

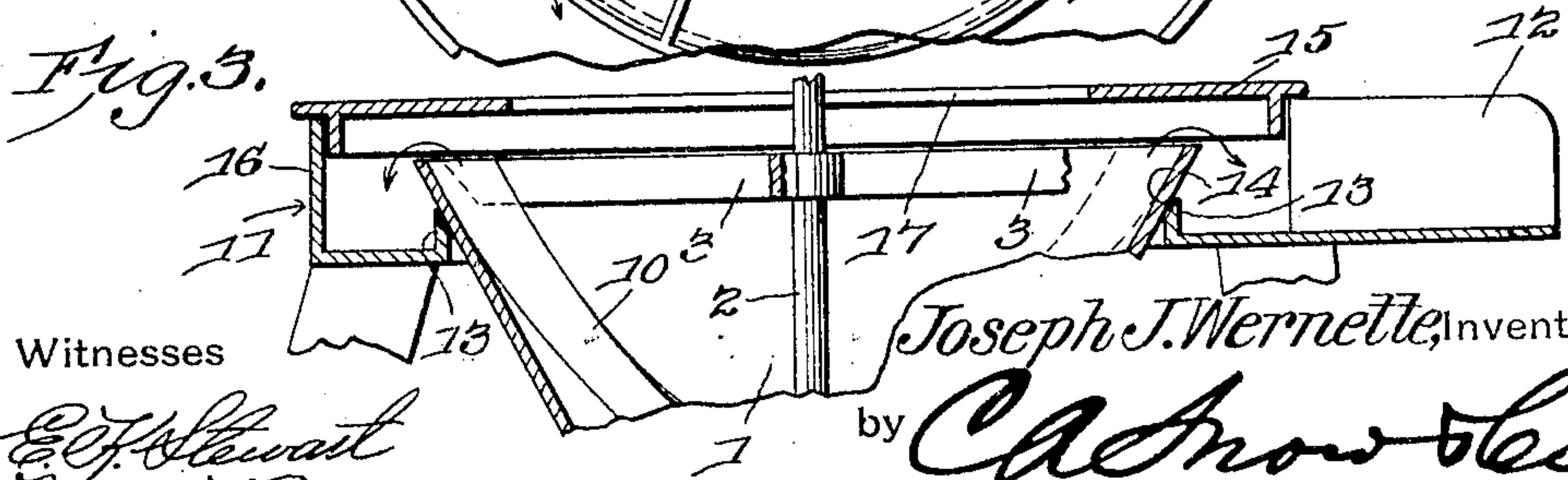
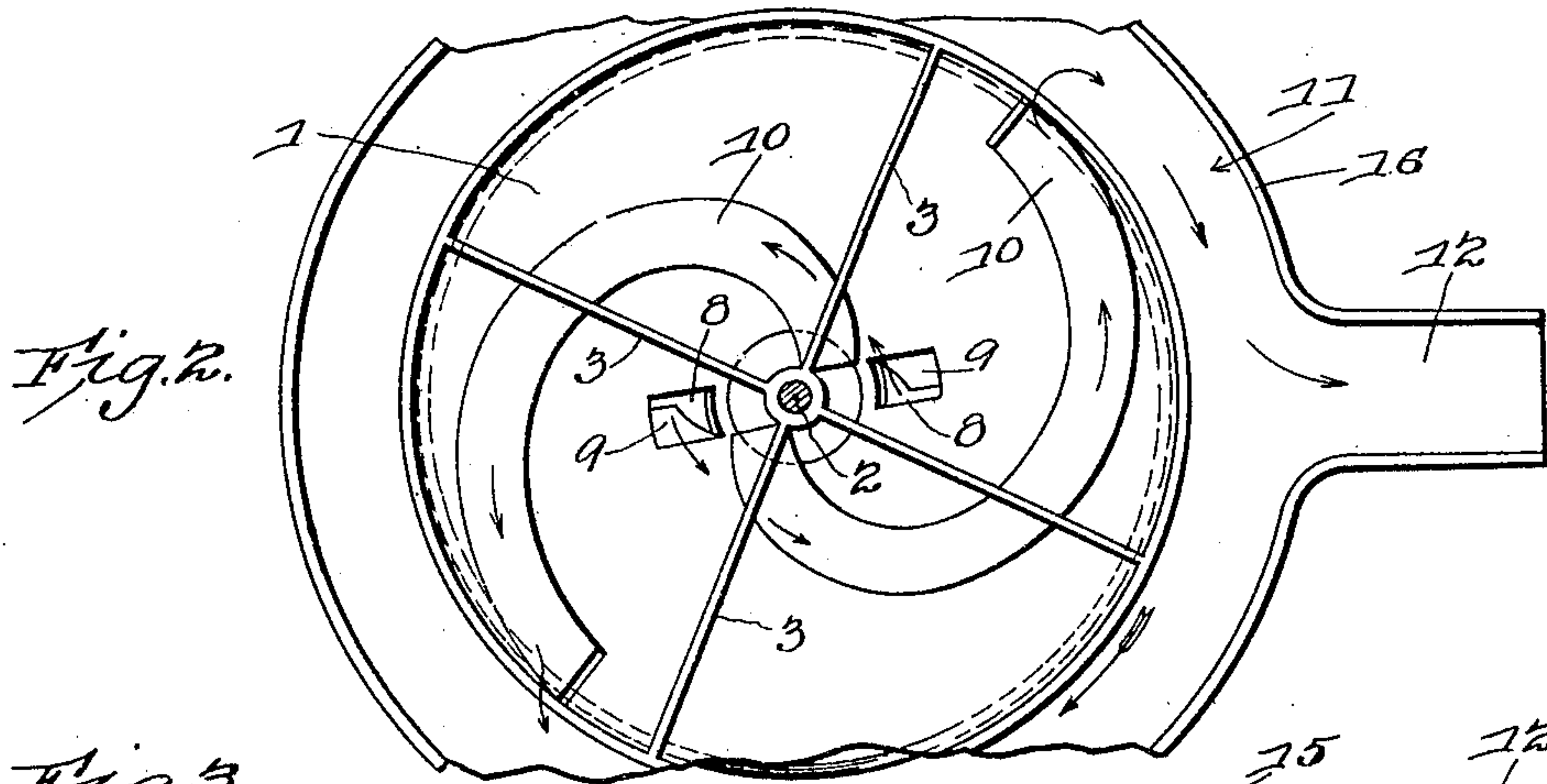
