

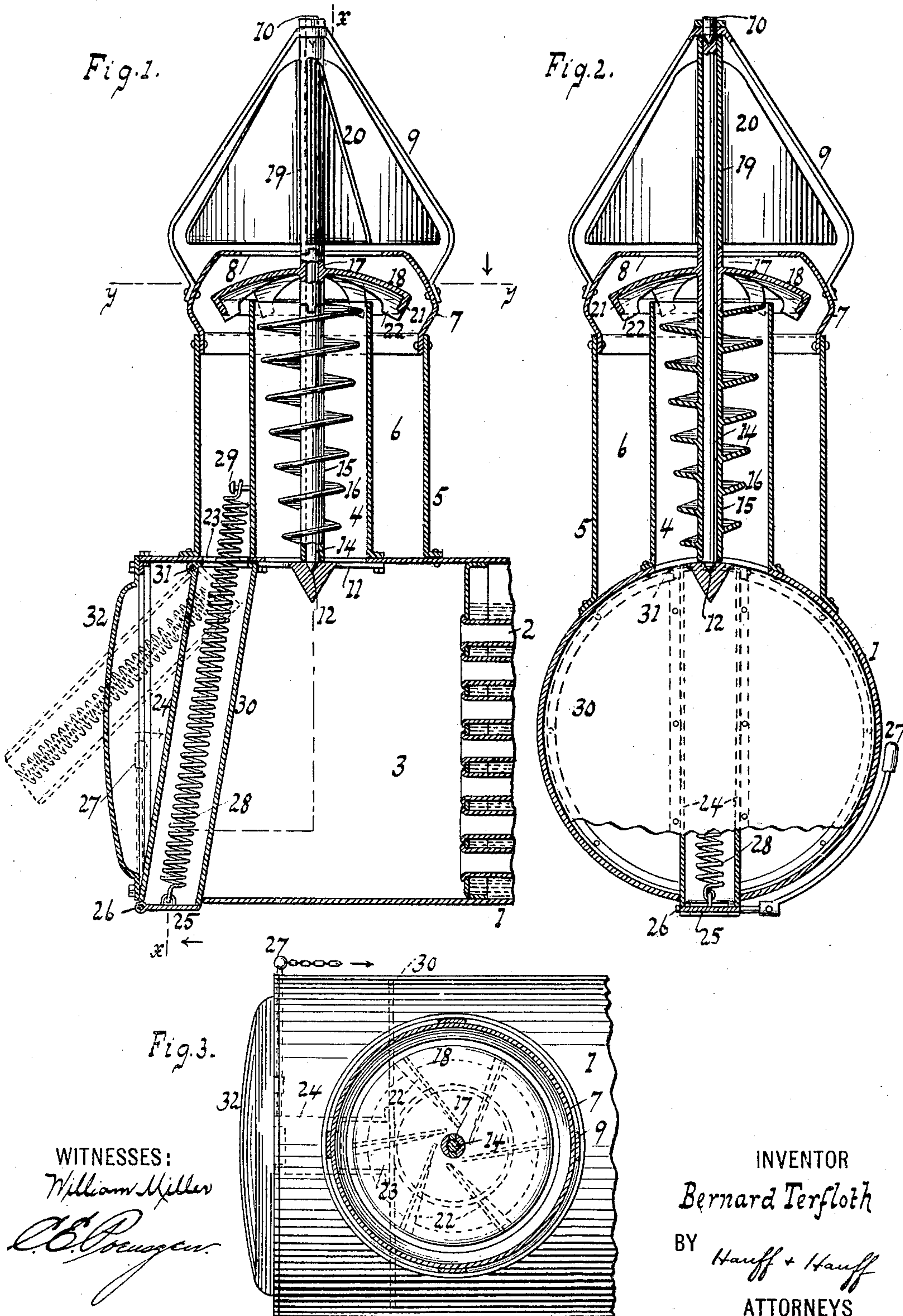
**No. 630,273.**

**Patented Aug. 1, 1899.**

**B. TERFLOTH.**  
**SPARK ARRESTER.**

(Application filed Mar. 9, 1899.)

(No Model.)





# UNITED STATES PATENT OFFICE.

BERNARD TERFLOTH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO  
ROBERT TOBIN, OF SAME PLACE.

## SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 630,273, dated August 1, 1899.

Application filed March 9, 1899. Serial No. 708,388. (No model.)

