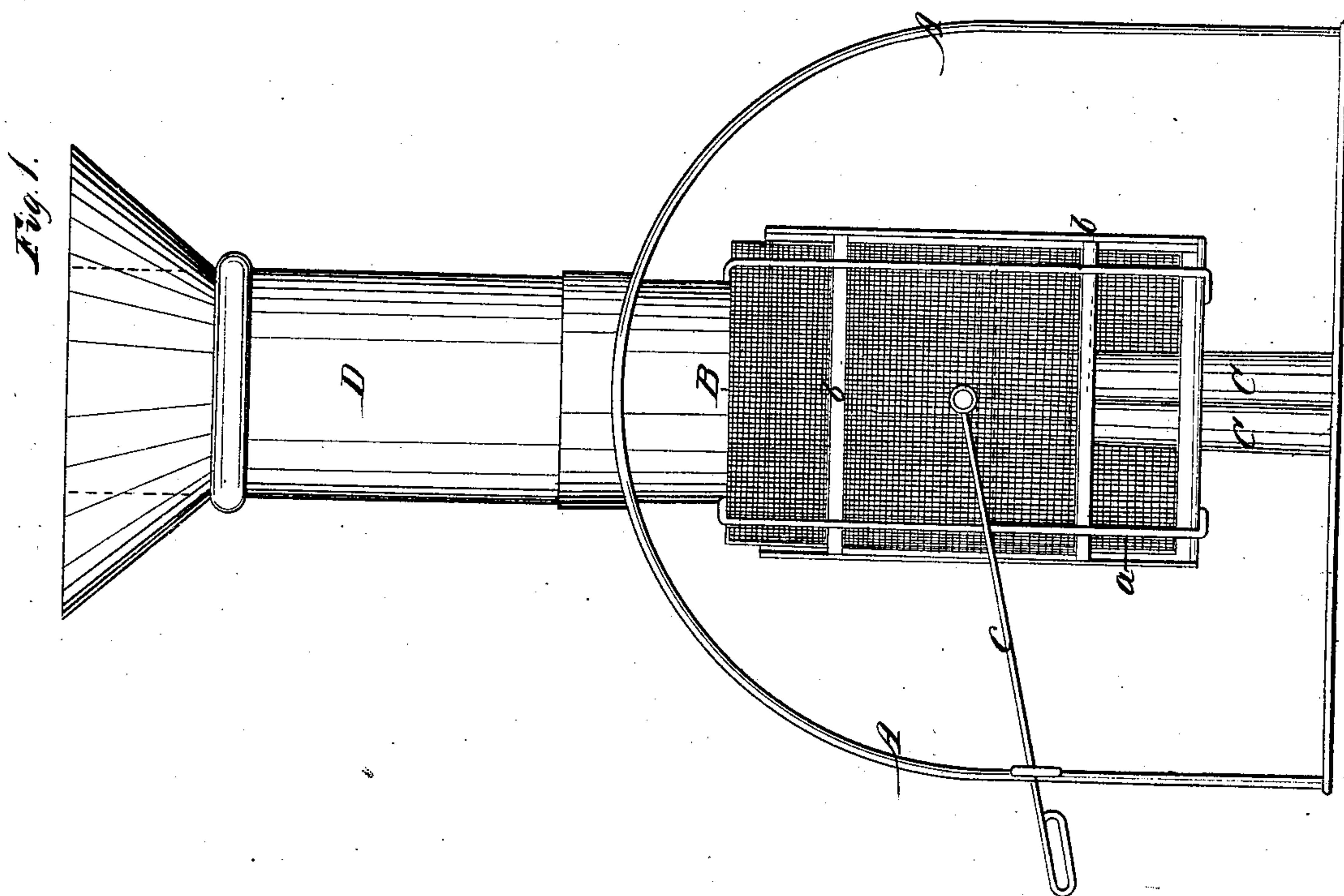
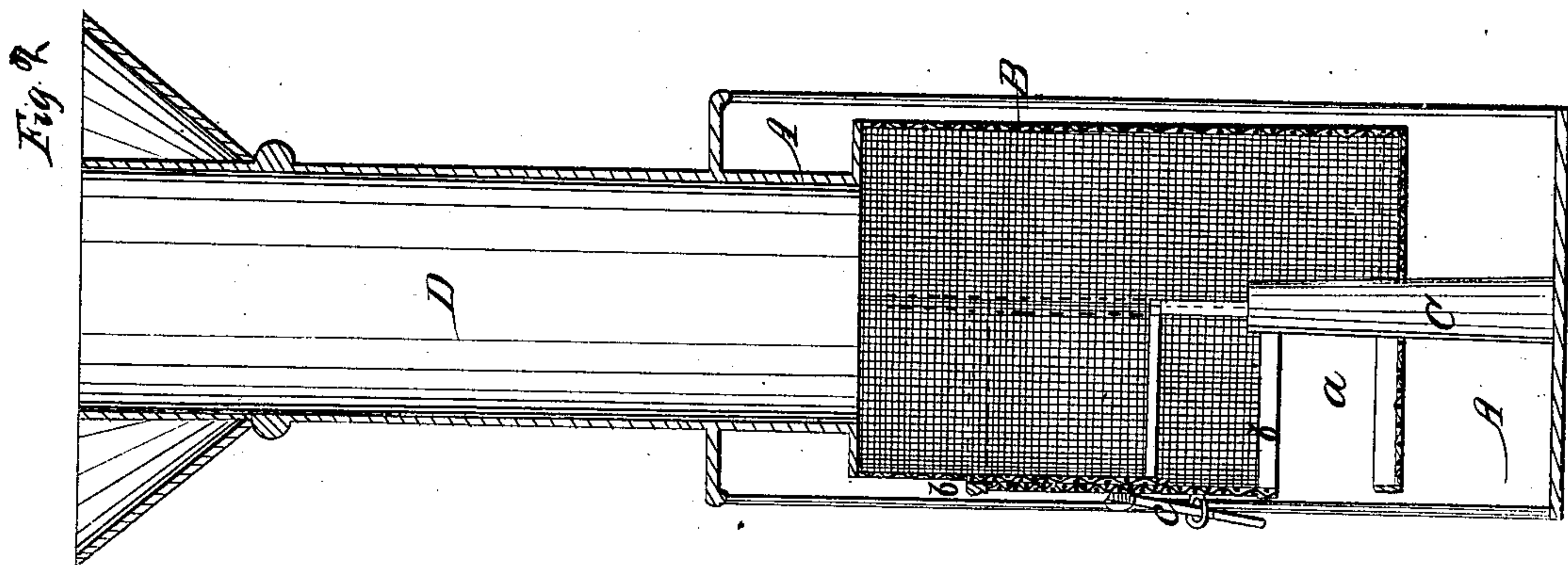


