PUBLISHED
JUNE 1, 1943.

A. SCHROTER
METHOD AND DEVICE FOR FILTERING AND PURIFYING THE GASES OF GAS PRODUCERS
Filed Sept. 22, 1942

Serial No. 459,344

BY A. P. C.

Fig. 1

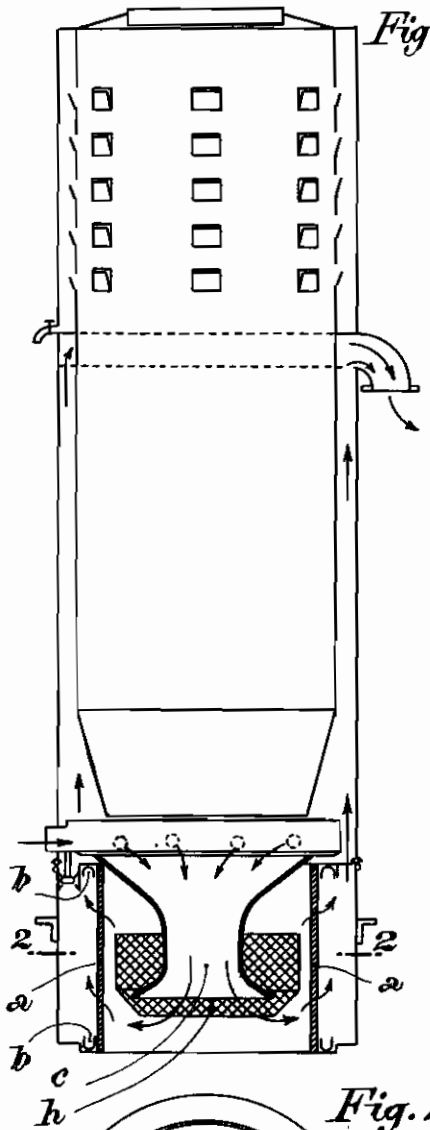


Fig. 2

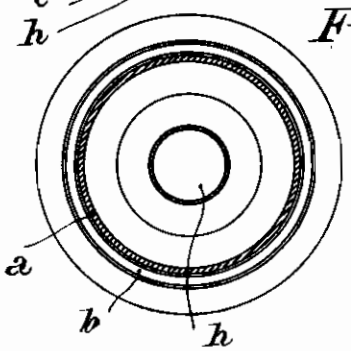


Fig. 3

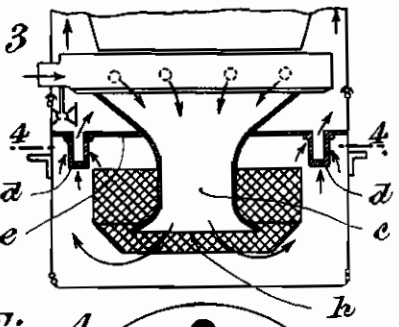


Fig. 4

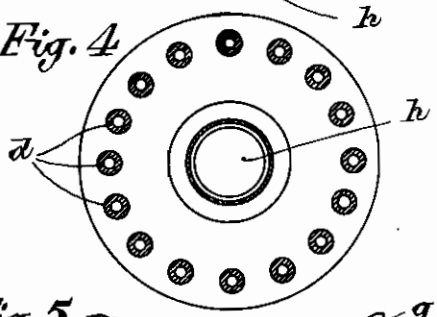


Fig. 5

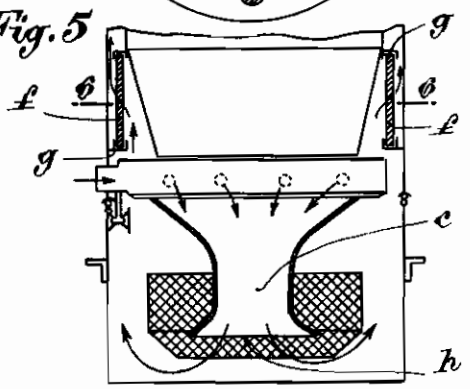
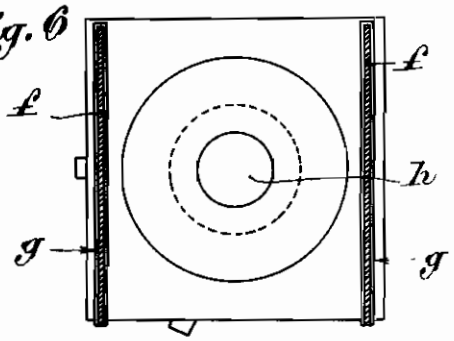


Fig. 6



Inventor:
ARNOLD SCHRÖTER
By Haseltine, Lake & Co.
Attorneys.

Published June 1, 1943 Serial No. 459,344

ALIEN PROPERTY CUSTODIAN

METHOD AND DEVICE FOR FILTERING AND PURIFYING THE GASES OF GAS PRODUCERS

Arnold Schroter, Villefranche - sur - Saone (Rhone), France; vested in the Alien Property Custodian

Application filed September 22, 1942

In most gas producing plants, it is desired to condense the steam contained in the gases before the latter reach the purifying device. It is, in fact, essential to prevent any clogging of the filter through the dust and like particles adhering against the walls of purifying or filtering material.

However, the temperature and hygrometric grade of the atmospheric air being extremely variable, the coolers provided are consequently not always sufficient for wholly condensing this steam, which leads to a defective operation of the purifying device.

Now the present invention, in contradistinction with the existing processes, relates to a novel purifying method according to which the gases are acted upon either in the gas generator itself or immediately at the exit thereof so as to be still at a temperature sufficiently above the condensation temperature of the vapours contained in the gases such as steam, tar vapour and the like, for these vapours to pass in the state of dry vapour through the filtering refractory porous material located in proximity to the exit of the gases from the generator.

The gases are thus purified while still hot and dry, so that the dust particles cannot adhere to the filtering partition through which the steam and vapours pass in the dry state.

