

(Model.)

J. M. BLACKMAN.

VENTILATOR WHEEL OR FAN.

No. 250,639.

Patented Dec. 13, 1881.

Fig. 1.

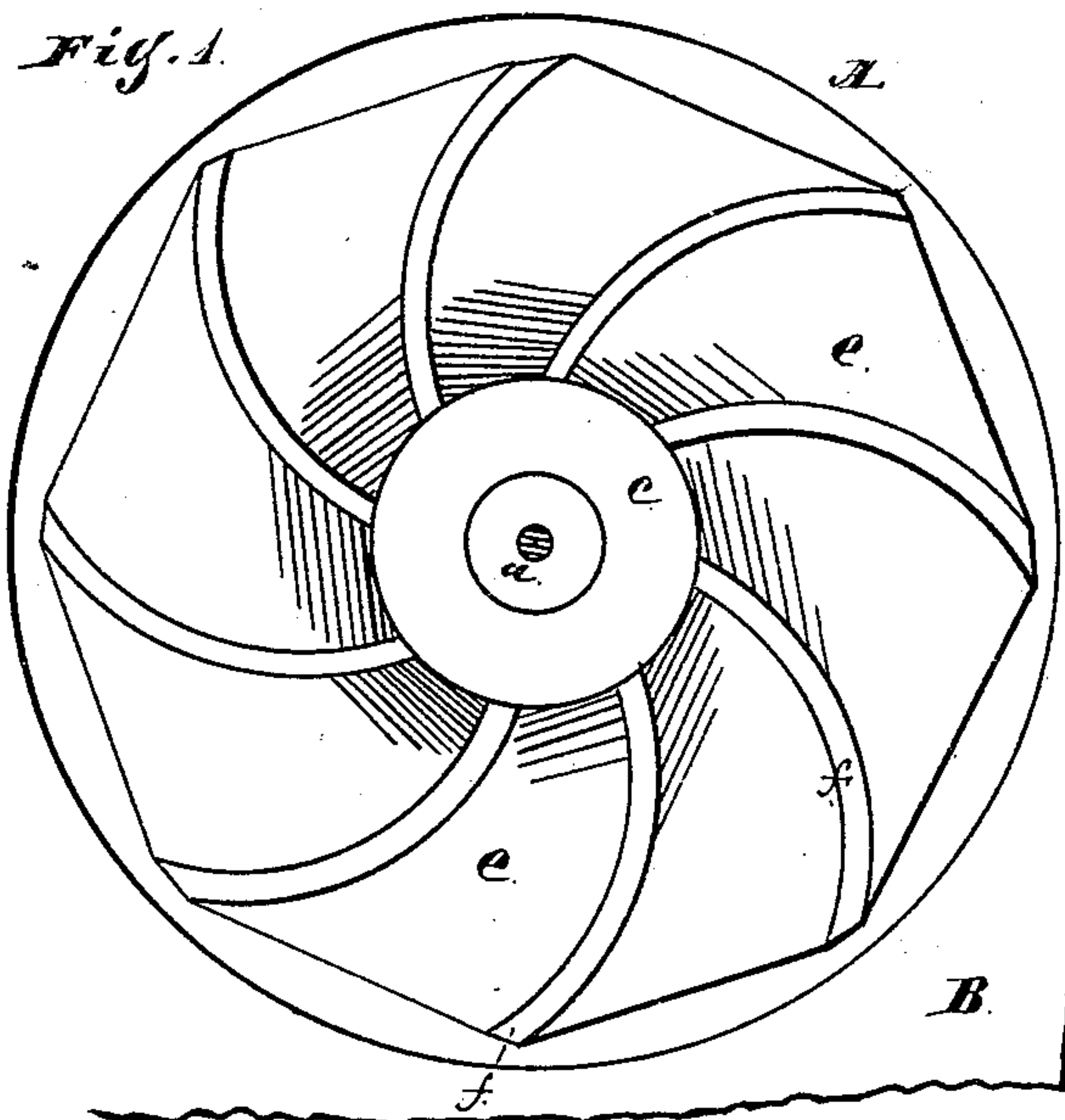


Fig. 2.