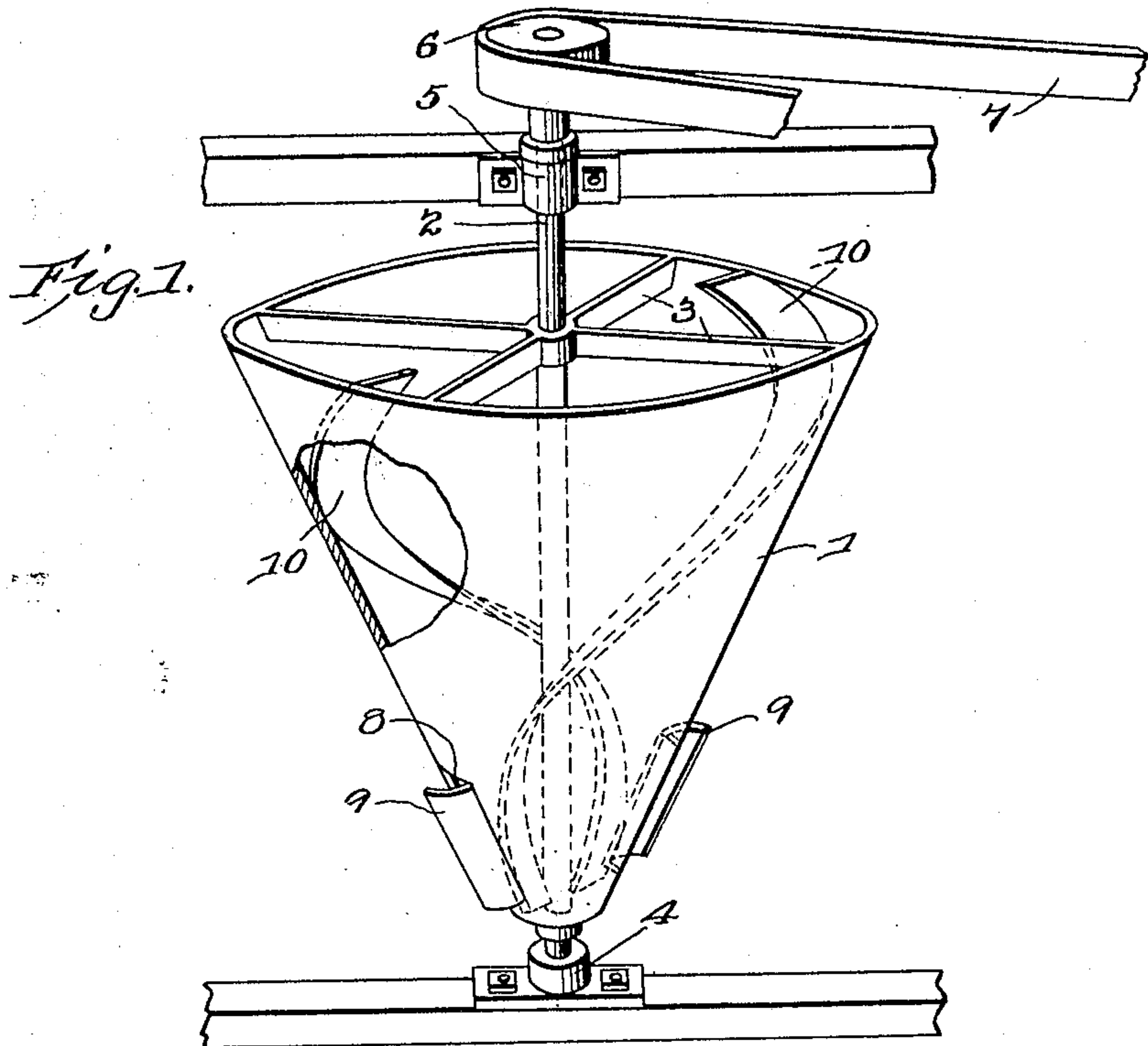
J. J. WERNETTE.

