

(No Model.)

E. RUTZLER.
EXHAUST HEAD FOR STEAM PIPES.

No. 434,119.

Patented Aug. 12, 1890.

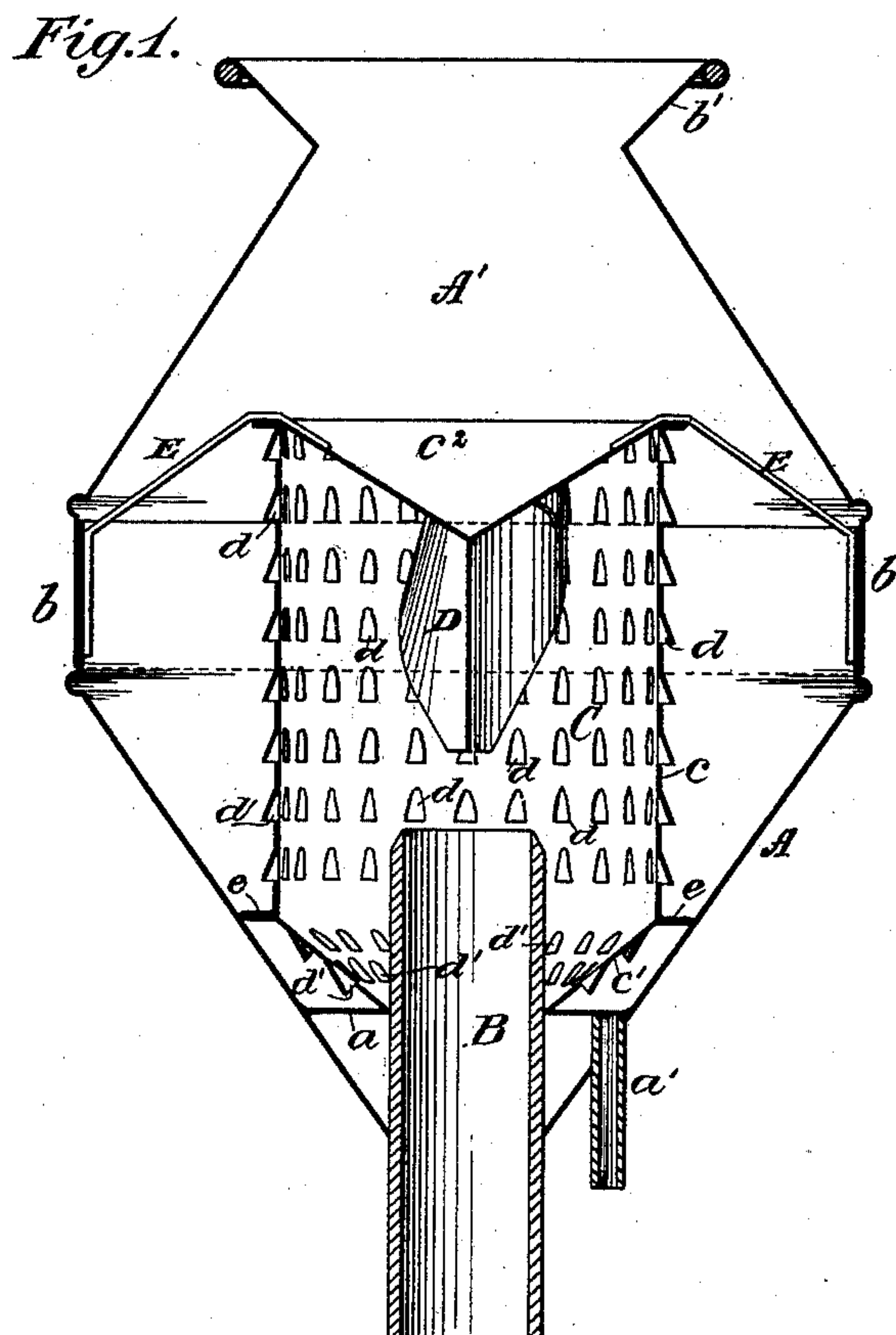
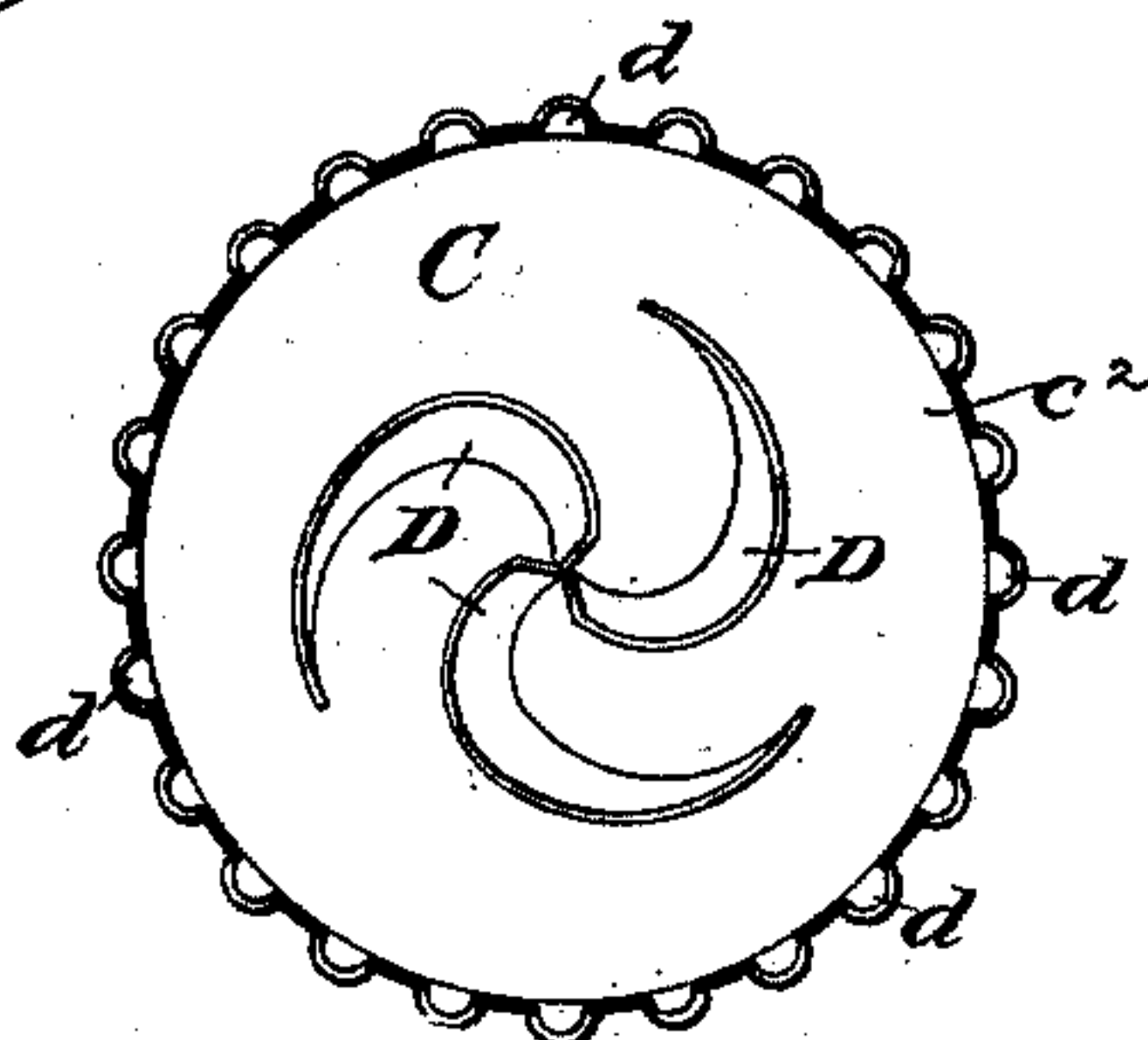


