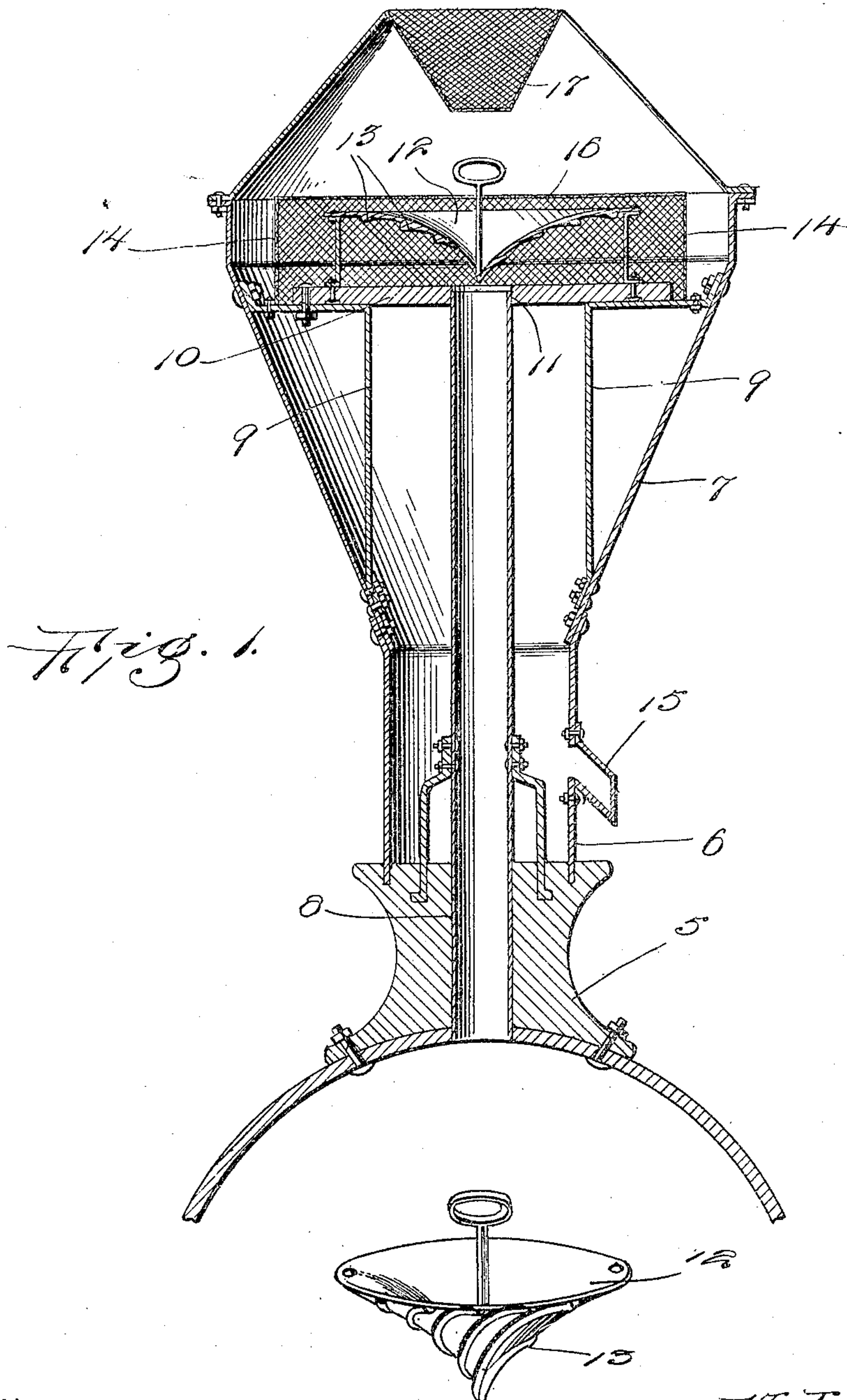


No. 798,187.

PATENTED AUG. 29, 1905.

M. J. KEELIN.  
SPARK ARRESTER.  
APPLICATION FILED AUG. 17, 1904.

2 SHEETS—SHEET 1.



Witnesses  
*Amstrong*

*W. S. Chandler*

Fig. 3.

