

W.M. A. WEST.

117492

CINDER — EXTINGUISHER

PATENTED JUL 25 1871

FIG. 2

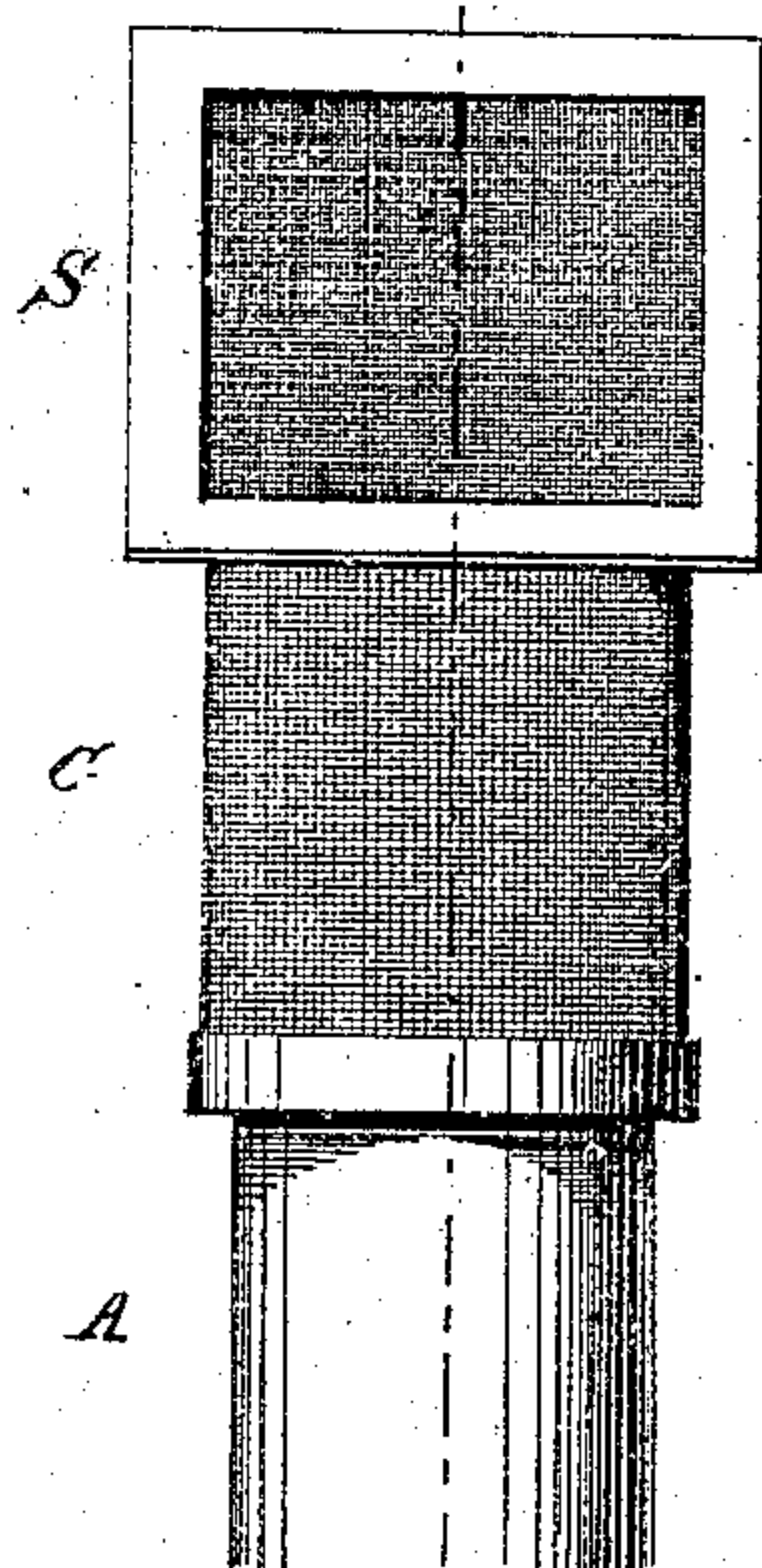
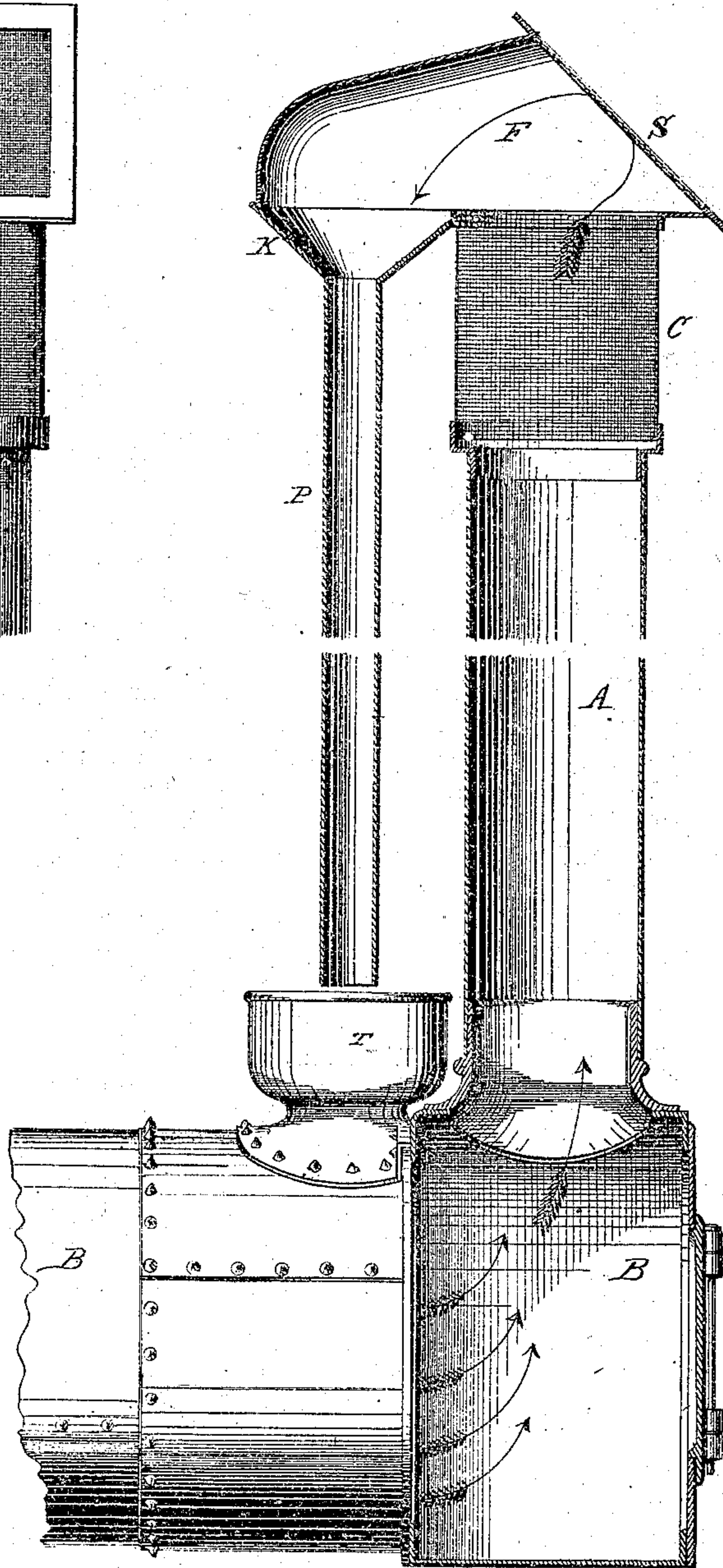


