No. 742,622. PATENTED OCT. 27, 1903.

J. E. FOLEY.

SEPARATOR.

APPLICATION FILED DEC. 11, 1902.

NO MODEL.

Fig. 2

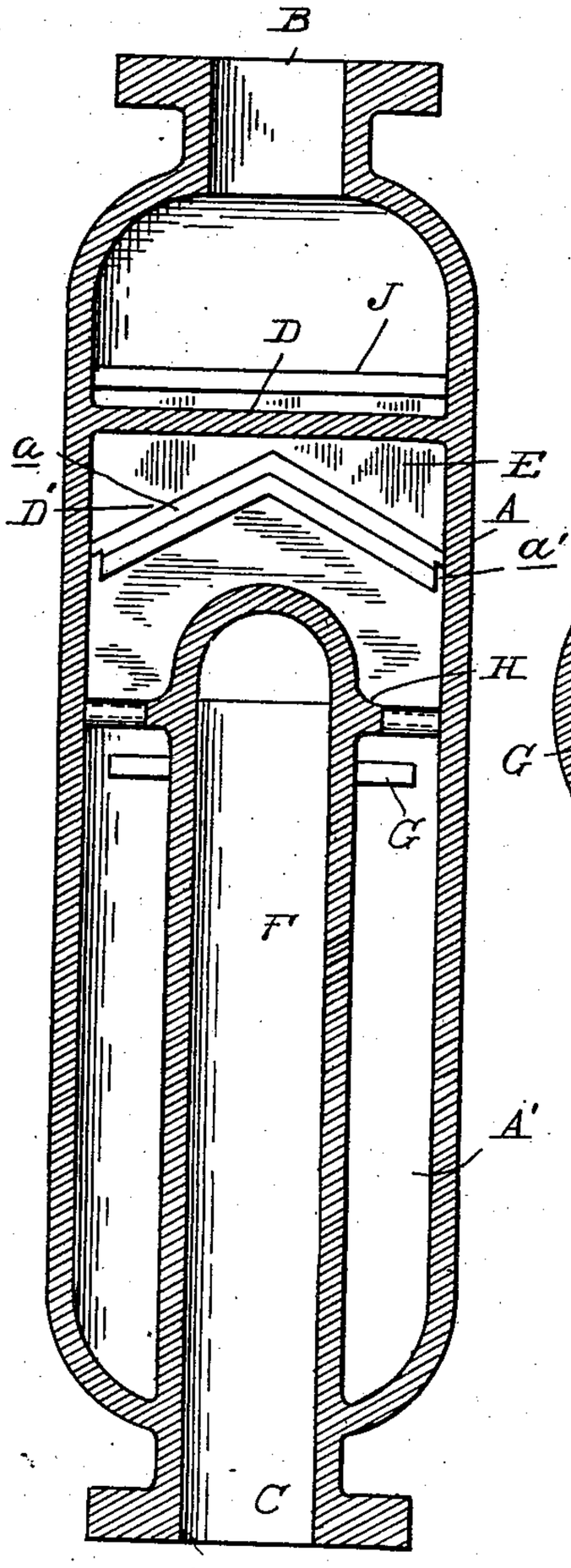


Fig. 3.

