No. 879,230. PATENTED FEB. 18, 1908.

K. R. WILSON.

COOLING MEANS FOR ENGINES.

APPLICATION FILED FEB. 6, 1907.

2 SHEETS—SHEET 1.

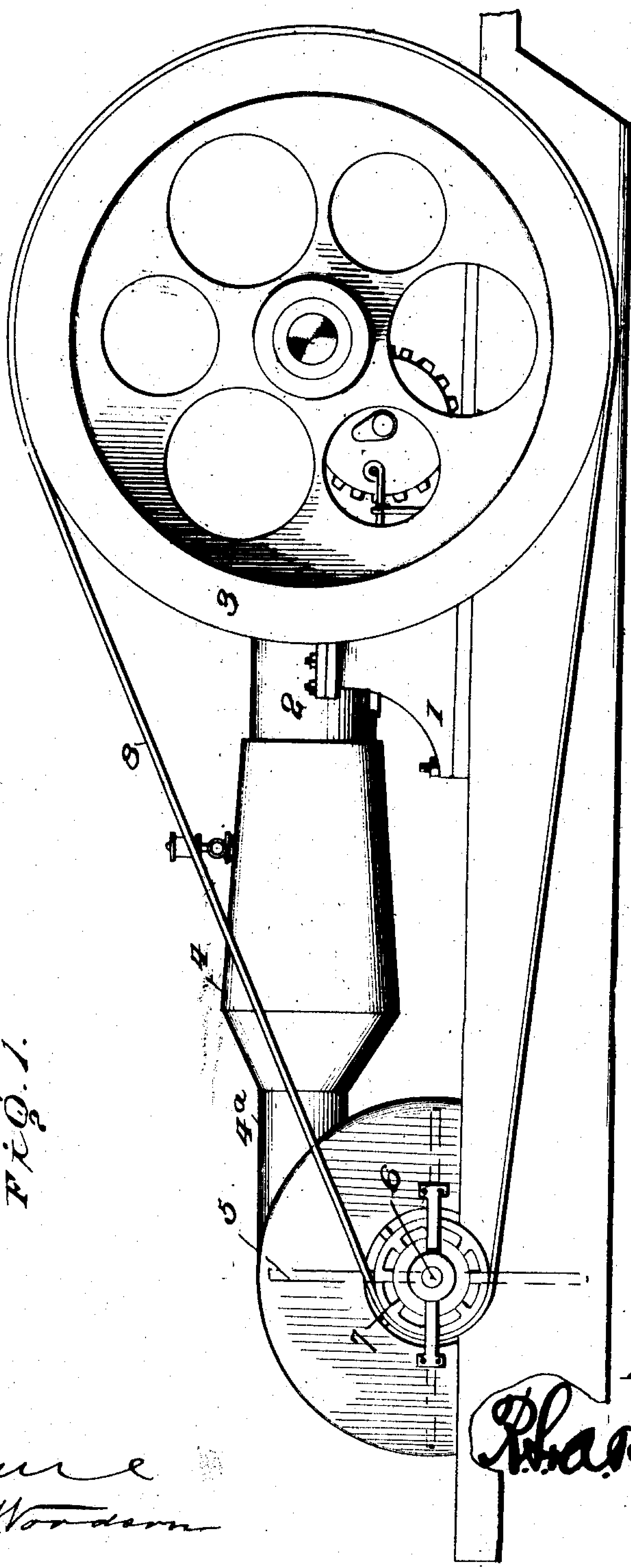


Fig. 1.

Witnesses

J. M. Imme

W. N. Woodson

Inventor

K. R. Wilson

By

Victor J. Evans [illegible]

Attorneys

No. 879,230. PATENTED FEB. 18, 1908.

K. R. WILSON.

COOLING MEANS FOR ENGINES.

APPLICATION FILED FEB. 6, 1907.

