H. HOLZER.

CASING FOR CENTRIFUGAL PUMPS AND BLOWERS.

APPLICATION FILED SEPT. 18, 1907.

944,864. Patented Dec. 28, 1909.

Fig. 1.

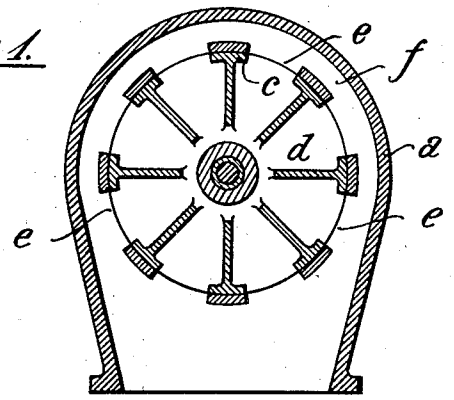


Fig. 2.

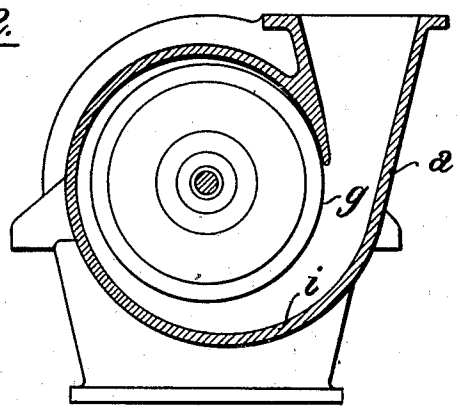
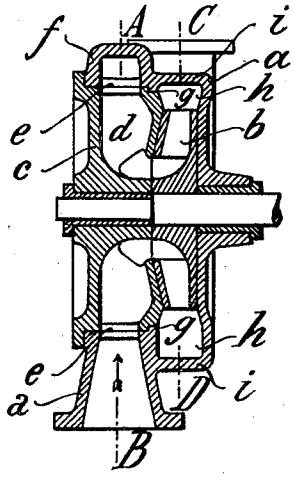


Fig 3.



WITNESSES

Alan G. White

W. P. Burke

INVENTOR

HEINRICH HOLZER.

BY Thomas Prince

ATTY.

UNITED STATES PATENT OFFICE.

HEINRICH HOLZER, OF NUREMBERG, GERMANY, ASSIGNOR TO VEREINIGTE MASCHINENFABRIK AUGSBURG MASCHINENBAUGESELLSCHAFT NÜRNBERG A. G. OF NUREMBERG, GERMANY.

CASING FOR CENTRIFUGAL PUMPS AND BLOWERS.

944,864. Specification of Letters Patent. Patented Dec. 28, 1909.

Application filed September 18, 1907. Serial No. 393,537.

To all whom it may concern:

Be it known that I, HEINRICH HOLZER, engineer, subject of the German Emperor, residing at Nuremberg, Bavaria, Germany, have invented new and useful Improvements in and Connected with Casings for Centrifugal Pumps and Blowers, of which the following is a specification.

In known constructions of centrifugal pumps and blowers, the feed of the fluid to be driven forward is effected either in an axial direction by means of a fore chamber arranged directly in front of the central suction aperture or by means of a passage opening radially to the fore chamber of the machine. By the first form of construction a uniform feed of the fluid is obtained, but also a considerable length of construction of the apparatus is necessitated. The second form of construction mentioned indeed avoids this drawback, but a uniform feed of the fluid, to the suction aperture, is prevented, as the part of the suction aperture lying next to the mouth of the feed passage is fed to a greater extent than the part lying farther away.

In order to avoid the defects inherent in both forms of construction, in the present invention the casing is composed of an undivided annular body provided with an annular chamber and a cover inserted laterally into this annular body, by means of which the fluid to be driven forward flows radially to the suction aperture through apertures distributed over the periphery of the inner walls of the annular chamber.

One form of construction is shown as an example of the invention in the accompanying drawings in Figures 1–3:—Fig. 1 being a section on the line A—B of Fig. 3; Fig. 2, a section on the line C—D of Fig. 3; and Fig. 3, a cross section of the casing of the machine.

A cover *c* which closes one side of the blade chamber *b*, is inserted in the annular cast body *a*. A fore chamber *d* is arranged in front of the vane or blade chamber *b*, which chamber *d* is placed in communication with the annular chamber *f* by means of apertures *e* formed in the cover *c* and in the annular body *a*. The fluid to be acted upon is introduced from beneath through the cast body *a*, and first passes into the annular chamber *f* and is then conveyed through the apertures *e* into the fore chamber *d*, in order from here to be uniformly fed to the suction aperture of the vane or blade chamber *b*.

This improved arrangement of casing has, in addition to the advantages hereinbefore mentioned, the further advantage, that by reason of the side position of the separating joint *g*, the external wall *i* of the pressure chamber *h* on which the greatest pressure is exerted, is unbroken along its entire length and consequently frictional resistances are comparatively small as compared with ordinary casings which are divided in the plane of the wheel, or in a plane passing through the wheel axis. As also the cover *c* is formed as a body of circular cross-section, it may be easily tightly packed against the annular body *a*, so that a reliable joint between the two parts is obtained.

I declare that what I claim is:—

A centrifugal pump comprising a horizontally arranged turbine shaft, a casing divided into an inner and outer part, the inner part having wedge shaped guide chambers therein, contracting toward the middle and distributed around the shaft, and the outer part having an annular inlet chamber communicating with the outer ends of said wedge shaped chambers, and a second chamber communicating with the inner ends of said wedge shaped chambers, and a runner mounted on the shaft and located within the said second chamber, said second chamber having an outlet therefrom.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HEINRICH HOLZER.

Witnesses:
JUSTUS HARKMANN,
H. W. HARRIS.