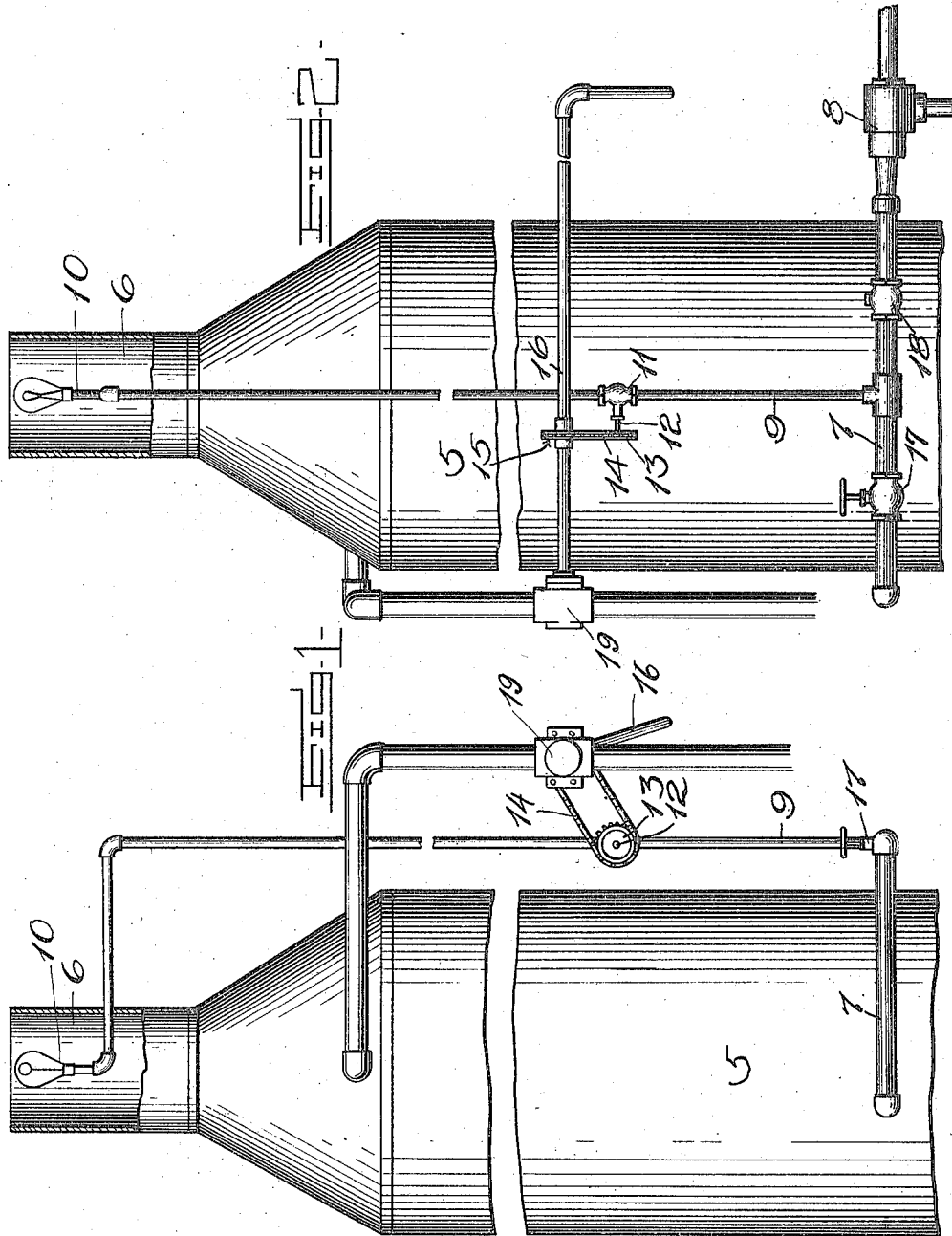


E. M. KITCHEL.
SPARK ARRESTER.

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1,237,791.

Patented Aug. 21, 1917.



Witnesses

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EARNEST M. KITCHEL, OF DOTY, WASHINGTON.

SPARK-ARRESTER.

1,237,791.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EARNEST M. KITCHEL, a citizen of the United States, residing at Doty, in the county of Lewis and State of Washington, have invented certain new and useful Improvements in Spark-Arresters, of which the following is a specification.

This invention relates to devices applied to stacks of steam-boiler furnaces for arresting the sparks issuing therefrom, and more particularly a device of this kind which extinguishes the sparks by a steam or water spray.

The invention has for its object to provide a simple and highly efficient spark arrester of the type stated, and also one which can be readily and cheaply applied, and to this end it consists in a novel combination and arrangement of parts to be hereinafter described and claimed, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation, and

Fig. 2 is a front elevation of a steam boiler, partly broken away, showing the application of the invention.

Referring specifically to the drawing, 5 denotes a fragment of an ordinary upright boiler having a stack 6. To the feed-water supply-pipe 7 leading from an injector or feed pump 8 is connected a branch pipe 9 which leads to and enters the stack 6, in which latter, at the mouth thereof, is located a spray nozzle 10 to which the pipe 9 is connected.

In the branch 9 is interposed a valve 11 to the stem 12 of which is made fast a sprocket wheel 13 which is geared by a chain 14 to a sprocket 15 on a shaft 16, the valve being thus operated by turning the shaft 16.

In the pipe 7, between the boiler 5 and the

branch pipe 9, is a valve 17, and between the branch pipe and the injector 8, the pipe 7 contains a check valve 18.

In operation, the valves 11 and 17 being opened, water from the boiler, under the boiler pressure, passes through the pipe 7 to the branch 9 and is discharged from the nozzle 10 in the form of a fine whirling spray, whereby all sparks issuing from the stack 6 are at once extinguished.

The device is highly efficient in operation, its parts are few and simple, and it can be easily and cheaply installed.

The shaft 16 is the operating stem of the throttle valve 19, and as said stem is geared to the valve stem 12, the valve 11 will be opened when the throttle valve is opened to start the engine, and closed when the throttle valve is closed to stop the engine. The valve 17 is an emergency valve for shutting off the pipe 9 from the boiler in case of trouble in said pipe or the check valve 18.

I claim:

The combination with a steam boiler, its feed-water supply-pipe, stack, throttle valve, and operating means for said throttle valve; of a spark arrester for the stack, said spark arrester comprising a spray nozzle mounted in the stack, a branch pipe leading from the feed-water supply-pipe to the spray nozzle, a valve in said branch pipe, and an operating means for said valve actuated by the throttle valve operating means.

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

EARNEST M. KITCHEL.

Witnesses:

W. H. MOORE,
C. E. HADLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."