No. 764,658. PATENTED JULY 12, 1904.

H. C. CLAY.

SPARK ARRESTING SMOKE STACK.

APPLICATION FILED MAY 21, 1904.

NO MODEL.

Fig. 3.

Fig. 5.

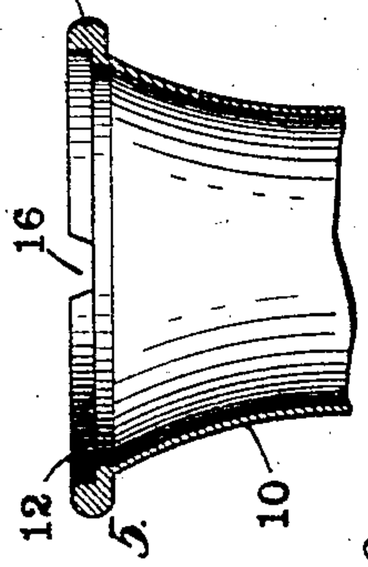


Fig. 2.

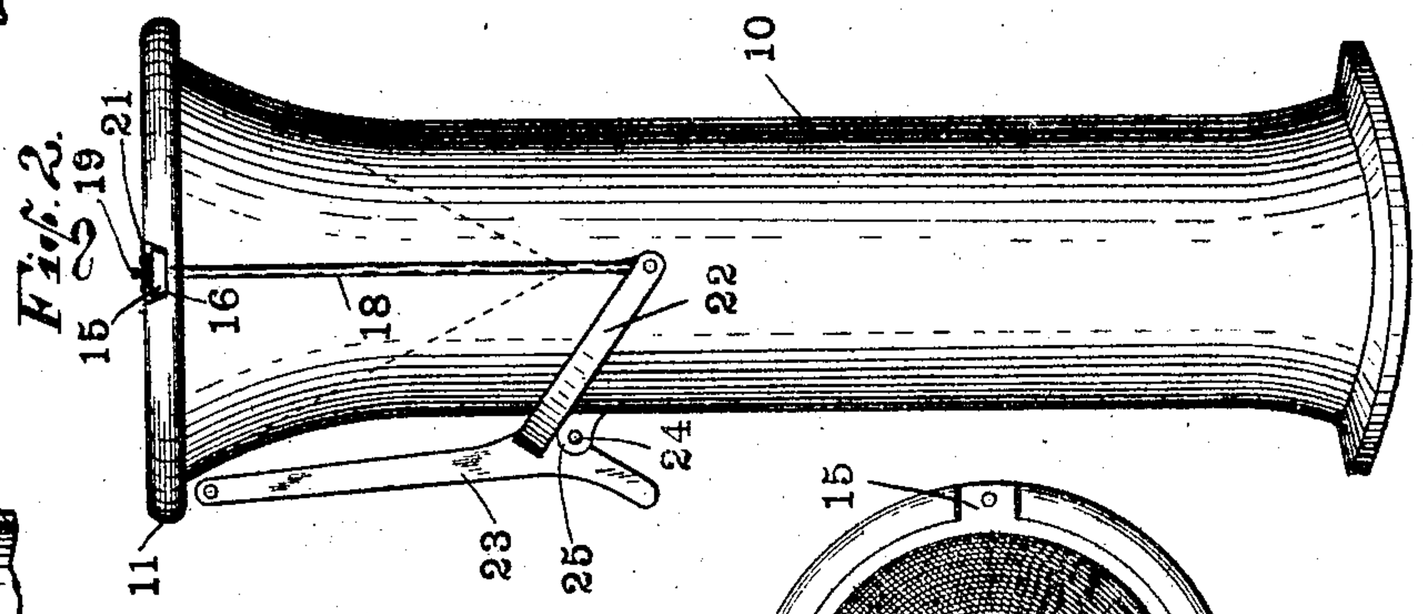


Fig. 7.

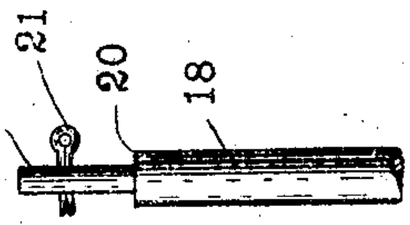


Fig. 4.

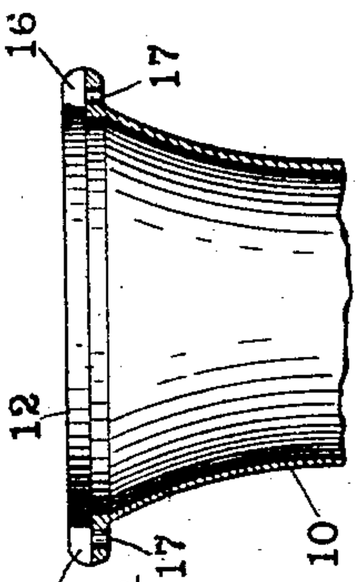


Fig. 6.