PUMP.

APPLICATION FILED SEPT. 25, 1905.

913,179.

Patented Feb. 23, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH J. WERNETTE, OF GRAND RAPIDS, MICHIGAN.

PUMP.

No. 913,179.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed September 25, 1905. Serial No. 279,995.

To all whom it may concern:

Be it known that I, JOSEPH J. WERNETTE, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Pump, of which the following is a specification.

This invention relates to that class of devices for elevating liquids, such as water, which are generally known as centrifugal pumps, and among the objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be made, when desired.

In the drawings, Figure 1 is a perspective view of a device constructed in accordance with the principles of the invention, the receiving trough having been detached for the purpose of showing the construction of subjacent parts more clearly. Fig. 2 is a top plan view of the water elevating device and of the receiving trough, the supporting shaft being shown in section. Fig. 3 is a vertical sectional view of the trough, the cover, and the upper portion of the water elevator.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The water elevator in the present case consists of an inverted conoidal or funnel-shaped vessel 1 supported upon a vertical shaft or axle 2 with which it may be connected by arms or spokes 3; the lower end of the shaft being stepped in a suitably supported bearing 4 which, as well as the lower end of the vessel 1, is intended to be immersed in the liquid that is to be elevated. An additional suitably supported bearing 5 is provided for the shaft or axle and the latter carries a drum or pulley 6 engaged by a belt 7 for the

transmission of motion from any suitable source of power. Be it understood, however, that any suitable means other than that herein shown may be employed for the purpose of imparting motion to the shaft carrying the vessel 1.

