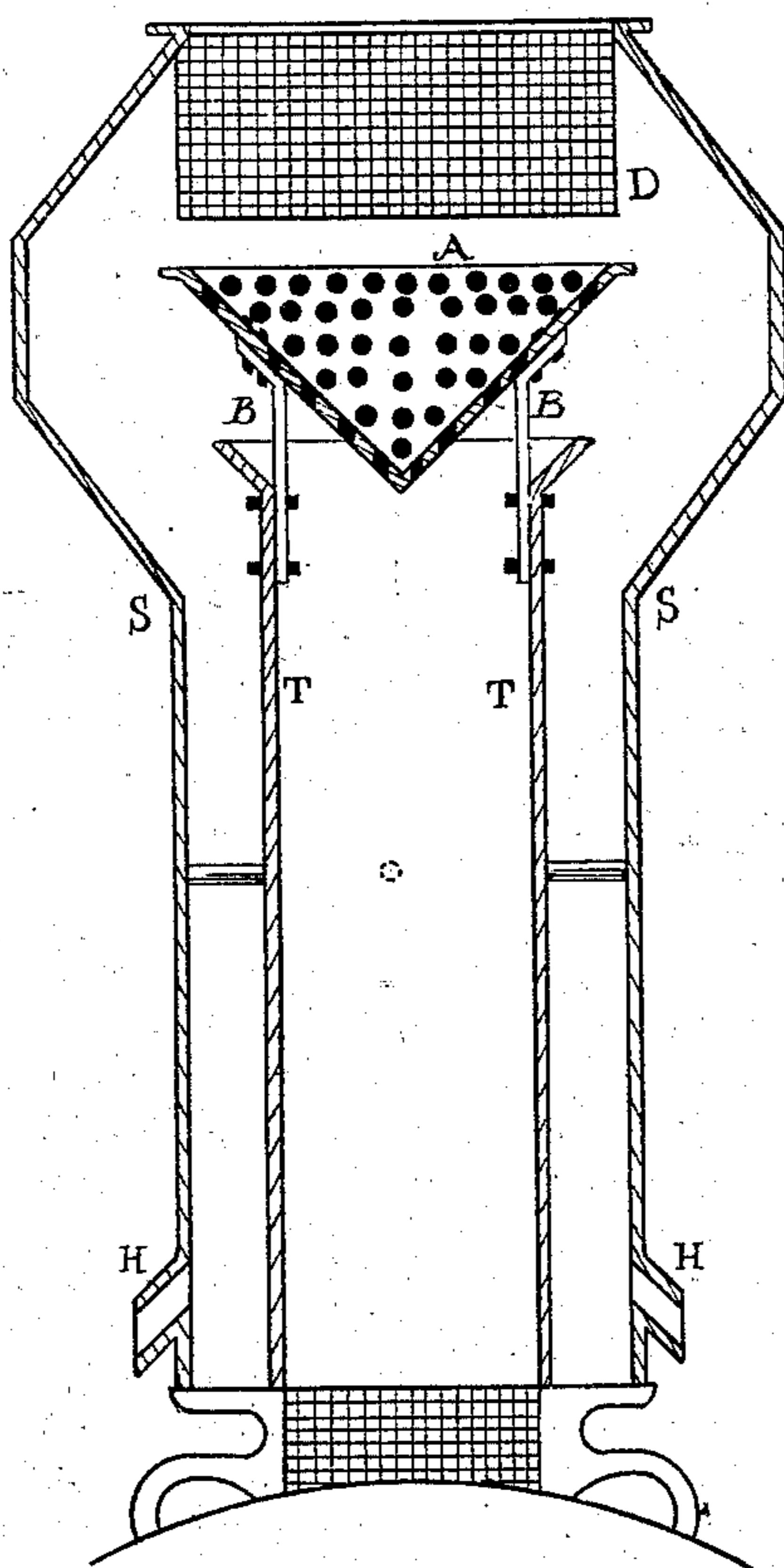


E. OSBORN.
Spark-Arresters.

No. 152,676.

Patented June 30, 1874.



WITNESSES:

Parker H. Sweet Jr.
Joseph Shinn.

INVENTOR:

Edward Osborn
By his attorney
John Dane Jr.

UNITED STATES PATENT OFFICE

EDWARD OSBORN, OF NEWTON, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS
RIGHT TO CHARLES S. OSBORN, OF SAME PLACE.

IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. **152,676**, dated June 30, 1874; application filed
March 31, 1874.

To all whom it may concern:

Be it known that I, EDWARD OSBORN, of Newton, in the county of Sussex and State of New Jersey, have invented new and useful Improvements in Spark-Arresters for Smoke-Stacks of Locomotives, Steamers, &c.; and I do hereby declare that the following specification, taken in connection with the drawings furnished, is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same.

My invention consists of a pipe so formed and arranged within a smoke-stack that the smoke and steam may pass through and out into the atmosphere, while the sparks, cinders, &c., are retained within the space or chamber surrounding the inner pipe, and be withdrawn at leisure.

Referring to the drawings, Figure 1 represents a sectional view of my improvement. S S is the main stack; T T, the inner pipe; A A, the perforated cone forming a cap; B B, stays for securing the cone in position over and above the flaring mouth or opening of the pipe T. H H are openings through which the cinders and other accumulated matter are removed. The main stack is of the usual formation for a locomotive having an opening or mouth of about one-fourth—more or less—smaller than the inner part of the stack just below it. (See drawing.) The inner pipe may be in diameter about one-third smaller than the outer or main stack, although the size may be varied from this. The upper end of this pipe is flared outwardly a trifle broader than the opening or mouth of the main stack, and in a line about the center of the enlarged part of the latter. A perforated cone-shaped device is located above the center of the bell-mouth or flared top of the pipe in such a manner as to allow about the same space between them as exists between the inner and outer stack. The diameter at the broadest part is large enough to lead off the cinders, sparks,

&c., to a space inclosed with the gage D and the main stack, while the lighter products of combustion—smoke, &c.,—will pass through the perforations in the cone, and the gauze D, which is secured to the inner edges of the mouth of the stack, hanging downward like a curtain to within two or three inches—more or less—of the top edge of the perforated cone, as shown. This cone is made by casting or otherwise, and may be supported in position by strips riveted or bolted thereto, and the opposite ends secured to the inner pipe, in conjunction with which it is to form a part.

I would remark that perforations in the cone may be made by drilling or otherwise, of about one-eighth of an inch in diameter, more or less thickly arranged through the entire surface, as shown.

The inner pipe may be secured to the boiler or furnace in the usual manner.

The object of my invention is to provide a cheap device that may be applied within a smoke-stack in such a manner as to not obstruct the draft, and at the same time retain the sparks, cinders, &c., within the space surrounding the inner pipe, to be removed at pleasure.

Having thus set forth my invention, what I claim as new, and desire protection by Letters Patent of the United States for, is—

The combination, in a smoke-stack, of the inner pipe T, with slightly-flared rim, with inverted perforated cone A and wire gauze D, substantially as shown, for the purpose described.

In testimony that I claim the foregoing I have hereunto signed my name before two subscribing witnesses on the 17th day of March, 1874.

EDWARD OSBORN.

Witnesses:

JOHN DANE, Jr.,
GEORGE E. HART.