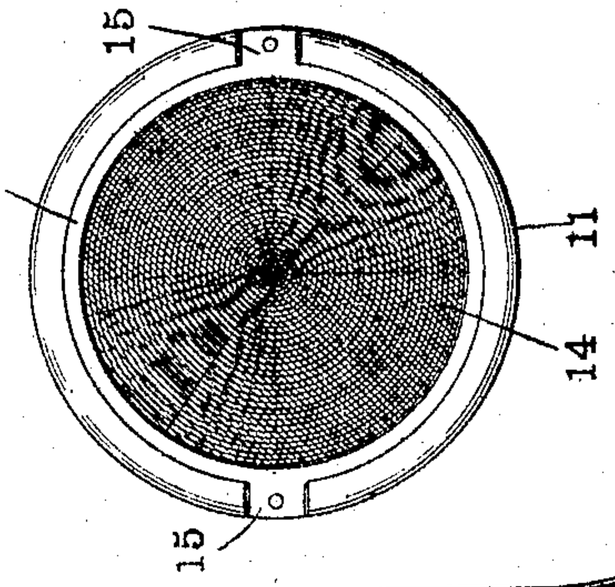
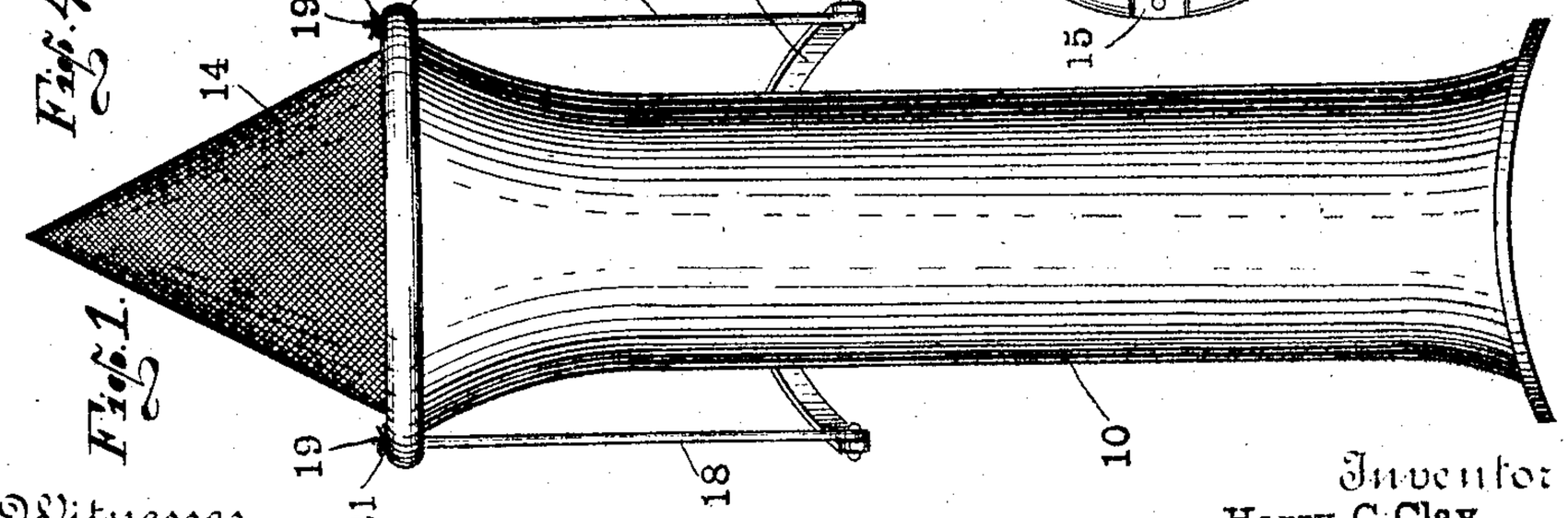


Fig. 1.



Witnesses
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No. 764,658. Patented July 12, 1904.

UNITED STATES PATENT OFFICE.

HARRY C. CLAY, OF COLUMBUS, INDIANA, ASSIGNOR TO REEVES & COMPANY, OF COLUMBUS, INDIANA, A CORPORATION OF INDIANA.

SPARK-ARRESTING SMOKE-STACK.

SPECIFICATION forming part of Letters Patent No. 764,658, dated July 12, 1904.

