

Feb. 9, 1926.

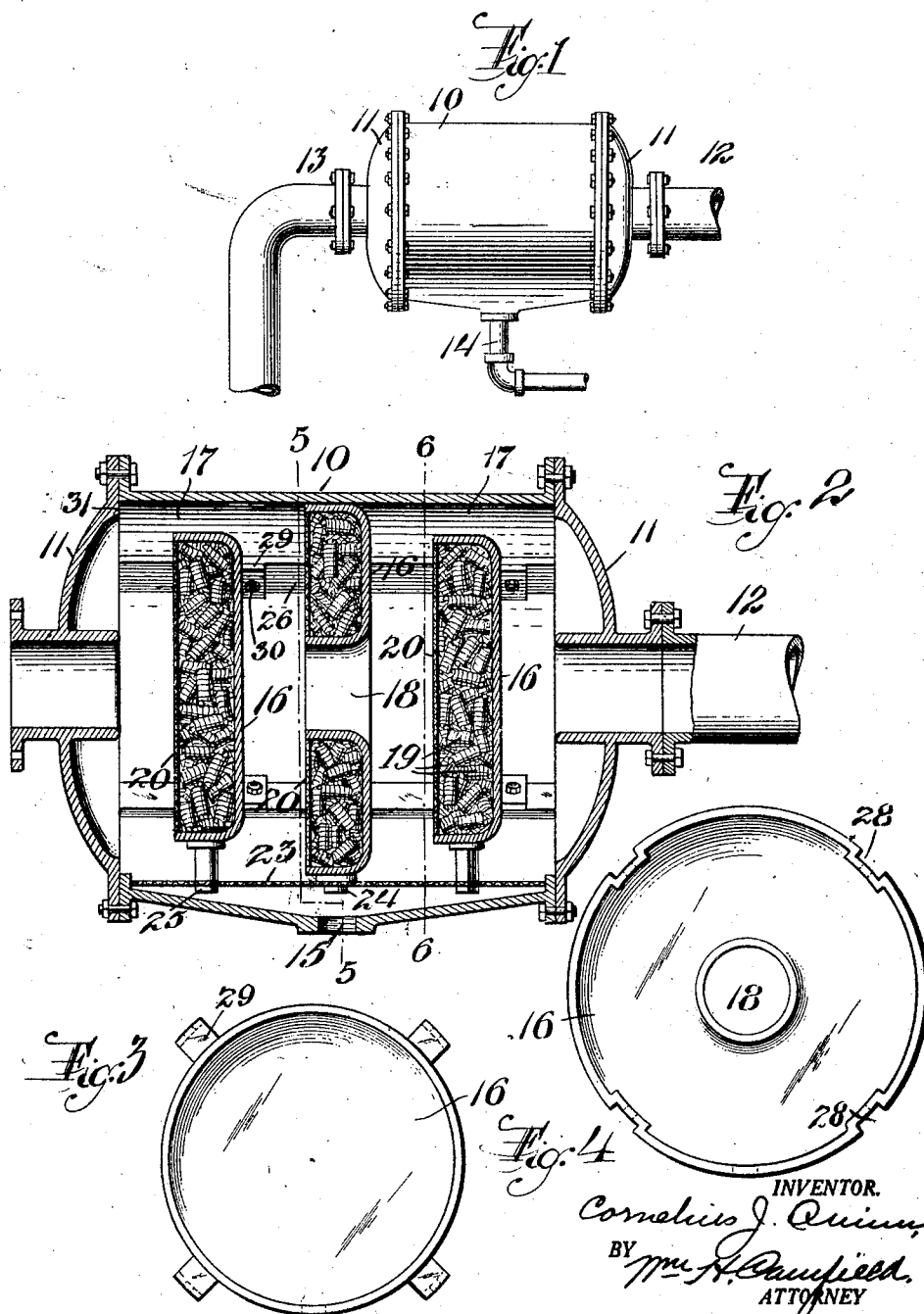
1,572,245

C. J. QUINN

STEAM PURIFIER AND DRIER

Filed Jan. 16, 1924

2 Sheets-Sheet 1



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Fig. 5

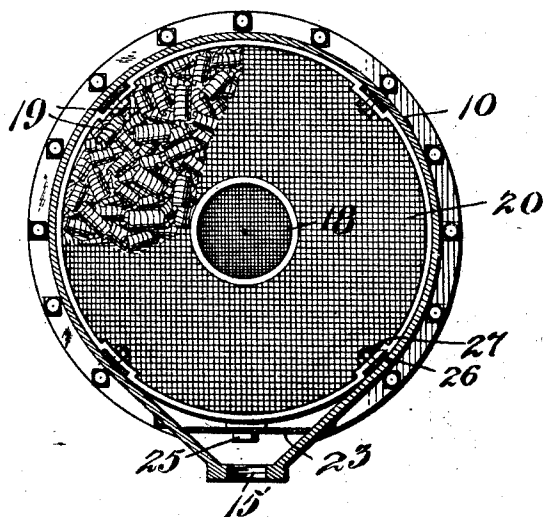


Fig. 6

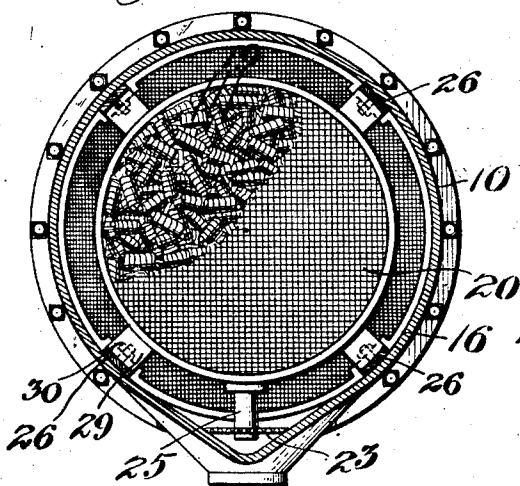


Fig. 7

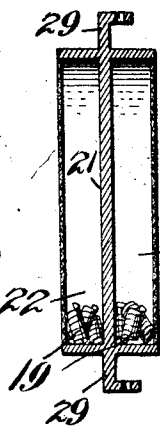
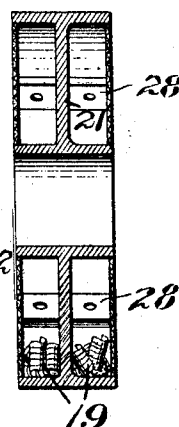


