IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Utility Patent Application (Provisional)

High Efficiency Turbine System

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SPECIFICATION

CROSS-REFERENCE TO RELATED APPLICATIONS
Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT
Not Applicable

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX
Not Applicable

BACKGROUND OF THE INVENTION

This invention is a more efficient, higher speed turbine system that can be used for virtually any fluid under pressure. This includes but is not limited to air, water, steam, and all other manner of gases or fluids. In this application the term fluid covers the whole gamut of these items. The applications for which this invention can be used include but again are not limited to wind turbines, water turbines, steam turbines, turbo chargers, and superchargers.

The general design target was to create a product that was easy to build, inexpensive to make, and efficient.

The final device converts the kinetic energy of a fluid under pressure into rotating mechanical energy in a unique way. The system consists of a turbine with uniquely shaped blades and a complex nozzle system that applied the fluid under pressure in an efficient way.

The turbine consists of a plurality of curved blades that wrap around a central shaft. The part of the blade closest to the top of the turbine is offset from the part of that same blade near the bottom of the turbine. This offset is similar to a screw shape that runs the length of the turbine. In other words, there is a longitudinal twist to the blade. As the blades are turned, the twisted shape presents reduced resistance to the air. It can be likened to the sweptback wings of a jet aircraft. The number of blades, the wrap around the shaft, the twist, and all related characteristics are adjusted to meet the needs of the particular application.

The nozzle system separates the incoming fluid into channels and applies the pressure to the underside and to the top of the turbine blades. The fluid pushes on the underside of the blade while a portion of the fluid flows over the top and creates an airfoil lift effect. The blades are, therefore, being pushed and pulled by the nozzles assembly design. Combine that with the sweptback configuration of the blades and high speeds with great efficiency is achieved. The shape of the nozzles, their angle, and arrangement is adjusted to achieve the greatest efficiency.

The nozzles system also has a cone-shaped fluid control item that forces the incoming fluid into the individual nozzles. The cone shape and the nozzles are designed in such a way as to allow the fluid to flow easily into the nozzles and ultimately onto to the blades while being forced to increase in speed.

In testing with a fixed 14 MPH air source, angling the nozzles from straight on the turbine to the design shown in this invention resulted in more than a 3:1 speed increase.

SUMMARY OF THE INVENTION

This invention covers a High Efficiency Turbine System

Brief Description of Drawings

Fig. 1 - General view of the turbine system;

Fig, 2 - Exploded view of the turbine and nozzle assembly;

Fig. 3 - View of the turbine assembly;

Fig. 4 - Side view of the turbine itself;

Fig. 5 - View of the nozzle assembly;

Detailed Explanation of the Invention

Referring now to the invention in more detail, in Fig. 1 all the parts are identified. The turbine 1 is shown nested in the array of nozzles 2. The base 3 channels the incoming high pressure fluid into the nozzles.

In Fig. 2, the turbine 1 is lifted out of the array of nozzles 2. The nozzle opening 3 shows how the fluid is applied to the surface of the turbine blades. The array of nozzles 4 illustrates how the nozzles are positioned with respect the turbine.

In Fig. 3, the blade 1 is wrapped around the center shaft. The blade 2 is cupped to present a resistance to the flow and thereby rotate. The twisted blade 3 shows how the top side of the blade creates a aerodynamic lift as fluid is passed over it.

Fig. 4 is a side view of the turbine 1 that illustrates the curved and wrapped aspect of the blades.

With Fig. 5 the nozzle assembly 1 is shown. The nozzle angle 2 is shown. The open base 3 is where the air enters the assembly. The underside of the nozzle 4 is where the fluid enters the nozzles and is directed towards the turbine assembly. The cone 5 concentrates and diverts the incoming fluid into the nozzle openings. The X-Ray of the assembly 6 shows how the cone 7 in positioned in the base. The fluid flow 8 shows how the fluid enters the nozzle assembly.

