

A. H. FIREY.
STEAM TURBINE.
APPLICATION FILED SEPT. 24, 1912.

1,063,788.

Patented June 3, 1913.

2 SHEETS—SHEET 1.

Fig. 1

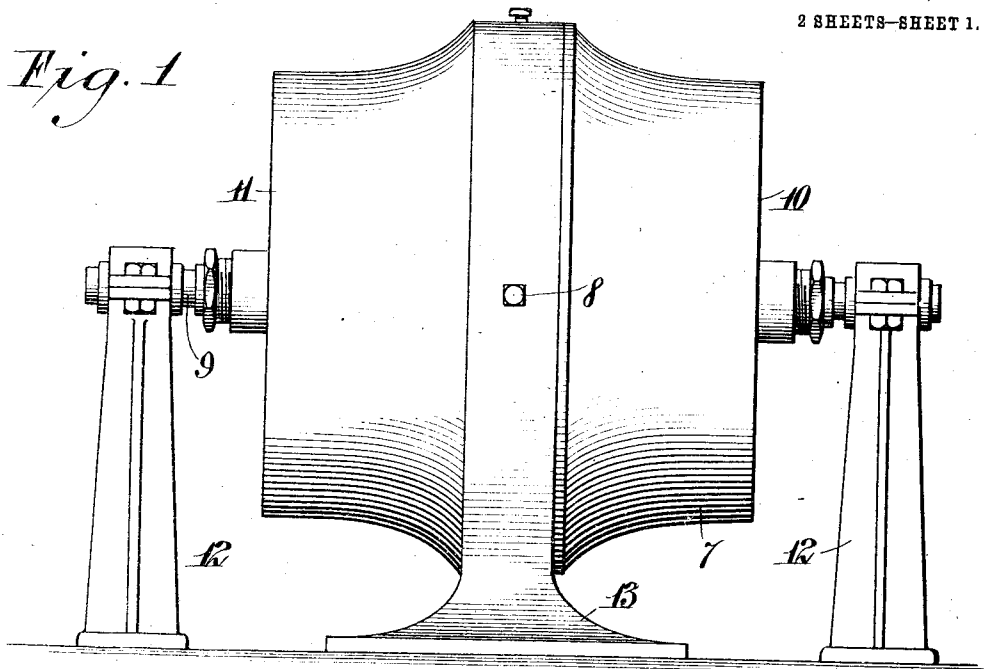
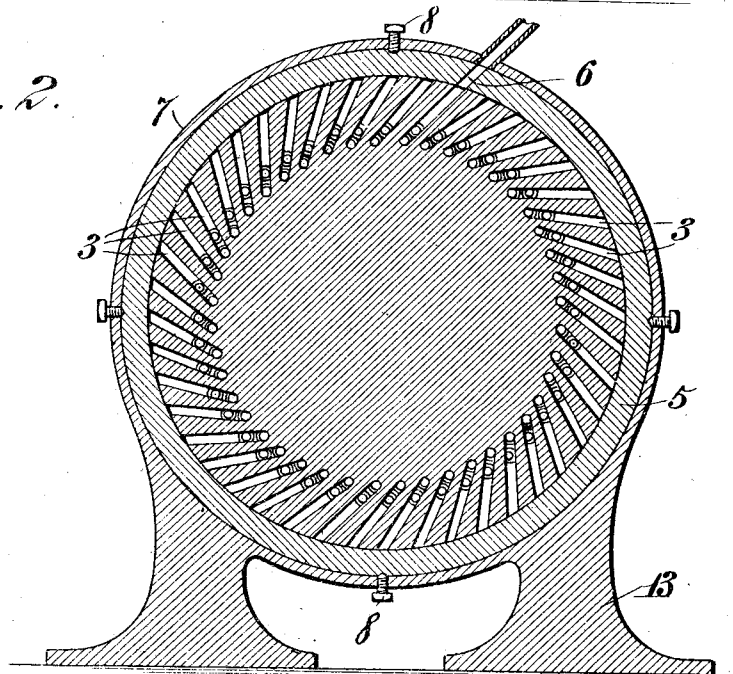


Fig. 2



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Fig. 3.

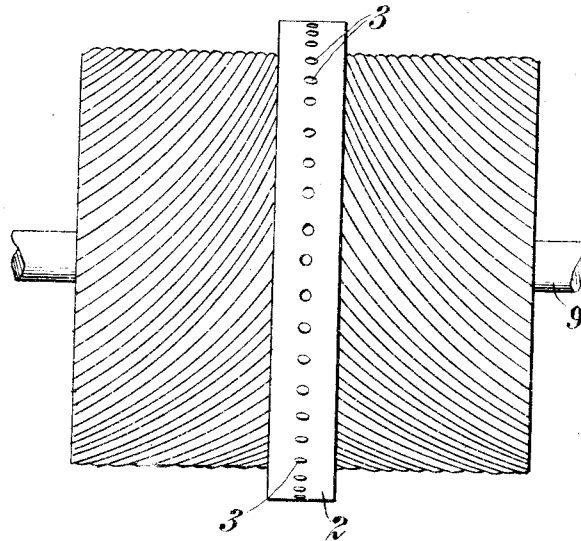
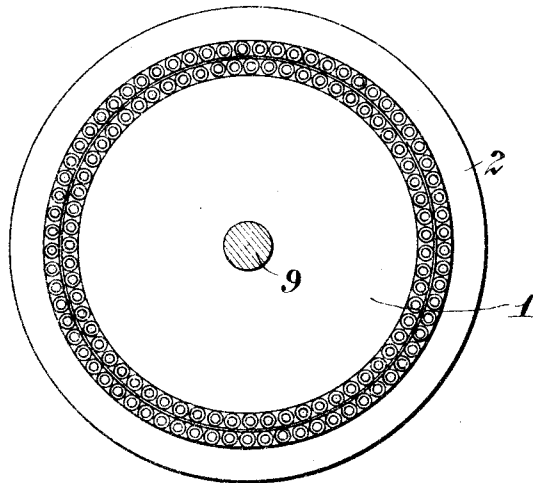


