 are secured to the hub member 18.

A cylindrical cover member 21 fits snuggly over the main portion 2 of the housing 1, and a portion of it fits over the curved wall section of the upper portion 3 of the housing 1.

When the device is not in use the member 21 is placed over the upper portion 3 of the housing 1, thereby the flexible blades 20 are bent so as to fit into the space between a portion of the inner side of the member 21 and the flat wall section of the reduced upper portion 3 of the housing 1. This position is illustrated in Fig. 3.

In order to use the device, the member 21 is removed from the portion 3 and placed upon the portion 2 of the housing 1 (Figs. 1 and 2), and the switch is operated so as to set the motor 7 in motion. The centrifugal forces exerted upon the blades 20 during rotation will unfold the blades 20, so that they change from their position shown in Fig. 3 to that shown in Fig. 1 with the result of operating as ordinary fan blades.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent is:

1. An electric battery operated hand fan comprising a housing having a reduced upper portion and an increased main portion, a battery mounted within the main portion of said housing, an electric motor mounted within the upper portion of said housing, wires connecting the terminals of said battery to the terminals of said electric motor being located within said housing, means for temporarily disconnecting one of said wires from said motor being mounted on said housing, a shaft driven by said electric motor extending laterally from the reduced upper portion of said housing, flexible fan blades radially mounted on said shaft, and a cover member fitting snuggly over the main portion of said housing and being slid over the same during the operation of said electric motor, said cover member being constructed and arranged for being placed over the upper portion of said housing while the device is not in operation, thereby said flexible fan blades being bent so as to fit into a free space between said cover member and the upper portion of said housing.

2. A device of the character described comprising a tubular housing having a cylindrical main portion and an upper portion which is reduced in cross-section to an arc-on-cord portion so as to consist of a flat wall section and a curved wall section, a battery mounted within the main portion of said housing, an electric motor mounted within

the upper portion of said housing, wires connecting the terminals of said battery to the terminals of said electric motor being located within said housing, an electric switch interposed between two portions of one of said wires and being mounted on said housing, a shaft driven by said electric motor extending through the flat wall section of the upper portion of said housing, a hub member secured to that portion of said shaft which is located outside of said housing beyond the flat wall section of the upper portion thereof, flexible fan blades mounted on said hub member, and a cover member fitting snuggly over the main portion of said housing and being slid over the same during the operation of said electric motor, said cover member being constructed and arranged for being placed over the upper portion of said

housing while the device is not in operation, thereby said flexible fan blades being bent so as to fit into a free space between said cover member and the upper portion of said housing.

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