Inventor  
*W. J. Keelin*

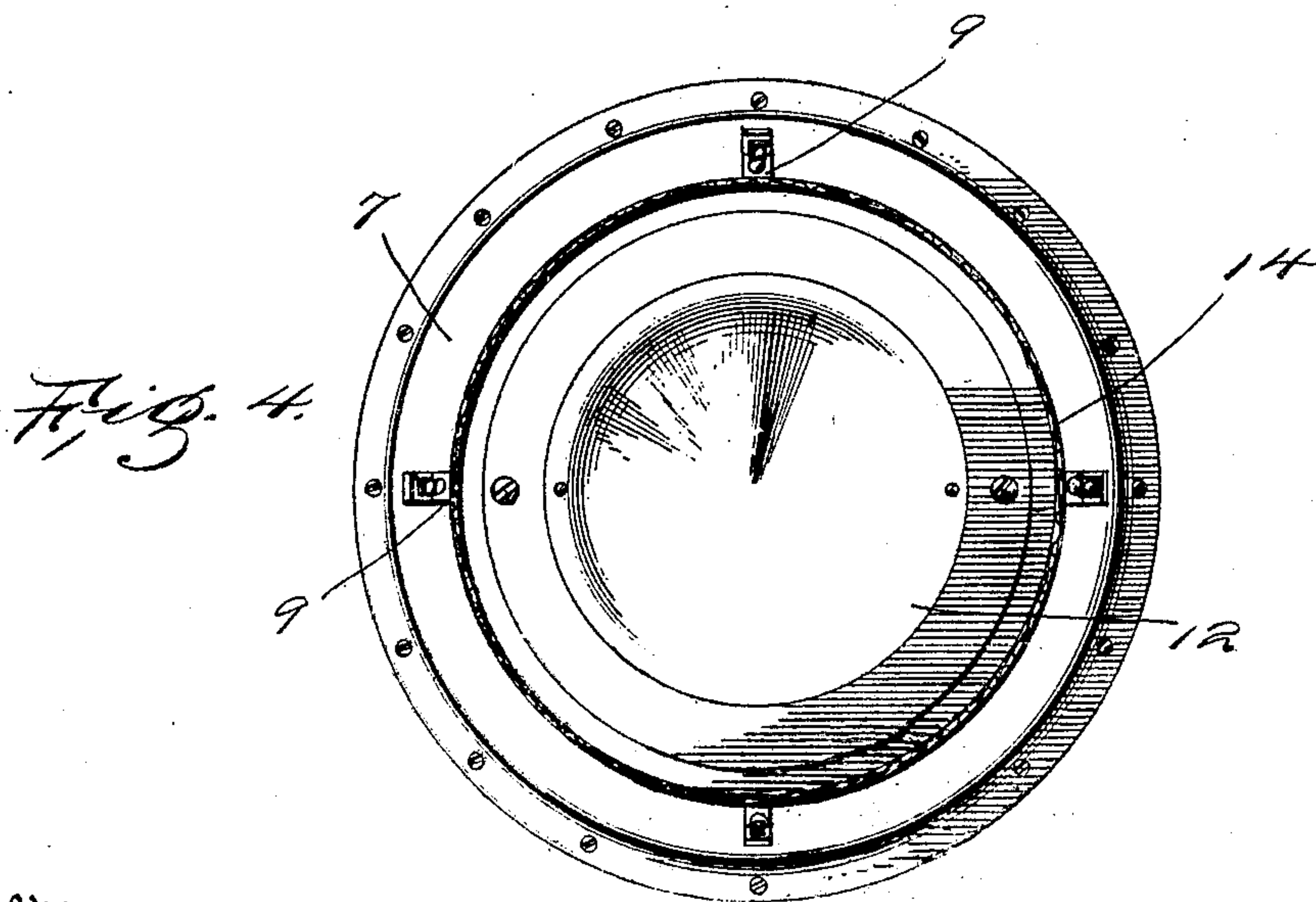