Fig. 2.



Witnesses:-
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UNITED STATES PATENT OFFICE.

ENOCH RUTZLER, OF BROOKLYN, NEW YORK.

EXHAUST-HEAD FOR STEAM-PIPES.

SPECIFICATION forming part of Letters Patent No. 431,119, dated August 12, 1890.

Application filed January 30, 1890. Serial No. 338,624. (No model.)

To all whom it may concern:

Be it known that I, ENOCH RUTZLER, of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Exhaust-Heads for Steam-Pipes, of which the following is a specification.

My improvement relates to so-called "exhaust-heads," which are placed at the outer ends of steam-exhaust pipes and act as separators to separate water from the steam. In my improvement the exhaust-head also operates as a "muffler" to muffle the sound of the escaping steam.

I will describe my improvement in detail and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a vertical section of an exhaust-head embodying my improvement. Fig. 2 is a horizontal section of a muffler employed therein and looking upwardly.

Similar letters of reference designate corresponding parts in both the figures.

A A' designate the shell or body of the exhaust-head. The portion A of the shell or body constitutes the bottom thereof and is shown as in the form of an inverted cone. Near its lower extremity the portion A is provided with an internal horizontally-extending diaphragm *a*. Water when separated from the steam gathers in the lower part of the portion A of the shell or body above the diaphragm *a* and passes outwardly therefrom through a drip-pipe *a'* in communication with the interior of the shell or body. Said portion A is supported upon a section B of a steam-exhaust pipe, which section may be secured to a main portion of the exhaust-pipe in any suitable manner. Said section B extends upwardly through the lower end of the portion A of the shell or body through a suitable aperture in the diaphragm *a*, and also through a suitable aperture formed in the lower extremity of a muffler C, forming part of the exhaust-head and arranged within the portion A of the exhaust-head. As shown, the section B extends for some distance into the interior of the muffler C.

The portion A' of the exhaust-head is mainly conical in shape and its lower edge is provided with a flange *b*, which may be slipped down over the upper part of the portion A of the

shell or body, so as to be thereby maintained in place. The portion A' might, however, be rigidly secured to the portion A, if desired. The upper extremity of the portion A' is open to the atmosphere and is provided with an outwardly-flaring flange *b'*.

The muffler C has a cylindrically-shaped body portion *c*, and, as shown, a bottom portion *c'* of an inverted conical shape, and a top *c''* of a similar shape, extending downwardly into the interior of the body portion *c*. The top *c''* constitutes part of a deflector for the upper portion of the muffler. Extending downwardly and centrally from the top *c''* over the upper end of the section of exhaust-pipe B is a spirally-formed deflector D. The incoming steam and water from the exhaust-pipe is discharged against the spiral deflector D, the construction of which is such as to cause the steam and water to be given a spiral motion, which throws them violently against the inner sides of the body portion *c* of the muffler, whereby the water is effectually separated from the steam. Said body portion *c* is indented upon its sides to form passages *d* for the steam and water. These passages open downwardly upon the exterior of the muffler. Water and steam, therefore, thrown by the spiral deflector D against the interior of the muffler C will be caused to pass outwardly and downwardly from the muffler and against the sides of the portion A of the shell or body, the separation of the water from the steam being thus completed, the water passing outwardly through the pipe *a'*, as previously stated, and the steam passing upwardly and out through the upper end of the portion A' of the shell or body.

I have shown the bottom *c'* of the muffler as provided with similar openings *d'*, through which steam and water at the bottom of the muffler may find exit.

Braces E, secured at one of their ends to the upper portion of the muffler and at their other ends to the inner side of the portion A of the shell or body, serve to maintain the muffler in position. The lower portion of the muffler is provided with horizontally-extending projections *e*, which when the muffler is in position contacts with the inner surface of the portion A of the shell or body and assists in maintaining the muffler in position.

By making the portion A' of the shell or body detachable, access may be readily had to the interior of the exhaust-head, if for any reason it should be found necessary. The
5 braces E also need not be secured to the portion A of the shell or body, in which event the muffler may be readily lifted out after the portion A' has been removed. This may be found
10 expedient in order to clean the muffler or the portion A of the shell or body.

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

1. The combination, with a section of steam-
15 pipe, of a shell or body provided with an outlet for waters of condensation, a muffler and separator arranged within said shell or body and with which said section of steam-pipe communicates, and a deflector at the upper
20 end of said muffler and separator, said muffler and separator being indented upon its sides to form passages for steam and water, which passages open downwardly upon the exterior of the muffler in order to direct steam
25 and water downwardly into contact with the inner surface of the shell or body, substantially as specified.

2. The combination, with a section of steam-

pipe, of a shell or body provided with an outlet for waters of condensation, a muffler and separator arranged within said shell or body
30 and with which said section of steam-pipe communicates, and a spiral deflector at the upper end of said muffler and separator and extending downwardly into the interior thereof, said muffler and separator being indented
35 upon its sides to form passages for steam and water, which passages open downwardly upon the exterior of the muffler in order to direct steam and water downwardly into contact with the inner surface of the shell or body,
40 substantially as specified.

3. The combination, with a section of steam-
pipe, of a shell or body provided with an outlet for waters of condensation and having an
45 upper portion loosely supported thereon, and a muffler and separator, with which said section of steam-pipe communicates, arranged within said shell or body, but loosely supported therein, substantially as specified.

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Witnesses:

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