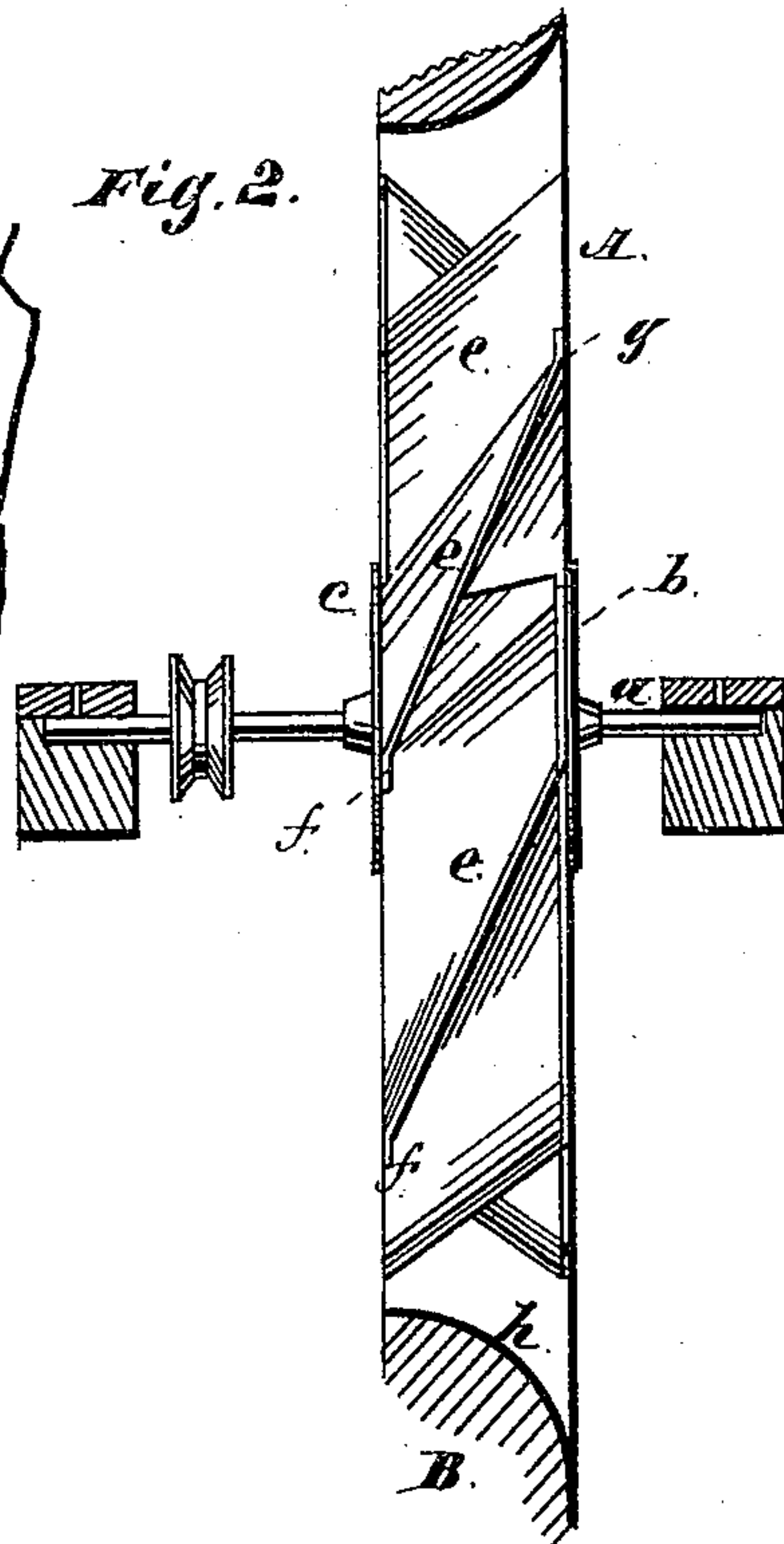


Fig. 3.

