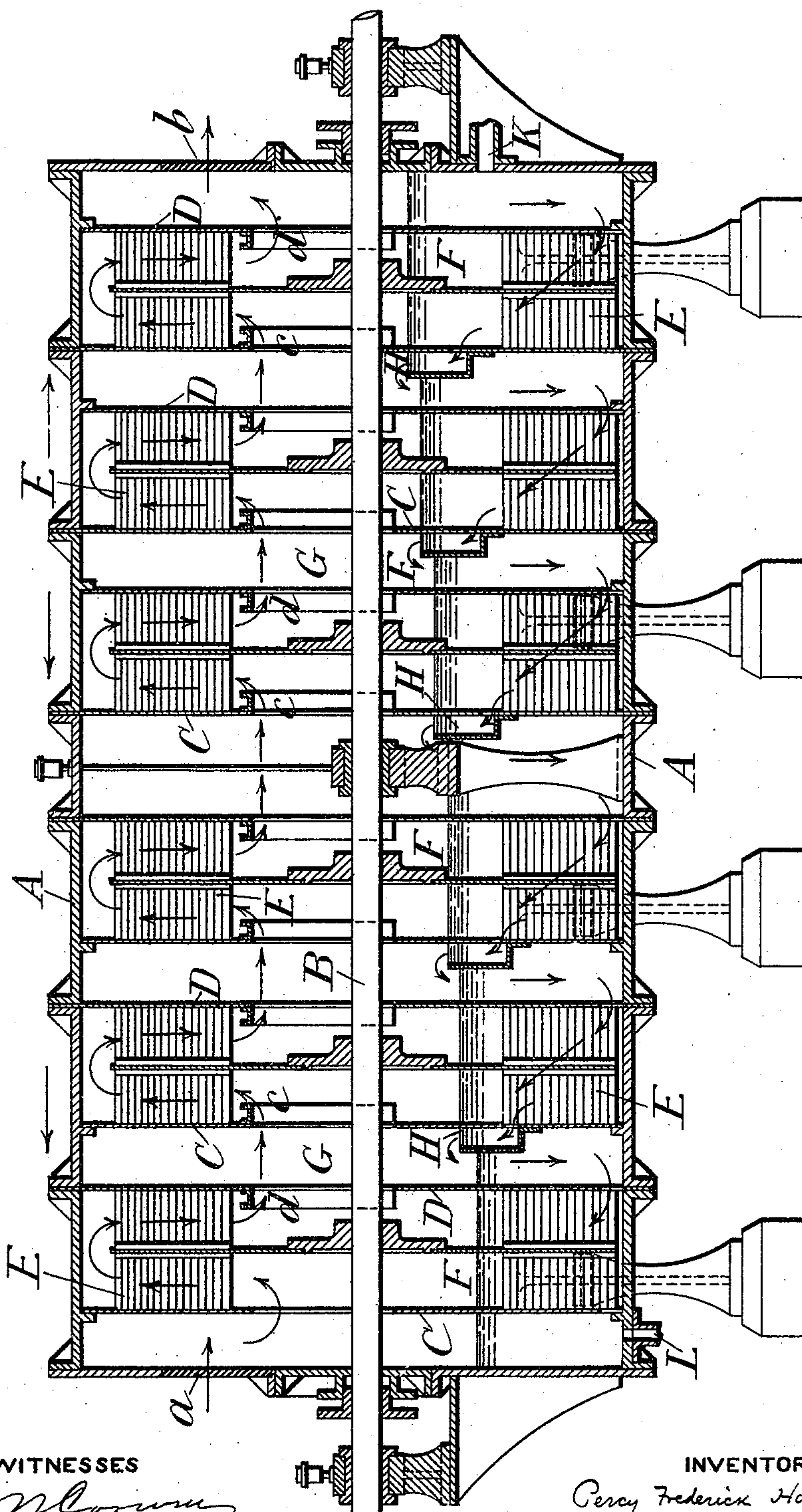


(No Model.)

P. F. HOLMES.
APPARATUS FOR WASHING GAS.

No. 574,683.

Patented Jan. 5, 1897.



WITNESSES

H. M. ...
J. S. Holdship

INVENTOR

Percy Frederick Holmes
by *Barrett & Barrett*
his Attorneys.

UNITED STATES PATENT OFFICE.

PERCY F. HOLMES, OF HUDDERSFIELD, ENGLAND.

APPARATUS FOR WASHING GAS.

SPECIFICATION forming part of Letters Patent No. 574,683, dated January 5, 1897.

Application filed May 16, 1896. Serial No. 591,772. (No model.) Patented in England March 11, 1895, No. 5,113.

To all whom it may concern:

Be it known that I, PERCY FREDERICK HOLMES, a citizen of England, residing at Whitestone Ironworks, Huddersfield, in the county of York, England, have invented certain new and useful Improvements in Apparatus for Washing Gases, (for which I have obtained Letters Patent of Great Britain, No. 5,113, dated March 11, 1895,) of which the following is a specification.

My invention relates to apparatus for washing combustible and other gases of the kind in which a number of disks, perforated or undulated or armed with brushes arranged on a horizontal shaft, revolve partly immersed in compartments of a vessel charged with water or other washing liquid.

The chief object of my invention is so to construct and arrange the compartments of the vessel and their communications that the washing liquid, which becomes more and more impure toward the end of the vessel where the gas enters, shall not flow back so as to vitiate the more pure portions of the liquid toward the end where the washed gas issues. For this purpose I construct a washing apparatus as I shall describe, referring to the accompanying drawing, which is a longitudinal section.

Within a cylindrical casing A, I mount a horizontal shaft B, which passes through stuffing-boxes at the ends of the casing. The shaft may be arranged centrally in the casing, but when it is desired to sweep the bottom of the casing it may be mounted a little below the center, as shown in the drawing.

The casing A is divided by a number of partitions C and D, between each pair of which there is a revolving brush E. The partitions have openings by which gas admitted at one end of the vessel, as at *a*, can pass through C outward through one side of the brush, inward through the other side of the brush, and out through D, and so on successively through all the compartments of the vessel, of which there may be any desired number, finally issuing at *b*. The lower parts F of the compartments between each pair of the partitions C and D, and also the intermediate

compartments G, are occupied by the washing liquid, which is supplied at K on the end whence the gas issues and is discharged at L at the end where the gas enters, flowing from compartment to compartment, the level at the entering end being lowered by steps to that at the issuing end; but each compartment F, in which the brushes revolve and in which the liquid is more or less agitated, communicates with the compartment G, not directly, but through a weir H, so that the compartment G, from which the next compartment F in order is supplied at the bottom, remains comparatively still and operates as a kind of liquid seal, preventing the more impure liquid on the left from going back to mingle with the less impure on the right. The edges of the holes through the partitions C and D are also armed with shields *c d*, having lips to catch spray and direct it downward.

When, instead of brushes, plain, perforated, or corrugated disks are employed, the gas may be led radially inward through one set of these and radially outward through another set. In these cases, however, I retain still compartments, such as G, dividing the liquid in one compartment from that in the next, so as to prevent their mixture, as above described.

Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—

In apparatus for washing gases, in combination with the successive compartments containing liquid in which brushes or their equivalents revolve, intermediate comparatively still compartments, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 1st day of May, A. D. 1896.

PERCY F. HOLMES.

Witnesses:

I. B. H. SHAW,
WM. LEE.