

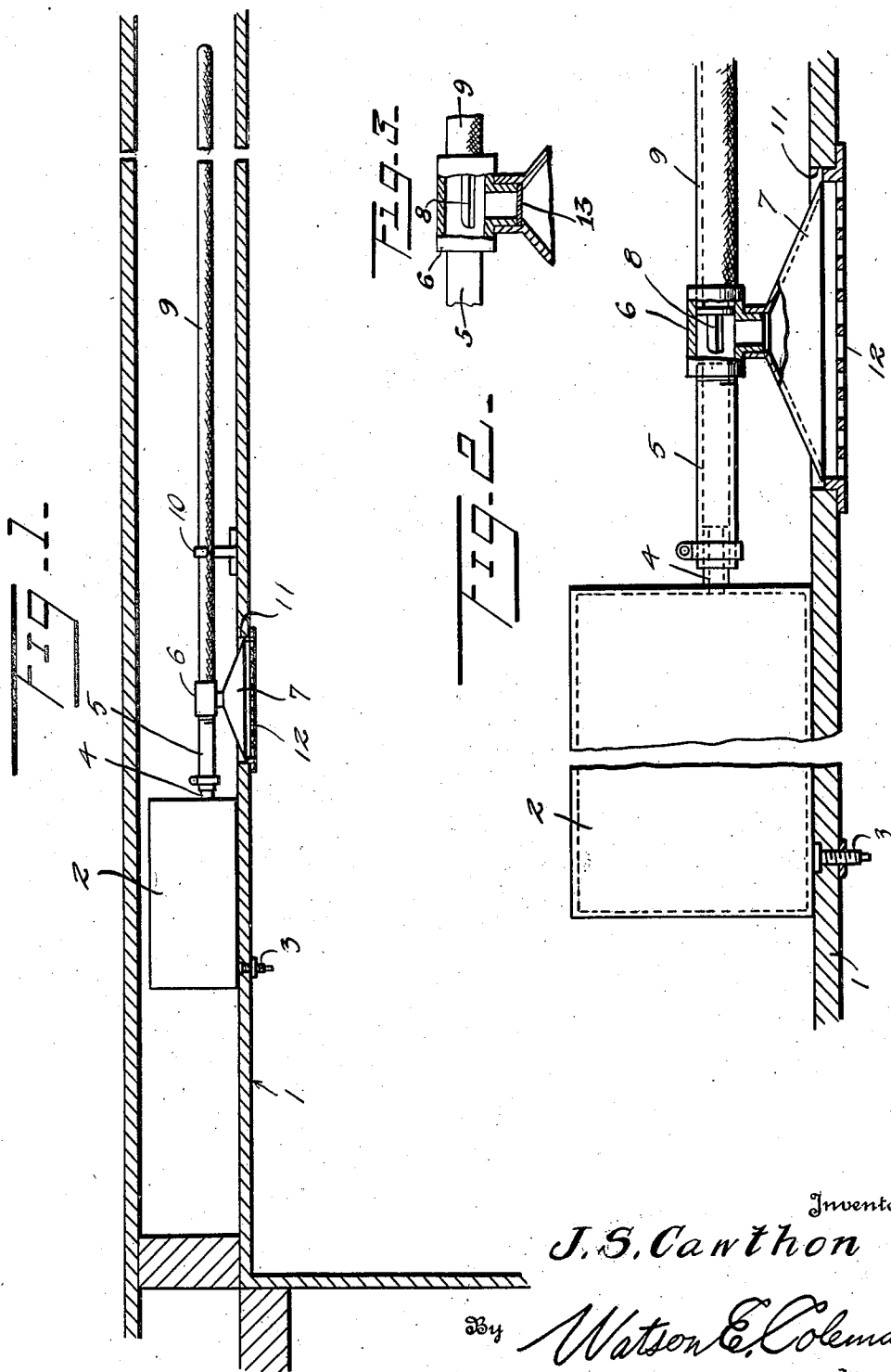
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FIRE ALARM

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FIRE ALARM

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This invention relates to signal devices and pertains particularly to an improved audible signal designed to give warning in the event of a fire, the device being adapted for use in buildings particularly residences.

The primary object of the present invention is to provide an air operated signal such for example as a horn having connection with an expansible conduit in which air under pressure is maintained, the conduit being of a character to be easily ruptured when fire comes into contact therewith so that the air will be released and actuate the signal element as it rushes from the conduit.