Application filed May 21, 1904. Serial No. 209,130. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. CLAY, a citizen of the United States, residing at Columbus, in the county of Bartholomew and State of Indiana, have invented certain new and useful Improvements in Spark-Arresting Smoke-Stacks, of which the following is a specification.

In the applications of smoke-stacks to traction-engines it has been customary heretofore to arrange an inverted conical screen in the upper end of the stack, means being provided by which the screen could be lifted a short distance out of the stack, so as to thus leave a freer opening for the smoke when there are no sparks therein. The arrangement of the screen within the stack has been necessary, because if the screen is arranged outside the height of the stack is so materially increased that difficulty is experienced in going under trees along the road and through covered bridges and the like. With the screen inverted and entirely within the stack the draft is cut down to a very considerable extent and difficulty is experienced in burning light fuel—such as straw, wood, &c.—and for this reason operators are inclined to lift the screen out of the stack, and thus run the risk of fire.

The object of my present invention is to provide a construction in which the conical (or closed) end may be readily shifted so as to be either inverted and entirely within the stack for convenience in transportation and where hard fuels are used or may be turned point upward and arranged entirely outside the stack, thus giving free draft for burning light fuels.

The accompanying drawings illustrate my said invention.

Figure 1 is an elevation of a stack embodying my invention with the screen-point uppermost and entirely outside the stack; Fig. 2, an elevation at right angles to that shown in Fig. 1 and with the screen inverted and entirely within the stack; Fig. 3, a view similar to Fig. 2 with the screen moved partly out of the stack; Fig 4, a central section of the upper end of the stack parallel with the plane of Fig. 1; Fig. 5, a similar section parallel with the plane of Fig. 2; Fig. 6, a plan of Fig. 2, and Fig. 7 a detail of one of the supporting-rods.

In the drawings, 10 indicates a stack of any desired construction and provided at its upper end with a flange 11, which is recessed at 12 to receive the screen-ring 13, to which the conical screen 14 is attached. Ring 13 is provided at opposite sides with a pair of perforated ears 15, and the upper portion of flange 11 is grooved at opposite sides at 16 to form receptacles for the ears 15. Flange 11 in the bottoms of the grooves 16 is perforated by a pair of vertical openings 17, through which vertical rods 18 may slide freely. Each rod 18 is shouldered at its upper end, thus providing a reduced portion 19 (which passes through the perforations of ears 15) and a shoulder 20, upon which the said ears may rest. The screen-ring is secured to the rods 18 by means of removable pins 21, passing through the portion 19. The lower end of each rod 18 is pivoted to one arm of a yoke 22, which is carried by a lever 23, pivoted at 24 to ears 25, carried by or integral with the stack 10.

In operation the ring 13 may be attached to the rods 18, either side up, and may be readily changed from one position to the other, the ring 13 fitting into the recesses 12 in either direction. By this means the operator may readily put the cone in the position shown in Fig. 1 when light fuels are to be burned, so as to offer less resistance to the draft and at the same time form an effectual stopper for all sparks, or when the engine is to be moved from one place to the other the operator may readily turn the cone to the positions shown in Fig. 3. The cone may be raised and lowered by the lever 23 when in either position.

I claim as my invention—

1. The combination, with a smoke-stack, of a spark-arresting screen having a closed end adapted to be inserted into the upper end of the stack, one end of said screen being provided with means whereby the screen may be arranged upon the stack with its closed end either up or down.

2. The combination, with a stack, of a vertically-movable screen-support carried thereby, a spark-arresting screen having a closed end adapted to be inserted into the stack, and means for detachably attaching said screen to said vertically-movable support with the closed end either up or down, for the purpose set forth.

3. The combination, with a stack having a recessed upper end and vertical rod-guides, of a screen-ring adapted to lie in said recessed upper end and provided with perforated ears registering with said rod-guides, a screen secured to said ring and having a closed end adapted to enter the upper end of the stack, screen-supporting rods arranged in said rod-guides, means for moving said rods vertically, and detachable connections between said rods and the screen-ring whereby the screen may be supported upon said rods with its closed end either up or down.

4. The combination, with a smoke-stack having a recessed upper end, of a screen-ring adapted to lie in said recess with either side uppermost, and a screen having a closed end carried by said ring whereby, by reversing the position of said ring in the recesses, the screen may be arranged with its closed end uppermost and out of the stack, or the said closed end may be projected downward into the stack.

In witness whereof I have hereunto set my hand and seal, at Columbus, Indiana, this 11th day of May, A. D. 1904.

HARRY C. CLAY. [L. S.]

Witnesses:
W. B. DENISON,
FRED DOELLER.