Sept. 10, 1929. W. N. PERRYMAN 1,727,669

MINE VENTILATING APPARATUS

Filed April 6, 1928

Fig. 1.

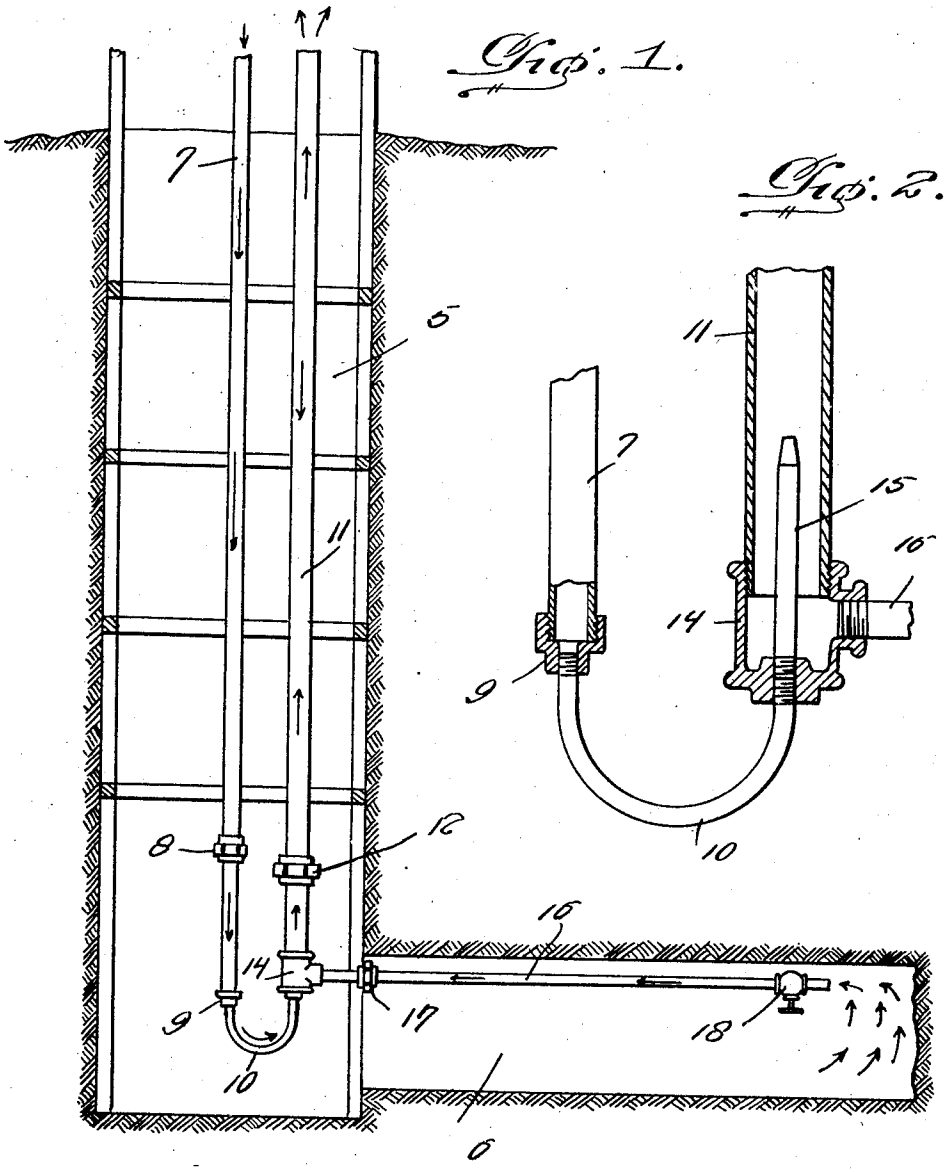


Fig. 2.

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MINE-VENTILATING APPARATUS.

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The present invention relates to an apparatus for ventilating mines and has for its prime object to provide a structure whereby bad air and the like may be sucked out of mine shafts in an efficient and effective manner.

