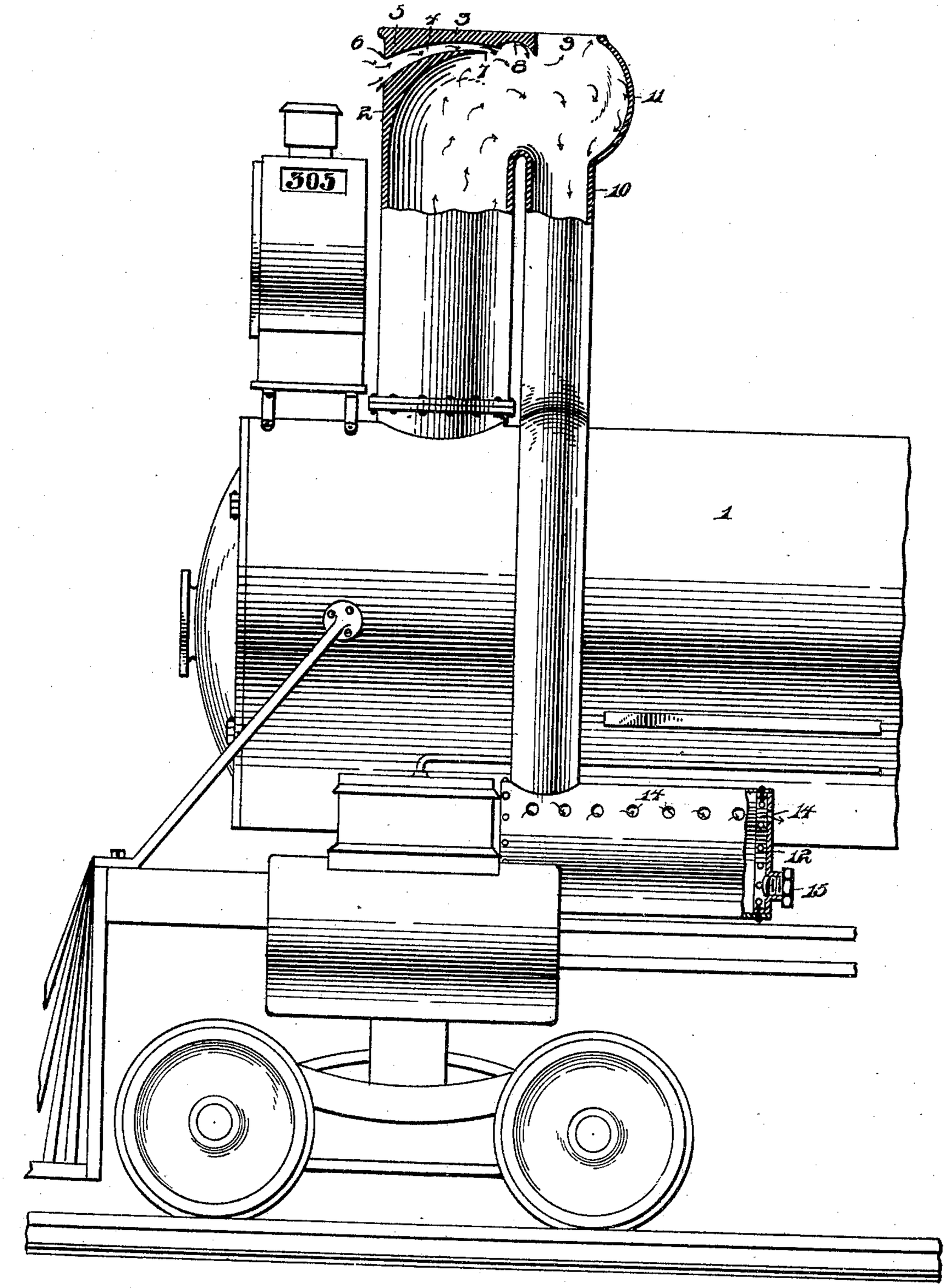
No. 682,422. Patented Sept. 10, 1901.

G. S. PARSHALL.

SPARK ARRESTER FOR LOCOMOTIVES.

(Application filed Apr. 23, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

GEORGE S. PARSHALL, OF SISTERSVILLE, WEST VIRGINIA.

SPARK-ARRESTER FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 682,422, dated September 10, 1901.

Application filed April 23, 1901. Serial No. 57,104. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. PARSHALL, a citizen of the United States of America, residing at Sistersville, in the county of Tyler and State of West Virginia, have invented certain new and useful Improvements in Spark-Arresters for Locomotives, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in spark-arresters for locomotives, and has for its object the provision of novel means whereby the sparks, cinders, and other impurities caused by the imperfect combustion that are usually conveyed through and out of the stack will be forced through a pipe to a chamber located at any suitable point on the outside of the engine.

A further object of my invention is to divert the course of the smoke slightly, but admit it to pass upwardly or downwardly through the top of the stack.

A still further object of the invention is to form suitable openings in the chamber in order that the smoke in the chamber may be conveyed out of the same by the natural draft that is caused through the momentum of the engine and be discharged under the engine.

With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawing, forming a part of this specification, wherein like numerals of reference indicate corresponding parts, and in which the figure represents a side elevation of the forward part of a locomotive having my improvements attached thereto, showing the same partly in vertical section.

In the drawing the reference-numeral 1 indicates the boiler, and 2 the smoke-stack connected thereto. The stack is provided with a top 3, which top has a funnel-shaped air-passage 4 formed therein, entering the stack in front, as at 6, and terminating in a contracted opening, as at 7.

5 represents a curved rearwardly-extending deflecting-surface terminating with a semicircular recess 8, which is located to the rear of the funnel-shaped passage.

9 represents an opening formed at the top of the stack to permit of the escape of the smoke. This opening is in direct vertical alinement with the return-pipe 10. A bulged portion 11 is provided opposite the deflecting-surface 5 of the stack. At the lower end of said return-pipe 10 is arranged a chamber 12, having inlet-ports 14, formed in its rear wall, and is further provided with a hand-hole 15 for the purpose of removing the cinders, ashes, and the like from the chamber.

The operation of my improved smoke-stack is as follows: The momentum of the engine will naturally create a draft through the funnel-shaped air-passage 4 by reason of the same being contracted, and the air passing through the passage 6 and out of the opening 7 will force the cinders and the heavy parts of the products of combustion against the portion 11 and down into the return-pipe 10 and thence into the chamber 12. The smoke will be allowed to escape by way of the opening 9. The semicircular recess 8 also serves to direct the cinders into the desired channel.

The many advantages obtained by the use of my improved stack will be readily apparent from the foregoing description, taken in connection with the accompanying drawing.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a spark-arrester, the combination of a smoke-stack provided with a curved rearwardly-extending deflecting-surface terminating with a semicircular recess, and with a funnel-shaped air-passage entering the stack in front of the semicircular recess, said stack being also provided with a bulged portion opposite said deflecting-surface, a cinder-chamber and a pipe arranged to receive the deflected cinders and to convey them to said chamber, substantially as described.

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

GEORGE S. PARSHALL.

Witnesses:
CHAS. E. DAILEY,
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