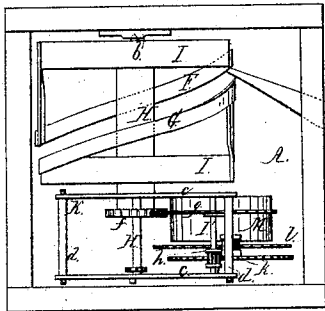


*C. A. Gale,*  
*Automatic Fan,*

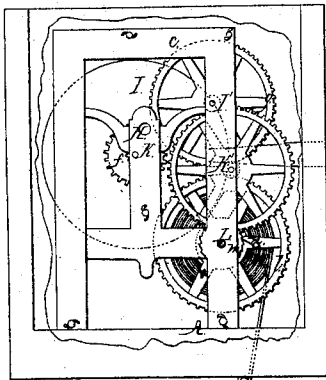
*N<sup>o</sup> 27,862,*

*Patented Apr. 10, 1860.*

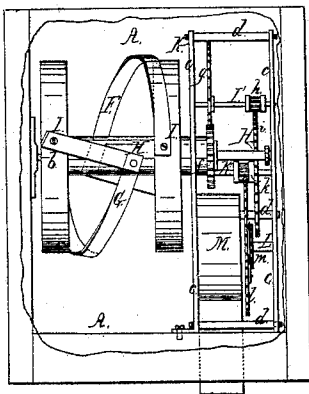
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses,*  
*R. B. Linn*  
*E. P. Hurd*

*Inventor,*  
*Charles A. Gale*

# UNITED STATES PATENT OFFICE.

CHAS. A. GALE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND SPENCER RUSSELL, OF SAME PLACE.

## AUTOMATIC OR MOSQUITO FAN.

Specification of Letters Patent No. 27,862, dated April 10, 1860.

*To all whom it may concern:*

Be it known that I, CHARLES A. GALE, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Automatic Mosquito-Fans; and do hereby declare the same to be fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, is a top view, and Figs. 2, and 3, side views of my invention, the case in the latter two figures being exhibited as cut away in part, in order to exhibit the works within it.

In the drawings, A, exhibits a box of nearly cubical form; B, is a fan or flag, whose staff C, is a horizontal lever and extends through an opening made through one side of the box, and has its fulcrum D, supported by brackets E, E, projecting from the box. The inner end of such staff projects between two cams F, G, arranged on opposite sides of a shaft H, and supported by two disks I, I, fixed to such shaft. These cams, while the shaft is in revolution operate alternately on the flag staff so as to first move it horizontally in one direction and next in the opposite. The said shaft H, is supported at one end by a bearing *b*, and also by a frame K, composed of two vertical plates *c, c*, united by cross bars *d, d*. These plates support three additional shafts or arbors I', K', L, arranged as shown in the drawings.

A pinion *f*, is fixed on the cam shaft H, and engages with a spur wheel *g*, carried by the shaft I' on which is a pinion *h*. This last pinion engages with a gear *i*, fixed on the shaft K', which carries a pinion *k*, that engages with a large gear *l*, placed on the winding arbor L, so as to be capable of rotating thereon.

A ratchet *m* is carried by the arbor L and engages with a spring pawl *n*, carried by the main gear, *l*. A long band spring M, has its inner end fastened to the arbor L, and is coiled around it, the other end of the said spring being passed through a weight step or opening, made in or applied to the bottom of the case. Furthermore, the latter end of the spring has a heavy weight of twenty pounds, more or less attached to it.

By applying a key to the winding arbor and turning it so as to coil up the spring,

the pawl will slip over the ratchet, but as soon as the key is removed or the power exerted to revolve the key ceases its action, the spring will be free to uncoil itself and thereby put the train of wheel work in operation so as to cause the shaft H, to be put in rotation in a manner to effect by its cams the vibratory movements of the fan.

By winding or coiling up the spring the weight may be drawn up to the case, it being there and by the case estopped, so as to prevent the further contraction of the spring to be effected by continued rotation of the winding arbor. While the weight acts on the arbor through the band spring, the latter will also perform the function of exerting a force tending to rotate the arbor, and thus the coiled spring and the weight produce the same effect, of a much heavier weight or a much greater spring. In this way, a small spring can be used for driving the machinery and operate as a band for the weight, and while the spring will drive the mechanism for a considerable length of time the weight will also operate with it in continuing the movement.

The whole apparatus so made, is intended to be applied to a wall by the side of or against the head of a bedstead and to be used for the purpose of keeping flies or mosquitos or other insects from lighting on the face or other part of a person while reposing on the bed of such bedstead.

The arrangement of the operative parts of the mechanism enables the fan to be moved in a horizontal plane and is advantageous.

I do not claim the automatic combination of a vibrating fan and clock work operating so as to put such fan in a continued rotary movement or a vibratory movement when the fan is made to swing in a vertical arc.

I claim—

My improved arrangement of the fan or flag staff with the reversed cams, the cam shaft and the clockwork mechanism for effecting the rotations of such cam shaft, the whole being made to operate substantially as described.

CHARLES A. GALE.

Witnesses:

R. H. EDDY,  
F. R. HALEY.