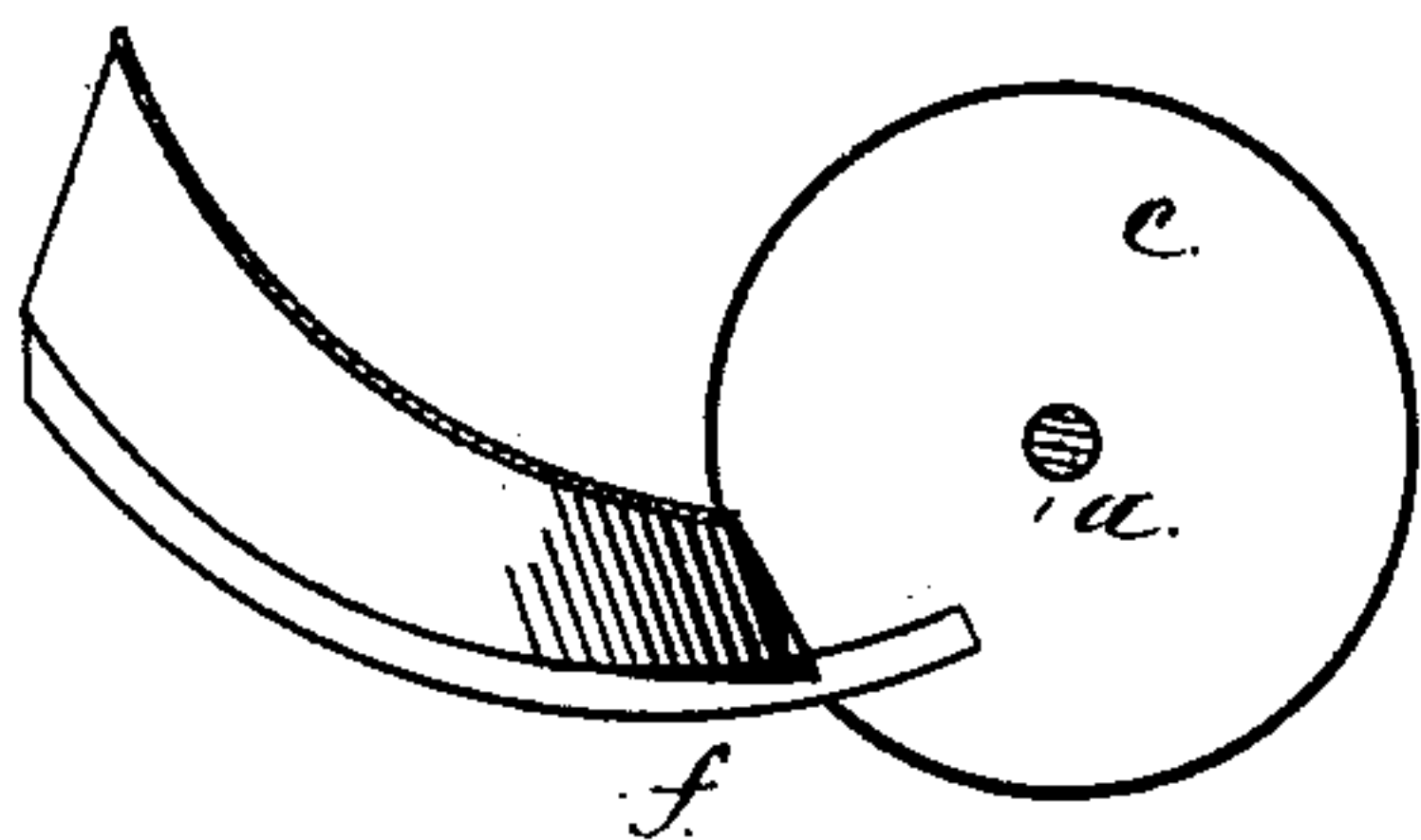


Fig. 4.

