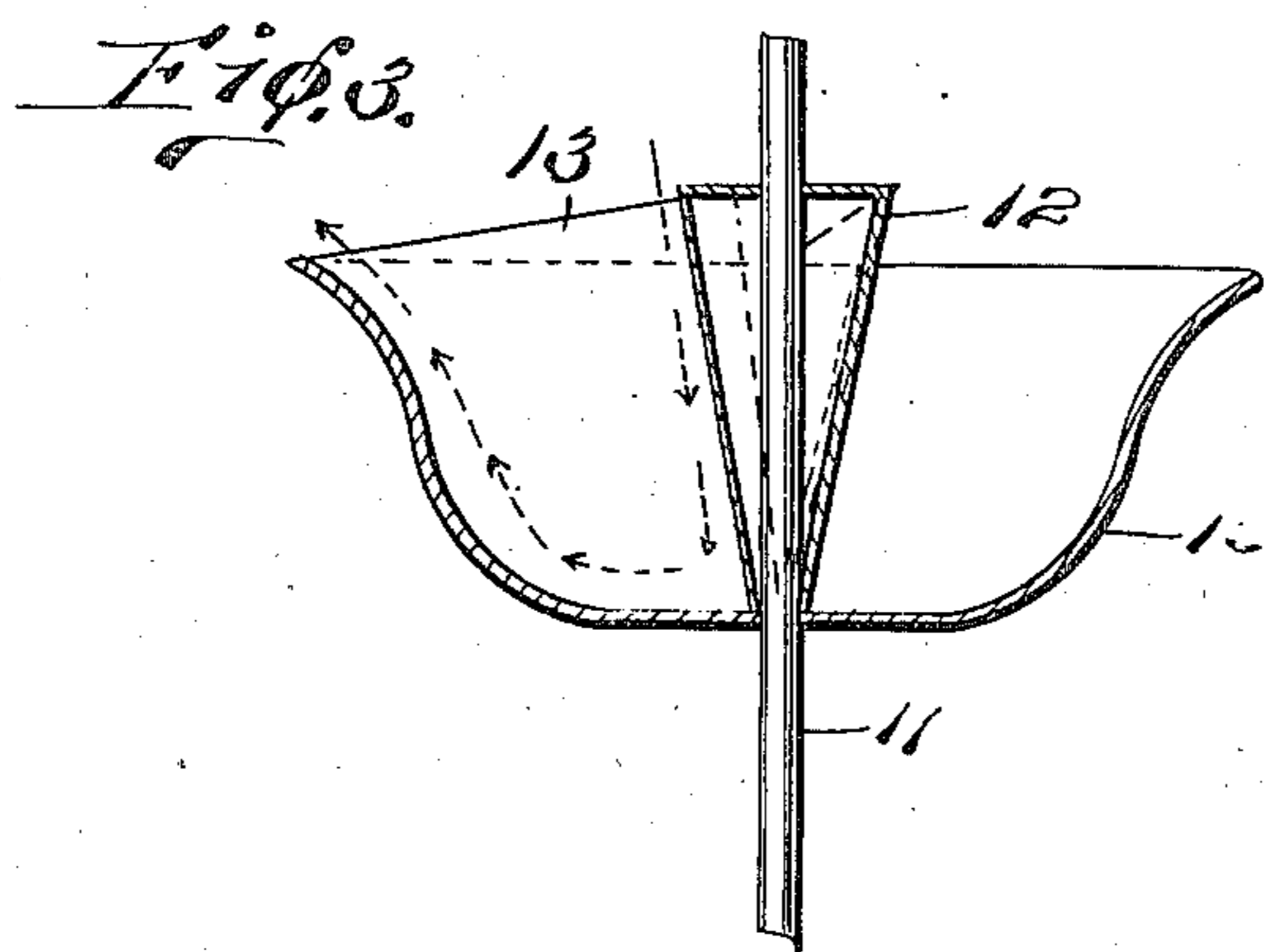
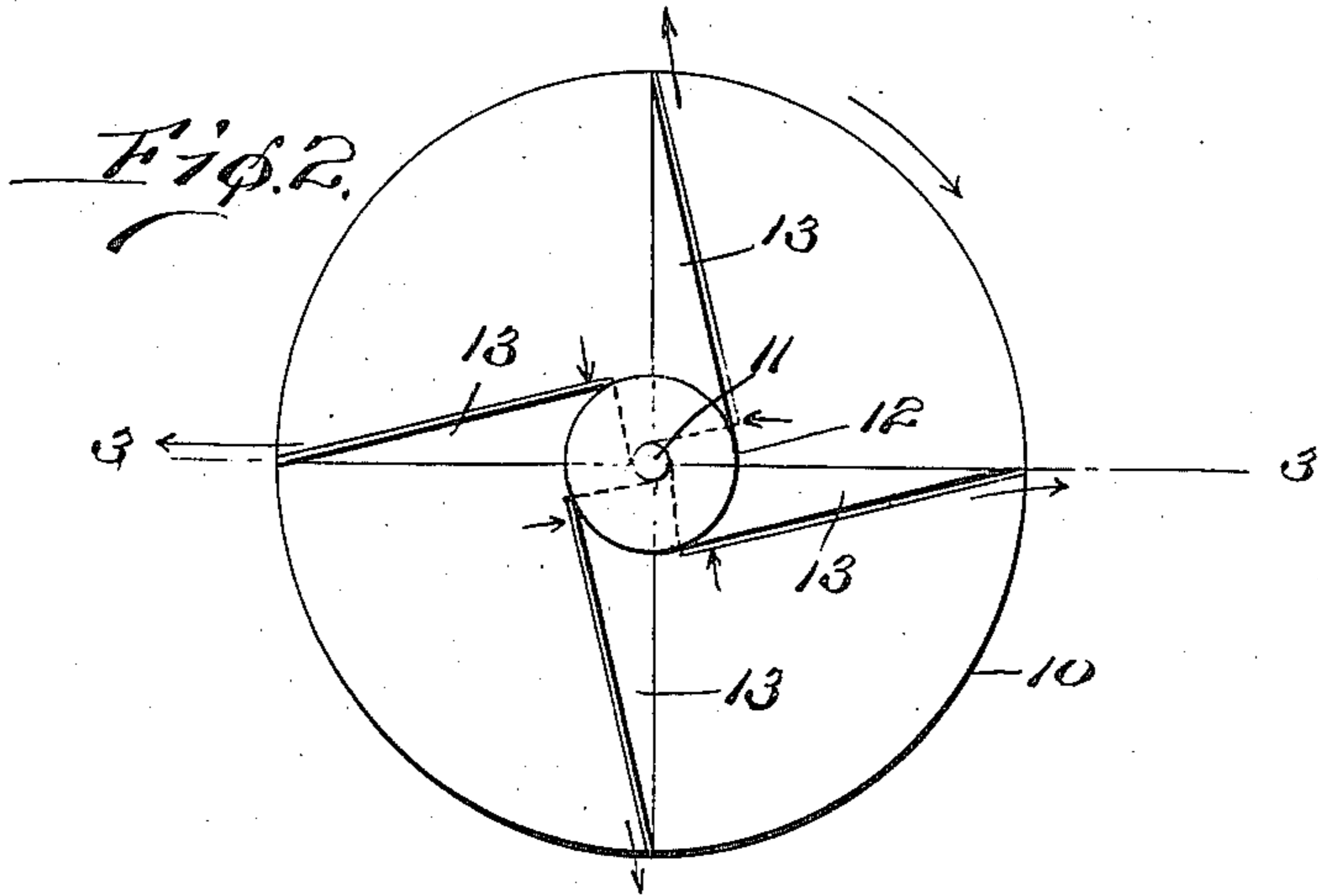
