

J. W. PARKER.

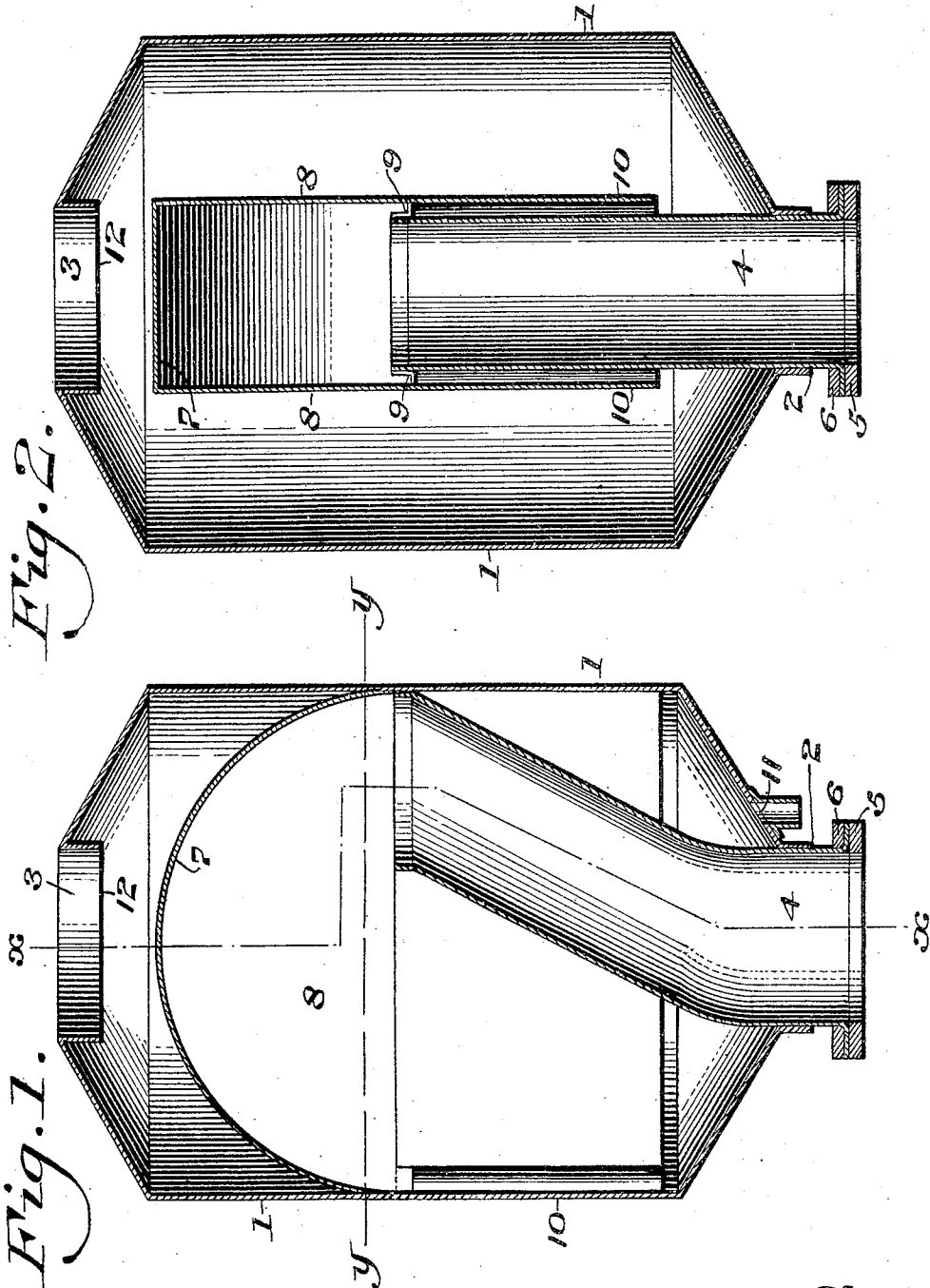
EXHAUST HEAD.

APPLICATION FILED APR. 21, 1908.

942,585.

Patented Dec. 7, 1909.

2 SHEETS—SHEET 1.



Witnesses
P. F. Nagle.
L. Douville.

