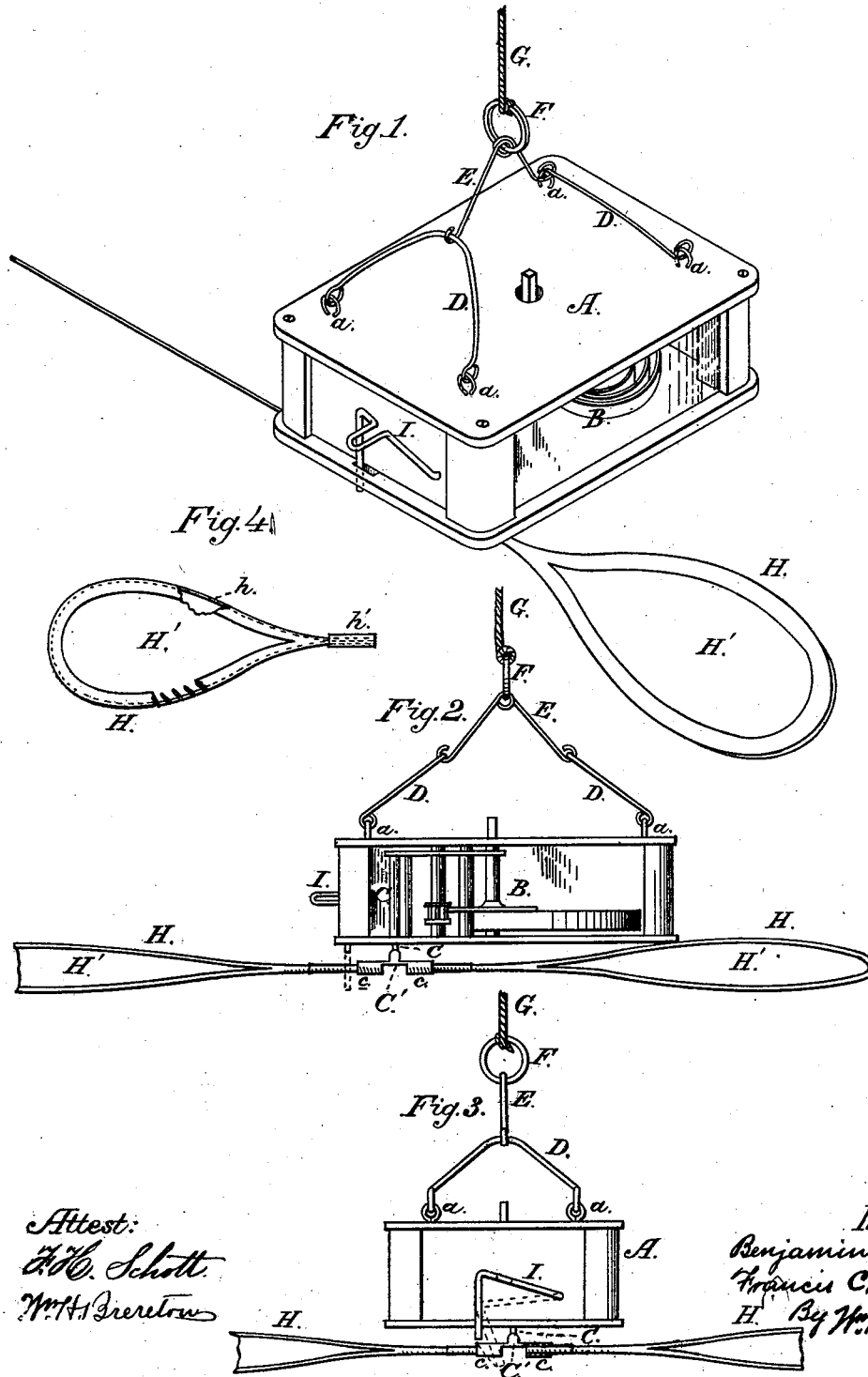


B. G. FITZHUGH & F. C. RENNER.

AUTOMATIC FANS.

No. 180,123.

Patented July 25, 1876.



Attest:
W. C. Schott
W. H. Drexler

Inventors:
 Benjamin G. Fitzhugh
 Francis C. Renner
 By *W. H. Drexler*
 Attorney.

UNITED STATES PATENT OFFICE.

BENJAMIN G. FITZHUGH AND FRANCIS C. RENNER, OF FREDERICK COUNTY,
ASSIGNORS TO FRANCIS C. RENNER, OF NEW MIDWAY, AND WASHING-
TON I. HINES, OF LIBERTYTOWN, MARYLAND.

