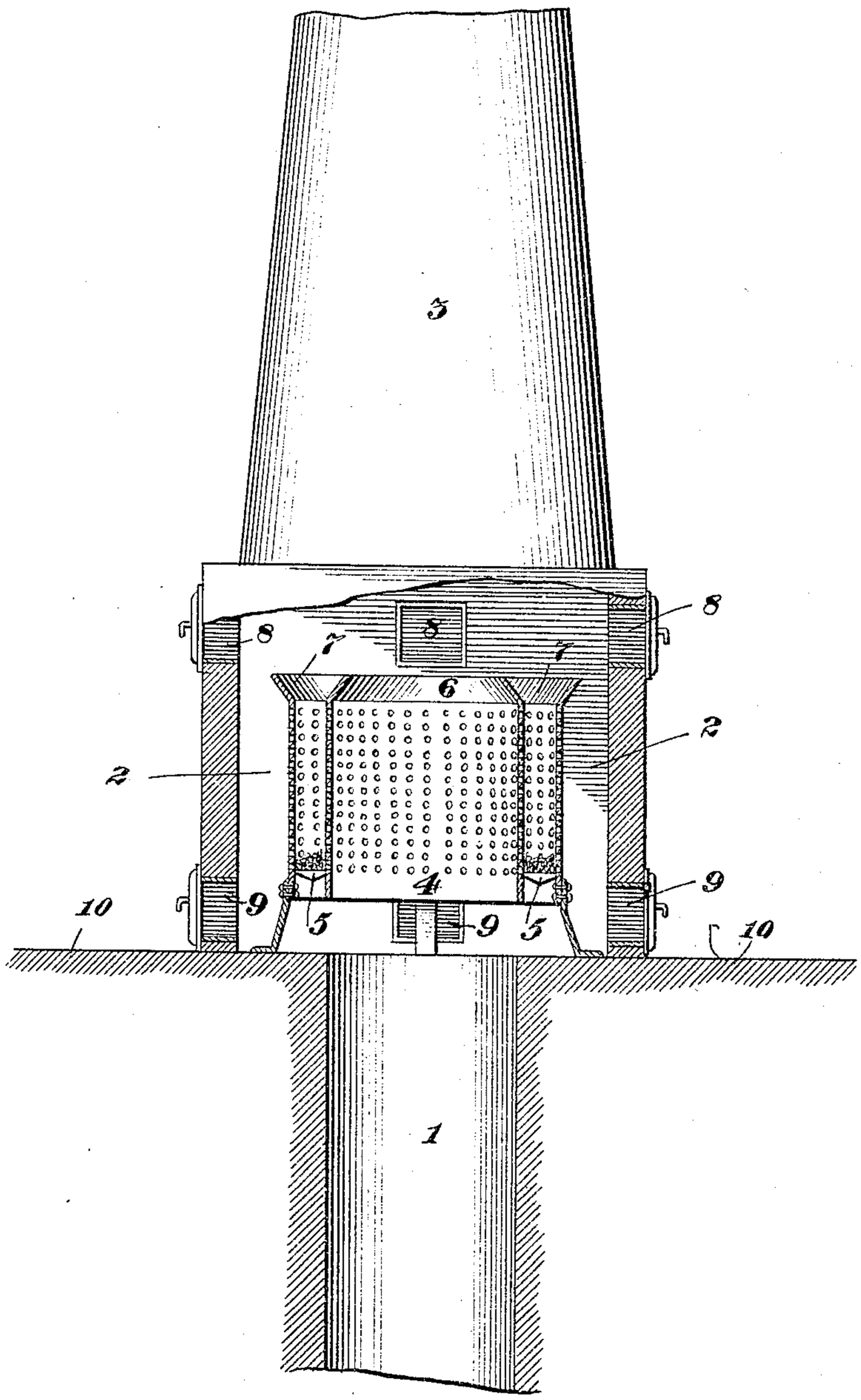
No. 773,936. PATENTED NOV. 1, 1904.

G. HIMROD.

MINE VENTILATOR.

APPLICATION FILED OCT. 3, 1902.

NO MODEL.



Witnesses:
J. B. Weir.
Julia M. Bristol.

Inventor:
George Himrod
by Bond, Adams, Pickard & Jackson
Attys.

No. 773,936. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

GEORGE HIMROD, OF LOCKPORT, ILLINOIS.

MINE-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 773,936, dated November 1, 1904.

Application filed October 3, 1902. Serial No. 125,835. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HIMROD, a citizen of the United States, residing at Lockport, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Mine-Ventilators, of which the following is a specification, reference being had to the accompanying drawing.

The object of my invention is to provide an efficient ventilator for coal and other mines which are drifted by lateral shafts, and its nature will be understood from the claims.

The figure is a vertical section of the ventilator shaft or opening, heating-chamber, and grate and an exterior view of the draft-chimney.

In the drawing, 1 indicates the ventilating-shaft, which is to be continued down through the roof of the mine-drift, and it is to be located near the inner end of the drift and as far away from the operating-shaft as circumstances will permit. It may be made by the use of earth-boring apparatus where the superposed matter is of earthy formation and tube-lined; but it may also be made in any of the ways used in well-sinking, and where a large ventilating-shaft is desired ordinary digging will be resorted to.

The chamber 2 is larger than the shaft or the chimney 3. It may be round or square and large enough to permit an attendant to enter and pass around the furnace or grate. I have shown feed-holes 8 for replenishing the fire provided with suitable covers or doors; also similar openings 9 for removing ashes; but when arranged for the entrance of an attendant a single door of sufficient dimensions will only be required.

The furnace or heater 4, as shown, is cylindrical and made of concentric perforated plates 6 and 7, having their tops somewhat flared to facilitate feeding the fuel, and the grate-bars 5 are located as shown.

I deem the form of furnace shown to be the best and most economical, and the perforations permit the burning of any combustible gases that may rise, and thereby increase the heat and draft; but I do not limit the construction of the furnace to the form shown, as other heaters may be used in place thereof.

The draft-chimney 3 may be made of brick or sheet metal, with or without taper, and of any desired height. I also recommend the employment of ventilating-fans at the top, and the use of ordinary air-blowers at the operating-shaft will add to the efficiency of the described ventilator.

10 indicates the surface of the earth.

Although this apparatus is mainly designed for coal and ore mines, its use will be found advantageous for railway and other tunnels; and it will be understood that the furnace casing or chamber is to be substantially air-tight.

By the use of this ventilator a mine will be kept fully ventilated and free from explosive gases and also from the heavier deleterious vapors and gases, and thus add greatly to the safety and health of the miners.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a mine-ventilator, the combination of a ventilator-shaft, a chamber surrounding the mouth of the shaft, a heater within the chamber comprising an annular wall forming an air-passage registering with the shaft, a second wall surrounding the first-named wall and forming therewith a fire-pot, each wall provided with a multiplicity of perforations, and a draft-chimney communicating with the chamber and having its bore registering with the annular space.

2. In a mine-ventilator, the combination of a ventilator-shaft, a chamber surrounding the mouth of the shaft, a heater within the chamber comprising an annular wall forming an air-passage registering with the shaft, a second wall surrounding the first-named wall and forming therewith a fire-pot, each wall provided with a multiplicity of perforations, means for supplying fuel to the heater, and a draft-chimney communicating with the chamber and having its bore registering with the annular space.

GEORGE HIMROD.

Witnesses:
JULIA M. BRISTOL,
ALBERT H. ADAMS.