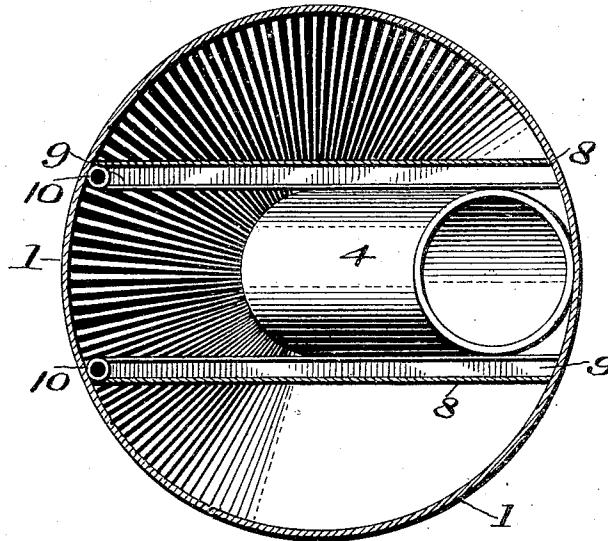
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Fig. 3.



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UNITED STATES PATENT OFFICE.

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EXHAUST-HEAD.

942,585.

Specification of Letters Patent.

Patented Dec. 7, 1909.

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To all whom it may concern:

Be it known that I, JUSTUS W. PARKER, a citizen of the United States, residing at Beverly, county of Burlington, State of New Jersey, have invented a new and useful Exhaust-Head, of which the following is a specification.

This invention relates to an improvement in condenser heads or steam exhaust heads into which the exhaust of an engine takes place and the steam is led therethrough by a circuitous path to the outlet, during which passage it contacts with suitable deflector plates so arranged as to condense the steam and carry the water of condensation to a drip pipe from which it discharges into a sewer or appropriate receptacle.

It consists of an exhaust head provided with a novel form of deflector plates so formed and arranged as to prevent back pressure on the engine and also to hinder and delay the exit of the steam passing therethrough so that much of the steam is condensed and no spray or objectionable matter therein escapes to the exterior thereof.

It further consists of a head wherein a means is provided to drain the water of condensation and lead it to an auxiliary discharge opening free from contact with the exhaust steam.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a section through a head embodying my invention. Fig. 2 represents a section on line $x-x$, Fig. 1. Fig. 3 represents a section on line $y-y$, Fig. 1.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates a casing forming the body of my exhaust head, the same being preferably drum-

shaped and provided with the inlet opening 2 and outlet 3. The inlet 2 has secured thereto in any suitable manner a pipe or conduit 4, the same preferably having one end turned outwardly and forming with the rings or flanges 5 and 6 a coupling whereby the head may be properly attached in operative position. The pipe 4 passes through the inlet opening 2 and is led upwardly into the casing 1 and in the present instance is provided with an inclined portion which meets the side walls of the casing 1 and is suitably secured thereto.

Adjacent the discharge end of pipe 4 and located in the path of the discharge passing therethrough is the deflecting plate 7 extending from one side of the casing to the other and in the preferred form is hemispherical in shape in order to offer slight resistance to the exhaust steam and yet provide a broad condensing and deflecting surface. The plate 7 has formed integral therewith, side walls 8 which form therewith an inverted boxlike deflecting structure having an opening at the lower portion communicating with the lower part of the casing 1. The side walls 8 are spaced apart a distance somewhat greater than the diameter of the pipe 4 so that a slight space is provided therebetween on each side for the purpose of accommodating an angle member 9 which is suitably connected to the discharge end of the pipe 4 and the walls 8 thereby forming a drip channel adapted to carry off the water of condensation. At one end these channels communicate with drain pipes which are adapted to discharge their contents near the base of the casing 1 and at substantially the extreme lower end of which is located a small auxiliary outlet 11 allowing this water of condensation to escape from the casing. The outlet 3 in the present instance is provided with an turned flange 12 which projects downwardly into the casing 1 and thereby forms an additional deflecting surface. Any steam which may pass the main deflecting plates 7 and 8 will pass upwardly along the side walls of the casing partly condensing thereon until such as reaches the top meets the downward projecting flange and thence to atmosphere.

