No. 684,692. Patented Oct. 15, 1901.

E. E. JARVIS.

SPARK ARRESTER.

(Application filed Feb. 25, 1901.)

(No Model.)

Fig. 1.

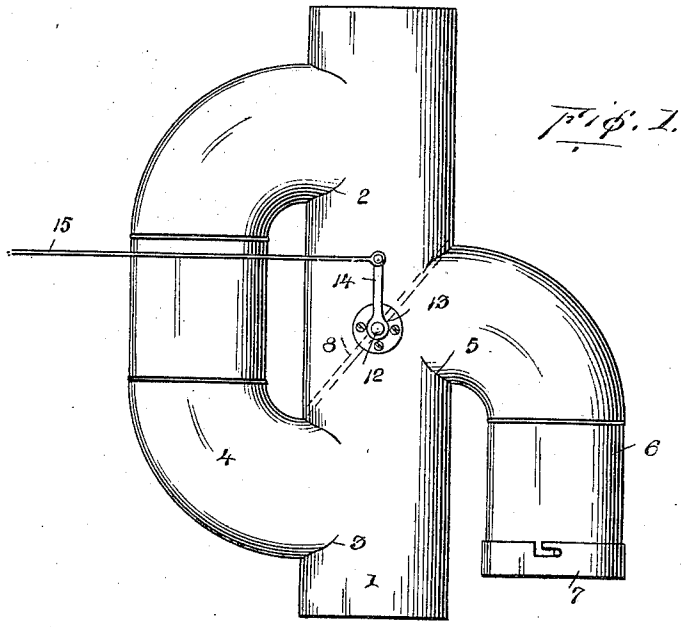


Fig. 2.

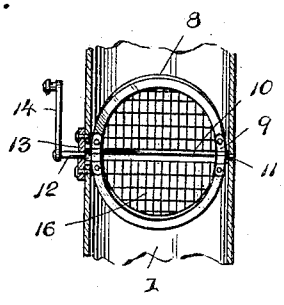
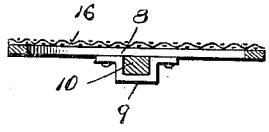


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ELMER E. JARVIS, OF XENIA, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOHN L. BLACK, OF FLORA, ILLINOIS.

SPARK-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 684,692, dated October 15, 1901.

Application filed February 25, 1901. Serial No. 48,826. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. JARVIS, a citizen of the United States, residing at Xenia, in the county of Clay and State of Illinois, have invented new and useful Improvements in Spark-Arresters, of which the following is a specification.

My invention relates to spark-arresters especially adapted for use within smoke-stacks of locomotives; and its object is to provide novel and effective means for preventing the escape of sparks and cinders from a smoke-stack without interfering with the free draft and discharge of smoke therefrom.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, which form a part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a side elevation of a spark-arrester embodying the invention. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a section through the screen of the device and its supporting-shaft.

The reference-numeral 1 designates a pipe or cylinder formed at one side with openings, as shown at 2 and 3, said openings being connected by a curved pipe 4. The pipe 1 is also formed with an opening at the point 5, which communicates with a depending discharge-pipe 6, the lower end of which is preferably closed by a removable closure 7.

Within the pipe 1 is a tilting screen 8, provided at diametrically opposite points with loops or keepers 9 to receive a shaft 10, which is rectangular in cross-section to fit the keepers. The shaft 10 is formed at one end with a trunnion 11, having bearing in an opening formed in the pipe 1, and at its opposite end with an extension 12, extending through an opening in the pipe 1 and through a plate 13, secured on the outer side of the pipe adjacent to said opening.

14 designates an arm secured at one end to the extension 12 of the shaft 10 and at its opposite end to a rod 15, which extends rearward to the locomotive-cab, so as to be readily manipulated by the engineer.

The screen 8, as clearly illustrated in Fig. 2, is of oval form and comprises a frame covered with wire mesh 16.

The utility and operation of the device constructed as above described will be readily understood. Normally the screen 8 occupies an inclined position, as illustrated by dotted lines in Fig. 1, and the products of combustion rising through the pipe 1 strike against said screen and the sparks, cinders, and other solid products of combustion are deflected through the discharge-pipe 6, while the smoke will escape through the curved pipe 4 and through the screen. The removable closure 7 of the pipe 6 permits the removal of any accumulation of cinders within the pipe 6.

In the construction shown in the drawings the shaft 10 is of rectangular form in cross-section, and its trunnion 11 and extension 12 are round in cross-section to permit the ready turning of the shaft; but I would have it understood that the invention is not restricted to the specific means shown for securing the screen to the shaft.

To remove the screen from the pipe 1 it is necessary to first remove the plate 13 to permit the withdrawal of the shaft 10 from the loops or keepers of the screen, after which the screen can be withdrawn from the top of the smoke-stack.

I claim—

1. A spark-arrester comprising a main pipe for the products of combustion formed at one side with openings; a pipe connecting said openings; a screen arranged within said main pipe between said openings; a discharge-pipe into which the sparks and cinders are deflected by said screen; and means for tilting the screen.

2. A spark-arrester comprising a main pipe for the products of combustion, formed with openings; a pipe connecting said openings; a shaft supported in bearings in said main pipe between the openings and formed at one end with an extension; a screen removably secured to said shaft; an arm secured to said extension; means for tilting said arm; and a discharge-pipe to receive the sparks and cinders from the under side of the screen.

3. A spark-arrester comprising a main pipe

for the products of combustion, formed at one side with openings; a pipe connecting said openings; a shaft supported in bearings formed in said main pipe between the openings; a screen removably supported upon said shaft; means for tilting said screen; and a depending discharge-pipe adapted to receive the sparks and cinders from the under side of the screen.

4. A spark-arrester comprising a main pipe for the products of combustion, formed at one side with openings; a pipe connecting said openings; a screen within said main pipe between the openings; keepers at opposite sides of said screen; a shaft extending through said keepers and supported in openings formed in the main pipe; means for tilting said screen, a plate removably secured to one side of the pipe and adapted to secure the shaft in place, and a discharge-pipe for cinders communicating with the main pipe below the screen.

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

ELMER E. JARVIS.

Witnesses:
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