The walls of the vessel 1 are provided near the pointed lower end of the vessel with one or more apertures, as 8, 8, which may be struck out from the body of the vessel, which latter is preferably composed of sheet metal of suitable gage; the struck out portions are permitted to remain, forming out-standing lips or scoops 9, whereby, when the vessel is rotated in the proper direction, liquid is scooped and caused forcibly to enter through the apertures 8. Interiorly upon the walls of the vessel it is preferred to place volute or spiral strips 10, the lower ends of which are intermediate the apertures 8, so that the liquid entering through the latter will be guided by said strips in an upward direction to be discharged over the upper edge of the vessel.

It is to be understood that one or more apertures 8 may be used, and that one or more volute strips 10 may be employed; also that the number of apertures and strips is not necessarily the same.

It will be noted that the lower end of each strip 10 is disposed close to one of the inlet apertures 8 so that the water or other liquid as soon as deflected into said apertures by the lip of scoop 9 is gathered up by the strip 10 without any loss of power and conveyed upwardly thereby.

Surrounding the upper end of the conical vessel 1 is an annular trough 11 having a discharge spout 12. The inner wall of this trough, as clearly shown in Fig. 3 of the drawings, extends beneath the upper edge of the vessel 1, said wall, which is designated 13, being provided with an inclined inner edge 14 exteriorly engaging the conical vessel, which is thereby steadied; a cover, 15, is provided for the trough, said cover engaging the outer wall 16 of the trough and having a central aperture 17 through which the shaft 2 extends.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. When the vessel 1 is rapidly rotated, the liquid in which its lower end is sub-

merged will enter through the apertures 8 and a distinct spiral current or movement will be set up by the scoops 9. As the liquid enters the vessel, it is forced centrifugally into contact with the inclined walls, which facilitate the movement of the liquid in an upward direction by the volute or spiral strips 10, whereby the liquid is propelled in an upward direction and discharged into the trough 11, from whence it escapes through the spout 12.

Having thus described the invention, what is claimed is:—

1. A pump comprising a vertically disposed rotatable casing having inlet openings through its lower end, a plurality of volute strips of uniform width secured to the inner wall of the casing and extending from the bottom to the top thereof the surface of the lower portions thereof lying in substantially vertical planes and the upper portions lying at an acute angle to said planes, and means for rotating the casing whereby water entering said inlet openings is thrown by centrifugal force onto said volute strips and elevated by them to the top of the casing.

2. A pump comprising an inverted frusto-conical casing mounted for rotation about its axis on a vertically disposed shaft said casing having inlet openings through its side near its lower end, a scoop or bucket projecting outwardly from the casing at the rear edge of each inlet opening, a plurality of volute

strips secured to the inner wall of said casing and extending from the bottom to the top thereof the surface of the lower portions thereof lying in substantially vertical planes and the upper portions lying at an acute angle to said planes, and means for rotating said casing whereby water directed into said inlet openings by said scoops is thrown by centrifugal force onto said volute strips and elevated by them to the top of the casing.

3. A pump comprising an inverted frusto-conical casing mounted for rotation on a vertical shaft and having inlet openings near its lower end with scoops or buckets projecting outwardly from the casing in rear of said inlet openings, a plurality of volute strips secured to the inner wall of said casing and extending from the bottom to the top thereof the surface of the lower portions thereof lying in substantially vertical planes and the upper portions lying at an acute angle to said planes, and means for rotating said casing to cause water to enter said inlet openings and travel up said volute strips to the top of the casing.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH J. WERNETTE.

Witnesses:

DANIEL W. TOWER,
CHAS. D. REEVE.