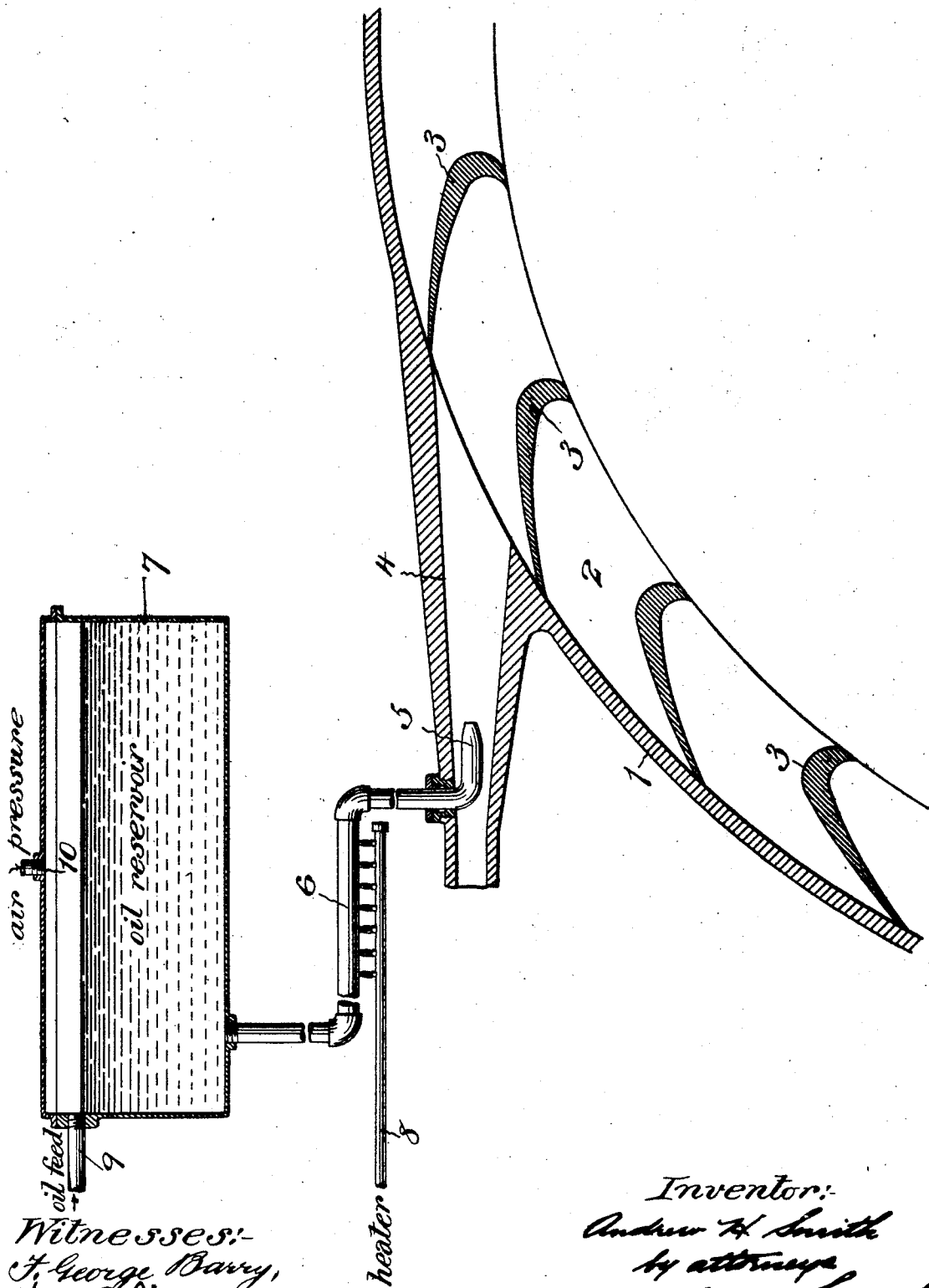


No. 857,965.

PATENTED JUNE 25, 1907.

A. H. SMITH.
STEAM TURBINE.

APPLICATION FILED JAN. 2, 1906.



Witnesses:-
J. George Barry,
Henry Thieme.

Inventor:-
Andrew H. Smith
by attorneys
Morse & Howard

UNITED STATES PATENT OFFICE.

ANDREW H. SMITH, OF NEW YORK, N. Y.

STEAM-TURBINE.

No. 857,965.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed January 2, 1906. Serial No. 294,058.

To all whom it may concern:

Be it known that I, ANDREW H. SMITH, a citizen of the United States, and a resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Improvement in Steam Turbine-Engines, of which the following is a specification.

The object of my invention is to provide certain improvements in steam turbine engines whereby the efficiency of the engine is increased by increasing the force of impact of the steam by the introduction of oil into the steam just before it is brought into engagement with the piston vanes or wings.

A practical embodiment of my invention is represented in the accompanying drawing which represents so much of a steam turbine engine as will give a clear understanding of my invention, the parts being shown partially in side elevation and partially in section.

The cylinder of the engine is denoted by 1, the piston by 2 and the piston vanes or wings by 3.

The expanding steam nozzle is denoted by 4, through which steam is forced to the vanes or wings from any suitable source of supply.

An oil nozzle 5 is located within the steam nozzle 4, to which oil nozzle a feed pipe 6 leads from an oil reservoir 7. This oil feed pipe 6 is brought into contact with a heater 8 of any well known and approved form which will serve to raise the oil to the proper high temperature. Oil may be fed to the reservoir through a suitable feed pipe 9. To permit the oil to be fed under pressure, an air pressure pipe 10 is provided for the reservoir 7, which pipe leads from any suitable means, not shown herein, for exerting pressure on the oil within the reservoir.

In operation, as the steam is passed through the nozzle 4 into engagement with the vanes or wings 3 of the piston 2, the oil is introduced into the jet of steam through the nozzle 5. This will serve to increase the momentum of the steam by adding to its weight and thus increase its efficiency as a driving force.

It is intended to use an oil which will stand a very high heat without volatilizing so that the oil may be introduced into the steam

under high temperature so that it will tend to prevent the rapid condensation of the steam as the oil will hold its elements of heat a considerably greater time than will the steam. Furthermore, it is intended to feed the oil under pressure so that the velocity of the steam will not be impaired. It is also intended that the oil should be used in large quantities with the object in view of materially increasing the momentum of the steam and thereby adding to its effective range.

While I have shown the oil as being introduced into the steam at a point where it first begins to expand before impinging against the piston vanes or wings, it is to be understood that the oil may be introduced at other points if so desired.

What I claim is:

1. In a steam turbine engine, a steam nozzle, a source of oil supply separate from the steam nozzle and means for introducing oil from said source of oil supply into the steam nozzle.

2. In a steam turbine engine, a steam nozzle, a source of oil supply separate from the steam nozzle and means for introducing oil at a high temperature from said source of oil supply into the steam nozzle.

3. In a steam turbine engine, a steam nozzle, a source of oil supply separate from the steam nozzle and means for introducing oil under pressure from the said source of oil supply into the steam nozzle.

4. In a steam turbine engine, a steam nozzle, a source of oil supply, separate from the steam nozzle, and means for introducing oil at a high temperature and under pressure from said source of oil supply into the steam nozzle.

5. In a steam turbine engine, an expanding steam nozzle and means for introducing oil into the steam as it is expanding in the said nozzle.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 29th day of December, 1905.

ANDREW H. SMITH.

Witnesses:

FREDK. HAYNES,
HENRY THIEME.