L. ZWIESLER.

CONDUIT SYSTEM FOR MINES.

APPLICATION FILED JAN. 3, 1910.

1,120,880. Patented Dec. 15, 1914.

Fig 1

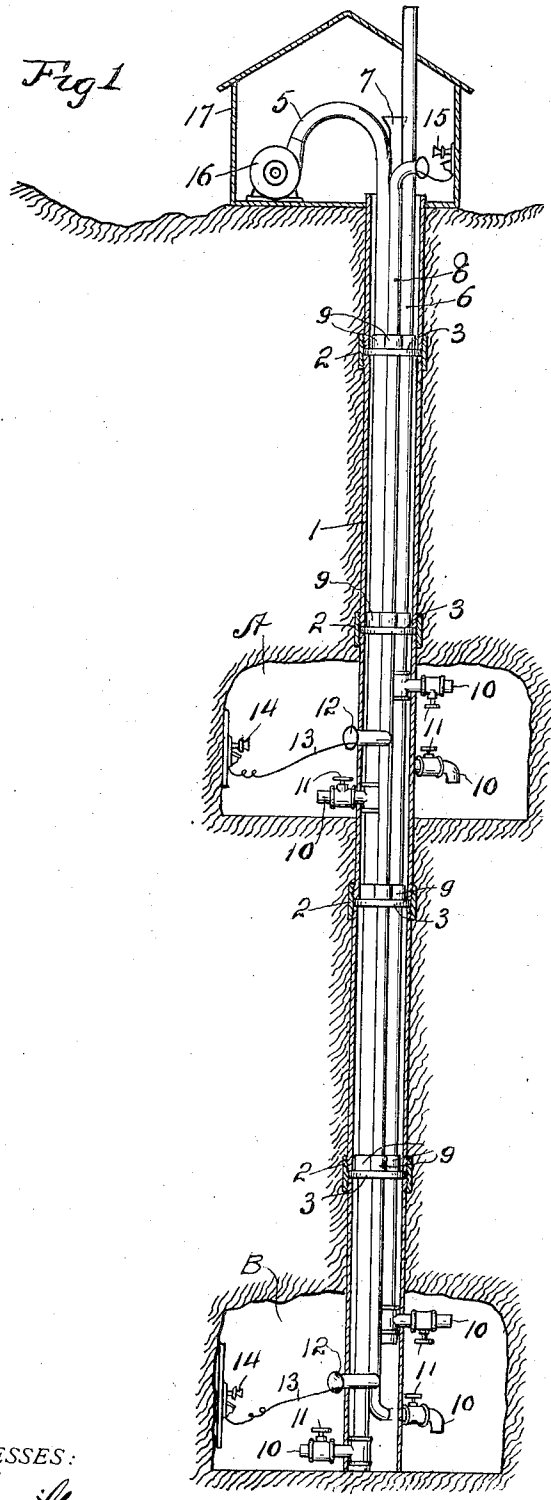
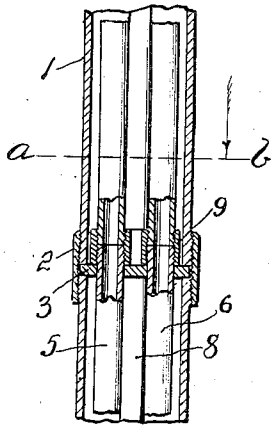


Fig 2



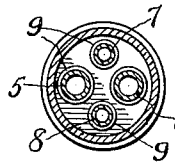


Fig 3

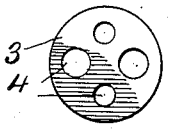


Fig 4

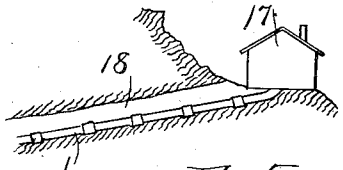


Fig 5

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LOUIS ZWIESLER, OF KANSAS CITY, MISSOURI.

CONDUIT SYSTEM FOR MINES.

1,120,880. Specification of Letters Patent. Patented Dec. 15, 1914.

Application filed January 3, 1910. Serial No. 536,244.

To all whom it may concern:

Be it known that I, LOUIS ZWIESLER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Conduit Systems for Mines, of which the following is a specification.

My invention relates to improvements in conduit systems for mines.

The object of my invention is to provide a conduit system located in the earth and by which life sustaining material, such as food, water and air may be supplied from the surface of the earth to miners who are buried in a mine and are without means of escape therefrom.

My invention provides further means by which the buried miners may communicate with persons on the surface, and means by which the miners may combat fire.

In the preferred form of my invention the apparatus for conveying life sustaining material into the mine is located outside of the mine shaft to avoid injury by fire, as the shaft usually serves as a flue for the fire in a mine.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawings illustrative of my invention, Figure 1 is a vertical sectional view. Fig. 2 is an enlarged central vertical sectional view of a portion of the casing and portions of the pipes inclosed thereby. Fig. 3 is a cross section on the dotted line *a*—*b* of Fig. 2. Fig. 4 is a plan view of one of the supporting plates. Fig. 5 is a view of a form of my invention applied to a tunnel.

Similar reference characters denote similar parts.

A and B denote two chambers of a mine, which are disposed one above the other and through which vertically extends a casing 1, preferably comprising a plurality of sections connected with each other by unions 2. The casing 1 extends from the earth's surface through a hole provided therefor in the earth to the bottom of chamber B upon which the lower end of the casing rests.

