P. J. AYOTTE.

DUST CONVEYER FOR DRILLS.

APPLICATION FILED APR. 19, 1919.

1,334,430.

Patented Mar. 23, 1920.

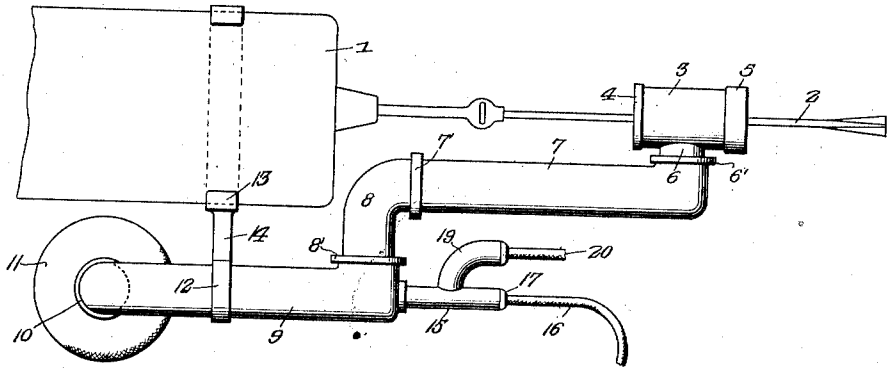
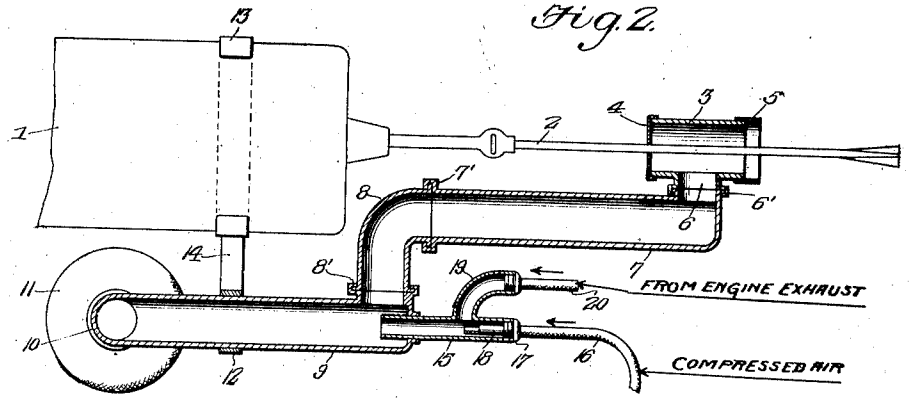


Fig. 1.

Fig. 2.



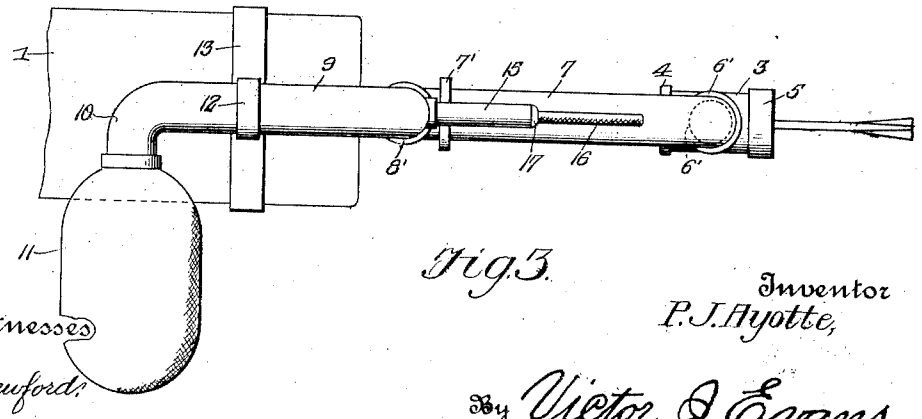


Fig. 3.

Witnesses

J. H. Crawford.

Inventor

P. J. Ayotte,

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

PHILLIP J. AYOTTE, OF McCARTHY, TERRITORY OF ALASKA.

DUST-CONVEYER FOR DRILLS.

1,334,430. Specification of Letters Patent. Patented Mar. 23, 1920.

Application filed April 19, 1919. Serial No. 291,258.

To all whom it may concern:

Be it known that I, PHILLIP J. AYOTTE, a citizen of the United States, residing at McCarthy, Territory of Alaska, have invented new and useful Improvements in Dust-Conveyers for Drills, of which the following is a specification.

