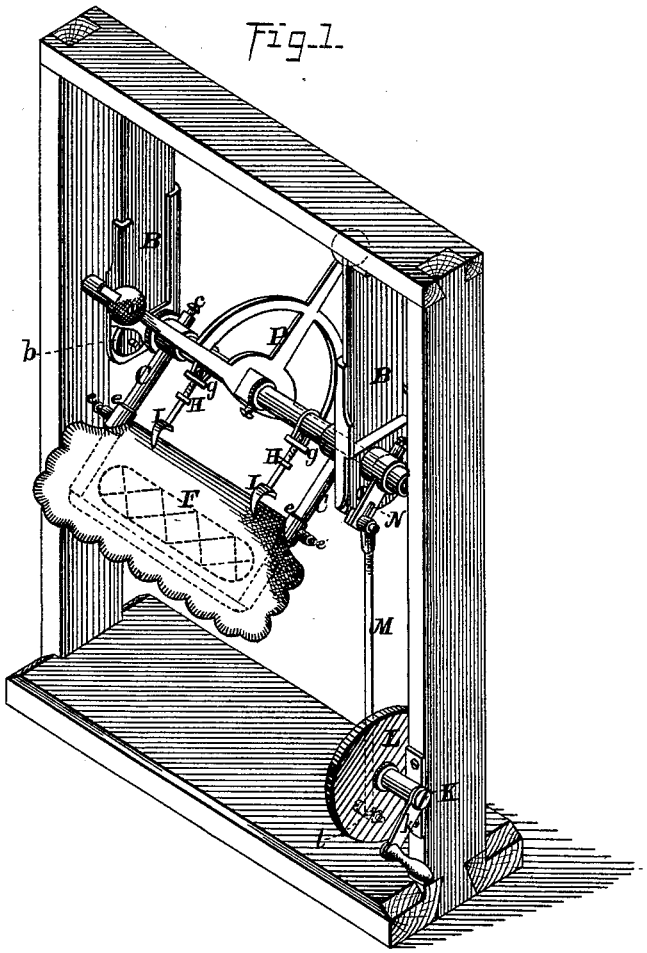
2 Sheets—Sheet 1.

J. G. SCHMIDT.

FANS.

No. 189,793. Patented April 17, 1877.

Fig. 1.



WITNESSES:

Jas. E. Hutchinson.

Henry G. Hazard.

INVENTOR.

J. G. Schmidt, by

Brundle & Gilchrist Attys

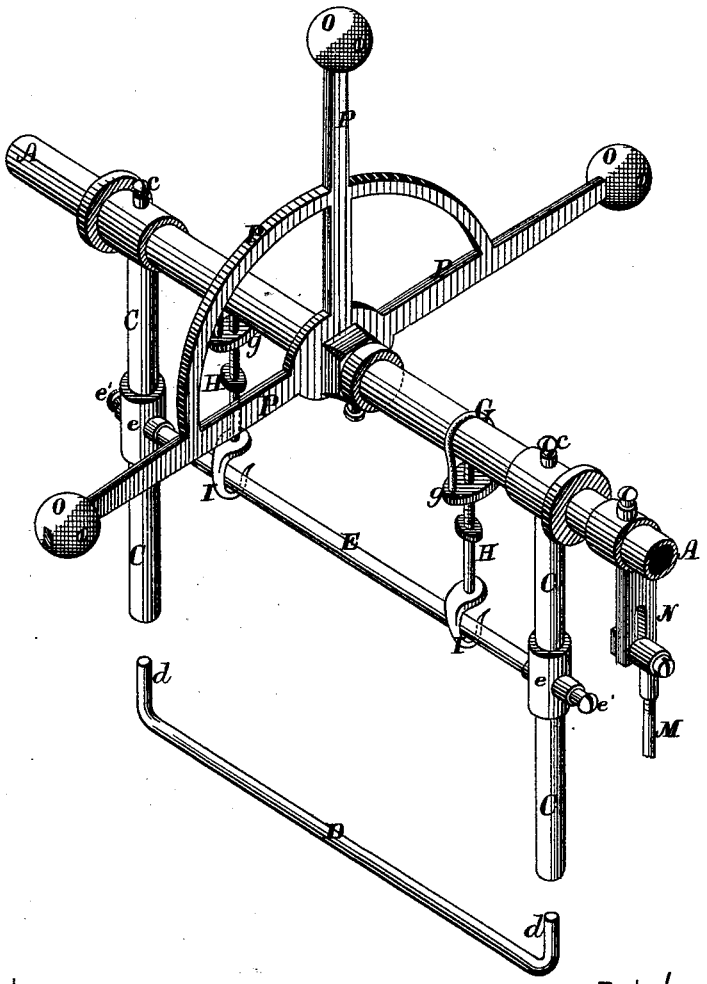
2 Sheets—Sheet 2.

J. G. SCHMIDT.

FANS.

No. 189,793. Patented April 17, 1877.

Fig. 2.



WITNESSES:

Jas. C. Hutchinson.

