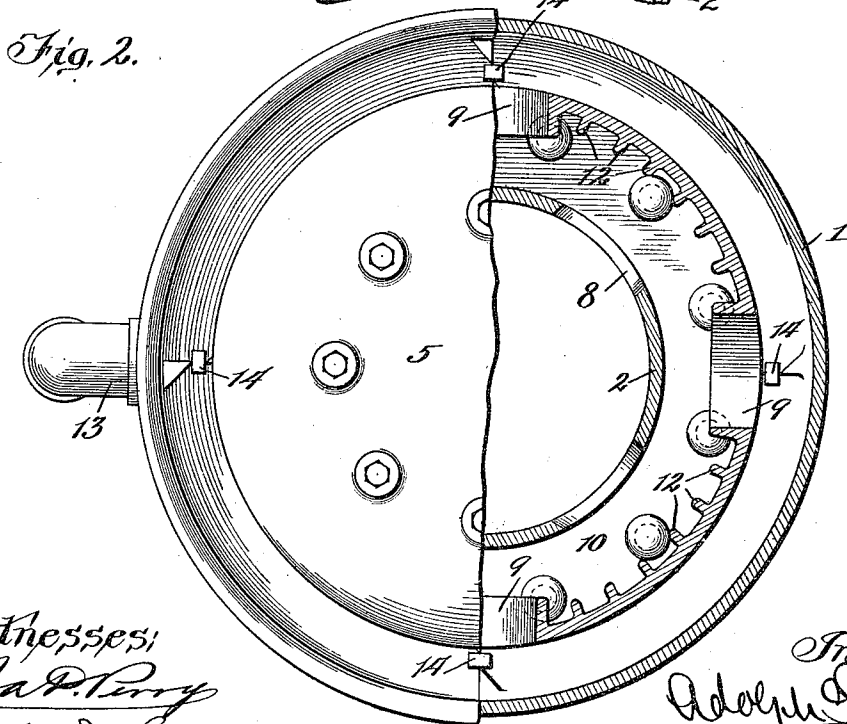
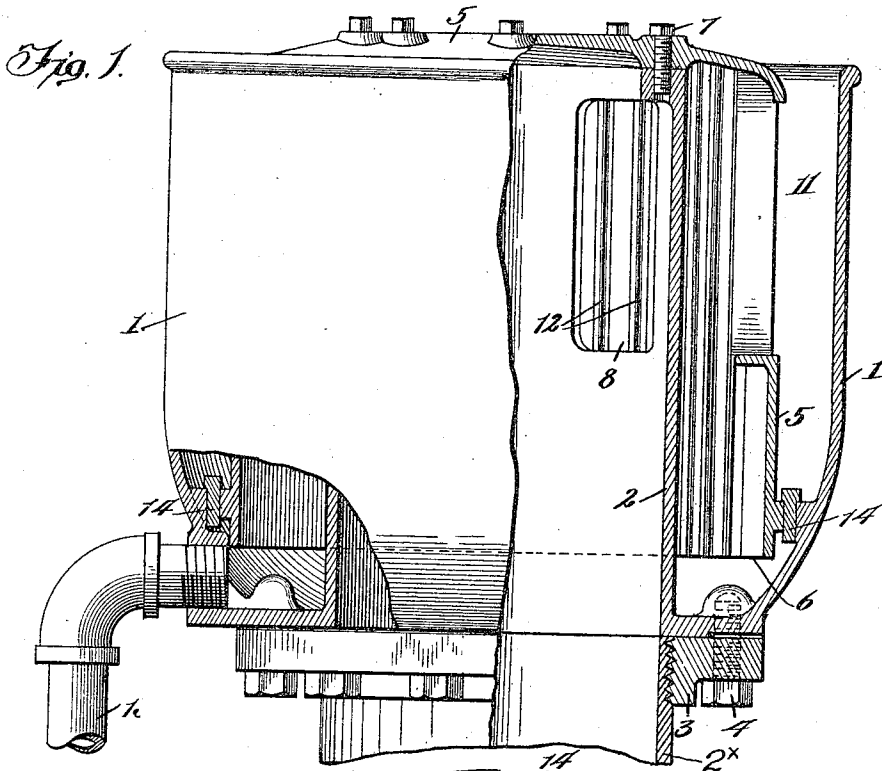


A. SORGE, JR.
EXHAUST HEAD.
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945,817.

Patented Jan. 11, 1910.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADOLPH SORGE, JR., OF ST. JOSEPH, MICHIGAN.

EXHAUST-HEAD.

945,817.

Specification of Letters Patent.

Patented Jan. 11, 1910.

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To all whom it may concern:

Be it known that I, ADOLPH SORGE, Jr., a citizen of the United States, and a resident of St. Joseph, Berrien county, Michigan, have invented certain new and useful improvements in Exhaust-Heads, of which the following is a specification.

This invention relates to improvements in exhaust heads for the exhaust pipes of steam engines and the like; its object is to provide an improved and simplified construction in devices of this character, and it consists in the matters hereinafter set forth and particularly pointed out in the appended claims.

The invention will be fully understood from the following detailed description of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of an exhaust head constructed in accordance with my invention. Fig. 2 is a top plan view thereof, with parts in section on line 2—2 of Fig. 1.

