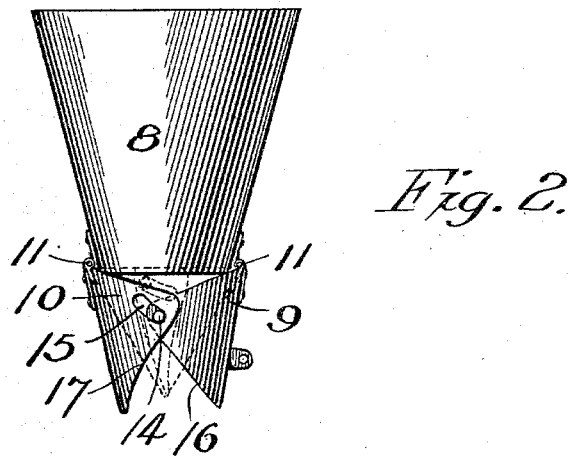
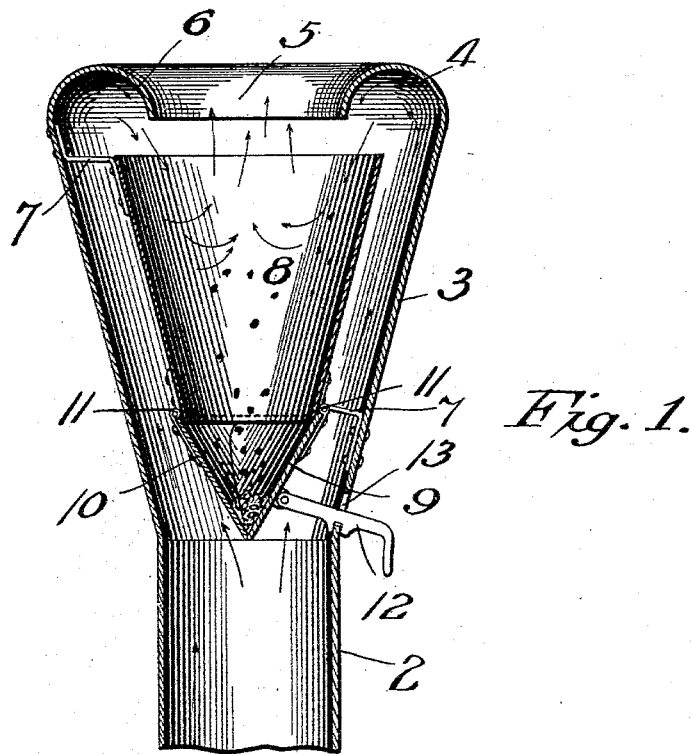


(No Model.)

A. T. BREWER.  
SPARK CATCHER.

No. 490,242.

Patented Jan. 17, 1893.



Witnesses.  
C. E. Van Dorn.  
*[Signature]*

Inventor,  
Andrew T. Brewer.  
By *Paulson*  
his Attorneys.

# UNITED STATES PATENT OFFICE.

ANDREW T. BREWER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF TWO-THIRDS TO EDWIN C. HOLMES AND JAMES M. BOYD, JR., OF SAME PLACE.

## SPARK-CATCHER.

SPECIFICATION forming part of Letters Patent No. 490,242, dated January 17, 1893.

Application filed September 6, 1892. Serial No. 445,162. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW T. BREWER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain  
5 Improvements in Spark-Catchers, of which the following is a specification.

My invention relates to means for intercepting and catching the sparks from locomotives, thrashing machine boilers &c. thereby preventing their escape from the smoke-stack and all possible danger of fire in the districts surrounding the location of the boiler.

The object of the invention is to greatly simplify the construction of spark catchers,  
15 to dispense with the screen or sieve ordinarily employed, and to provide means in connection therewith whereby sparks after being caught and cooled may be discharged in a body.

