

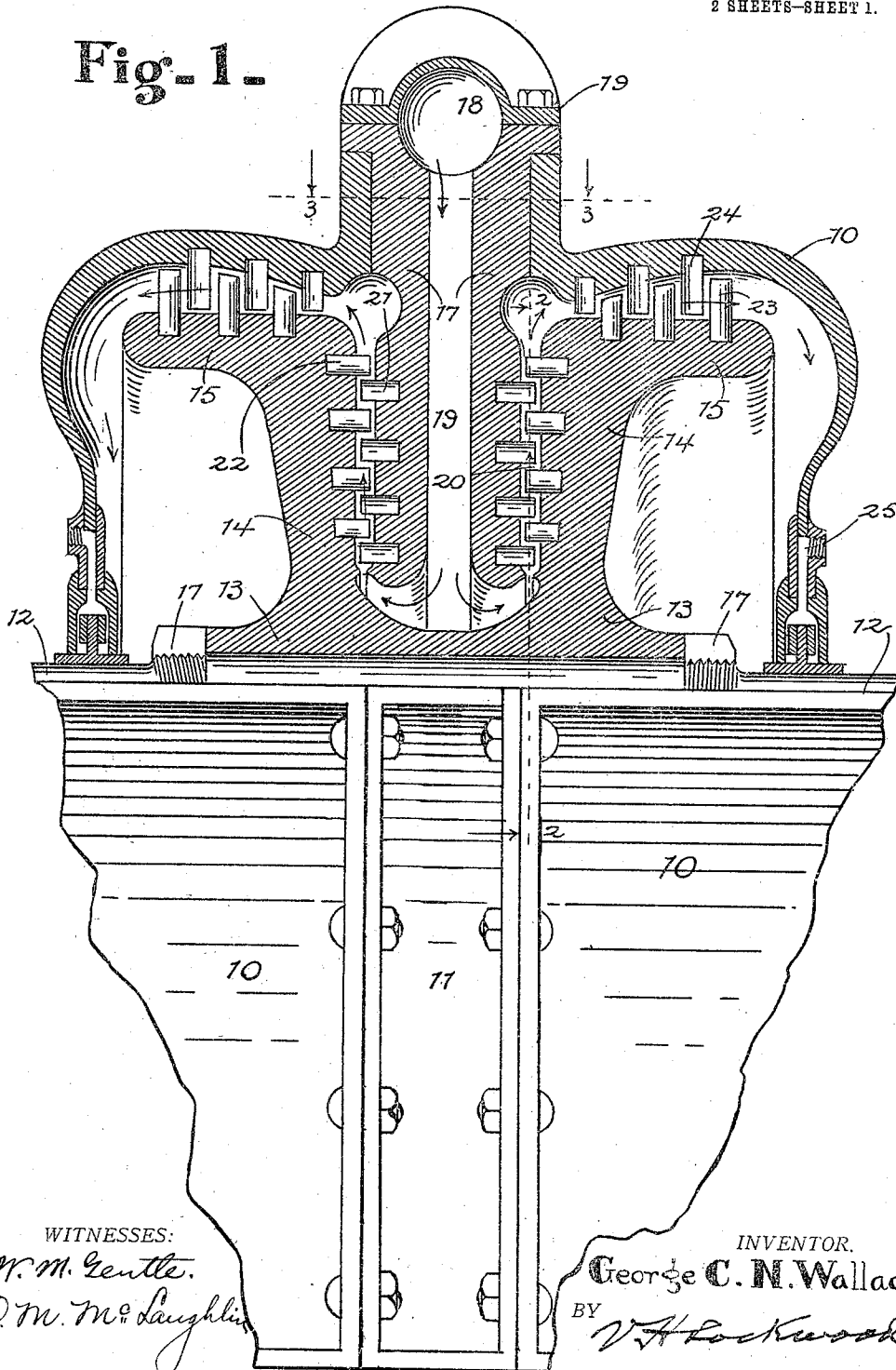
G. C. N. WALLACE.
STEAM TURBINE.
APPLICATION FILED JAN. 20, 1910.

984,788.

Patented Feb. 21, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig-2.