E. May,
Spark Arrester.
N^o 17,884. Patented July 28, 1857.



UNITED STATES PATENT OFFICE.

ETHELRED MAY, OF BOSTON, MASSACHUSETTS.

SPARK-ARRESTER.

Specification of Letters Patent No. 17,884, dated July 28, 1857.

To all whom it may concern:

Be it known that I, ETHELRED MAY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Arrangement of Spark-Arresters in Locomotive Steam-Engines; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, exhibits a view of the smoke box and chimney of a locomotive steam engine provided with my invention. Fig. 2, is a sectional view of the same taken longitudinally of the engine.

The nature of my improvement consists in prolonging the spark arrester from the chimney or stack down within and near the bottom of the smoke box, and making the prolongation of wire gauze or perforated plates of metal and closed at bottom, so that the entire track of the smoke, shall be through the perforated plates or wire gauze spark arrester as arranged in the smoke box.

In the drawings, A exhibits the smoke box; B, the spark arrester; C, C, the steam blast pipes, and D the chimney. This spark arrester as shown in the drawings is represented as a cylindrical cage or sieve made either of woven wire or of perforated sheet metal, it being formed with meshes when it is constructed of woven wire. These meshes or perforations should be in great number and of a very small size, in order to arrest the sparks and cinders and allow the escape of smoke through the said meshes. The steam blast pipes lead up into the lower part of the spark arrester, while the chimney is led out of its upper part. For the purpose of gaining access to the interior of the spark arrester, I usually construct it with an opening *a*, in its front, and with a sliding door, *b*, so adapted to the said opening as to be capable of either covering or uncovering the same as circumstances may require. This door may be jointed to a hand lever *c*, extending through the side of the smoke box, and applied thereto in such manner as to enable a person to operate the door.

The advantages of making the spark arrester within the smoke box instead of plac-

ing it within the chimney or in a chamber arranged above the smoke box, and made to communicate therewith by a flue, are, that the spark arrester is rendered easier of access, when it may be desirable to cleanse it. It causes the sparks and cinders to gather and remain in the smoke box, from which they can be easily removed. It also enables a larger straining surface to be exposed to the smoke, and it is placed to better advantage for the impingement of smoke against it, as well as, for the introduction and operation of the blast pipes.

I do not claim combining with a chimney of a railway locomotive steam boiler, woven netting to prevent the escape of sparks and cinders therefrom; nor do I claim arranging a perforated or woven wire cone in a chamber placed over a smoke box of a locomotive engine boiler and made to communicate with such a flue surrounding and being concentric with such chamber, the same being shown in the patent of R. A. Wilder, dated October 31, 1854; nor do I claim surrounding the exhaust pipes with two cylinders, perforated or not, and having the outer one connected with rings with the sides of the smoke arch as described in J. Williams' patent of March 6, 1855; nor do I claim prolonging an unperforated tubular smoke stack down to near the bottom of the smoke box, and providing it (the said stack) with one large opening for the reception of the smoke and products of combustion, but

What I do claim, is—

My arrangement of the spark arrester within the smoke box of the locomotive steam boiler, so that the stack or chimney shall be prolonged down into the smoke box and made of wire gauze or perforated plates and otherwise so constructed as specified, that the entire track of the smoke shall be through the gauze or perforated plates.

In testimony whereof, I have hereunto set my signature this 25th day of May, A. D. 1857.

ETHELRED MAY.

Witnesses:

R. H. EDDY,
F. B. HALE, Jr.