Another very important object of the invention is the provision of an apparatus of this nature which may be simple in its construction, capable of being easily installed and very reliable in its operation.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as hereinafter more fully described and claimed.

In the drawing:

Figure 1 is a vertical section through a mine shaft showing my apparatus mounted therein, and

Figure 2 is a detail sectional elevation of the apparatus.

Referring to the drawing in detail it will be seen that the numeral 5 denotes a vertical shaft leading to a horizontal shaft in a mine. This particular arrangement has been disclosed for the purpose of example only and I do not consider myself limited to the particular problem shown in the drawing.

The apparatus about to be described can obviously be changed to other problems. Referring to the improved apparatus specifically it will be seen that the numeral 7 denotes an air pipe down into the shaft and if desired this pipe may be formed in sections coupled together as at 8 in any preferred manner. A reducer 9 is provided on the lower end of the pipe 7 and a return bend conduit 9 has one end threadedly engaged with the reducer.

The numeral 11 denotes an exhaust pipe larger in diameter than the pipe 7 and arranged there alongside and this pipe 11 may be formed respectively coupled together in any preferred manner as at 12. On the lower end of the pipe 11 there is threadedly engaged a coupling 14 with which the other end of the conduit 10 is threadedly engaged.

An ejector 15 is threaded in the lower end of the coupling 14 and extends up and terminates in the bottom portion of the pipe 11. The lateral branch of the coupling has the pipe 16 threadedly engaged therewith and this pipe 16 leads into the shaft 6 and may be formed in sections coupled together in any preferred manner such as at 17. The pipe 16 preferably has a valve 18 incorporated therein. The pipe 7 is adapted to lead from any source of air under pressure so that an air current will flow downwardly therein as indicated by the arrows in Figure 1 and thereby causing the air to be ejected upwardly through the ejector 15 which will create a suction through the pipe 16 for sucking out all foul air in the shaft 6.

Not only will the bad air be sucked out but also smoke and the like. It is thought that the construction, operation and advantages of this invention will now be quite apparent to those skilled in this art without a more detailed description thereof. The present embodiment of the invention has been disclosed in detail merely by way of example since in actual practice it attains the feaures of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent that changes in the details of construction, in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. An apparatus of the class described comprising a vertical air inlet pipe, a vertical air outlet pipe, a curved conduit leading downwardly from the lower end of the air inlet pipe, a feed coupling on the lower end of the air outlet pipe with which the other end of the conduit is engaged, a pipe leading laterally from the coupling, an injector leading from the conduit upwardly through the coupling and terminating interiorly of the outlet pipe.

2. An apparatus of the class described comprising a vertical air inlet pipe, a ver-

tical air outlet pipe, a curved conduit leading downwardly from the lower end of the air inlet pipe, a feed coupling on the lower end of the air outlet pipe with which the other end of the conduit is engaged, a pipe leading laterally from the coupling, an injector leading from the conduit upwardly through the coupling and terminating interiorly of the outlet pipe, said pipe being smaller in diameter than the outlet pipe.

3. An apparatus of the class described comprising a vertical air inlet pipe, a vertical air outlet pipe, a curved conduit leading downwardly from the lower end of the air inlet pipe, a feed coupling on the lower end of the air outlet pipe with which the other end of the conduit is engaged, a pipe leading laterally from the coupling, an injector leading from the conduit upwardly through the coupling and terminating interiorly of the outlet pipe, said pipe being smaller in diameter than the outlet pipe, the third mentioned pipe being provided with a valve incorporated therein.

4. An apparatus of the class described comprising a vertical air inlet pipe, a vertical air outlet pipe, a curved conduit leading downwardly from the lower end of the air inlet pipe, a feed coupling on the lower end of the air outlet pipe with which the other end of the conduit is engaged, a pipe leading laterally from the coupling, an injector leading from the conduit upwardly through the coupling and terminating interiorly of the outlet pipe, said pipe being smaller in diameter than the outlet pipe, the third mentioned pipe being provided with a valve incorporated therein, all of said pipes being formed in section and couplings for holding the sections together.

In testimony whereof I affix my signature.

WILLIAM N. PERRYMAN.