This invention relates to dust collectors for drills and the principal object of the invention is to provide means for collecting the dust and particles of material created by the drill so as to prevent the same from mingling with the air of the mine and thus affecting the health of the miners.

Another object of the invention is to provide means for keeping the hole being drilled free of dust and particles of rock so that the hole is clear at all times, thus preventing binding of the bit and, when the drilling is completed, providing a hole ready to receive the explosive charge.

Still another object of the invention is to provide means for connecting the device to the drill so that the same is free to move therewith without interfering with the operation of the drill.

The invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a plan view of a drill to which my invention is applied;

Fig. 2 is a like view but showing the invention in section;

Fig. 3 is an elevation of the invention applied to a drill.

In these views 1 indicates the shell of the drilling machine, and 2 the drill bit connected with the machine. This drilling machine may be of any desired type as I do not wish to be limited to the use to which my invention is put.

In carrying out my invention, I provide a tubular casing 3 which is adapted to surround the drill bit with its front end open to receive the dust and particles of rock thrown off by the bit. The other end of the casing is closed by a flexible cover 4 which is provided with a centrally arranged hole through which the bit passes. The front end of the casing may be provided with a sleeve 5 of flexible material for engaging the wall in which the hole is being drilled to act as a buffer to prevent injury to the casing and also to make a relatively tight connection between said casing and said wall. The casing is provided with a nipple 6 at one side thereof to which is connected the bent end of a pipe 7 which extends parallel with the drill bit. This pipe 7 has its other end connected by an elbow 8 with the bent end of a pipe 9 which lies parallel with the shell 1 and said pipe 9 has its other end bent downwardly as at 10 and this bent end has the dust collecting bag 11 detachably secured thereto. The nipple 6 is rotatably connected with the pipe 7 by means of the coupling 6′, and the pipe 7 is rotatably connected with the elbow 8 by the coupling 7′ while the elbow 8 is rotatably connected with the pipe 9 by the coupling 8′. In this way the pipes will adjust themselves to the movement of the drill so that the casing 3 will always be in a position with its mouth adjacent the drill point. The device is attached to the drilling machine by the ring 12 slidably engaging the pipe 9 and connected with the strap 13, engaging the shell 1, by the arm 14. By this means the parts of the device may be moved parallel with the drill so as to space the casing the proper distance from the drill point.

The means for creating a suction in the casing 3 consists of a nozzle 15 extending into the end of the pipe 9, adjacent the point of connection of said pipe with the elbow and this nozzle is supplied with air from any suitable source by means of the pipe 16 connected with the outer end of the nozzle by means of the coupling 17, and the nipple 18. The nozzle is also provided with a curved extension 19 which is connected by the pipe 20 with the discharge of the drill so that the compressed air from the drill may be used to create the suction in the casing. If this supply of air is not sufficient then the main supply of compressed air may be used through the pipe 16.

It will thus be seen that the air passing through the nozzle into the pipe 9 will create a suction in the casing 3 and pipe 7 so as to draw the dust created by the drill, through said casing and pipe and said dust will pass with the air coming from the noz-

zle through the pipe 9 into the bag 11. The air will pass through the meshes of the fabric of the bag while the dust will be caught and held by the bag. The bag may be emptied by detaching it from the end of the pipe 9, any suitable form of clamp being used to clamp the mouth of the bag to the said pipe.

I have found it is not necessary to place the mouth of the casing against the wall as the suction will be sufficient to draw the dust and particles of material into the casing when the mouth of said casing is spaced a distance from said wall.

By this invention the mine is kept free of dust so that the miners' vision is not obscured and his health is not injured by breathing in the dust.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

In combination with a drilling machine and its bit, a casing having one end open and a flexible cover for the other end having an opening therein for the passage of the bit, a flexible sleeve carried by the open end of the casing, a nipple projecting from one side of the casing, a metal pipe having a laterally extending opening at one end thereof, means for movably connecting this part of the pipe with the nipple, a second pipe, means for adjustably connecting the second pipe with the casing of the drilling means, an elbow movably connecting the two pipes together, a dust receptacle connected with the end of the second pipe, a nozzle carried by said second pipe and means for supplying compressed air to said nozzle.

In testimony whereof I affix my signature.

PHILLIP J. AYOTTE.