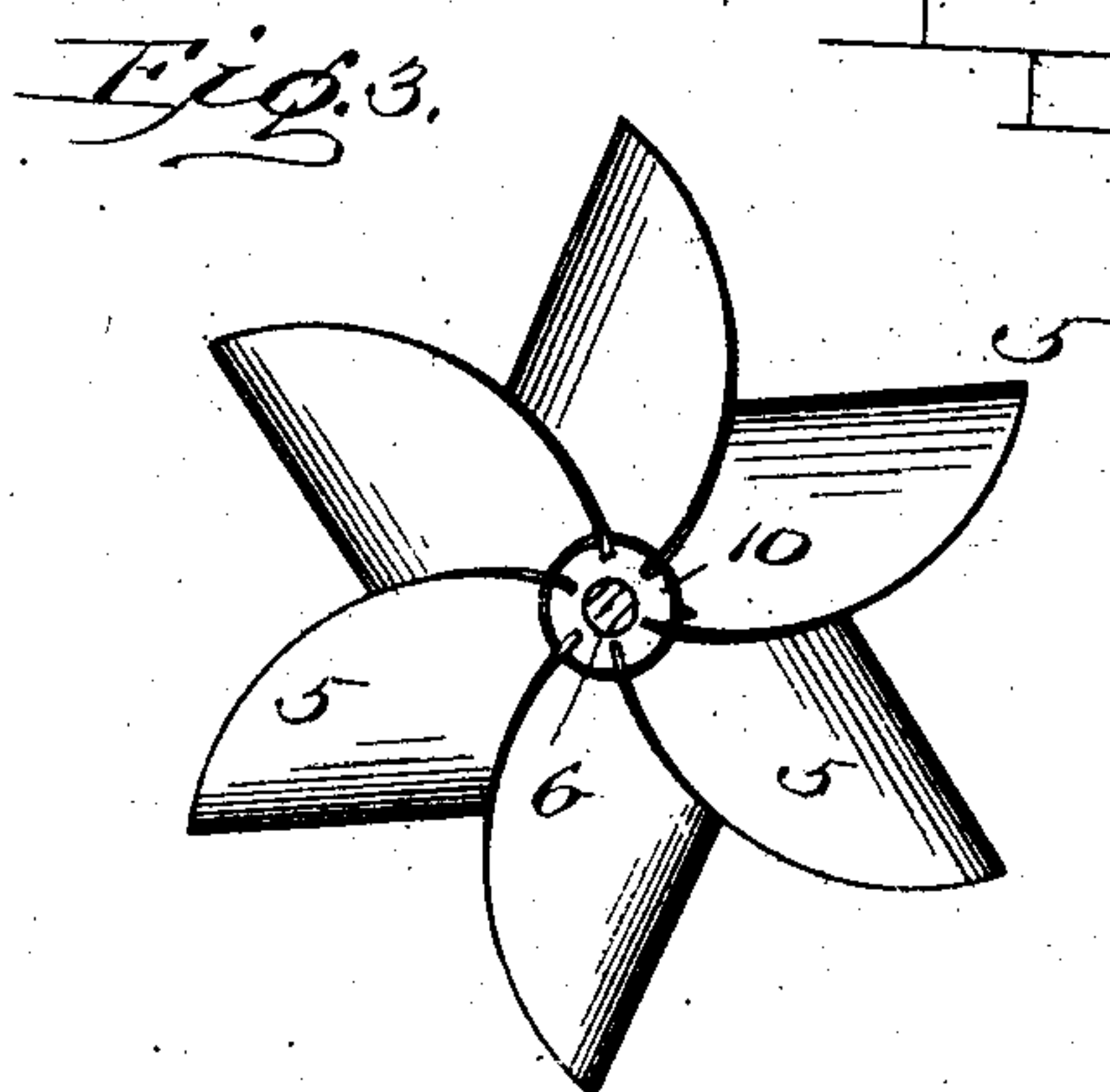
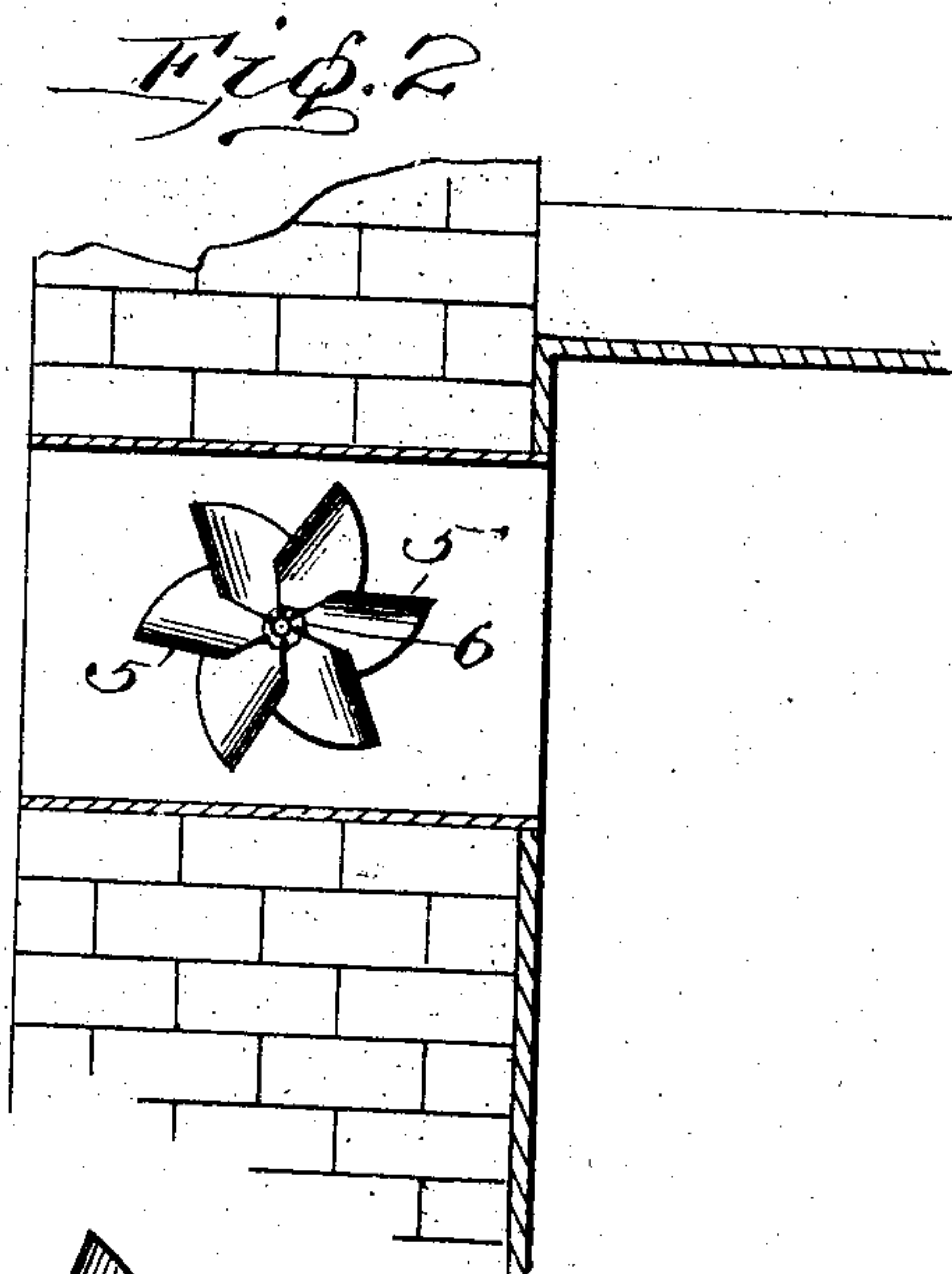