IMPROVEMENT IN AUTOMATIC FANS.

Specification forming part of Letters Patent No. **180,123**, dated July 25, 1876; application filed
April 19, 1876.

To all whom it may concern:

Be it known that we, BENJAMIN G. FITZHUGH and FRANCIS C. RENNER, of the county of Frederick and State of Maryland, have invented certain new and useful Improvements in Automatic Fly-Fans and Mosquito-Drivers; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to automatic fly-fans.

In the drawings, Figure 1 is a perspective view, Fig. 2 a side elevation, and Fig. 3 an end view, of the device in operation. Fig. 4 is a detached view of one of the fans.

Our invention has for its object the construction of a simple device for suspending and raising or lowering a fly-fan, operated by clock mechanism, also a catch for preventing the rotation of the fan, all as hereinafter more fully will appear.

A is a case of any suitable or appropriate construction, provided in its interior with clock mechanism B, which mechanism may be of any desired or appropriate construction so as to produce a regular rotation of the fan-shaft C. To the top of the case are secured at each corner hooks *a*, from which extend suspension arms or bails D united to a central piece, E, provided with loop F. G is a cord attached to loop F, which passes up to the ceiling and over a hook or pulley, thence returning to the floor. By means of this cord G, secured to the suspension-bails D E, the device is suspended in position, and may be raised or lowered at will. On the end of the fan-shaft C is formed a head, C', with socket-heads *c*, to receive the fan-arms. H, Fig. 4, is the fan, composed of a flat spring-metal, *h*, bent around and united at the ends by an inclosing-band, *h'*, or the ends may be united by solder or other means. In the opening formed by the bow is secured a piece of bright paper or other material, H'. On the end of the case A is secured a stop, I, made of such

length as to pass through the lower edge of the case and come in contact with and arrest the action of the fans.

By thus constructing and arranging the parts, a simple, cheap, and convenient fly-exPELLER and fan is secured.

It is usually the practice to construct fly-fans upon a stationary stand, the fans operating from the top of the stand or box. These forms are objectionable, because often being in the way and not adapted to be used both for bed and table.

By suspending the entire fan and operating mechanism and making the fans operate at the bottom, as herein shown, the device is always out of the way and may be lowered at will to bring it in position for effective operation, or may be hoisted out of the way. It may be suspended over the bed at night and a slow movement given to the fans, thus producing a gentle agitation of the air, inducing sleep and frightening off mosquitoes.

The velocity of the fan is regulated by turning each fan in its socket of the fan-shaft so as to bring an oblique face to the air. On the degree of obliquity of the fans depends the velocity of the revolution.

When desired, the fans may be stopped by bringing down the stop I, which comes in contact with one of the fans and prevents their revolution.

The object and advantage gained by constructing the suspension devices of these bails looped to each other and secured to the four corners of the case, as herein shown and described, is that the machine is held in a perfectly horizontal position, and, when not in use, the bails, &c., fold or lie down close to the case, thus occupying less room than if the parts were rigid, and making it more convenient to handle, pack, and for transportation, &c.

We are aware that fly-fans have before been suspended, by different means, from points above. This, therefore, we do not wish to be understood as broadly claiming, the gist of our invention being in the particular devices for thus suspending the machine.

We are also aware that different forms of

stops have before been used to stop the revolution of fly-fans. This, therefore, we do not lay broad claim to. We only claim our specified construction or device, whereby the stop acts directly in contact with the fans themselves, and not on the shaft upon which the fans are mounted, as is usual.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an automatic fan, the hooks *a*, bails *D D E*, cord *G*, and loop *F*, all constructed and arranged to suspend the fan and its clock-work from above, substantially as and for the purposes set forth and shown.

2. The stop, consisting of bent wire *I*, pivoted to one end of the case *A*, made to project directly downward through a slot in the edge of the case, and of such length as to

project across the path of the fan-arms and prevent their revolution, as described and shown.

3. The automatic fly-fan herein described, consisting of case and clock-work *A B*, fans *H h*, adapted to be turned in their sockets, suspension devices *a D D E F G*, and stop *I*, the whole constructed and arranged to operate in the manner and for the purposes set forth and shown.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

B. G. FITZHUGH.
FRANCIS C. RENNER.

Witnesses:

M. F. HARDING,
ROBT. STOKES.