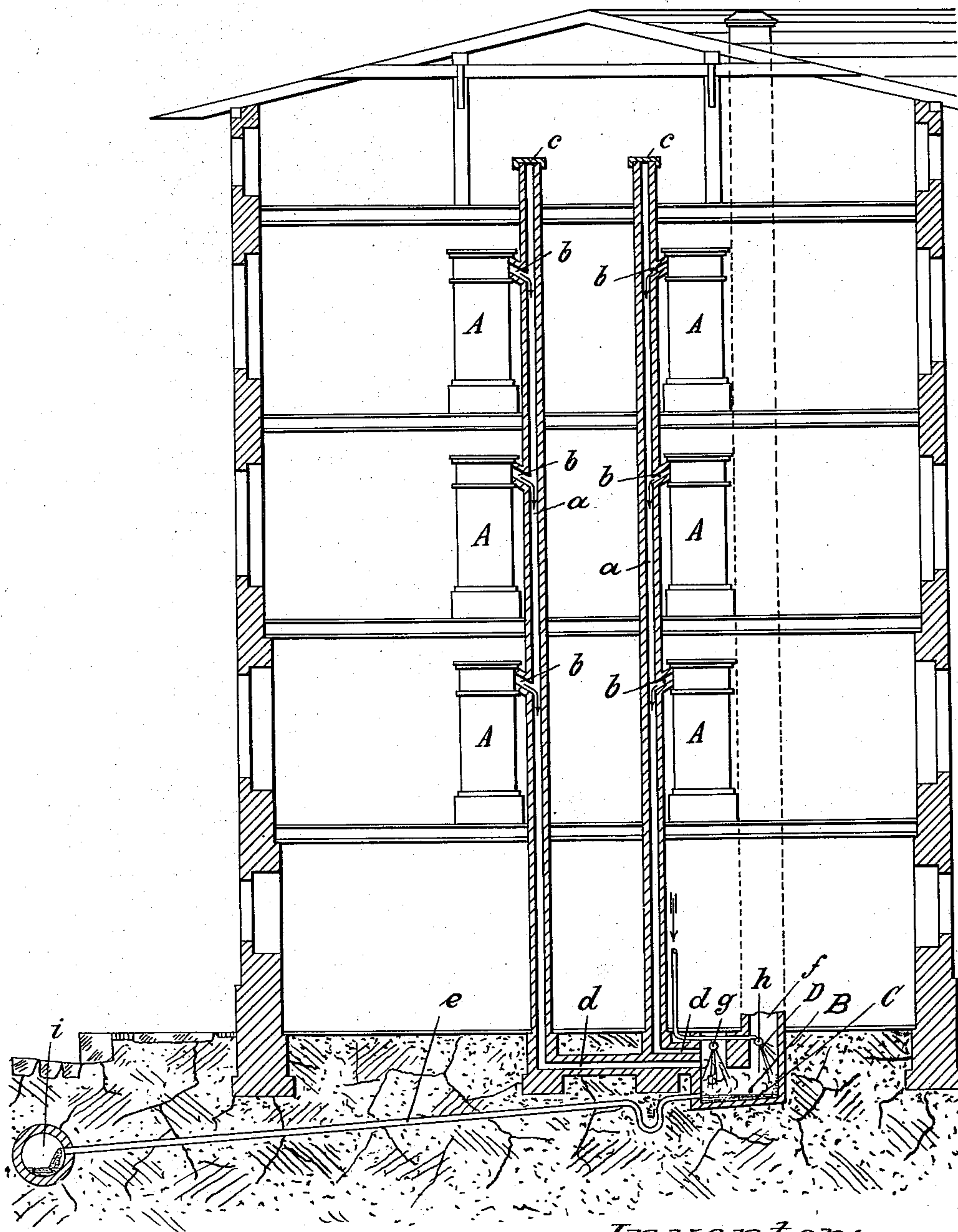


(No Model.)

M. A. LUTZNER.  
SOOT SEPARATOR.

No. 517,581.

Patented Apr. 3, 1894.



Inventor:

Witnesses:

E. B. Bolton  
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# UNITED STATES PATENT OFFICE.

MAXIMILIAN ALBERT LUTZNER, OF STEGLITZ, GERMANY.

## SOOT-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 517,581, dated April 3, 1894.

Application filed June 24, 1893. Serial No. 478,760. (No model.)

*To all whom it may concern:*

Be it known that I, MAXIMILIAN ALBERT LUTZNER, a subject of the King of Prussia, residing at Steglitz, Prussia, Germany, have  
5 invented certain new and useful Improvements in Soot-Separators, of which the following is a specification.

The drawing shows a sectional view of a house having my improvements therein.

10 In order to be able to undertake the washing of the gases of combustion, the Russian flues *a a*, into which the exit tubes *b b* of the stoves *A* open, are tightly closed with covers  
15 *c c* which may be removed for their cleaning, and are connected below with the washing chamber *B*, by means of the canals *d d*. In the interior of the washing chamber *B*, which is provided with an exit pipe *e*, for the water  
20 which has been used, and a flue *f*, for the purified gases of combustion, are arranged roses or water-vaporizing-mouth-pieces *g, h*, in such number that a perfect purification of the gases  
25 of combustion, and a sufficient draft for the removal of the purified gases, is secured. By the first vaporizer *g*, pertaining to the first row of vaporizers *g g*, which serve in the main  
30 for the production of a strong draft, the flakes of soot and the particles of ashes will be thoroughly wet and driven against the water covered bottom of the washing chamber *B*. In  
35 order to avert the possible escape through the conduit of particles not sufficiently saturated by the streams of water issuing from the nozzle *D*, and not held back by the water *C*, there is arranged in this conduit or chimney,  
40 another little vaporizing arrangement *h*, or several of them by means of which the flakes of soot which might ascend are cast back into the water, and are carried by it through the  
exit pipe *e* into the drain pipe *i*. The second  
vaporizing arrangement *h*, in respect to the direction of the jets issuing from the same, and  
their strength must be such that the draft  
produced by the rose *g*, is not materially neu-

tralized by it. The arrangement and size of 45 the washing chamber *B*, of the conveying pipe, exit pipe, and drain canals *d, e* and *f*, of the water jet apparatus and of the water vaporizing arrangements *g h*, must be varied according to local conditions, and the amount 50 of gases of combustion to be washed and purified, and also according to the temperature of the same.

By the hereinbefore described apparatus, not only is accomplished the freeing of the 55 gases of combustion passing off, from soot and particles of ashes, and by this means the contamination of the air, which in industrial cities exercises such a noxious influence over the growth of plants and trees prevented, but 60 also in case the invention finds application in dwelling houses, the passing off of the gases of combustion will be controlled independent of the weather, and principally the poisoning of the air through oxide-gas, so often happen- 65 ing from the existence of bad stoves, will be rendered impossible, and likewise will be avoided the re-entering of the smoke into the dwellings by reason of opposite winds, fogs, or the effect of the rays of the sun. 70

I claim—

In combination, the flue, the settling chamber *B* connecting therewith the water spray device *g* adapted to create a draft in the said chamber *B*, a second spray device *h*, the gas 75 escape flue *f* and the water outlet pipe *e* leading from the chamber, said spray device *g* being located near the inlet of the flue into the chamber to induce a draft at this point and the said spray device *h* being located at the 80 gas outlet flue *f*, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

MAXIMILIAN ALBERT LUTZNER.

Witnesses:

W. HAUPT,

G. WILLNER.