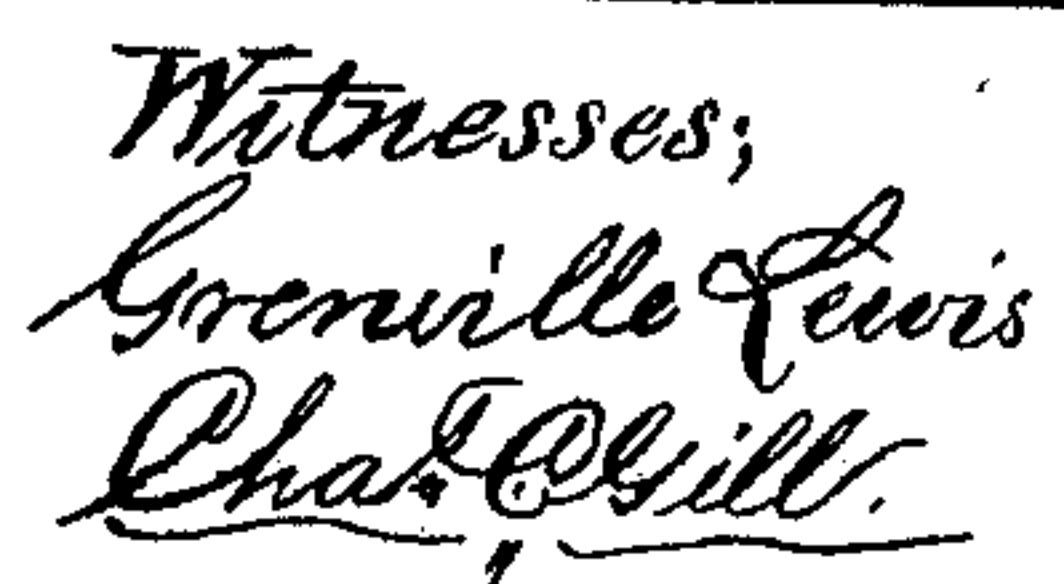


FLY-FAN.

Patented April 10, 1877.



Inventor
James F. McMillen.
By his Atty.
Cox & Cox

UNITED STATES PATENT OFFICE.

JAMES F. McMILLEN, OF MANSFIELD, OHIO.

IMPROVEMENT IN FLY-FANS.

Specification forming part of Letters Patent No. **189,373**, dated April 10, 1877; application filed December 27, 1876.

To all whom it may concern :

Be it known that I, JAMES F. McMILLEN, of Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Fly-Fans, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in fly-fans, and consists in the mechanism hereinafter specifically designated, its object being to furnish an efficient self-acting means for preventing flies and other winged insects from lighting upon tables of different forms and dimensions.

Figure 1 is a side elevation of a device embodying the elements of the invention. Figs. 2 and 3 are like views of the same.

In the accompanying drawings, A represents a gear-wheel, provided on its upper surface with the cams B, and actuated by the driving mechanism D, consisting of the main-spring E, wheel F, pawl and ratchet H, and their necessary adjuncts, all of which is secured in a suitable manner in a casing or box, I. The teeth of the gear-wheel A mesh with the trundles or spindles of the lantern-wheel L mounted upon the vertical shaft M, the lower extremity of which rests and has a free rotary movement in the step N, the remaining portion of the shaft extending a suitable distance upward, and provided with the shaft-coupling P, which connects the shaft M with the vertical shaft T, which also extends upward, the distance being governed by the size of the table upon which it is to be employed, or the taste of the manufacturer or user. At a proper distance above the coupler P is adjustably secured upon the shaft T the beveled gear-wheel V, which meshes with the similarly-constructed wheel W, fastened to the ends of the horizontal shafts X, which revolve in the standards *a*, and may be extended by means of couplers *b*, and extra bevel-wheels and vertical shafts with the use of but one driving mechanism. Thus the device may be lengthened to suit long dining-tables, or short or round tables. Upon the upper ends of the vertical shaft T, and also on the extra vertical shaft, is secured a ball or other suitably-configured body, *d*, in which are formed certain sockets or cavities, in which may be in-

serted the handles of fans or flag sticks, so that the flags or fans radiate from a given center, and in the revolution of the shaft and ball they are revolved, thereby effectually preventing insects from lighting on the table. At the same time, if fans are employed, the air will be cooled, to the comfort of persons sitting around the table.

It is obvious that different forms of practicing the invention will readily suggest themselves to the manufacturer, one form being the employment of vertical oscillating bars *e*, pivoted or hinged in the upper end of the standard *f*, and provided at a proper distance from the standard *f* with the loosely-pivoted standards, hangers, or props *g*, the lower ends of which rest upon the cams B of the gear-wheel A, and when said wheel is rotated the hangers *g* ride up the incline of the cams until they reach their edges, when they fall or drop down to the next cam on the wheel, and continue this operation until the driving mechanism is stopped. Thus the bars *e*, being alternately raised and lowered by their props or hangers operating upon the cams, receive an oscillating movement, and thereby causing the flags or streamers on their ends to have a jarring motion sufficient to frighten winged insects from the table.

h represents a vertical shaft provided on its upper end with a ball or other suitable device, *i*, furnished with apertures *x*, extending into but not through the ball, to receive flags or penons, the lower end of the shaft extending downward and resting upon the cams B, which, as the wheel A revolves, alternately elevate and depress the shaft, imparting to it a vertical movement, and thereby causing its flags or penons to have a jolting action, which prevents flies from lighting on the table.

It is evident that, if desired, all of the forms described may be employed on one table, with the use of but one driving mechanism, which, being wound up, will act automatically and communicate motion through the wheels A and L to the vertical shaft T, thence through the wheels V and W to the horizontal shafts *x*. At the same time, and by the same driving mechanism, motion is imparted to the props or hangers *g* and vertical shaft *h*, thereby operating them and their adjacent parts.

If it is desired simply to use the vertical shaft T, the gear-wheel A need not be furnished with cams.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a fly-fan, the vertical shaft T, provided with the ball *d*, and driven by wheels A and L, said ball being furnished with the sockets or cavities *x*, for the reception of the ends of the flag shafts, substantially as described.

2. In a fly-fan, the horizontal shafts *x x*, vertical shaft P, and wheels V, in combination with the wheel A, having cams B, substantially as and for the purpose set forth.

3. In a fly-fan, the wheel A, provided with the cams B, in combination with the vertical shaft *h*, substantially as set forth.

4. The oscillating bars *e*, pivoted to the standard *f*, and provided with the hangers or props *g*, substantially as specified.

5. The gear-wheel A and cams B, in combination with the props *g* and bars *e*, substantially as specified.

In testimony that I claim the foregoing improvement in fly-fans, as above described, I have hereunto set my hand this 19th day of December, 1876.

JAMES F. McMILLEN.

Witnesses:

THOS. E. BARROWS,
D. C. McMILLEN.