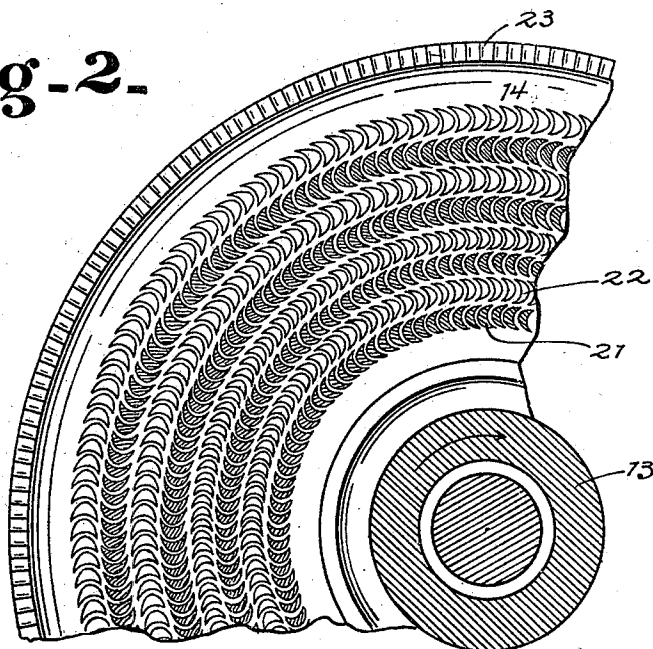
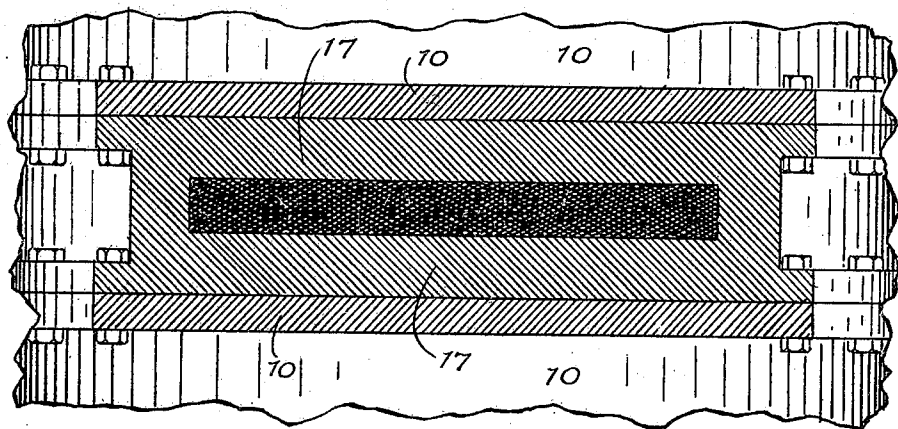


Fig-3.



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GEORGE C. N. WALLACE, OF ANDERSON, INDIANA.

STEAM-TURBINE.

984,788.

Specification of Letters Patent. Patented Feb. 21, 1911.

Application filed January 20, 1910. Serial No. 539,044.

To all whom it may concern:

Be it known that I, GEORGE C. N. WALLACE, of Anderson, county of Madison, and State of Indiana, have invented a certain new and useful Steam-Turbine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

10 The object of this invention is to improve the efficiency and power of steam turbine engines. To that end I provide a double turbine wheel having two similar sides or halves and introduce the steam or fluid 15 under pressure near the hub between the two halves of the wheel so that it passes out radially through a series of buckets and then horizontally across the periphery of each section of the wheel. This gets out of 20 the steam or other fluid under pressure an unusual amount of power because of the doubling of the wheel, the introduction of the steam near the axis of the wheel and the passage thereof through two long series of 25 buckets on each half of the wheel.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:

30 In the drawings Figure 1 is a central vertical section of the upper half of the turbine engine longitudinally of the shaft thereof and an elevation of the lower half thereof, the latter being partly broken away. Fig. 2 35 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1.

The casing consists of the two side portions 10 and an intermediate portion 11. The shaft 12 extends transversely of said casing and upon it the turbine wheel 13 is mounted, being held in place by the nuts 14. The turbine wheel 13 is a double wheel having two radial flanges 14 somewhat separated from each other and a wide rim 15.

45 The portion 11 of the casing has two parallel flanges 17 that extend inward between the two radial members 14 of the wheel so as to leave a slight space between them and the wheel and a considerable space between the 50 two flanges 17 for the passage of the steam which enters through the port 18 formed by adding the cap 19 upon the flange 17. The flanges 17 extend down to what may be

termed the hub of the wheel, almost to the shaft and their inner peripheries are curved 55 so that the steam entering in the passage way 19 between them will pass in two opposite directions laterally into the radial chamber 20 between the flanges 17 and the parts 14 of the wheel. Into these radial chambers 60 20 buckets 21 and 22 are secured, the former projecting from the flanges 17 and the latter from the parts 14 of the wheel. After the steam passes radially outward through the series of buckets 21 and 22, it passes later- 65 ally in the opposite direction across the two rims of the wheel through two series of the buckets 23 and 24, the former being in the periphery of the two parts of the wheel and the latter in the internal periphery of the 70 casing. The steam exhausts through any suitable exhaust port 25.

This construction provides an extremely large number of buckets in the wheel of moderate size, there being four series of 75 them extending all about the wheel cylindrically, so that the full effect of the steam during its passage and expansion is obtained. It is noted too, that the steam begins to act near the center of the wheel and 80 thence moves outwardly as it expands.

What I claim as my invention and desire to secure by Letters Patent is:

A turbine wheel including a shaft, a double wheel thereon having two lateral halves 85 or parts with an intermediate peripherally disposed space between them and having flattened peripheral rims, a casing surrounding the peripheries of said wheel provided with flanges that extend inwardly between 90 the halves of the wheel nearly to the center thereof, means for introducing steam into the chamber between said flanges, a series of buckets on said flanges and the adjacent radial sides of the two parts of the wheel, 95 another series of buckets on the peripheries of the two parts of the wheel and the adjacent parts of the casing, and a suitable exhaust port, substantially as set forth.

In witness whereof, I have hereunto af- 100 fixed my signature in the presence of the witnesses herein named.

GEORGE C. N. WALLACE.

Witnesses:

A. W. DRAKE,
JESSE J. GIBBONS.