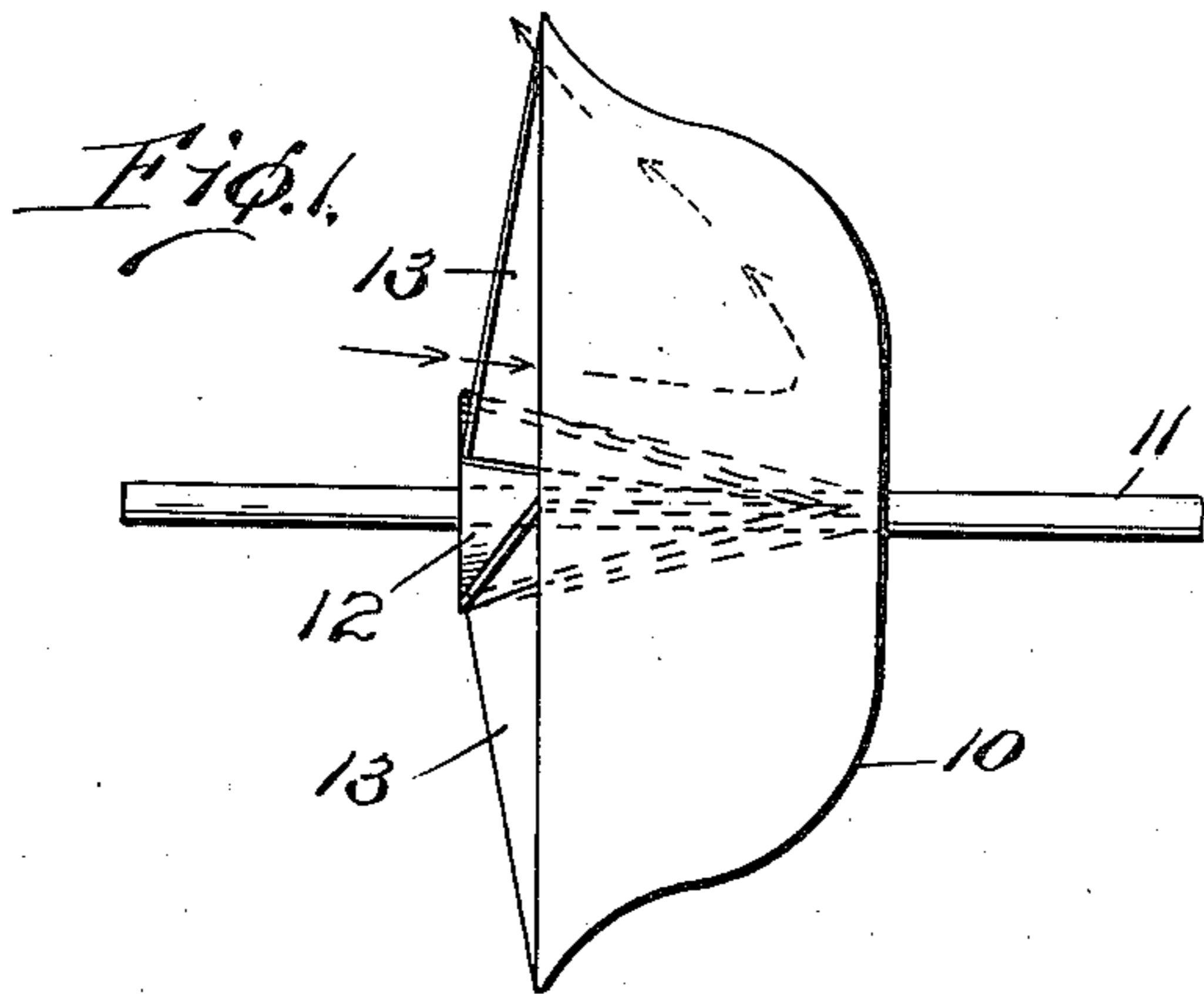