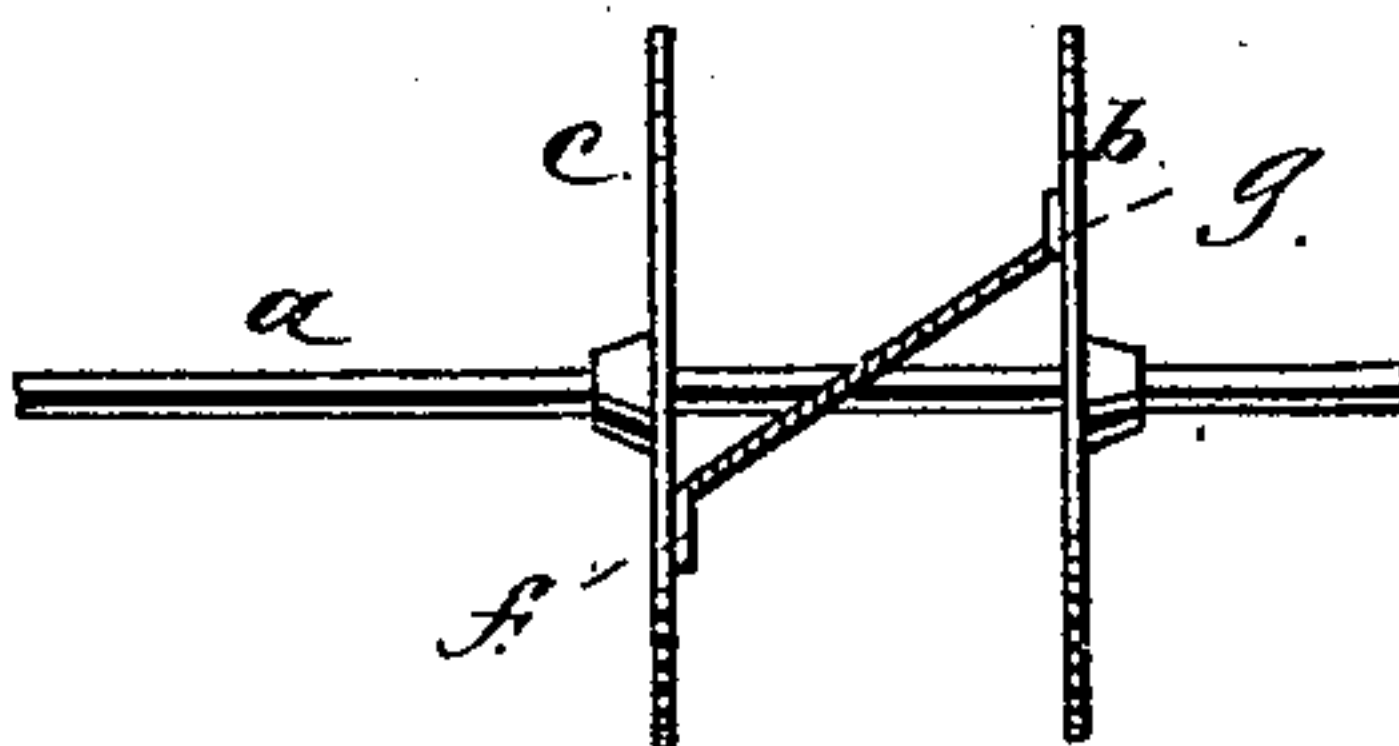
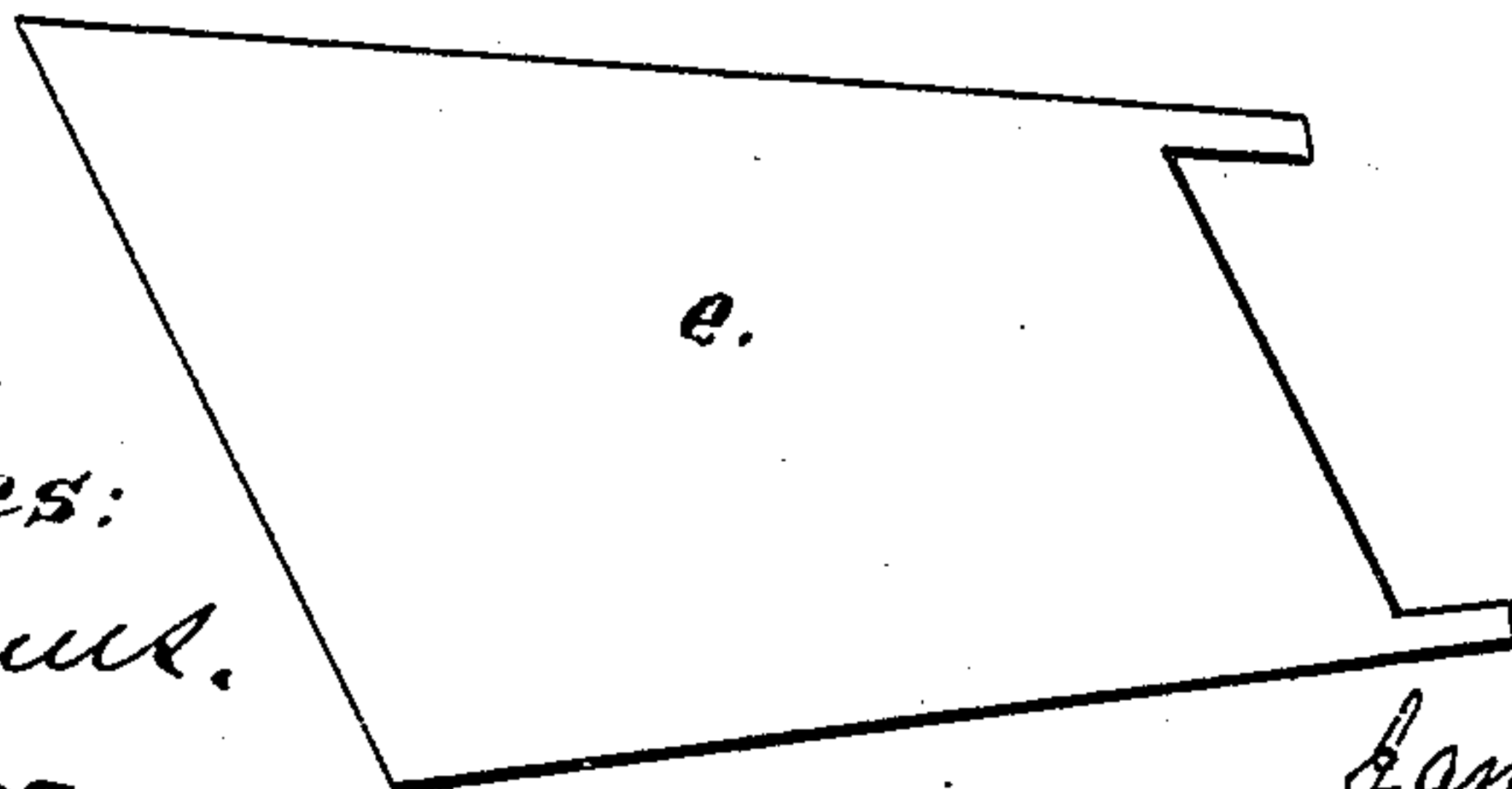