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALEXANDER H. FIREY, OF CANANEA, MEXICO.

STEAM-TURBINE.

1,063,788.

Specification of Letters Patent.

Patented June 3, 1913.

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To all whom it may concern:

Be it known that I, ALEXANDER H. FIREY, a citizen of the United States of America, residing at Cananea, Mexico, have invented new and useful Improvements in Steam-Turbines, of which the following is a specification.

This invention relates to steam turbines, the object in view being to provide an exceedingly simple and effective motor of the class described, embodying a novel construction and form of rotor which will greatly facilitate the manufacture of the rotor, and any subsequent repair that may be needed, thereto.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a front elevation of a steam turbine, embodying the present invention. Fig. 2 is a vertical cross section through the same. Fig. 3 is a view in elevation of the rotor, showing the arrangement of steam tubes and ports. Fig. 4 is an end view of the rotor.

The main feature of the present invention resides in the form and construction of the rotor, which, as illustrated in the drawings, comprises a substantially cylindrical body 1 provided about centrally thereof or at any suitable point intermediate its ends with an annular flange 2, extending circumferentially around the body, and of a suitable depth to accommodate one or more layers of steam tubes, as shown in Fig. 4. The flange 2 is provided with steam inlet ports 3 arranged in a circular series, extending entirely around the periphery of the flange 2, and communicating with the ports 3, as shown in Fig. 3, are two laterally arranged series of steam tubes 4 which lead from the ports 3 outwardly toward the opposite ends of the rotor, and are disposed substantially in a spiral relation to the rotor, said tubes terminating at or near the extreme ends of the rotor, as indicated in said Fig. 3.

Encircling the flange 2 is a steam ring 5 which is provided with a steam inlet port 6, with which all of the ports 3 register, during the revolution of the rotor. This steam ring serves to close all of the remaining ports 3, and thereby admit steam to only

one of the ports at a time, the steam passing thence through the tubes 4 and escaping from the opposite ends thereof, but in the meantime traversing a substantially spiral course, which serves to give the requisite pull on the rotor.

A casing 7 of suitable construction surrounds and incloses the rotor, and carries a plurality of binding screws 8, the inner ends of which impinge against the steam ring and serve to hold the latter stationary and in proper relation to the flange 2 of the rotor, thereby preventing the steam from escaping. The rotor is mounted fast upon a central shaft 9 which has bearings in the end walls or heads 10 and 11 of the casing. Said shaft may be mounted in bearing standards 12 connected to a suitable base 13 which also supports the casing of the turbine.

As the steam under pressure escapes from the spirally arranged tubes, it impinges against the heads or end walls of the casing, and a rapid revolution is thereby imparted to the rotor. The power generated by the turbine may be belted or otherwise transmitted off from the shaft 9.

What is claimed is:

1. In a steam turbine, a rotor comprising a cylindrical body, an annular flange extending circumferentially around the body intermediate the ends thereof and provided with steam inlet ports in its peripheral face, and steam tubes communicating with said ports and extending therefrom around the end portions of the body in a substantially spiral direction.

2. In a steam turbine, a rotor comprising a cylindrical body, an annular flange extending circumferentially around the body and provided with steam inlet ports in its peripheral face, and steam tubes communicating with said ports and extending therefrom around the body in a substantially spiral direction.

3. In a steam turbine, a rotor comprising a cylindrical body, an annular flange extending circumferentially around the body intermediate the ends thereof and provided with steam inlet ports in its peripheral face, a steam ring encircling said flange and provided with an inlet port, and steam tubes communicating with said ports and extending therefrom around the end portions of the body in a substantially spiral direction.

4. In a steam turbine, a rotor comprising a cylindrical body, an annular flange extend-

ing circumferentially around the body intermediate the ends thereof and provided with steam inlet ports in its peripheral face, a steam ring encircling said flange and provided with an inlet port, steam tubes communicating with said ports and extending therefrom around the end portions of the body in a substantially spiral direction, and a casing inclosing the rotor and provided with steam inlet and exhaust ports.

5. In a steam turbine, a rotor comprising a cylindrical body, an annular flange extending circumferentially around the body and

provided with steam inlet ports in its peripheral face, steam tubes communicating with said ports and extending therefrom around the body in a substantially spiral direction, and a stationary steam ring encircling said flange and provided with an inlet port.

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

ALEXANDER H. FIREY.

Witnesses:

W. O. THOMAS,

THEO. E. COLLINS.