The filtering partition or partitions considered are arranged in the path of the hot gases passing out of the generator before same have undergone any cooling and said partitions may be executed in any desired or approved manner.

Appended drawings show diagrammatically by way of example some of the arrangements which may be used with advantage in the execution of the invention.

Figs. 1, 3 and 5 are partly sectional elevational views of different forms of gas producers according to my invention, Figs. 3 and 5 being shown with their upper portion partly broken off.

Figs. 2, 4 and 6 are horizontal cross-sections respectively along lines 2—2, 4—4 and 6—6 of Figs. 1, 3 and 5 respectively.

In the form of execution illustrated in Figs. 1 and 2, the purifying device is constituted by a cylinder *a* coaxial with the gas producer and yieldingly held between the packings *b* in a manner such that it surrounds the lower part *c* of the furnace, which part may have a substantially double frustoconical shape as shown or any other suitable shape.

In the modification according to Figs. 3 and 4, the purifying device is constituted by an arrangement of refractory plugs *d* annularly distributed on an inner partition *e* disposed in the annular passage provided for the gases.

Lastly according to Figs. 5 and 6, the purifying device comprises two vertical filtering plates *f* which I prefer to arrange slidingly in the grooves *g*.

In all forms of execution, the hot gases passing out of the furnace *c* through the opening *h* in the latter are thus compelled to pass through the filtering member or members *a*, *d* or *f* before they are submitted to any cooling; the filtering is thus performed on perfectly dry gases, the water and cloggy material such as tar, carried along by the gases, being still in the state of dry steam or vapour.

As obvious and as apparent from the above, my invention is by no means limited to the sole forms of execution described hereinabove; on the contrary it includes all modifications which may appear to those skilled in the art; in particular the purifying device may if desired be arranged just outside the gas generator at a point where the gases have not yet been submitted to any cooling sufficient to bring their temperature underneath the above defined value.

ARNOLD SCHROTER.