The foregoing description enable persons with ordinary skills and with available machinery to make the invention. Those persons will also appreciate and understand the equivalents, variations, and combinations of the specific embodiment, method, and examples herein. The invention should therefore not be limited by the above described embodiment, method, and examples, but by all embodiments and methods within the scope and spirit of the invention as claimed.

Fig. 1

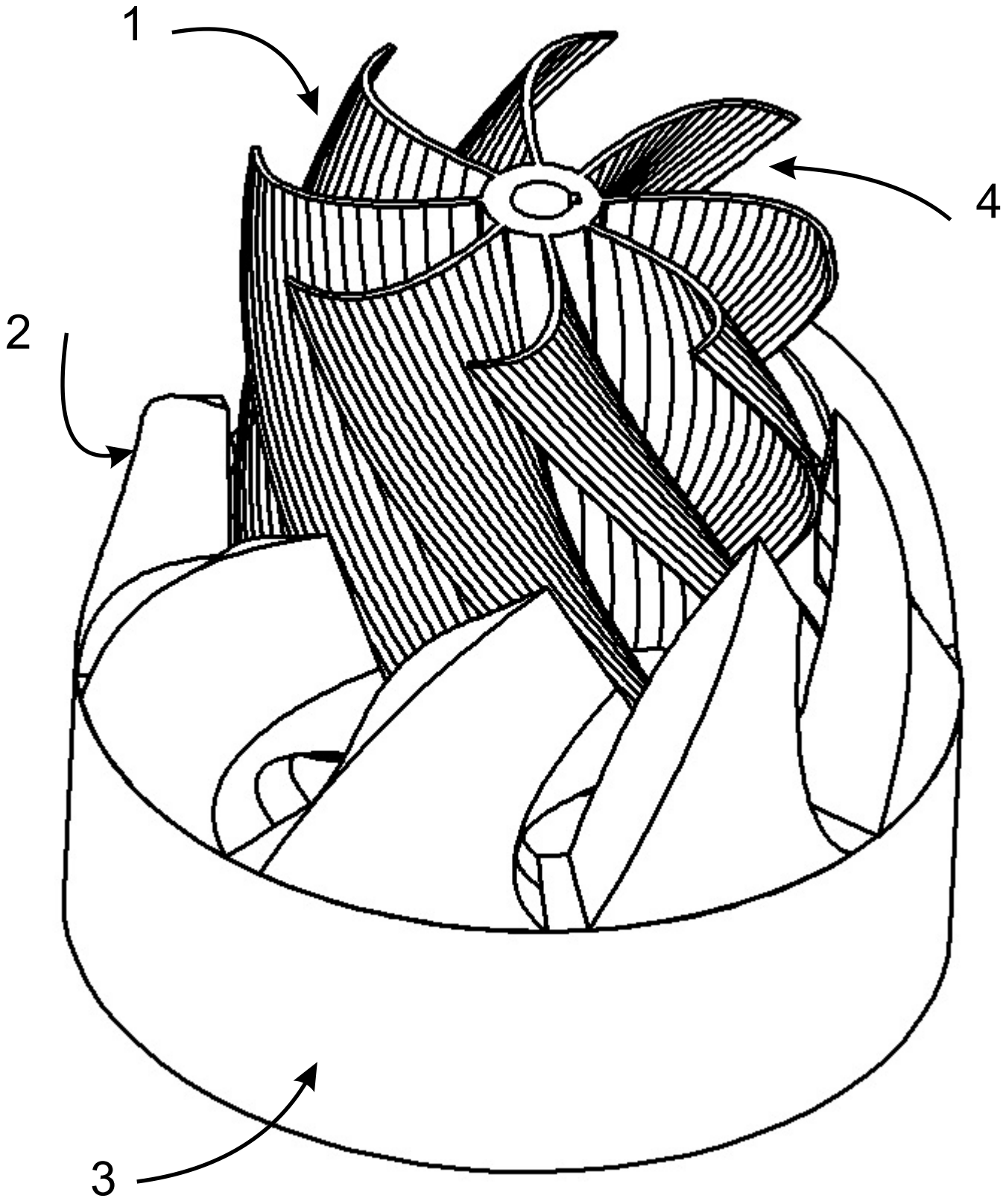

