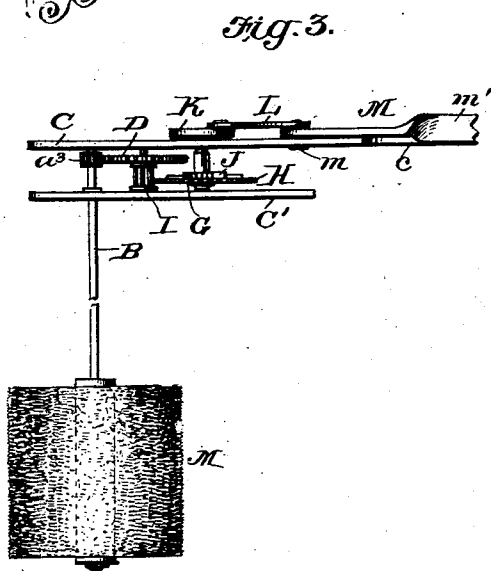
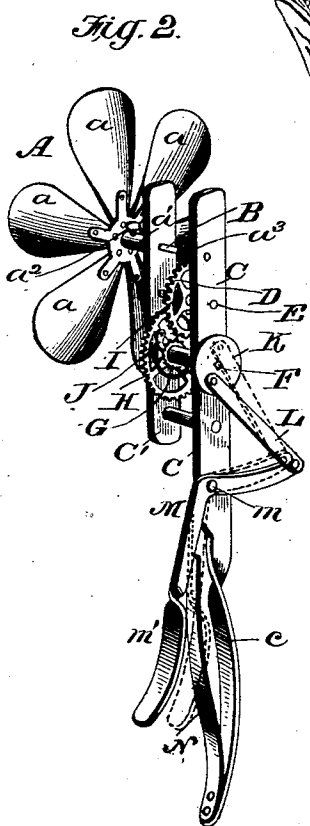


(No Model.)

A., A. D. & M. FLORES.
MEANS FOR OPERATING FANS, &c.

No. 573,774.

Patented Dec. 22, 1896.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ALFREDO FLORES, ANTONIO D. FLORES, AND MARCOS FLORES, OF SAN ANTONIO, TEXAS.

MEANS FOR OPERATING FANS, &c.

SPECIFICATION forming part of Letters Patent No. 573,774, dated December 22, 1896.

Application filed June 10, 1896. Serial No. 595,065. (No model.)

To all whom it may concern:

Be it known that we, ALFREDO FLORES, ANTONIO D. FLORES, and MARCOS FLORES, citizens of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Improvement in Means for Operating Fans, &c., of which the following is a specification.

Our invention is an improvement in the class of apparatus adapted to be propelled by hand or foot, and is embodied in the construction and arrangement of parts hereinafter described. As connected with and forming part of a rotatable hand-fan it is adapted to be held in the hand and driven by pressure of the thumb applied intermittently to a vibrating lever.

In the accompanying drawings, Figure 1 is a perspective view illustrating the practical use of our invention as applied to a fan. Fig. 2 is a perspective view of the same. Fig. 3 is a side view of the apparatus applied to a bottle-cleaning brush.

The fan proper, A, is composed of a series of radial and twisted blades *a*, fixed on a hub *a'*, that is in turn secured by means of a clamp-screw *a²* to a rotary shaft B, having its bearings in a suitable skeleton frame C C'. The said shaft B has a lantern-pinion *a³*, arranged between the parallel bars or arms C C', composing said frame, and meshing with a spur-gear D, which is similarly arranged and keyed on a counter-shaft E, also journaled in the bars C C' and arranged below the fan-shaft B. On a third shaft F, arranged below shaft E, is keyed a ratchet-wheel or disk G, and beside it is mounted loose on the same shaft a skeleton spur-wheel H, that meshes with a pinion I on the middle shaft E. To the face of the loose gear H is pivoted a spring-actuated pawl J, that engages said ratchet G and is adapted to slide on the same when moving in the opposite direction.

The lower shaft F projects through the frame-bar C, and on its end is keyed a disk or crank K, to which a link L is pivoted eccentrically. The lower end of said link is pivoted to a lever M, which is of right-angular form and pivoted at its angle *m* to the

frame-bar C, its longer arm *m'* projecting downward at a normally slight angle to the handle extension *c* of frame-bar C. A stiff plate-spring N is secured to the lower end of such handle extension *c*, its free end bearing against the free arm *m'* of the lever M. By the form and arrangement of said lever, as shown and described, it is adapted to be easily pressed by the thumb of the operator's hand which grasps the handle *c* and holds the fan in any desired position, say contiguous to the operator's face. When the lever M is thus pressed, it is forced to the position shown by dotted lines, Fig. 2, and the link L pushes on the crank or disk K and thereby rotates the shaft F one-half a revolution, and the thumb-pressure being then relaxed the spring N forces the lever M back to its original and normal position, (shown by full lines,) and pressure being then again applied the same operation is repeated, and so on indefinitely. It is further apparent that by the rotation of the crank-shaft F thus produced the ratchet G is held engaged with the pawl I and the loose gear H thereby caused to drive the shafts B and rotate the fan A continuously. Thus the intermittent vibration of the lever M is converted into constant rotation of the fan.

It will be seen that the complete rotation of the ratchet G and crank-shaft F is not essential or necessary to effect constant rotation of the fan, since if the lever M be pressed only sufficient to rotate the said shaft F, say, one-third of a revolution that will suffice to cause the fan to make several revolutions, and by the momentum thus acquired the pawl I will be caused to ride over the ratchet G, as the latter rotates backward with its shaft F, by reason of the downward pull of the link L.

We apply the propelling apparatus proper for various uses besides driving a fan, for example, for rotating a bottle-cleaning brush M, as shown in Fig. 3. By substituting another circular brush for that shown the apparatus may be used as a type-writer-type brush-cleaner, and by substituting a suitable and well-known form of stirrer for the brush the apparatus is adapted for use as a

flour-beater. In short, we do not restrict ourselves in any range of use of the propelling apparatus proper.

What we claim is—

5 1. The improved apparatus, composed of a frame, a rotatable, bladed wheel, multiplying-gearing for rotating such wheel, a spring-pressed lever pivoted to and extending along the frame, and a link connecting said lever
10 and gearing, all operating as shown and described.

2. The improved fan apparatus, composed of the supporting-frame, the fan proper, a counter-shaft, gear, and pinion, the fan-shaft
15 and its pinion, a third shaft, and a ratchet fixed thereon, a gear rotating loose on such ratchet-shaft, and a pawl carried thereby and engaging the ratchet, a pivoted hand-lever, a pivoted link connecting such lever and a
20 crank on the ratchet-shaft, and a spring acting on the lever on the side adjacent to its free end, and serving to restore the lever and

pawl-carrying gear to their normal position while the fan, gearing, and ratchet continue to rotate, as specified.

25 3. The improved hand-fan apparatus, composed of the fan proper, rotative gearing for directly operating it, ratchet-and-pawl mechanism for working such gearing, a frame carrying such apparatus and having a handle
30 extension *c*, a right-angle lever pivoted to such extension, and its free portion arranged adjacently, and the spring, arranged between the lever and extension *c*, as shown and described, whereby the operator is enabled to
35 hold the handle and vibrate the lever by the same hand, as specified.

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Witnesses:

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