Fig. 5.



Witnesses:

H. Adams.
O. Bond

Inventor:

James M. Blackman.
By Crest & Bond Attys.

UNITED STATES PATENT OFFICE.

JAMES M. BLACKMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND
LYCURGUS LAFLIN, OF SAME PLACE.

VENTILATOR WHEEL OR FAN.

SPECIFICATION forming part of Letters Patent No. 250,639, dated December 13, 1881.

Application filed March 14, 1881. (Model.)

To all whom it may concern:

Be it known that I, JAMES M. BLACKMAN, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented new and useful Improvements in Ventilator Wheels or Fans, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is a side view. Figs. 3 and 4 are details. Fig. 5 shows the form of the blanks from which the wings are made, and is enlarged.

The object of my invention is to provide an improved ventilator wheel or fan for the purpose of forcing air out from buildings and other places.

In the drawings, A represents my ventilator-wheel. *a* is the shaft, to be mounted in use in suitable bearings. *b c* are two disks secured to the shaft *a*. *e* are the wings of the wheel. They are scroll-shaped. Their inner ends are secured to the disks *b c*. One edge of each wing is provided with a flange, *f*, and the other edge of each wing has, as shown, a flange, *g*. The flange *f* is on the inner edge of the wing—meaning that edge which is next to the room, or toward the inside of the opening in which the wheel is placed—and the flange *g* is upon the outer edge. These flanges project from the wing in opposite directions. The flange on the outer edge is mainly for strength. The wings are considerably wider at their outer than at their inner ends; but they are so shaped that the outer edges are in one plane and their inner edges are in one plane. The distance between the two disks *b c* is about one-sixth of the diameter of the wheel. For wheels four

feet or less in diameter I use eight wings. For wheels from four to seven feet in diameter I use ten wings. The flanges *f g* may be iron arms, to which the wings are riveted.

In use the wheel or fan is to be located in an opening in the wall of the building, or in other suitable place.

B represents the wall of a building, and *h* an opening therein.

The wheel is to be driven in any well-known manner.

I find by actual use that the scroll-shaped wings are more efficient than other forms used; that such wings gather and force out a greater volume of air than any form now used; that the shape of the wings prevents the air from falling back into the room, and that the flanges on the inner edges of the wings aid in gathering, holding, and forcing out the air.

I have shown in Fig. 5 the form of the blanks from which the wings may be made, the flanges being omitted. Fig. 1 shows the proper curve for the wings, and the scroll shape will be given if the blank be formed so that the front and rear edges of the wings will stand respectively in the same planes. The wings can be made from any suitable sheet metal.

What I claim as new, and desire to secure by Letters Patent, is as follows:

In a ventilator fan or wheel, the scroll-shaped wings *e*, provided with flanges *f* and *g*, in combination with the disks *b c* and shaft *a*, all constructed substantially as and for the purposes described.

JAMES M. BLACKMAN.

Witnesses:

E. A. WEST,
B. A. PRICE.