The exhaust steam passes from the engine through the coupling 5 into the inclined conduit 4 along the length of which it travels and discharges into the interior of the curved boxlike structure against the upper

surface 7 of which it contacts and is deflected. The remaining steam discharges downwardly through the opening in the bottom into the lower portion of the casing 1 and then again has its direction changed so that it passes upwardly through the casing on the outside of the walls 8 to the exit 3. As the steam encounters the comparatively cool surface of the head structure it is partly condensed and the water of condensation collects along the sides and runs down into the drip channels formed by the angles 9 by which it is conducted to the drain pipes 10 and discharges to the bottom of the casing 1 and from there runs through the outlet 11 to the exterior of the casing.

It will be apparent that I have devised an exhaust head simple in construction, efficient in operation and one in which much of the steam is condensed, so that it is especially well adapted for city use where neighboring roofs and the like will be damaged by the continual discharge of condensed steam and the contained impurities.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character described, a casing, an outwardly inclined inlet and an outlet therefor, a conduit secured to said inlet and extending interiorly of said casing, a curved deflecting plate located adjacent said conduit intermediate of the latter and said outlet, side walls secured to said plate and extending downwardly, below the discharge opening of said inlet, thereby forming an inclosed passage having a communication with said casing, and means to collect and discharge the water of condensation.
2. In a device of the character described, a casing, an outwardly inclined inlet and an outlet therefor, a conduit secured to said inlet extending interiorly of said casing, a curved deflector plate located adjacent said conduit and extending across said casing, side walls secured to said plate forming an inclosed passage having a communication with said casing, and means to collect and discharge the water of condensation.
3. In a device of the character described, a casing, an inlet and an outlet therefor, a conduit secured to said inlet and extending interiorly of said casing, a deflecting plate located adjacent said conduit, side walls secured to said plate forming an inclosed passage having a communication with said casing, channels on said side walls and drain pipes secured in alinement with said channels.
4. In a device of the character described, a casing, an inlet and an outlet therefor, a conduit secured to said inlet extending interiorly of said casing, a curved deflecting member located adjacent the outlet of said conduit, channels on the side walls of said

members, drain pipes at the termination of said channels and an auxiliary outlet from said casing.

5. In a device of the character described, a casing, an inlet and an outlet therefor, a conduit secured to said inlet and inclined interiorly of said casing, a curved deflecting member secured adjacent the outlet of said conduit channels secured to the walls of said member, drain pipes adjacent said channels and an auxiliary outlet in the bottom of said casing.

6. In a device of the character described, a casing, an outlet therefor having an in-turned flange, an inlet for said casing, a conduit secured to said inlet and inclined interiorly of said casing, a curved deflecting member secured adjacent the outlet of said conduit channels secured to the walls of said member, drain pipes adjacent said channels and an auxiliary outlet in the bottom of said casing.

7. In a device of the character described, a casing, an inlet pipe extending into said casing at the lower portion thereof and inclined outwardly, a curved plate against which said inlet pipe discharges, said plate extending across said casing, side walls depending from said plate to a point below the discharge opening of said inlet pipe, and an outlet located in the top of said casing out of alinement with the discharge opening of said inlet.

8. In a device of the character described, a casing, an inlet pipe extending into said casing at the lower portion thereof and inclined outwardly, a curved plate against which said inlet pipe discharges, said plate extending across said casing, side walls depending from said plate to a point below the discharge opening of said inlet pipe, and an outlet located in the top of said casing out of alinement with the discharge opening of said inlet, in combination with channels located between the upper end of said inlet and said depending walls, and devices for draining said channels.

9. In a device of the character described, a casing, an inlet pipe extending into said casing at the lower portion thereof and inclined outwardly, a curved plate against which said inlet pipe discharges, said plate extending across said casing, side walls depending from said plate to a point below the discharge opening of said inlet pipe, and an outlet located in the top of said casing out of alinement with the discharge opening of said inlet, in combination with channels secured to said depending walls, drain pipes adjacent said channels and an auxiliary outlet in the bottom of said casing.

10. In a device of the character described, a casing having an inlet pipe 4 secured to the lower portion thereof, the discharge opening for said inlet pipe being located at

one side of said casing, a curved plate extending across said casing, side walls depending from said curved plate and extending to a point below the discharge opening
5 of said inlet pipe, channels 9 located immediately of said inlet pipe and said depending side walls, drain pipes for leading the discharge from said channels to the lower portion of said casing, an auxiliary
10 outlet from the lower portion of said casing,

and a main outlet located in the upper central part of said casing and provided with an inwardly extending flange, said main discharge outlet being located out of alinement with the discharge opening of the inlet pipe. 15

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Witnesses:

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