T. RUDZINSKI.

SPARK ARRESTER.

APPLICATION FILED MAY 5, 1921.

1,396,882. Patented Nov. 15, 1921.

FIG. 3.

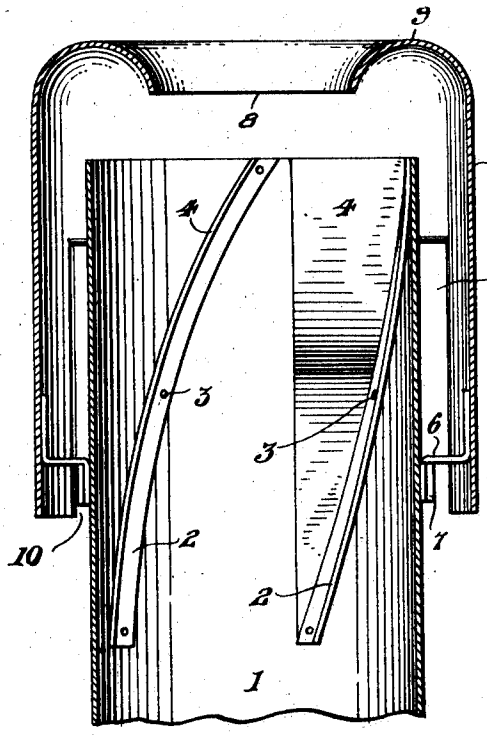


FIG. 1.

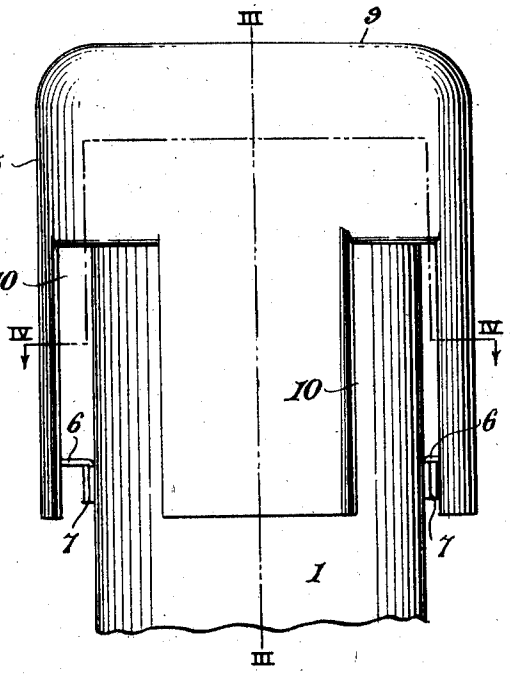


FIG. 2.

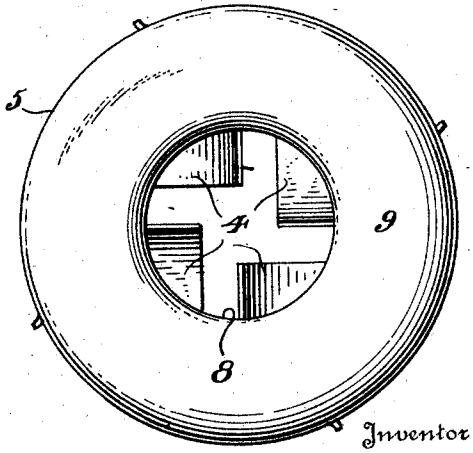
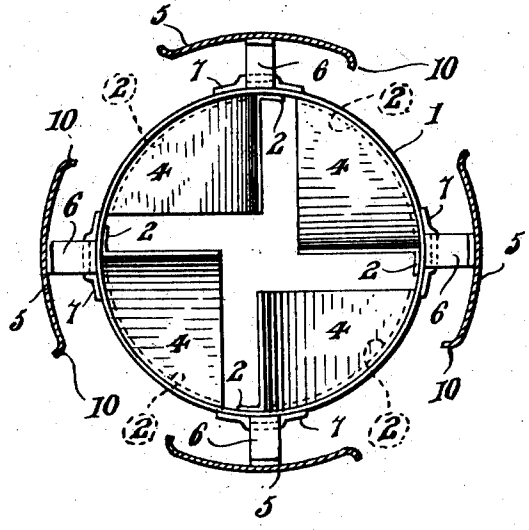


FIG. 4.



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SPARK-ARRESTER.

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Application filed May 5, 1921. Serial No. 466,997.

To all whom it may concern:

Be it known that I, TONY RUDZINSKI, a citizen of Poland, residing at Virginia, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to certain new and useful improvements in spark arresters and has particular reference to a spark arrester especially designed for association with the smoke stack of a railroad steam engine, although the device may be applied to a chimney associated with any type of furnace.