2 SHEETS—SHEET 2.

Fig. 2

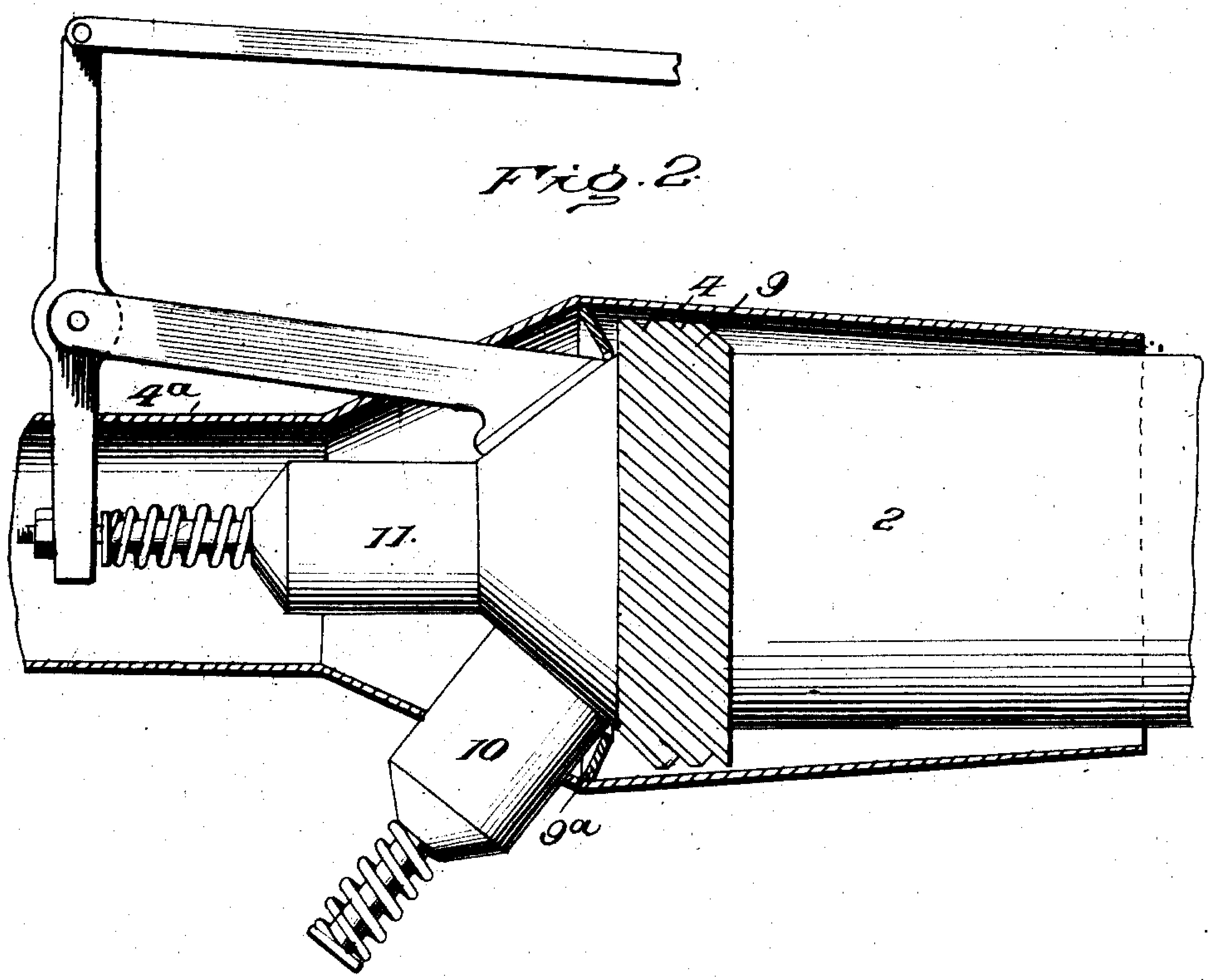