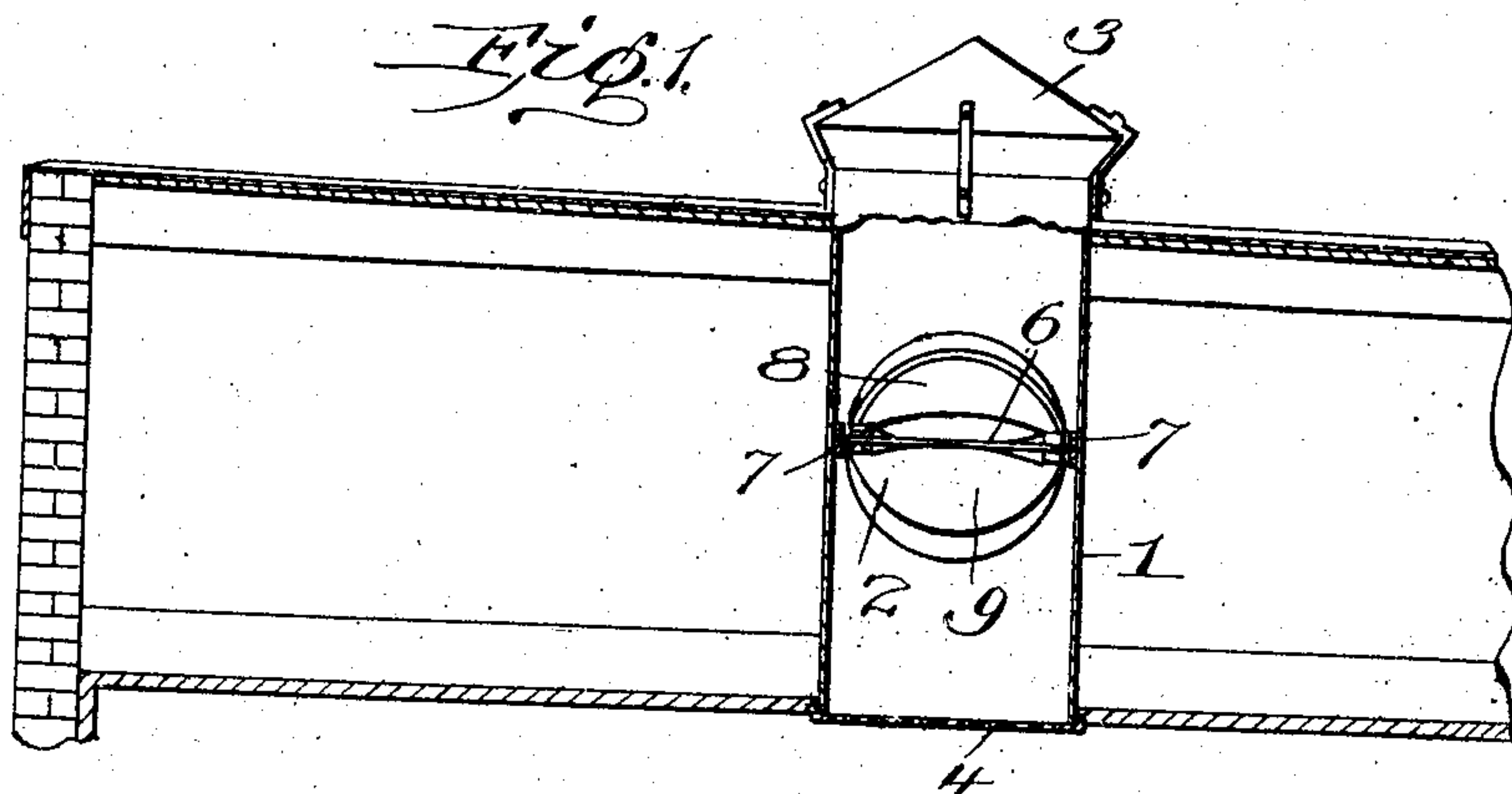