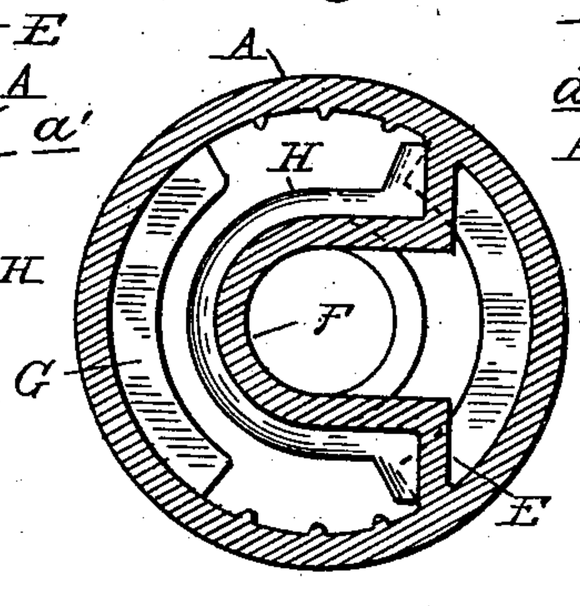
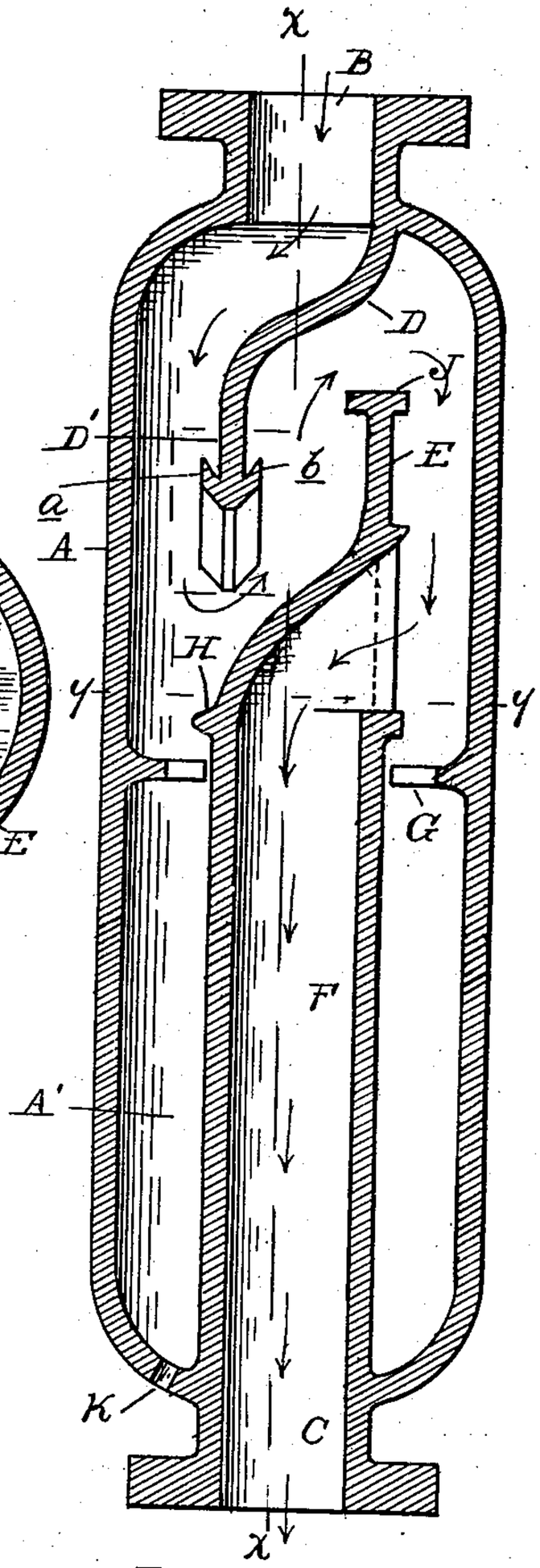


Fig. 1.



Inventor.
James E. Foley
By Thos. S. Sprague & Son
Attys.

Witnesses
A. G. Robertson
M. B. Dougherty

No. 742,622. Patented October 27, 1903.

UNITED STATES PATENT OFFICE.

JAMES E. FOLEY, OF DETROIT, MICHIGAN, ASSIGNOR OF THREE-FOURTHS TO ALEXANDER M. KERR, HUGH BRODIE, AND JAMES C. McGREGOR, OF DETROIT, MICHIGAN.

SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 742,622, dated October 27, 1903.

Application filed December 11, 1902. Serial No. 134,799. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. FOLEY, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Separators, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates particularly to a separator adapted to purify either live or exhaust steam by removing therefrom the impurities—such as water, grit, and oil; and the invention consists in a novel and simple construction of a separator of this type and in the peculiar arrangement and combination of its various parts, as will be hereinafter set forth, and shown in the drawings, in which—

Figure 1 is a vertical central section through the separator. Fig. 2 is a section taken on line *x x*, Fig. 1; and Fig. 3 is a section on line *y y* of Fig. 1.

In construction the separator comprises a casing or shell A, preferably vertical and cylindrical in configuration. At its ends it is provided with the ports B and C, adapted to be connected to any line of piping carrying the supply of steam to be purified.

Arranged within the upper end of the casing and in front or opposite the port B is an inclined baffle-wall D. As shown, the wall is diagonally disposed and extends from side to side of the casing from one side of the port to a point slightly above the middle line of the separator. The lower end of the baffle-wall (indicated by the reference-letter D′) depends vertically and is arched at its lower edge. Flanges *a* and *b* project at an angle to the baffle-wall and from the lower edge thereof, forming a trough extending from the center of the wall in an inclined direction to the sides.