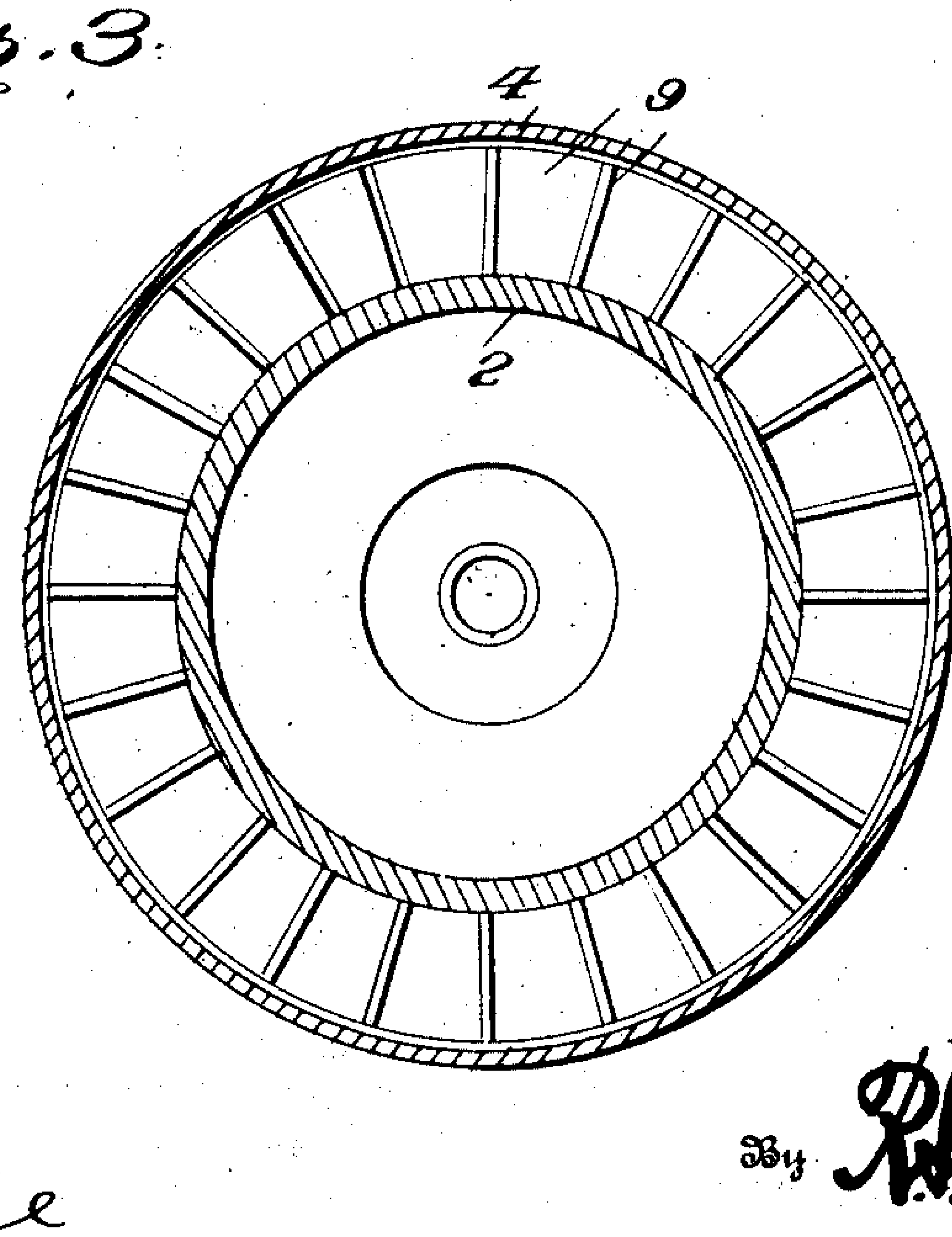


