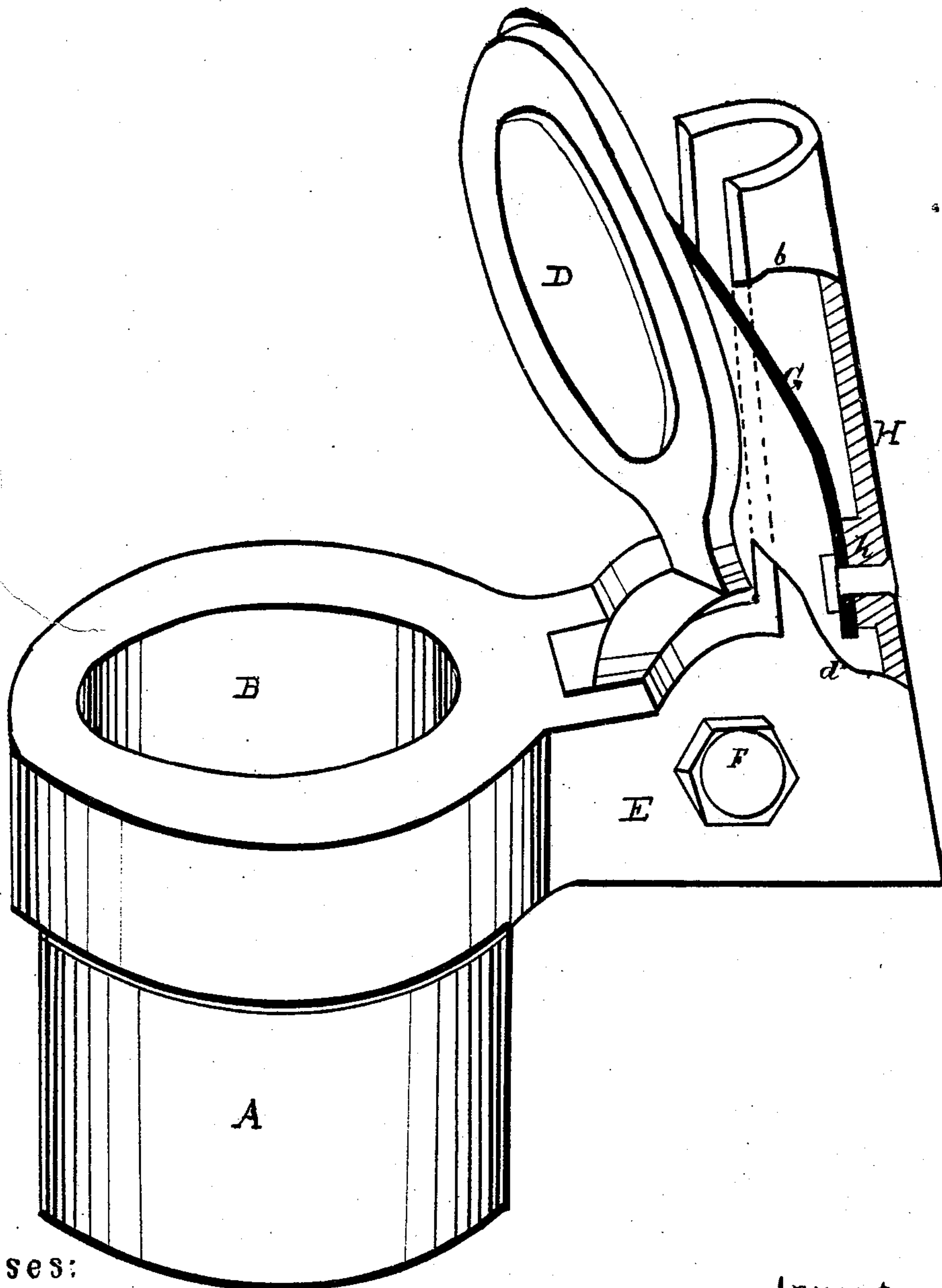


C. H. Frisbie

Exhaust-Nozzle for Steam-Engine.

No 93,294.

Patented Aug 3. 1869.



Witnesses:

Chas H. Brown
W. B. B.

Inventor:

C. H. Frisbie

United States Patent Office.

C. H. FRISBIE, OF CHICAGO, ILLINOIS.

Letters Patent No. 93,294, dated August 3, 1869.

IMPROVEMENT IN EXHAUST-NOZZLE FOR STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, C. H. FRISBIE, of Chicago, in the county of Cook, in the State of Illinois, have invented a new and useful Improvement in Automatic Exhaust-Cap; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

The drawing represents a complete view of exhaust-cap, with a section of projection removed, to show the attachment of the spring.

My invention relates to an automatic exhaust-cap, to be used on steam-engines, for the purpose of preventing ashes, hot air, &c., from going through exhaust-pipes; and coming in contact with valve and valve-seat, or piston and cylinder.

My object is to provide exhaust-pipes with a cheap, safe, and compact device, which can be attached on any engine, by persons of ordinary skill, and which is for the purpose of preventing ashes, hot air, &c., from coming in contact with valve and valve-seat, or piston and cylinder.

In order to give a correct understanding of my invention, I have marked corresponding parts with similar letters, and will now give a detailed description.

A represents the section of cap which is attached on exhaust-pipes, by means of set-screws or otherwise convenient, similar to the nozzles used at present, and has the opening, B, for the purpose of allowing the steam to exhaust, when the engine is set in motion, and will be closed, by means of the spring G acting on the cover D, as soon as the exhaust has

ceased, for the purpose of preventing hot air, ashes, &c., from coming in contact with valve and valve-seat, or piston and cylinder, after going through exhaust-pipes of steam-engines, whereby a cutting of said valve and piston is prohibited.

The projection E is for the purpose of forming a hinge for cover D, in connection with bolt F, and to give a foundation to spring G, at *h*, which is seen on drawing, as a section of projection is removed between *b* and *d*.

The projection E has the extension H, for the purpose of preventing the cover D going further back than a vertical line, so that the cover D can close the opening, B, when the exhaust has ceased, by its own weight.

Operation.

In order to use my invention, it is required to attach the section A on the exhaust-pipe of steam-engines, and it will be operated by steam, when the engine is set in motion.

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent, is—

The construction and arrangement of the exhaust-valve, consisting of the cap A, hinged cover D, projection E, extension H, and spring G, substantially as described.

C. H. FRISBIE.

Witnesses:

CHAS. H. BARM, H. BAHR.