In said drawings, 1 designates the outer casing of the exhaust head. This casing is bowl-shaped and open at its upper end, and has an interior vertical cylinder 2 cast integral with it, this cylinder being preferably of approximately one-half the diameter of the outer casing 1. The inner cylinder 2 is open at its lower end where it communicates with the exhaust pipe 2* leading from the engine, the connection being made by means of an interiorly screw threaded pipe flange 3 which is clamped to the bottom of the outer casing 1 by tap bolts 4.

The upper end of the interior cylinder 2 is closed by a dome 5 which is made of a diameter intermediate to the diameters of the casing 1 and cylinder 2. This dome 5 is inverted over the cylinder 2 and dropped down into the casing 1 so that its lower margin 6 reaches nearly to the bottom of the annular chamber formed in said casing between its outer wall and its inner integral cylinder 2. Tap bolts 7 clamp the dome 5 securely in this position upon the upper end of the cylinder 2. To provide for the escape of the steam, the inner cylinder 2 is formed with openings 8 near its upper end, and the cylindric wall of the inverted dome 5 is provided with corresponding outlet openings 9. As herein shown these openings are four in number in each instance, but they are staggered with respect to each other so that the

steam cannot pass directly from an opening 8 to an opening 9, but must follow a somewhat circuitous path through the annular space 10 between the cylinder 2 and the dome 5. On passing out through the opening 9 the steam will enter the annular channel 11 between the dome 5 and outer casing 1 and finally escape freely through the open upper end of this annular channel. The steam passing out of the openings 8 strikes the inner surface of the dome 5, which has vertical ribs 12 cast in same in the spaces between the openings 9. The water and oil carried in the steam are projected against these ribbed inner surfaces of the dome 5 and run down in same to the bottom of the bowl, whence they are drained off by pipe 13 which is tapped into the lower end of the casing. The steam being thus freed from water and oil passes out of the dome 5 through the openings 9. Any moisture or oil remaining will be projected against the inner wall of the casing 1 and run down said wall, mingling at the bottom with the drainage from the dome 5 and passing off through the pipe 13. The now thoroughly cleaned, dry steam passes away through the circular channel 11, escaping to the atmosphere. To prevent the dome from vibrating and making a noise as the steam escapes through it, wedges 14 are shown as inserted at intervals between its lower edge and the opposite inner wall of the casing 2.

An exhaust head of this design is exceedingly simple in its construction, but very effective in its operation, the separation of the oil and water from the outgoing vapor being so complete as to practically do away with the dripping which so often takes place about the upper end of a steam pipe and makes it a nuisance to all passers-by. The making of the outer casing and inner vertical cylinder integral with each other provides a well for the condensation water and oil which is free from joints and therefore not subject to leakage, and which thus completely prevents the accumulation of ice around the exhaust pipe which so frequently occurs in winter with exhaust heads of ordinary construction—often to the extent of requiring the ice to be frequently chopped away in order to preserve the roof of the building through which the exhaust pipe extends.

I claim:—

1. An exhaust head comprising an outer

casing consisting of a bowl-shaped outer casing formed with an upwardly projecting inner cylinder, means for securing said exhaust head to the upper end of an exhaust pipe with the interior of its inner cylinder in open communication with said exhaust pipe, a dome-shaped part having an imperforate top-plate secured down on the upper end of the inner cylinder so as to close the same and have its annular wall depend into the casing around said cylinder, exhaust openings in said inner cylinder and dome-shaped part, and means for draining the casing, substantially as set forth.

2. An exhaust head consisting of an integral annular casing closed at its lower end in its annular portion and opening upwardly, an inverted dome-shaped part fastened directly down on the upper end of the inner annular wall of said casing, the top plate of this dome being imperforate, means on the bottom of the casing for securing the casing to the upper end of an exhaust pipe, lateral exhaust openings in said casing and dome-shaped part, and means for draining the annular chamber of the casing, substantially as set forth.

3. An exhaust head consisting of an integral annular casing closed at its lower end in its annular portion and opening upwardly, a dome-shaped part inverted over the inner annular wall of said casing, means for securing the casing to the upper end of

an exhaust pipe, lateral exhaust openings in the inner wall of said casing and the depending wall of said dome-shaped part, said openings being staggered with reference to each other and the inner face of dome wall being ribbed vertically and means for draining the annular chamber of the casing, substantially as described.

4. An exhaust head consisting of an integral annular casing closed at its lower end in its annular portion and having its upper end open and its inner wall provided near its upper end with lateral escape openings, means on the bottom of the casing for attaching the exhaust pipe thereto, a drain pipe connected to the lower end of the casing, and a closure plate fastened to the top of the inner wall of the casing and provided with an annular wall depending into the casing and forming steam spaces between the two walls thereof, provision being made for the passage of steam from the inner chamber formed by said depending wall to the outer chamber, for the purpose set forth.

In testimony, that I claim the foregoing as my invention, I affix my signature in presence of two subscribing witnesses, this 12th day of April, A. D. 1909.

ADOLPH SORGE, JR.

Witnesses:

K. A. COSTELLO,
G. M. ELLINGEN.