No. 834,422.

PATENTED OCT. 30. 1906.

L. WALENTE.
VENTILATOR.

APPLICATION FILED MAY 15, 1905.



Witnesses

*Severance,
J. M. Fowler Jr.*

Inventor
Louis Walente,

By *Marion Francis Lawrence*
Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS WALENTE, OF TERCIO, COLORADO.

VENTILATOR.

No. 834,422.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Application filed May 15, 1905. Serial No. 260,580.

To all whom it may concern:

Be it known that I, LOUIS WALENTE, a citizen of the United States, residing at Tercio, in the county of Las Animas and State of Colorado, have invented certain new and useful Improvements in Ventilators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in ventilators; and the object of the invention is the provision of means located either in the walls, roof, or flooring of a building for establishing a current of air in such a manner that overheated and foul air can escape from a room or building and fresh air can be admitted to take the place thereof. In accomplishing this purpose the ventilator is provided with a movable or rotating member, which is suitably mounted for carrying out the purpose of the invention.

With these and other objects in view the invention comprises certain novel constructions, combinations, and arrangement of parts, as will be fully described and claimed.

In the accompanying drawings, Figure 1 is a sectional view through a portion of a roof of a building, showing my improved ventilator applied thereto, a portion of the ventilator being shown in section and a portion in elevation. Fig. 2 is a sectional view through a portion of the side wall of a building with the ventilator applied therein. Fig. 3 is an enlarged detail view in elevation of the revolving member or wheel of the ventilator.

In carrying out the purposes of the present invention the ventilator is so constructed that the tendency of a column of cold air to descend and of a column of hot air to rise is utilized for producing rotation of a revolvably-mounted member located in the walls of a building.

In the drawings I have illustrated a practical manner of carrying the invention into effect, and in the illustration 1 indicates a flue, and 2 a revoluble member or wheel. The flue 1 is usually made cylindrical and is long enough to extend through the side wall or roof of the building or room to which the ventilator is to be applied. In the event of the ventilator being located in the top or roof of a building or room the upper end of the flue 1 is covered and protected from the weather by any suitable shield or cap, as 3. In using

such a cap of course ample space is allowed between the same and the upper end of the cylindrical casing to permit the air to flow freely through the ventilator. The lower or inner end of the flue 1 may be closed, if desired, by a screen 4, which is provided with suitable apertures, or in the event of its being made of woven wire of large enough mesh to not materially retard the flow of air into and from the flue 1.

