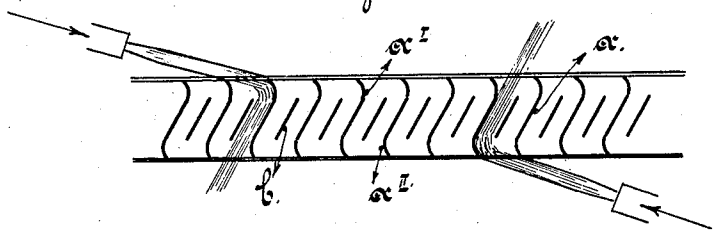
No. 874,432. PATENTED DEC. 24, 1907.

H. P. R. L. PÖRSCKE.

TURBINE.

APPLICATION FILED MAY 3, 1907.

Fig. I.



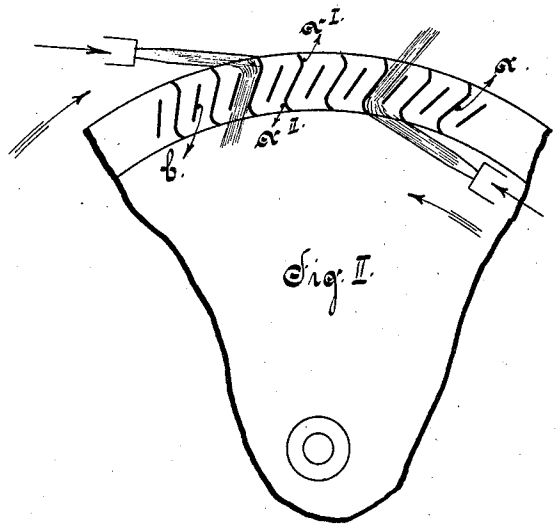


Fig. II.

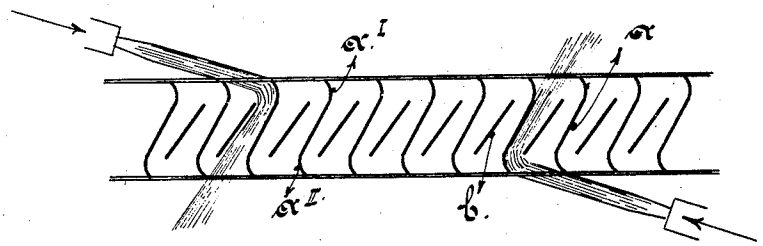


Fig. III.

Witnesses
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UNITED STATES PATENT OFFICE.

HEINRICH PAUL RUDOLF LUDWIG PÖRSCKE, OF HAMBURG, GERMANY.

TURBINE.

No. 874,432. Specification of Letters Patent. Patented Dec. 24, 1907.

Application filed May 3, 1907. Serial No. 371,634.

To all whom it may concern:

Be it known that I, HEINRICH PAUL RUDOLF LUDWIG PÖRSCKE, a subject of the German Emperor, residing at Hamburg, Germany, have invented certain new and useful Improvements in Turbines, of which the following is a specification.

In connection with turbines, more particularly steam-turbines, no construction has hitherto been known which enables a turbine wheel or rotor to be driven with equal efficiency in both directions.

The present invention relates to a construction which fulfils this requirement.

The invention is illustrated in the annexed drawing, in which

Figure 1 represents a portion of a rotor with steam acting axially thereon; Fig. 2 shows a portion of a rotor with steam acting radially thereon, and Fig. 3 a modification of the rotor shown in Fig. 1.

As shown in the drawing the rotor is in each case so constructed that **S**-shaped blades *a* alternate thereon with shorter, straight blades *b*, each of the blades *a* being bent at its ends to form troughs a^1 and a^{11}. The steam is directed into the troughs a^1 or a^{11} at such an angle that the diameter of the impinging jet is smaller than half the distance between two consecutive blades *a*. The purpose of the blade *b* is to so guide the steam that it does not enter the troughs a^1 or a^{11} at the opposite side of the rotor.

In the radial flow turbine shown in Fig. 2 the **S**-shaped blades *a* are bent into trough-shape at the inner and outer circumferences of the rotor and alternate with straight blades *b*. The action is similar to that described with reference to Fig. 1. For driving the rotor anti-clockwise, steam is directed on to the inner circumference; for clockwise rotation steam acts in the opposite direction on the outer circumference of the rotor.

In the construction shown in Fig. 3 the straight blades *b* are placed between the curved blades *a* at such an angle that at both sides of the rotor the apertures for the entrance of the steam are larger than the apertures for the outlet of the steam, so that expansion can take place between the blades.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

In a turbine the combination of "**S**" curved blades alternated with straight blades of narrower width.

In witness whereof I have signed this specification in the presence of two witnesses.

HEINRICH PAUL RUDOLF LUDWIG PÖRSCKE.

Witnesses:

SIEGFRIED STORCH,

OTTO W. HELLMRICH.