Fig. 2

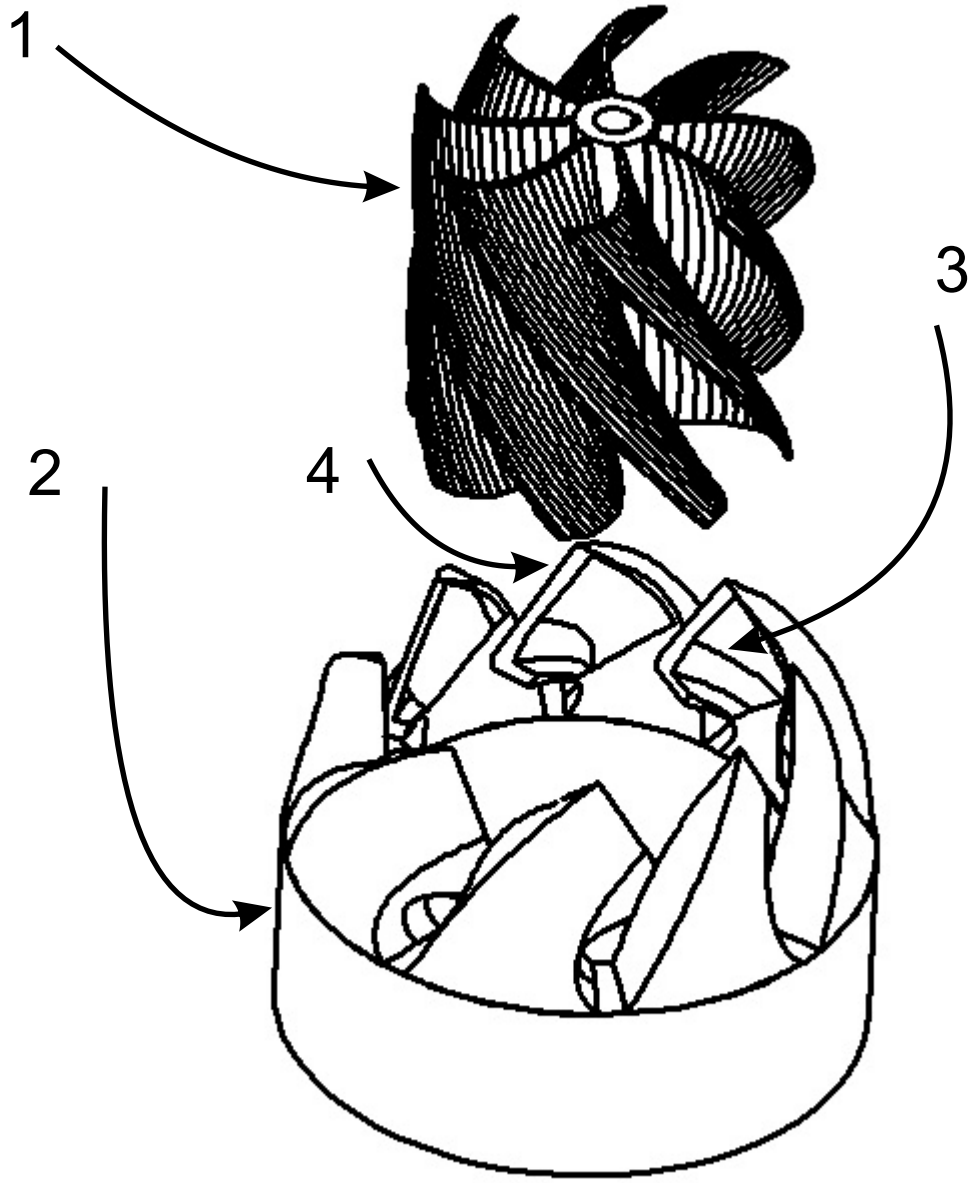

Fig. 3

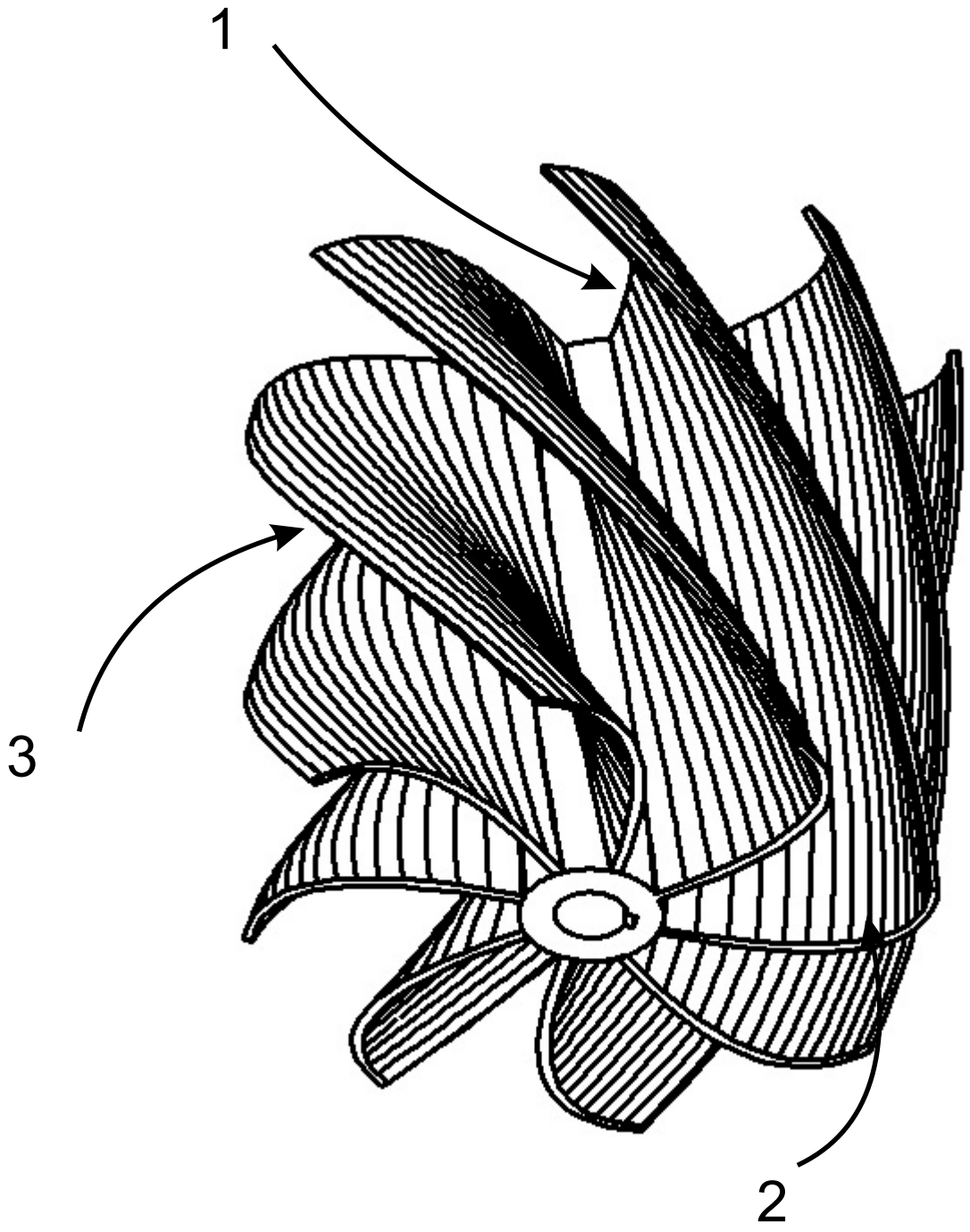

Fig. 4

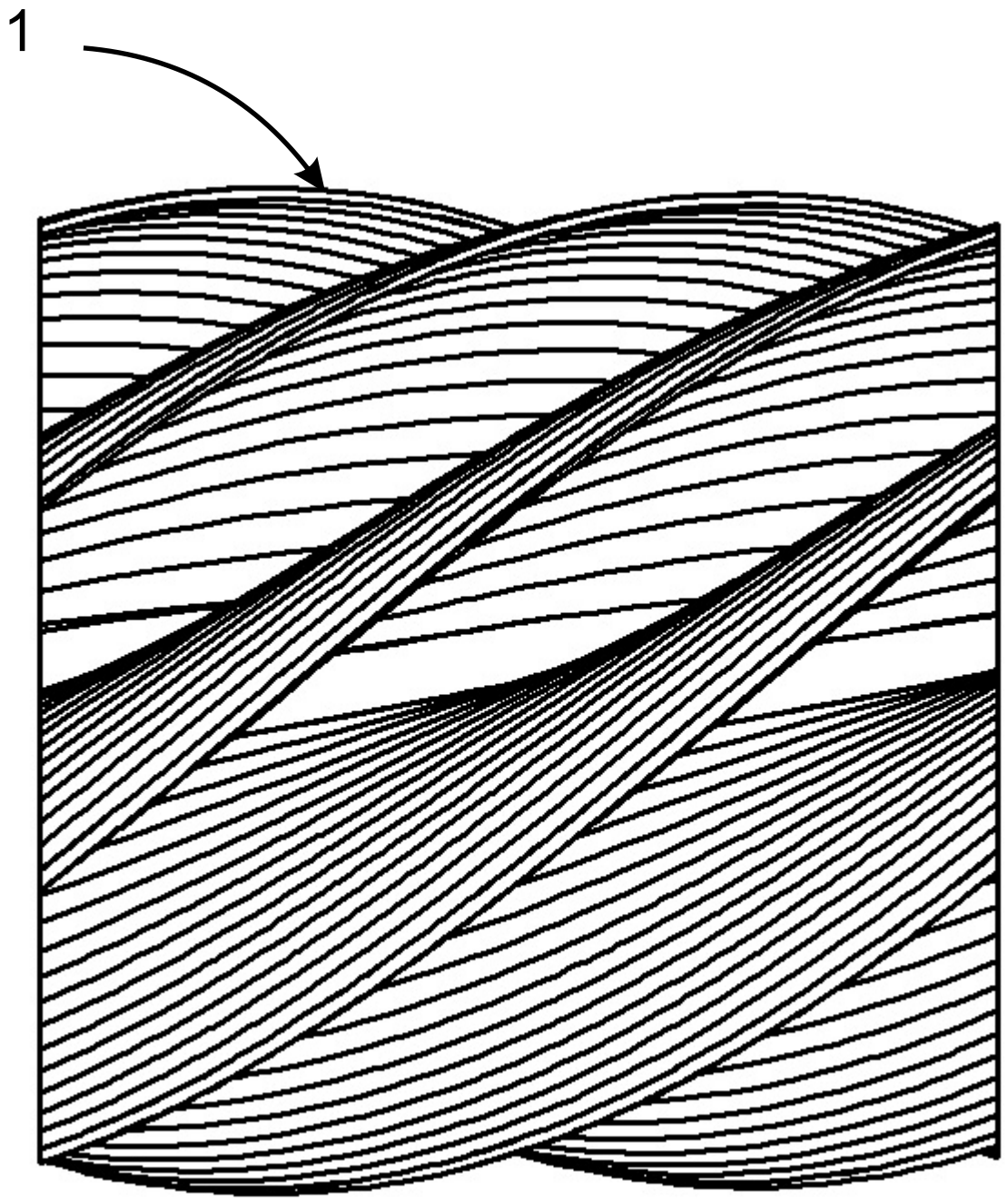

Fig. 5