One or more horizontal plates 3 are supported between the ends of adjacent sections of the casing 1 and are provided each with one or more vertical holes 4 through which extend respectively pipes 5, 6, 7 and 8, each comprising preferably a plurality of sections connected with each other by unions 9 which are supported by the plates 3. The pipes 5, 6, 7 and 8 extend from the surface of the earth and communicate respectively with the chambers A and B. The casing 1 not only serves to support the pipes 5, 6, 7 and 8, but it protects said pipes from earth pressure, thereby eliminating danger of the pipes being severed.

The pipe 5 is provided with two branches 10 disposed respectively in the chambers A and B near the bottom thereof, preferably. Similar branches 10 are provided in the pipe 6 and are respectively located in the chambers A and B adjacent to the upper sides thereof, preferably. Similar branches 10 are provided in the pipe 7, said branches being located in the chambers A and B respectively. Preferably valves 11 are respectively provided in all of the branches 10. Two branches 12 are provided in the pipe 8 and are located respectively in the chambers A and B.

Through the pipe 8 may extend a conductor 13 for conveying telephonic or telegraphic currents from the surface of the earth to the chambers A and B, said conductor having branches which extend through the pipe branches 12 and connect with instruments, such as telephones 14 located respectively in chambers A and B. An instrument, such as a telephone 15, is connected to the upper end of the conductor 13.

16 denotes a pump connected to the upper end of the pipe 5 for forcing material, such as air, water or liquid food through said pipe.

In short lengths of casing the plates 3 may be omitted, but in deep mines, where the weight of the pipes 5, 6, 7 and 8 might be sufficient to have the pipes break apart by their own weight, the plates 3 should be provided to support the pipes by providing support for the unions 9.

In case the friction of the casing 1 is insufficient to support it in the earth, said casing should be projected to the bottom of the lowermost chamber with which it is desired to maintain communication with the surface.

While I have shown the casing 1 extending through two chambers, it is obvious that it may be employed in connection with one or more chambers. The upper end of the

apparatus may be covered with a building 17, which should be located at a distance from the shaft buildings to eliminate danger of catching fire should the shaft buildings burn. When used in connection with tunnels, the casing 1 may be disposed as shown in Fig. 5 in the tunnel 18.

The preferable manner of operating my invention is to employ the pipe 5 for carrying fresh air from the surface into the chambers A and B, the pipe 6 being employed to carry off the vitiated air. Preferably the pipe 7 is employed to carry food, preferably in liquid form, into the chambers A and B.

The pipe 8 is preferably employed as a speaking tube through which those on the surface can communicate with those in the mine.

One of the pipes, if desired, may be employed for several purposes. For example the pipe 5 may be employed to carry air, water or liquid food from the surface to the chambers A and B.

In case of a cave in or if fire breaks out so that the miners are prevented from escaping by way of the shaft, they should collect in the chambers A and B and open the valves 11. They can then be supplied by those on the surface with food, water and air, the pipe 7, if desired being employed for carrying water to fight the fire as well as for carrying food, or an additional pipe, not shown, may be employed for carrying water for this purpose.

With a mine equipped with my invention miners who have been unable to escape, after a cave in or a fire in the mine may live in safety until rescued, the chambers A and B, if necessary, being isolated by the buried miners from the other parts of the mine.

Various modifications of my invention, within the scope of the appended claims, may be made without departing from the spirit of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a conduit system for mines, a vertical tubular supporting casing extending from the earth's surface to a chamber in a mine, the casing comprising sections disposed end to end and connected by unions mounted on the outer sides of the sections, horizontal circular disks between and supported respectively upon the ends of said sections, each disk having a vertical hole, and a conveyer inner pipe extending from the earth's surface to said chamber and extending through said holes and comprising a plurality of sections disposed end to end and connected by unions which rest respectively upon and are detachable from said disks, the conveyer pipe having means and arranged for conveying material from the earth's surface to said chamber.

2. In a life saving apparatus for mines, a vertical tubular supporting casing extending from the earth's surface to a chamber in a mine, the casing comprising sections disposed end to end and connected by unions mounted on the outer sides of the sections, horizontal circular disks between and supported respectively upon the ends of said sections, each disk having a plurality of vertical holes, and conveyer inner pipes extending from the earth's surface to said chamber and extending respectively through said holes and comprising each a plurality of sections disposed end to end and connected by unions which rest respectively upon and are detachable from said disks, the conveyer pipes having means and arranged for conveying material from the earth's surface to said chamber.

3. In a conduit system for a mine, a vertical tubular supporting casing extending from the earth's surface to a chamber in a mine, and comprising sections disposed end to end and connected together, supporting means carried respectively by said sections, and a conveyer pipe extending from the earth's surface to said chamber and inclosed by the casing and comprising a plurality of sections disposed end to end and communicating with each other, said sections being independently supported by said supporting means, the conveyer pipe having means and arranged for conveying material from the earth's surface to said chamber.

4. In a life conduit system for mines, a tubular supporting casing extending from the earth's surface to a chamber in a mine, a conveyer pipe extending from the earth's surface to said chamber and located in said casing and also extending from the earth's surface to a chamber in the mine, and comprising a plurality of sections disposed end to end communicating with each other, and means for independently supporting each of said sections by the said casing, the conveyer pipe having means and arranged for conveying material from the earth's surface to said chamber.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

LOUIS ZWIESLER.

Witnesses:
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