Henry C. Hazard

INVENTOR.

J. G. Schmidt, by

Prindle & Lyon his Attys.

UNITED STATES PATENT OFFICE.

JOHN G. SCHMIDT, OF MEMPHIS, TENNESSEE.

IMPROVEMENT IN FANS.

Specification forming part of Letters Patent No. **189,793**, dated April 17, 1877; application filed March 10, 1877.

To all whom it may concern:

Be it known that I, J. G. SCHMIDT, of Memphis, in the county of Shelby, and in the State of Tennessee, have invented certain new and useful Improvements in Fans; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my fan as arranged for use; and Fig. 2 is a like view of the stretcher-frame separated from the fan and removed from its support.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to furnish a simple, convenient, and efficient means for creating artificial currents of air; to which end it consists, principally, in the construction of the stretcher-frame for receiving and sustaining the fan, substantially as and for the purpose hereinafter specified.

It consists, further, in the means employed for stretching the fan, substantially as is hereinafter shown.

It consists, further, in the means employed for counterbalancing the fan and its frame, substantially as is hereinafter set forth.

It consists, finally, in the device as a whole, constructed and operated in the manner and for the purpose, substantially as hereinafter shown and described.

In the annexed drawings, A represents a shaft, which is journaled near its ends within two hangers, B, and immediately adjacent to the inner face of each hanger is provided with a radial arm, C, that at one of its ends encircles said shaft, and is held in place by means of a set-screw, *c*.

The arms C are hollow, and at their outer ends receive the ends *d* of a rod, D, which rod extends between said arms, and has its said ends *d* bent to a right angle to its length.

Extending between the arms C is a bar, E, which is provided at each end with a sleeve, *e*, that encircles the contiguous arm and confines said bar in longitudinal position with reference to said arms, while allowing it to be moved lengthwise of the latter, toward or from the shaft A. A set-screw, *e'*, passing inward through the outer side of each of said sleeves enables said bar E to be confined in place when adjusted thereto.

The arms C, rod D, and bar E form a frame for a fan, F, which latter is constructed, preferably, from cloth, and is provided with sewed channels for the reception of said parts.

In placing the fan F in position the rod D is first passed endwise into its channel through an opening provided in the cloth. The bar E is then passed through its channel in the inner edge of the said fan, after which the ends of said bar and said fan are slipped over the arm C, and moved inward over the same until the ends *d* of said rod D are contained within their bearings.

In order that the fan F may be stretched taut, the following described means are employed: A loop, G, passes around the shaft A near each arm C, and has its ends secured within a nut, *g*. Within said nut is fitted the threaded end of a rod, H, which has its opposite end swiveled within a hook, I, that passes through the fan F around the bar E.

As thus arranged, by rotating the rod H, its threaded end will be caused to pass through the nut *g* toward the shaft A, by which operation the bar E and inner edge of the fan F will be drawn in the same direction.

The shaft A is caused to oscillate within its bearings, so as to give a reciprocating motion to the fan F, by the following described means: A shaft, K, is journaled within a suitable bearing and at one end is provided with a crank, *k*, and at its opposite end with a disk, L.

Within the outer face of the disk L is provided a crank-pin, *l*, to or upon which is pivoted one end of a bar, M, that from thence extends upward and has its opposite end pivoted upon a crank, N, which is secured upon one end of the shaft A.

The diameter of the circle traveled by the lower end of the connecting-bar M is sufficient to cause the shaft A to move about one-fourth of a revolution in each direction, such distance having been found best adapted to the requirements of the fan.

The weight of the fan is counterbalanced by means of three balls, O, which are placed upon the ends of a three-arm frame, P, that is secured to the center of the shaft A, said arms being arranged to extend radially rearward

and in a line having a right angle to the face of the fan F.

The friction of the shaft within its bearing is lessened by the employment of friction-wheels *b*, which are journaled within each hanger B, and furnish a support for the journals of said shaft.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. The stretcher-frame for receiving and sustaining the fan F, consisting of the arms C secured radially upon the shaft A, the rod D having its ends *d* contained within the outer ends of said shaft, and the bar E provided with the sleeves *e* extending between and encircling said shaft, and provided with the set-screws *e'*, said parts being combined with each other and with said fan, substantially as specified.

2. In combination with the shaft A, bar E, and fan F, the loops G, nuts *g*, rods H, and hooks I, substantially as and for the purpose shown.

3. In combination with the fan F and its supporting-frame, the balls O secured upon the radial arms of the frame P, and said frame attached to or upon the shaft A, substantially as and for the purpose set forth.

4. The hereinbefore-described device, in which the shaft A, stretcher-frame C, D, *d*, E, and *e*, the fan F, the stretcher-rods G, *g*, H, and I, the shaft K, disk L, crank-pin *l*, connecting-bar M, and crank N are constructed and combined to operate in the manner and for the purpose substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of March, 1877.

JOHN GEORGE SCHMIDT.

Witnesses:

GEORGE MITCHELL,

JNO. BEAMISH.