To this end my invention consists in the combination with the upper part of the smoke-stack provided with an inwardly turned deflector, of a basin or sleeve arranged therein beneath said deflector and provided with a  
25 valved bottom arranged to be opened at intervals to discharge the body of collected sparks or cinders and further the invention consists in various details of construction and combinations all as hereinafter described and  
30 particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, forming a part of this specification, in which:—

35 Figure 1 is a vertical sectional elevation of a smoke-stack provided with a spark catcher embodying my invention. Fig. 2 is a detached elevation of the spark receptacle, showing the bottom thereof open.

40 As shown in the drawings, the lower part 2 and the enlarged upper part 3 of the stack are of the usual construction with the exception that the upper part has the hood-like part 4 inwardly and downwardly curved at the  
45 center to form the contracted exit opening 5 and the angular deflector or flange 6. Within the stack and supported therein by braces 7 is the conical sleeve or receptacle 8 having a large open top occupying a position just beneath said flange and of greater diameter than

the exit opening 5. The lower end of the sleeve is also open and the bottom of the sleeve or receptacle is formed by the cone valve shown, the same consisting in two semi-conical parts 9 and 10 attached to the lower  
55 end of the sleeve 8 by hinges 11 and having their upper edges so lapped and formed as to make a tight joint with the lower end of the part 8 when closed as shown in Fig. 1 and in dotted lines in Fig. 2. For opening the valve  
60 thus forming the bottom of the spark receptacle I provide the flat bar 12 pivoted at its inner end to the part 9. This handle bar passes through the hole 13 in the stack and is notched on its lower side so that when forced  
65 in it may be locked by engagement with one shoulder of the opening 13. The part 9 closes inside of the part 10 and in order that the latter part may be opened with the former I arrange the studs or lugs 14 on the upper  
70 corners of the part 9, the same being adapted to operate in the inclined slots 15 arranged in the overlapping corners of the part 10. To facilitate the closing of 9 into 10 I make the inner edges 16 of the first straight while the  
75 edges 17 of the part 10 are curved. The opposing edges thus slipping readily one over the other. It will be observed also that the part 10 is longer than the other so that its lower end projects somewhat beneath that of  
80 the part 9 when the two are closed together.

The operation of the device is as follows. The valve or cone-bottom of the receptacle being tightly closed, the escape of the smoke upward through the receptacle 8 is prevented  
85 and the smoke is forced upward in the narrow channel formed between the stack and the outside of the receptacle. Arriving at the upper edge of the receptacle the smoke passes into the large annular chamber formed beneath the hood 4 and its velocity is decreased  
90 so that as the products of combustion pass over the receptacle the sparks and heavier particles are deflected and precipitated into the same falling into the bottom thereof while  
95 the spark freed smoke passes out through the exit 5. When a considerable body of sparks or cinders has collected in the receptacle 8 the steam exhaust beneath the stack is closed to shut down the draft and the cone valve is  
100

opened whereupon the sparks drop down into the spark box of the boiler.

Having thus described my invention I claim as new and desire to secure by Letters Patent:—

1. The combination, in a spark catcher, of the stack provided with the annular deflector, with an open receptacle arranged beneath said deflector, and a valved-bottom for said receptacle, consisting of semi-conical hinged parts arranged to be opened or closed as described, and for the purpose specified.

2. The combination with a smoke-stack provided with a deflector, of a spark receptacle arranged therein beneath said deflector, and a valved-bottom for said receptacle, consisting of the semi-conical hinged parts pivoted thereto, and having overlapping edges, making the whole tight when closed, and means for opening and closing said parts, substan-

tially as described and for the purpose specified.

3. The combination with a stack provided with a deflector, of a spark receptacle arranged therein beneath said deflector the valved-bottom for said receptacle, composed of the semi-conical parts 9 and 10 having overlapping edges hinged to the lower end of said receptacle, the part 10 provided with slots 15, lugs 14 on the part 9 extending into said slot, the part 9 adapted to close within the part 10 and an operating bar extending to the outside of the stack, all substantially as described.

In testimony whereof I have hereunto set my hand, this 3d day of September, A. D. 1892, at Minneapolis, Minnesota.

ANDREW T. BREWER.

In presence of—

A. C. PAUL,

F. S. LYON.