Fig. 8



INVENTOR.
Cornelius J. Quinn,
BY *Wm. H. Campfield,*
ATTORNEY

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UNITED STATES PATENT OFFICE.

CORNELIUS J. QUINN, OF WINFIELD JUNCTION, NEW YORK.

STEAM PURIFIER AND DRIER.

Application filed January 16, 1924. Serial No. 686,504.

To all whom it may concern:

Be it known that I, CORNELIUS J. QUINN, a citizen of the United States, and a resident of Winfield Junction, county of Queens, and State of New York, have invented certain new and useful Improvements in Steam Purifiers and Driers, of which the following is a specification.

This invention relates to an improved steam purifier and drier which is of the type used to separate oil from exhaust steam so that the oil can be directed to the sieve or other outlet and the steam is pure and dry as is necessary in the use of heaters, heating systems, driers, dry kilns, vacuum pans, cooking kettles, etc., and which when condensed, forms pure hot distilled water for boilers.

The object of the invention is to provide a casing fitted with concentration basins or equivalent devices, which when the steam expands and has decreased velocity, catch, hold and divert all oil and water from the flowing steam.

The invention is illustrated in the accompanying drawing in which Figure 1 is a side view of my improved steam purifier and drier showing the pipe connections thereto. Figure 2 is a central longitudinal section through the device shown in Figure 1. Figures 3 and 4 are face views of basins used in the casing. Figure 5 is a section on line 5-5 in Figure 2 and Figure 6 is a similar view taken on line 6-6 in Figure 2. Figures 7 and 8 are sections of basins of modified form.

The casing is shown at 10 and is usually made up of a flanged cylinder and flanged ends 11 which ends are provided with connections for the inlet pipe 12 and the exhaust pipe 13. The bottom of the casing has an inclined portion so that the material gathered is directed to the outlet pipe 14 which is connected to the outlet opening 15. The casing is provided with devices on which is concentrated water and oil in the steam entering through the pipe 12. Steam entering the casing, which is much larger in diameter than the pipe at once moves with a decreased velocity due to its expansion. I place basins or equivalent holders 16 which are smaller than the inside of the casing to provide passages 17 around them, the usual arrangement being to form the central basin with a central opening 18 so that the steam pursues a circuitous path. In these

basins, I arrange concentration or accumulating elements which easily admit the steam to pass through the fine separated strands therein and I find the ordinary steel or similar shavings now considered waste in machine shops, excellent elements for this purpose. Such elements are shown at 19 and they are held in the basins by the screens 20. The basins are provided with drip pipes 24 and 25 out of which oil and water caught by the elements 19 pass to flow along the bottom of the casing to the outlet pipe 15. While such fillings are specified, it will be understood that other non-absorbent strands in bundled or gathered relation can be used.

When desired, I may provide the basins with a central partition 21 as shown in Figures 7 and 8 so that the two sides are formed into a chamber 22 to receive the accumulating elements 19.

The casing below the basins is usually provided with a screen 23 through which the drip pipes 24 and 25 from the basins project. This screen 23 aids in the quick and thorough cleaning of the casing as impurities therein will congregate on the screen and can be cleaned from the screen with ease when the casing is opened at one end.

It will be evident that this construction is economical to make, is efficient and is easily cleaned.

Such cleaning as is necessary is made easier when the basins are connected to form a unitary structure as is provided by the construction shown in which the basins are connected by strips 26 to which the larger basins are connected by bolts 27 which fit through the flange of the basin at the recessed paths 28 into which the strips 26 fit. The smaller basins are provided with arms 29 which are fastened by screws 30 to the strips 26. The strips 26 fit into the cylinder 10 and are just as long as the cylinder and are held against longitudinal movement by the shoulders 31 on the ends 11. When the basins are to be cleaned one end 11 is removed and then the strips 26 and the basins 16 are slid out as they are all secured together and can be dipped in soda or the like to clean them and then replaced.

Minor changes can, of course, be made without departing from the scope of the invention.

I claim:

1. A steam purifier and drier comprising a casing having ports at its ends, trans-

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- versely arranged basins having openings to force steam passing through the casing to pursue a circuitous path, metal shavings in the basins, and a screen for holding the shavings in the basins so as to present a broad expanse of such shavings to steam, the casings and basin being constructed to provide an outlet for the drip from the shavings.
- 10 2. A steam purifier and drier comprising a casing having ports at its ends said ends being removable, basins mounted on strips said strips being longitudinal and the basins being transversely arranged in said casing the basins being disposed so as to form a circuitous passage for steam, metal shavings in said basins, screens for holding the shavings in place and for breaking up steam on its way to the shavings, the strips and basins forming a unitary structure removable together when one of the ends of the casing is removed.
- 15 20 In testimony that I claim the foregoing. I have hereto set my hand, this 31st day of October, 1923.

CORNELIUS J. QUINN.