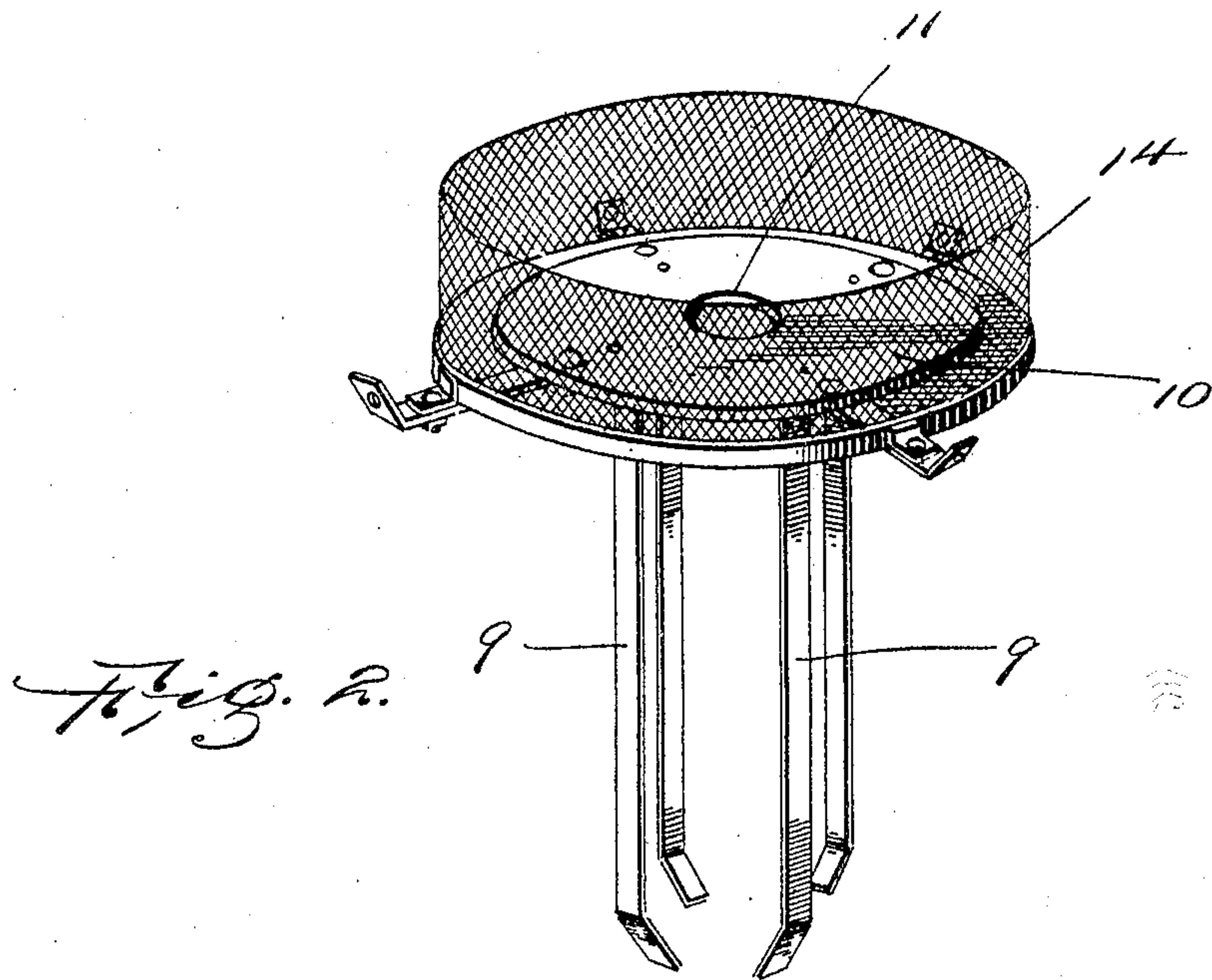
By  
*Chandler & Chandler*  
Attorneys