Arranged adjacent to the baffle-wall described and in the upper part of the separator is a substantially vertical baffle-plate E, extending from side to side of the casing in a manner similar to the baffle-wall and projecting to near the middle of the casing, as shown.

F is a steam-conduit in the form of a pipe leading from the port C upwardly within the casing to and extending through the baffle-plate, the end of the conduit extending to one side of the baffle-wall D and in the direction of inclination of the latter.

G is an annular baffle-plate upon the interior of the casing, at substantially its center, surrounding the steam-conduit F.

H is an annular bead extending about the upper end of the steam-conduit, forming a complementary baffle to the baffle upon the casing.

J designates a flange at the top of the baffle-plate E, which overhangs each side of the plate, and K is a drip-port at the lower end of the casing adjacent to the steam-conduit through which the impurities collected in the chamber A′ are discharged.

The separator is adapted to receive a supply of steam at either end. For the purpose of describing its operation the port B may be considered its inlet. Steam entering through said port passes downward, a portion between the complementary annular baffles and the remainder upwardly between the baffle-plate and baffle-wall, the steam being eventually discharged through the steam-conduit F. In passing through the separator the impurities are collected in the trough carried by the baffle-wall and are conveyed to the sides of the casing, where they pass through openings *a′* and are eventually collected in the chamber A′. Impurities are also deposited upon the annular baffle-plates described and are projected against the baffle-plate E and its overhanging flange. From these points the impurities pass down the sides of the casing and the steam-conduit to the chamber A′, previously described.

In case the port C is employed as an inlet the greater portion of the steam passes over the top of the baffle-plate, and the maximum amount of impurities are collected on the overhanging flange upon the plate and in the trough on the baffle-wall.

While I have shown a particular form of casing, it will be obvious that the same may be modified without in any manner departing from the spirit of my invention. Further, as

previously set forth either of the ports may be employed as the inlet which enables the separator to be conveniently used.

What I claim as my invention is—

1. In a steam-separator, the combination of a casing provided with an inlet and an outlet port, a baffle-wall diagonally disposed within and extending from side to side of the casing opposite one of the ports and having a vertical extension at its lower end, flanges upon the sides of the vertical extension, and a steam-conduit extending within the casing from the other port in proximity to the baffle-wall, the conduit end being presented at an angle to said wall.

2. In a steam-separator, the combination of a casing provided with an inlet and an outlet port, a baffle-wall diagonally disposed within and extending from side to side of the casing opposite one of the ports, means carried by said wall at its lower end for collecting impurities and conveying the same to the casing side said means comprising oppositely-disposed flanges, and a steam-conduit extending within the casing from the other port in proximity to the baffle-wall.

3. In a steam-separator, the combination of a casing, having an inlet and an outlet port, a baffle-wall diagonally disposed within and extending from side to side of the casing opposite one of the ports, said baffle-wall having also a vertically-disposed extension at its lower end terminating in an inclined trough, and a steam-conduit extending within the casing from the other port in proximity to the baffle-wall.

4. In a steam-separator, the combination of a vertical casing having oppositely-arranged inlet and outlet ports, a baffle-wall diagonally disposed within and extending from side to side of the casing opposite one of said ports, said wall being arched and provided with flanges extending from its opposite sides, forming inclined troughs leading from the central portion of said wall to the casing sides, and a steam-conduit extending within the casing from the other port in proximity to the baffle-wall.

5. In a steam-separator, the combination of the casing having inlet and outlet ports at its opposite ends, an inclined baffle-wall at one end of said casing arranged opposite the port therein and having a vertical extension at its lower end, and a steam-conduit extending within the casing from the opposite port, the inner end of the conduit projecting to one side of the baffle-wall in the direction of inclination to the vertical extension of the latter.

6. In a steam-separator, the combination of a vertical casing having ports at its opposite ends, an inclined baffle-wall at one end of the casing extending across the port therein and having a vertical extension at its lower end, a substantially vertical baffle-plate adjacent to said vertical extension, and a steam-conduit leading from the port at the opposite end of the casing to and extending through the baffle-plate.

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

JAMES E. FOLEY.

Witnesses:

A. G. ROBERTSON,

G. U. LATOUR.