The construction of the revoluble member or wheel 2 is an important feature of the invention, the said wheel comprising a plurality of wings or paddles 5, which project outwardly from a common shaft 6. The ends of the shaft 6 are journaled in bearings, as 7, secured in the opposite walls of the flue 1. The wings or paddles are curved upon their outer edges in such a manner that as the wheel is rotated it may be made to fit snugly within the walls of the flue 1.

The paddles or wings 5 are bent longitudinally, so as to give them each a concave surface upon one side and a convex surface upon the other side, as clearly indicated at 8 and 9 in the drawings. By having a number of paddles or wings—for instance, six—there will always be some of the wings upon one side of the wheel with their concave faces turned toward the interior of a room or building, while at the same time upon the opposite side of the wheel other blades or wings will have their convex sides turned toward the interior of the room or building. It will thus follow that when a column of warm air rises and attempts to escape through the flue of the ventilator the said column of air will come in contact with the concave and the convex surfaces of the paddles; but the concave surfaces will hold and offer more resistance to the movements of the air than the convex surfaces, and there will be a tendency to turn the wheel in accordance with the impulse received by the concave paddles from the column of air. Upon the opposite side of the wheel a column of cold air is also operating simultaneously. The column of cold air is endeavoring to descend and to force its way into the position occupied by the warm or rarefied air within the room and will thus come in contact with the concave and convex faces of the paddles or blades of the wheel but here again the concave faces will collect and receive greater force from the column of air than the convex faces, and there will be a tendency to rotate the wheel. Since the col-

umn of cold air is operating with greatest force upon the opposite side of the wheel and in the opposite direction from the side operated upon by column of warm air with the greatest effect, the two columns of air will contribute to the proper revolution of the ventilator-wheel. In practice the ventilator-wheel is thus found to operate continuously, and the discharge of heated and foul air from rooms and the replacement thereof by fresh cooler air is greatly facilitated through the operation of this wheel.

The wheel may be constructed in any desired manner so long as the arrangement of concave and convex surfaces above mentioned is retained, and the inner edges of the paddles or wings may be secured in any desired manner to the axle 6. The securing of such wings or paddles when bent and made in the shape described is better accomplished by the securing of the ends only of the said blades or paddles to the shaft 6, and I therefore usually employ hubs 10, arranged near each end of the said shaft 6. The said hubs can be made comparatively short, as shown in Fig. 1, since the central portions of the paddles or wings do not come close to the shaft or axle 6.

The inner end of the flue 1 may be left entirely open, as shown in Fig. 2, it not being necessary to employ a screen, such as is shown at 4 in Fig. 1. Of course when the ventilator is applied in the side wall of a building, as illustrated in said Fig. 2, it is usually not necessary to employ a hood or outer covering. I do not wish to be understood as limiting the invention to a wheel formed in the exact manner above described, since it will be evident that the paddles or blades may be given an angular shape instead of being curved, and in this manner a concave force-collecting blade can be secured. It will also be evident that the manner of securing the paddles or blades to the axle or shaft 6 can be varied without departing from the spirit of the invention.

The ventilator above described is exceedingly simple in structure and will be found useful especially in large buildings or estab-

lishments, such as hospitals, hotels, saloons, dance-halls churches, offices, prisons, theaters, &c., as well as in smaller places, such as kitchens, meat or other shops, basements, refrigerators, stables, coaches, and the like. There is no operative mechanism necessary in using the device, as the tendency of the air to rise or fall in accordance with its temperature and the relative temperature of air inside or outside of a closure or building of any kind being sufficient to produce the desired effect.

In placing the revoluble member or wheel within the flue 1 it should not be located so that the paddles or wings extend beyond the ends of the casing. The best effect is secured by locating the said wheel intermediate the length of the flue and within the walls thereof, since the walls of the flue serve to bring the columns of air to bear properly upon the faces of the wings of the wheel. Of course it will be apparent that the wheel may be located nearer one end of the casing than the other, if desired; but I usually place the said wheel about centrally of the said casing 1.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a ventilator, a shaft, a plurality of plates each comprising a crescent-shaped blank curved and with its extremities secured rigidly to the shaft and so shaped that the outer edges of the plates contact throughout their extent with an imaginary sphere.

2. In a ventilator, a shaft adapted to be journaled within a cylindrical flue, a plurality of blades each comprising a crescent-shaped blank curved and with its extremities secured rigidly to the shaft adjacent its ends and so shaped that the outer curved edges of the blades contact throughout their extent with the interior of a flue throughout its entire circumference.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS WALENTE.

Witnesses:

AUG. S. BACCA,
JOHN COSTANTINI.