D. R. SHIRAS.

COOLING APPARATUS FOR STAND PIPES OF GAS RETORTS.

No. 192,944. Patented July 10, 1877.

Fig. 1

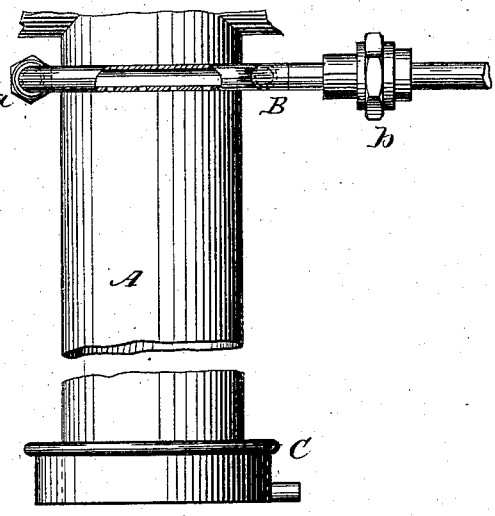


Fig. 4

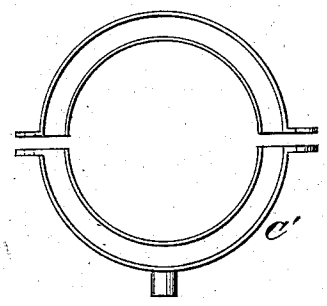


Fig. 2

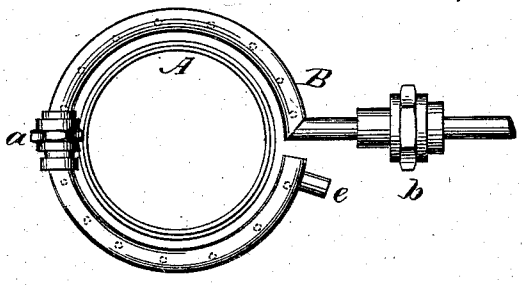
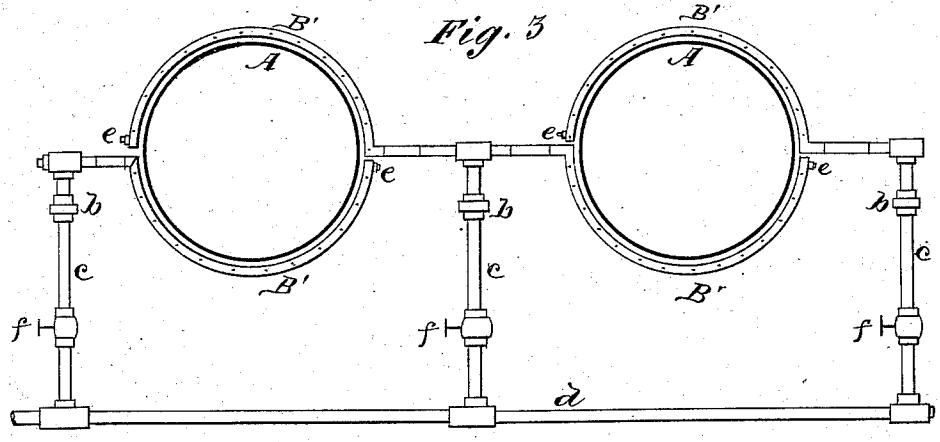


Fig. 3



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UNITED STATES PATENT OFFICE

DAVID R. SHIRAS, OF SHARON, PENNSYLVANIA.

IMPROVEMENT IN COOLING APPARATUS FOR STAND-PIPES OF GAS-RETORTS.

Specification forming part of Letters Patent No. **192,944**, dated July 10, 1877; application filed April 23, 1877.

To all whom it may concern:

Be it known that I, DAVID R. SHIRAS, of Sharon, in the county of Mercer and State of Pennsylvania, have invented a new and Improved Cooling Apparatus for the Stand-Pipes of Gas-Retorts, of which the following is a specification:

Figure 1 is a side elevation of my improved apparatus. Fig. 2 is a plan view of the same. Fig. 3 is a plan view of a series of stand-pipes, showing the application of my improvement. Fig. 4 is a detail view of a modified form of the device for conducting away the water used in cooling the stand-pipes.

Similar letters of reference indicate corresponding parts.

The object of my invention is to prevent the stand-pipes of gas-retorts from reaching a sufficiently high temperature to cause an accumulation of carbon or baked tarry matter in the stand-pipes to enable the manufacturer to heat the retorts to the maximum temperature without causing a stoppage in the stand-pipes, and thereby increase the production of gas, as well as improving its quality and greatly diminishing the time occupied distilling the charge.

Referring to the drawing, A is the ordinary stand-pipe, which conducts the gas from the mouth of the retort to the hydraulic main; and B is a curved pipe surrounding the same, which is perforated from the under side, so as to direct a number of jets of water against the stand-pipe.

This curved pipe is made in two sections, which are connected together by a union, *a;* and it is connected with a water-supply pipe by a union, *b*, and a short section of lead or other flexible pipe.

Where a series of stand-pipes are employed the curved pipes are arranged as shown in Fig. 3, one-half, B′, of the curved pipe of each of the adjacent stand-pipes being connected to a central supply-pipe, *c*, which is connected with a main pipe, *d*, that supplies the series with water.

The ends of the curved pipes are provided with openings closed with plugs *e*, which may be removed when the pipes need cleaning.

A stop-cock, *f*, is placed in each of the supply-pipes *c*, for controlling the flow of water.

An annular trough or channel, C, surrounds the lower end of the stand-pipe A for receiving the water discharged by the perforated pipe B against the surface of the stand-pipe. A pipe is connected with the trough C for conducting away the water. This trough may be formed on the stand-pipes when they are cast; but when the improvement is applied to works already completed a sectional trough or channel, C′, (shown in Fig. 4) may be placed around the lower end of the stand-pipe and secured together by bolts, the joint between the said trough or channel and the stand-pipe being made water-tight by means of any suitable cement.

When it is required to remove the stand-pipes the curved pipes B may be readily removed by disconnecting the unions *b*.

The advantages secured by my improvement are the avoidance of clogging in the stand-pipes, the more economical production of gas, and the saving of time in its manufacture.

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

The curved perforated pipe B, in combination with the stand-pipe A, and annular trough C, as and for the purpose specified.

DAVID R. SHIRAS.

Witnesses:

THOS. J. GILLESPIE,

J. W. EVANS.