

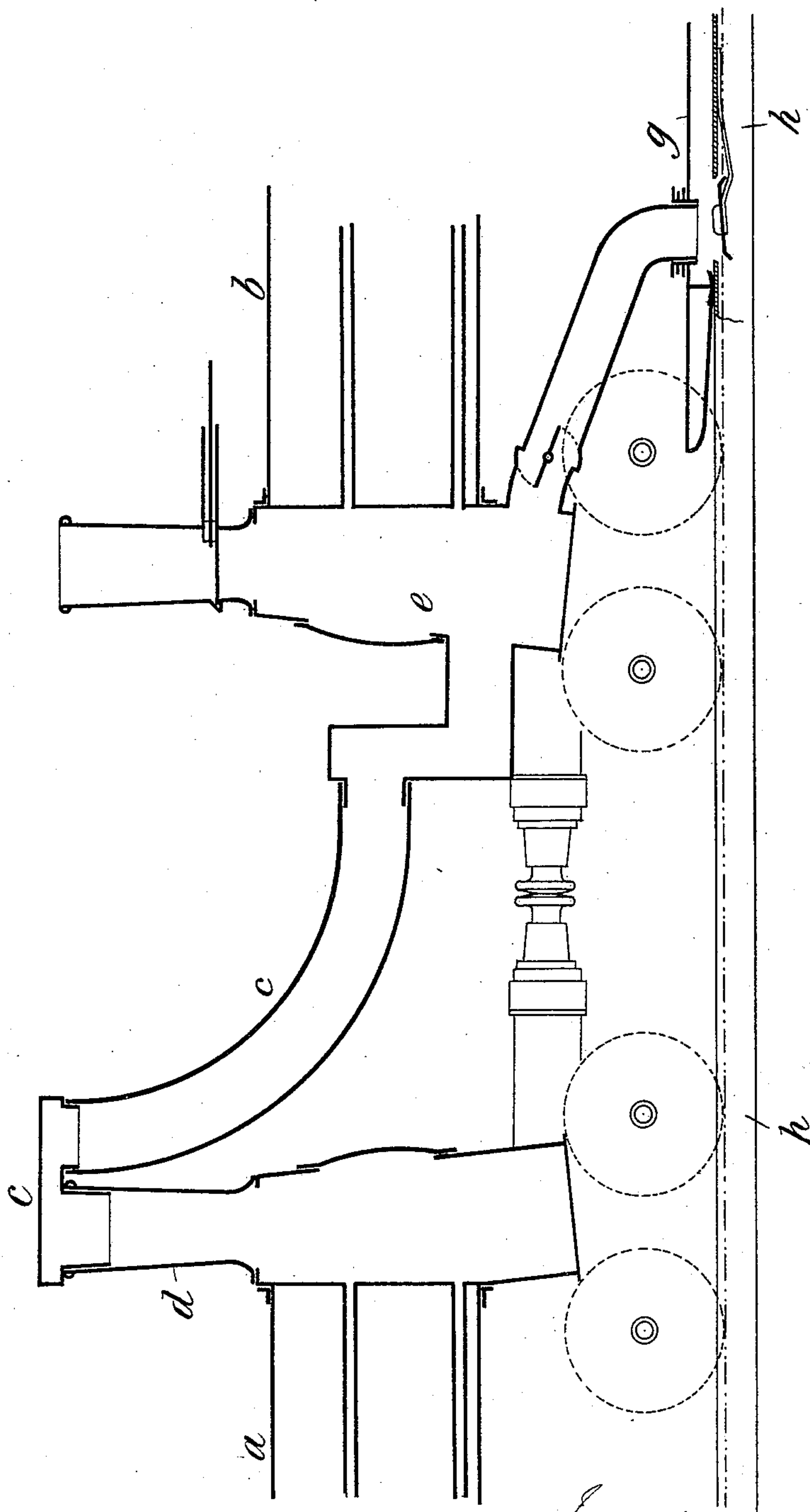
(No Model.)

C. ANDERSON.

SMOKE EXHAUSTING APPARATUS FOR LOCOMOTIVES.

No. 470,965.

Patented Mar. 15, 1892.



Witness:

Ja. Rutherford.
Robert Everett.

Inventor:

Christopher Anderson
By *James L. Norris.*
Attorney

UNITED STATES PATENT OFFICE.

CHRISTOPHER ANDERSON, OF LEEDS, ENGLAND.

SMOKE-EXHAUSTING APPARATUS FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 470,965, dated March 15, 1892.

Application filed January 20, 1892. Serial No. 418,730. (No model.) Patented in England February 26, 1891, No. 3,503.

To all whom it may concern:

Be it known that I, CHRISTOPHER ANDERSON, barrister at law, a subject of the Queen of Great Britain, residing at 1 Park Square, Leeds, in the county of York, England, have
5 invented new and useful Improvements in Smoke - Exhausting Apparatus for Locomotives, (for which I have obtained a patent in Great Britain, No. 3,503, bearing date February
10 26, 1891,) of which the following is a specification.

My invention relates to certain arrangements whereby the products of combustion as they arrive in the smoke-box are diverted from
15 their usual course through the funnel and carried through a communicating pipe to a channel in a permanent way, formed to receive the same products of combustion, which are then withdrawn through other flues external to the tunnel; and the object of my
20 present invention is to effect improvements in such apparatus by adapting the same to main-line and other locomotive-engines which are not themselves fitted with such apparatus,
25 but which have to pass through very long tunnels or underground railways when running through traffic; and in order that my said invention may be particularly described and ascertained reference is hereby made to the
30 accompanying drawing.

In carrying out my invention I fit pilot-engines in such a manner that they may be temporarily connected with the main-line engines, as shown in the drawing, in which—

a is the main-line engine, and *b* is the pilot- 35 engine.

c is a temporary cap and tube for forming a connection between the funnel *d* of the main-line engine *a* and the smoke-box *e* of the pilot-
40 engine.

Any other suitable form of connection may be used for transferring the products of combustion from the smoke box or funnel of the main-line engine to the smoke-box of the pilot-
45 engine. The latter engine is suitably fitted so as to carry away the products of combustion from both engines to the slider *g* and air-trunk *h*, from which said products are pumped.

I claim—

In means and appliances for preventing the 50 pollution of the atmosphere in railway-tunnels, the combination of a pilot-engine fitted with appliances for conveying away the products of combustion and also fitted with a cap and tube *c c* or equivalent means for connect-
55 ing such pilot-engine with an ordinary locomotive-engine, substantially as and for the purpose hereinbefore described.

Dated this 18th day of December, 1891.

CHRISTOPHER ANDERSON.

Witnesses:

GEORGE C. DOWNING,
8 Quality Court, London, W. C.
WALTER J. SKERTEN,
17 Gracechurch St., London, E. C.