*To all whom it may concern:*

Be it known that I, BERNARD TERFLOTH, a citizen of the United States, residing at New York, borough of Manhattan, in the county and State of New York, have invented new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention resides in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a sectional side elevation of the spark-arrester. Fig. 2 is a front elevation of the same, sectioned along  $x x$ , Fig. 1. Fig. 3 is a section along  $y y$ , Fig. 1.

The boiler-shell 1, with tubes 2 and draft-space 3, are known and require no description. The smoke from space 3 passes into inner stack 4, surrounded by and concentric with an outer stack 5. The space 6 between the stacks can receive sparks, dust, and the like. Fixed to outer stack 5 is a cap or cowl 7, having a central or what might be called a "contracted" opening 8. The cap 7 carries a suitable number of arms 9—say three or four—supporting a center 10. Across the lower mouth of inner stack 4 extends a cross-piece 11, having a step or center 12. A shaft 14 is free to rotate between these centers 10 and 12. The tubular shaft 15 of lower screw-thread 16 is slipped over shaft 14, as also the tubular shaft 17 of deflector 18 and the tubular shaft 19 of upper screw 20. The tubes or shafts 15 to 19 are shouldered or made to interlock, so that while separable or dismountable said tubular shafts when assembled will rotate together. The upper and lower screw-threads are made to coact in rotating the deflector 18. The lower thread 16 is actuated by the draft or heat rising from the draft-space 3 through the inner stack 4. The upper or exposed screw or fan 20 is driven by the wind or current, as when the boiler or locomotive is in motion.

The deflector, besides its disk or top 18, flanged, as seen at 21, and extended from shaft 17 to space 6, has the blades 22. While smoke or gases can pass out of stack 4 about the deflector to escape at outlet 8, dust or sparks or the like are thrown by this rotating deflector into the space 6. From space 6 the cinders

or dirt passes through aperture 23 into a spark or dirt tube 24, forming an attached part of the hinged disk-shaped door 30, hereinafter described. The lower end of the spark or dirt tube is normally closed by valve 25, (shown hinged at 26.) The handle 27 enables the valve 25 to be opened or agitated for dumping. The closing-spring 28 of the valve 25 extends into spark-tube 24 and is secured at 29 in the space between the stacks. On opening or agitating valve 25 the spring 28 will loosen or break any choking or accumulation which tends to retain matter in the dirt-tube, so that the latter can be effectively dumped or cleared. The disk-shaped door 30, carrying the spark or dirt tube 24, is hinged at 31 and normally closes the front of the smoke or draft space 3. This door can be swung open or partly open, as indicated by broken lines in Fig. 1, so as to regulate draft or give access to space 3. Should the boiler-front have a cover 32, this cover must of course be removed or opened for the inner door 30 to be swung forward or open.

The handle 27 could have a chain or link extended, for example, to the engineer's cab, if desired.

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

1. The combination of a boiler having a draft-space, the concentric stacks arranged one within the other, a cap or cowl secured to the upper end of the outer stack and having a contracted central opening, a vertical shaft extending through the inner stack, an upper screw mounted on the shaft above said cap or cowl, a lower screw mounted on the shaft within the inner stack, and a rotary deflector-plate mounted on the shaft between said upper and lower screws and under the central contracted opening of said cap or cowl, substantially as described.

2. An inner and outer stack combined with a rotary shaft having upper and lower threads and a deflector, said threads and deflector having tubular shouldered shafts made to set about the first-named shaft and to interlock with one another substantially as described.

3. The combination with a boiler having a draft-space at its front, and the inner and outer stacks, of a hinged door for closing the



front of the draft-space, a spark or dirt tube mounted upon and moving with said door and communicating with the space between the stacks, a valve for closing the lower end portion of the tube, means for closing the valve, and means for opening said valve, substantially as described.

4. An inner and outer stack, a dirt or spark tube made to communicate with the space between the stacks, a valve for emptying the tube, and a closing-spring for the valve extended into the tube so that on opening the valve the motion of the spring will loosen accumulation in the tube substantially as described.

5. An inner and outer stack, a dirt-tube made to communicate with the space between the stacks, a valve for the tube, and a closing-spring extended into the tube and secured in the space between the stacks substantially as described.

6. The combination with a boiler having a draft-space, of an outer stack, an inner stack, a hinged door normally closing the front of said draft-space, a tube on the door, a valve at the lower end of the tube, and a spring acting to close the valve, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

BERNARD TERFLOTH.

Witnesses:

RICHARD EISIG,  
JOSEPH A. QUINN.