Another object of the invention is to provide a fire alarm or signal of the above described character which is of simple construction and may be inexpensively manufactured and installed and is devoid of moving or mechanical elements which would be apt to become inoperative as a result of inactivity for a long period of time.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of the present invention, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention, as expressed in the appended claims.

In the drawing:—

Figure 1 is a horizontal sectional view through a building wall showing the application of the alarm embodying the present invention.

Figure 2 is an enlarged view partly in section and partly in elevation of the air receptacle and signal, in applied position.

Figure 3 is an enlarged fragmentary sectional view partly in elevation showing the details of the sounding device.

Referring more particularly to the drawing, the numeral 1 indicates a wall of a room behind which wall a part of the present signal device may be mounted.

The signal consists of a suitable compressed

air receptacle 2 having an air inlet valve 3 extending from an opening through one wall thereof and further having extending from an adjacent wall a nipple 4 over which the end of a pipe 5 is secured. The pipe 5 is connected with the rear portion 6 of a horn 7, the portion 6 of the horn being provided with a suitable reed 8 which will be operated upon the passage of air through the portion 6 of the horn to give a signal.

As shown, the part 6 of the horn comprises a sleeve which extends transversely of the rear or apex thereof so that the air line connected with the receptacle 2 may pass across the rear of the horn.

At the opposite side of the sleeve 6 to which the pipe 5 is attached, there is attached one end of a rubber tube 9, this tube passing along behind the wall 1, in the manner shown, and having its other end closed, as shown, to prevent the escape of air therefrom. Suitable brackets 10 may be employed for supporting the tube 9 in the desired position behind the wall structure.

The wall 1, which is preferably one wall of a bed chamber, is provided with an opening 11 in which the mouth or bell of the horn 7 is positioned, the front of the horn being covered by a suitable grille 12, so that the appearance of the wall face will not be marred. As shown in Fig. 3, a diaphragm 13 is interposed between the offset portion of the sleeve 6 and the horn 8 so as to close the open end of the sleeve 6 and to permit the desired air pressure in the conduit to be maintained until the conduit has been ruptured as by a fire or the like. When the combustible element 19 has been ruptured the air pressure in the conduit remote from the reed 8 will be reduced and the air forced past the reed causing the reed to vibrate, the sound being transmitted outwardly through the diaphragm 13 and the horn 7. It will be obvious from the foregoing that the reed 8 will be caused to vibrate when the conduit 9 has been ruptured at any point remote from the reed. The conduit 9 may be extended for a considerable length throughout the walls or other portions of the building where fire is more apt to occur and, if desired, the

horn and the pressure tank 2 may be positioned at a point where the device may be readily heard should the conduit be ruptured at any time.

From the foregoing description it will be readily seen that with a tank or receptacle 2 and the conduit made up of the tubes 5 and 9 filled with air under pressure, if a fire should break out the rubber tubing 9 would be easily ruptured and thus release the compressed air which in passing through the sleeve 6 from the receptacle to the point where the tube is ruptured will operate the reed 8 to give the desired signal.

While there has only been shown in the drawing a relatively short section of the rubber tubing 9 it is, of course, apparent that this tube may be continued for any desired distance through the walls of the house so that ample protection can be given to the entire building in which the alarm apparatus is installed.

Having thus described my invention, what I claim is:—

1. An alarm, comprising a compressed air receptacle, a combustible conduit connected and in communication at one end with the receptacle and having the other end closed, and sound means in the conduit adjacent the receptacle designed to be acted upon by air passing therethrough, following rupture of the conduit, to create an audible signal.

2. An alarm, comprising a compressed air receptacle, a combustible conduit connected at one end with the receptacle and having its other end closed, a horn having a sleeve transversely of the apex and opening thereinto, said sleeve being interposed in said conduit, and an air operated element in the sleeve designed to be actuated therethrough upon the rupture of the tube.

3. A fire alarm signal comprising a valved compressed air receptacle having an outlet, a rubber tube connected at one end with said outlet and having its other end closed, and a horn interposed in the tube intermediate the ends thereof and opening into said tube adjacent the receptacle to be actuated by air escaping from the receptacle into the tube following the rupture of the tube, said structure being designed to be located within a wall and to have the horn open through the wall into a room.

In testimony whereof I hereunto affix my signature.

JOHN S. CAWTHON.