The primary object of the invention resides in the provision of guiding ribs or vanes disposed within the outlet end of a chimney with a hood detachably mounted on the chimney and having a central opening disposed above the chimney outlet with the sparks and cinders escaping from the chimney directed into engagement with the hood for arresting the same and causing a precipitation in proximity to the outer wall of the chimney.

With the above general objects in view and others that will appear as the nature of the invention is better understood, the invention consists in the novel form, combination and arrangement of parts hereinafter more fully described in connection with the accompanying drawing and in which like reference characters indicate corresponding parts throughout the several views.

In the drawings,

Figure 1 is a side elevational view of the upper end of a chimney with the spark arrester attached thereto,

Fig. 2 is a top plan view of the same,

Fig. 3 is a vertical sectional view taken on line III—III of Fig. 1 showing the curved vanes upon the inner face of the chimney, and

Fig. 4 is a cross sectional view taken on line IV—IV of Fig. 1 showing the side openings in the chimney hood and the spark arresting vanes for directing the sparks and cinders outwardly of the chimney adjacent the walls thereof.

Referring more in detail to the accompanying drawing, there is illustrated a spark arrester designed for attachment to smoke stacks or chimneys of any character, the present invention being preferably designed as a spark arrester for the smoke stacks of steam engines, the reference numeral 1 designates a chimney open at its upper end and having spark and cinder directing vanes secured to the inner walls thereof.

These vanes are in the form of angle plates embodying base flanges 2 secured as at 3 to the inner wall of the chimney 1 and extending at an angle to the vertical axis of the chimney, right angularly extending vanes 4 being carried by the base flanges 2 and with the free edge thereof formed at an angle to the base flange, the lower end of the vane substantially merging into the base flange as shown in Fig. 3 while the upper edge thereof terminates at a point spaced from the vertical central axis of the chimney as clearly shown in Figs. 2 and 4. Any number of these spark directing vanes may be secured to the chimney 1, four being shown as equidistantly spaced within the chimney.

A hood is mounted on the open upper end of the chimney 1 and embodies a cylindrical wall 5 open at its lower end and of a size to provide an annular chamber surrounding the chimney, with angle brackets 6 carried by the inner face of the lower end for detachable mounting in brackets 7 secured to the outer face of the chimney 1. The upper end of the hood 5 is provided with a central opening 8 and is spun inwardly to form an arched abutment wall 9 for the sparks and cinders, the edge of the wall 9 surrounding the opening 8 extending over the open upper end of the chimney 1. The side wall 5 of the hood is provided with cut away portions 10 to permit the lateral escape of sparks and cinders that are retarded in their escape by the hood.

In the operation of the device, smoke and gases escaping from the chimney 1 will pass upwardly through the central opening 8 in the hood and will not in any manner interfere with the draft of the furnace. By the particular arrangement and design of the vanes 4, sparks and cinders passing upwardly in the chimney 1 will be given a tortuous path of movement and directed in their escape from the chimney at points adjacent the chimney walls, the sparks and cinders being retarded by the arched wall 9 and thereafter precipitated into the space or chamber between the chimney and hood, the side openings 10 in the hood providing for a clearance of the sparks and cinders from the hood to prevent any collection within the hood. The hood being removable from the chimney, the same may be easily detached for repair or other purposes, and

is easily and quickly replaced to its operative position.

While there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made in the form, combination and arrangement of parts herein described and claimed.

What is claimed as new is:

1. In a device of the class described, a chimney, a spark arrester associated with the chimney and secured to the inner face thereof, the arrester being constructed to provide an unobstructed vertical axis and vertical radial passages in the chimney, said spark arrester including a plurality of vanes, each embodying a curved base flange secured to the inner face of the chimney and arranged at an angle to the vertical axis of the chimney, each vane confined within an arc of less than ninety degrees, and all of the vanes equidistantly spaced, a vane wall extending at right angles from the base flange with the free edge lying in a plane parallel with the vertical axis of the chimney and the lower end of the vane wall merging into the base flange.

2. In a device of the class described, a chimney, a spark arrester associated with the chimney and secured to the inner face thereof, the arrester being constructed to provide an unobstructed vertical axis and vertical radial passages in the chimney, said spark arrester including a plurality of vanes, each embodying a curved base flange secured to the inner face of the chimney and arranged at an angle to the vertical axis of the chimney, each vane confined within an arc of less than ninety degrees, and all of the vanes equidistantly spaced, a vane wall extending at right angles from the base flange with the free edge lying in a plane parallel with the vertical axis of the chimney and the lower end of the vane wall merging into the base flange, and a hood removably supported on said chimney and having an arched upper wall provided with a central opening overlying said chimney, the edge wall of the opening being spaced inwardly of the upper edge wall of the chimney.

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

TONY RUDZINSKI.

Witnesses:
J. M. THURSTON,
NEVA M. JOHNSON.