FIG. 1.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM A. WEST, OF BELLEFONTAINE, OHIO.

IMPROVEMENT IN SPARK-ARRESTERS.

Specification forming part of Letters Patent No. 117,492, dated July 25, 1871.

To all whom it may concern:

Be it known that I, WILLIAM A. WEST, of Bellefontaine, in the county of Logan and State of Ohio, have made a certain new and useful invention, designed to gather and confine the sparks and cinders issuing from the stacks of portable, stationary, locomotive, and other engines, of which the following is a specification:

The machine is designed as an attachment to the stacks of portable, stationary, locomotive, and other engines, as represented in the accompanying drawing, for the purpose of gathering and confining the sparks and cinders, thereby preventing destruction of property and annoyance of passengers. It consists of a cylindrical wire screen, about two feet in length and of the diameter of the stack, surmounted by a sheet-iron cap or chamber having an inclination of about forty-five degrees, upon the plane of which is firmly fixed an inclined screen of fine gauze-wire, opposite to which the cap or chamber projects beyond the rim of the cylindrical screen a distance sufficient to form a funnel for the attachment of a descending pipe, down which the sparks and cinders are discharged into a vessel, tank, or cistern below. The cylindrical screen thus surmounted is firmly attached to the top or summit of the stack.

Figure 1 is a sectional elevation of the front part of a boiler, showing a vertical section of my device, the line *x x*, Fig. 2, indicating the plane of section. Fig. 2 is a front view of the apparatus and the upper part of the smoke-stack.

B B are parts of a boiler. A is the smoke-stack. C is a cylindrical screen, placed on the top of the smoke-stack, of sufficient dimensions and sufficiently coarse or open to permit the free egress of the smoke. F is a sheet-iron cap, casing, or chamber surmounting the cylindrical screen. S is an inclined screen, fixed firmly, or

with clasp and hinges, on the plane of the cap or chamber over the top of the stack, having an inclination of about forty-five degrees, and made of fine or gauze-wire, with meshes so small that, while permitting the escape of the steam, it prevents the escape of sparks and cinders. K is a cinder-funnel at the projecting base of the cap or chamber F. P is a pipe attached to the funnel K for the conducting of sparks and cinders. T is a tank at the foot of the pipe P for the reception and confinement of sparks and cinders.

The cylindrical screen, surmounted by the cap, and inclined screen, funnel, and conducting-pipe attached, being firmly fixed upon the top or summit of the smoke-stack, the mode of operation is as follows: The steam from the exhaust or blast-pipe is discharged into the smoke-stack below the cylindrical screen C. The force of the steam drives the smoke, sparks, and cinders with great velocity to the top of the stack. The smoke, having no other vent, passes chiefly through the meshes of the cylindrical screen C, a portion only passing through the inclined screen S. The sparks and cinders, being forced up with great velocity, strike against the inclined screen S and are thrown off into the funnel K, whence they pass down the pipe P into the tank T, which may be dry or filled with water, and are thence removed.

I claim as my invention—

In combination with the chimney A, the cylindrical screen C, cap or chamber F, screen S, conducting-pipe K P, and tank T, constructed and arranged substantially as described, for the purpose specified.

WILLIAM A. WEST.

Witnesses:

EDWARD H. KNIGHT,
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