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 FAN.
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995,725.

Patented June 20, 1911.



Witnesses

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995,725.

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To all whom it may concern:

Be it known that I, WILLIAM F. ROTHENBERG, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Fans; 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 fans and has for an object to provide a fan especially adapted for producing circulation of air as distinguished from an exhaust fan or a fan for introducing air into a space.

A further object of the invention is to produce a fan which takes and discharges air from the same side of the fan as distinguished from drawing the air through the blades of the fan.

A further object of the invention is to provide a dished casing open upon one side only with fan blades set in the casing in such manner and at such an angle as to draw in the air adjacent the center and discharge it at the periphery.

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

In the drawings: Figure 1, is a view of the improved fan in side elevation. Fig. 2, is a view of the fan in front elevation. Fig. 3, is a diametrical sectional view of the fan taken on line 3—3 of Fig. 2.

Like characters of reference designate corresponding parts throughout the several views.

A dished casing 10 is rigidly secured to a shaft 11 with the shaft positioned as the axis of the casing and with a cone 12 also rigidly secured to the shaft with the shaft serving as the axis of the cone and the base of the cone disposed at the open side of the casing 10. The cone is preferably longer along its major axis than the depth of the receptacle along its axis so that the base of the cone 12 extends outwardly beyond the edge of the casing.

A plurality of the blades 13 are rigidly secured tangentially to the cone and extend outwardly to the peripheral edge of the casing being shaped to conform to the curvature of such casing to which they are se-

cured and leaving no space between the lower edges of the blades and the casing. The result of the securing of the blades in the manner described is that the lower edges of the blades extend radially from the shaft while the outer edges are tangential to the circle formed by the base of the cone.

In operation the fan rotates in the direction indicated by the arrow in Fig. 2; in other words with the upper or outer edges of the blades moving in advance of the lower or inner edges. The reason for the fan rotating with the parts so disposed is to draw in the air adjacent the cone as indicated by the arrows in the several figures and by centrifugal force to throw the air outwardly along the blades and discharge it at the peripheral ends of such blades.

The arrows are intended to indicate the direction of travel of the air as moved by the fan rotating in the direction indicated by the large arrow in Fig. 2.

I claim:

1. In a device of the class described a shaft, an outer cone carried by the shaft, a casing concentric with the cone and shaft and blades secured tangentially to the cone and extending to the periphery of the casing.

2. In a device of the class described a shaft, a cone mounted upon the shaft with the shaft as the major axis of the cone blades secured to the cone with one edge extending radially from the shaft and the other extending tangentially from the base of the cone and a casing surrounding the cone and blades and having an opening the edges of which surround the base of the cone.

3. In a device of the class described a cone and blades having their forward edges extending tangentially from the base of the cone and secured along the cone from the base to the apex, a casing open on one side and surrounding the cone and blades, and a shaft constituting the major axis of the cone and casing.

4. In a device of the class described a shaft, a dished casing, open upon one side only, secured upon the shaft with the open side concentric with the shaft, a cone secured concentrically upon the shaft and with its base toward the open side of the casing and blades secured tangentially to the cone and extending to the periphery of the casing.

5. In a device of the class described a casing open at one side, a shaft secured to

the casing at its axis, a cone secured to the shaft with the casing having its apex adjacent the closed side and its base extending beyond the open side of such casing and blades having their ends secured along the side of the cone with their forward edges extending tangentially from the base of the cone and their rearward edges extending

radially from the shaft to the periphery of the casing.

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

WILLIAM F. ROTHENBERG.

Witnesses:

CARLE WHITEHEAD,

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