Fig. 3



Witnesses

W. N. Woodson

Inventor

K. R. Wilson

By Lacey,

Attorneys

NORRIS PETERS, INC., LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

KIRKE R. WILSON, OF ARCADE, NEW YORK.

COOLING MEANS FOR ENGINES.

No. 879,230. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed February 6, 1907. Serial No. 356,108.

To all whom it may concern:

Be it known that I, KIRKE R. WILSON, citizen of the United States, residing at Arcade, in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Cooling Means for Engines, of which the following is a specification.

This invention contemplates certain new and useful improvements in means for cooling the cylinders, cylinder heads and valves of engines that are subjected to heat in their operation and particularly engines of the internal combustion type.

The invention has for its object a cheap and efficient construction of means for cooling the engine parts as above noted, and it embodies means for producing swirling air currents around the cylinder and especially the head thereof, and consists in certain constructions, arrangements and combinations of parts hereinafter described and claimed.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of an engine provided with the improvements of my invention, it being understood that the main parts of the engine are portrayed for the purposes of illustration only: Fig. 2 is a longitudinal sectional view of the hood which constitutes the main element of the invention; and Fig. 3 is a transverse section view of said hood.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the bed or base of an engine, 2 the cylinder thereof and 3 the fly-wheel.

My invention comprises a hood 4, which surrounds the cylinder 2 at one head thereof and preferably tapers toward the opposite end of the cylinder, as clearly indicated in the longitudinal sectional view. The hood 4 is adapted to be supplied with air, which may come from any air compressor or other source of supply, but preferably from a blast fan 5, to the casing of which the reduced neck 4^a of the hood 4 is connected, so as to support said hood in spaced relation around the end of the cylinder 2. The shaft 6 of the fan or rotary blast device within the casing 5, preferably carries a pulley 7 which may be operatively connected to the fly-wheel 3 or any other revoluble part of the engine by means of the belt 8.

Located within the hood 4 and preferably at the junction of the tapered neck 4^a with the main body of the hood is a transversely extending circular series of deflector blades 9, which are arranged aslant as shown in the drawing, so that the air which issues from the discharge opening of the fan casing 5 and flows through the tapered neck 4^a is caused to swirl as it issues through the series of blades 9 and thence out through the tapered body of the hood 4, around the cylinder 2, or the exhaust air from the cooler may be piped off, if desired. The deflector blades 9 may be either straight or curved.

10 designates the intake valve of the engine, which is merely shown conventionally, and 11 illustrates the exhaust valve from which the exhaust gases are piped off.

As clearly shown in Fig. 2, an annular deflector 9^a is interposed between the series of deflector blades 9 and the blast fan, the inner edge of said deflector 9^a being spaced slightly from the cylinder head and thereby serving to deflect the air up against the cylinder head just before it enters the set of deflector blades 9.

From the foregoing description, in connection with the drawing, it will be seen that I have provided improved means whereby a continuously flowing volume of air directly around the head of the cylinder is caused to swirl around the cylinder, so as to effectively cool the same, and as the blades 9 are preferably stationary, the air, as a rotary motion is set up, is held for a short time within the hood and around the cylinder, thereby accomplishing a greater amount of work. As the exhaust valve 11 is preferably located at the center of the neck 4^a, it will receive a small amount of air on all sides and thereby become cooled effectively. By the arrangement set forth, the temperature is maintained by the air currents, equal at all points and danger of uneven expansion of the cylinder walls and the consequent leakage and other injurious results are avoided.

It is to be understood that changes in the

arrangement and proportions of the parts, within the scope of the claims, may be made within the purview of my invention.

Having thus described the invention, what is claimed as new, is:

1. In cooling means for engines, the combination with the engine cylinder, of a hood surrounding the same, means for supporting said hood in spaced relation to the cylinder, means for forcing air through said hood, a series of blades supported within the hood and arranged aslant and adapted to cause the air passing therethrough to set up a swirling motion, and a deflector 9^a carried by the hood and interposed between the air forcing means and the said blades, the inner edge of said deflector 9^a being spaced slightly from the cylinder, as and for the purpose set forth.

2. In cooling means for engines, the combination with the engine cylinder, of a hood surrounding same, means for supporting the hood in spaced relation to the cylinder, means for forcing air through said hood, a series of blades supported within the hood and arranged aslant and adapted to cause the air passing therethrough to set up a swirling motion, and a deflector interposed between the air forcing means and said blades, the inner edge of said deflector being spaced slightly from the cylinder.

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

KIRKE R. WILSON. [L. S.]

Witnesses:
D. C. BENTLEY,
L. M. SPRINGER.