No. 798,187.

PATENTED AUG. 29, 1905.

M. J. KEELIN.  
SPARK ARRESTER.  
APPLICATION FILED AUG. 17, 1904.

2 SHEETS—SHEET 2.



Witnesses  
*Chandler*

*H. E. Chandler*

Inventor  
*M. J. Keelin*

By *Chandler Chandler*  
Attorneys



# UNITED STATES PATENT OFFICE.

MICHAEL J. KEELIN, OF HILO, TERRITORY OF HAWAII.

## SPARK-ARRESTER.

No. 798,187.

Specification of Letters Patent.

Patented Aug. 29, 1905.

Application filed August 17, 1904. Serial No. 221,113.

*To all whom it may concern:*

Be it known that I, MICHAEL J. KEELIN, a citizen of the United States, residing at Hilo, in the Territory of Hawaii, have invented certain new and useful Improvements in Spark-Arresters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to spark-arresters, and while being particularly designed for use in connection with a locomotive smoke-stack it will be understood that it may be elsewhere employed.

The object of the invention is to provide a construction wherein the sparks will be caused to travel against a friction-surface to extinguish them and will be then deposited in the base of the stack, from which they may be drawn.

Other objects and advantages of the invention have reference to details of structure, as will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a section taken vertically through the smoke-stack having the present invention therein. Fig. 2 is a view showing the spark-receiving table and the friction-band encircling it and spaced from it. Fig. 3 is a detail view of the deflector. Fig. 4 is a transverse section through the stack above the deflector.

Referring now to the drawings, there is shown a locomotive smoke-stack, including the usual base 5, which is secured upon the smoke-box and from which rises the cylindrical pipe-section 6, the upper portion of which is expanded to form the head 7, in which is contained the spark-arrester. In the base 5 is engaged the smoke-pipe 8, which communicates at its lower end with the smoke-box and the upper end of which terminates in the broadened or expanded portion of the head 7.

Within the head 7 are secured the brackets 9, upon which is bolted a disk-shaped plate 10, forming a table, this plate having a cen-

tral opening 11, in which the upper end of the pipe 8 is engaged.

An inverted conical deflector 12 is disposed above the table 10 with its apex arranged centrally above the pipe 8, and the face of this deflector is concaved, as illustrated, and is provided with ribs 13, which beginning at the center of the deflector progress spirally to the periphery thereof, so that the smoke and sparks when they leave the pipe 8 and strike the deflector are whirled from the outer edge thereof.

The table 10 is of greater diameter than the deflector, and concentric with the table and spaced slightly from its periphery is a wall 14, which rises above the deflector. The wall 14 is a friction-stop for the cinders, which when they leave the deflector strike the friction-wall at a sharp angle thereto and pass along it in contact with it sufficiently far to extinguish the sparks, the cinders falling between the wall and the edge of the table and in the lower portion of the stack, from which they may be drawn through the pipe 15. It will be noted that the friction-wall 14 is supported upon the brackets 9.

To prevent egress from the top of the casing of any sparks or cinders that may pass upwardly of the wall 14, a screen 16 is secured to the upper edge of the wall and covers the inclosure of the wall, and as a further precaution a frusto-conical screen 17 is engaged in the upper end of the stack.

What is claimed is—

1. The combination with a smoke-stack comprising an outer casing having a screened outlet-opening in its top, and a smoke-pipe extending upwardly through its lower end, of a table supported in the upper portion of the stack and having a central opening in which the smoke-pipe terminates, a vertical wall encircling the table and spaced therefrom, a deflector constructed and arranged to deflect cinders from the smoke-pipe against the wall, a screen supported upon the wall, and an outlet-pipe at the lower portion of the stack.

2. The combination with a smoke-stack comprising an outer casing having a screened outlet-opening in its top, and a smoke-pipe extending upwardly through its lower end,

of a table supported in the upper portion of  
the stack and having a central opening with  
which the smoke-pipe engages, a vertical wall  
encircling the table and spaced therefrom and  
5 the aforesaid casing, a deflector arranged above  
the smoke-pipe to deflect cinders from the lat-  
ter against the wall, the under face of the de-  
flector being roughened, a screen supported

by the wall, and an outlet-pipe at the bottom  
of the stack. 10

In testimony whereof I affix my signature in  
presence of two witnesses.

MICHAEL J. KEELIN.

Witnesses:

RODERICK W. McLEOD,  
IRA E. RAY.