

(No Model.)

W. SCHMOLZ.

FAN WHEEL.

No. 279,603.

Patented June 19, 1883.

FIG. 1.

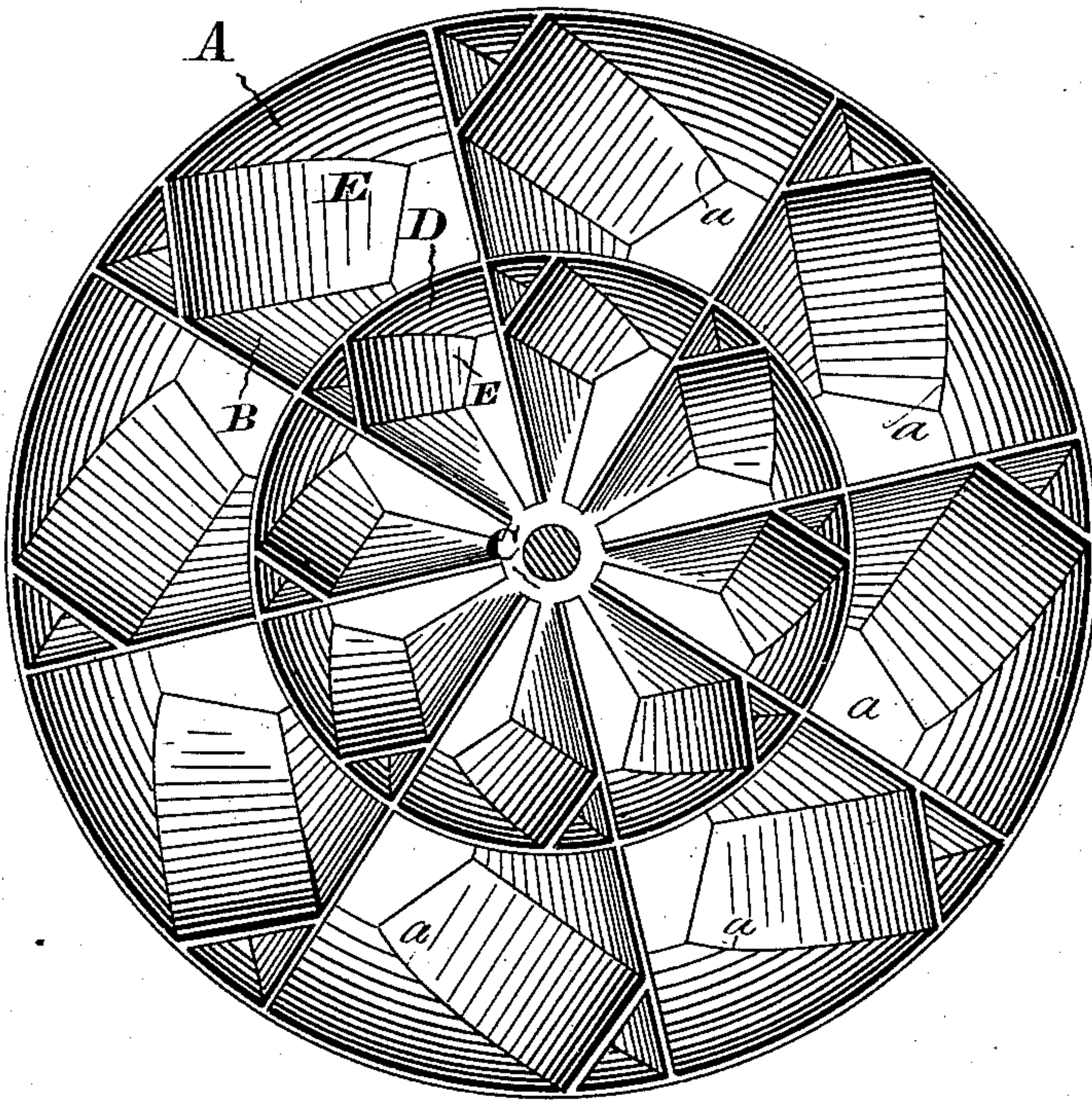
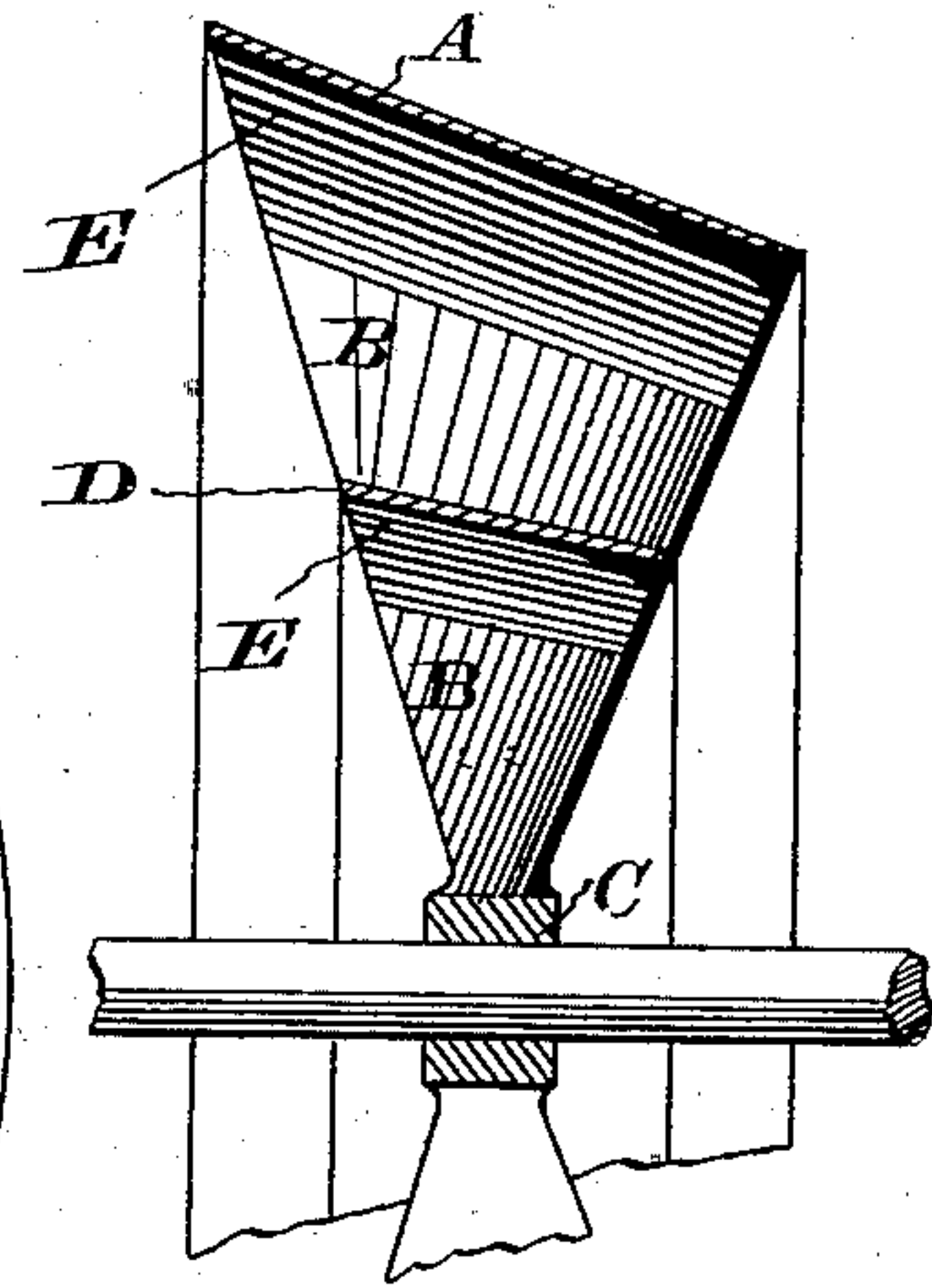


FIG. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM SCHMOLZ, OF SAN FRANCISCO, CALIFORNIA.

FAN-WHEEL.

SPECIFICATION forming part of Letters Patent No. 279,603, dated June 19, 1883.

Application filed November 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCHMOLZ, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Fan-Wheels, of which the following is a specification.

My invention relates more particularly to certain improvements upon a fan-wheel for which Letters Patent No. 265,984 were granted to me on the 17th day of October, 1882; and the object of my invention is to provide a fan-wheel of simple and cheap construction and of great power, and adapted for exhausting and forcing atmospheric air, vapors, and gases from and into mines, ventilating and cooling buildings, railway-cars, &c. I accomplish this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved fan-wheel. Fig. 2 is a face view of one of the blades or fans.

Similar letters of reference are used to designate like parts throughout the several views.

The rim A is composed of a flat sheet of metal bent into a truncated conical form, or of less diameter at its inner than at its outer edge. The blades B, which radiate from the hub C, are set at an angle to the plane of revolution, and are formed, preferably, of smooth sheet metal.

At a point about midway between the hub C and the rim A, I set an interior band or rim, D, likewise composed of flat or smooth sheet metal bent into the form of a truncated cone, whose apex or point of generation is the same as that of the outer rim or tire.

The sheet-metal plates E are cut in the form of a rectangle; but the outer edge, *a*, is curved to conform with the curvature of the rim against which they abut and form a close connection. These plates are set between the blades and rims at an angle of about forty-five degrees—or, in other words, said blades are so set as to form an angle of about forty-five degrees with a radial line drawn from the center to the circumference of the wheel, and also at

about the same angle with the axis of the wheel—and they incline upwardly and outwardly from the line of contact with the blades to the line of contact with the rims, as is seen in Fig. 1.

The object in giving the described taper to the rims is to increase the suction and forcing capacity of the fan-wheel; and I have found by actual experiment that a body of air can be blown or forced fully three times farther with an inwardly-beveled rim than it can be with the cylindrical rim described in my former Letters Patent, the number of revolutions given to the wheel being the same.

The metal plates E serve to stay and brace the rims and blades, and at the same time further increase the forcing and suction capacity of the wheel.

By this construction it will be seen that the outer atmospheric air is concentrated as it is drawn through the wheel, and the whole volume is driven in the desired direction; and, furthermore, that when using the fan as an exhausting-fan the outward flare given to the parts will impart a centrifugal motion to the body of air drawn through the fan and disperse it outwardly, thereby removing a solid body of air and enabling the wheel to be run with less applied power.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a fan-wheel, the combination of the circular tapering rims A and D, hub C, blades or fans B, radiating from the hub and set at an angle to the plane of revolution, and the plates or braces E, set at an angle to a radial line drawn from the center of the wheel, all substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 4th day of November, 1882.

WILLIAM SCHMOLZ. [L. S.]

Witnesses:

C. W. M. SMITH,
CHAS. E. KELLY.