D. W. HOWES.

METHOD OF DETECTING AND EXTINGUISHING FIRES, &c.

No. 184,380. Patented Nov. 14, 1876.

Fig. 1

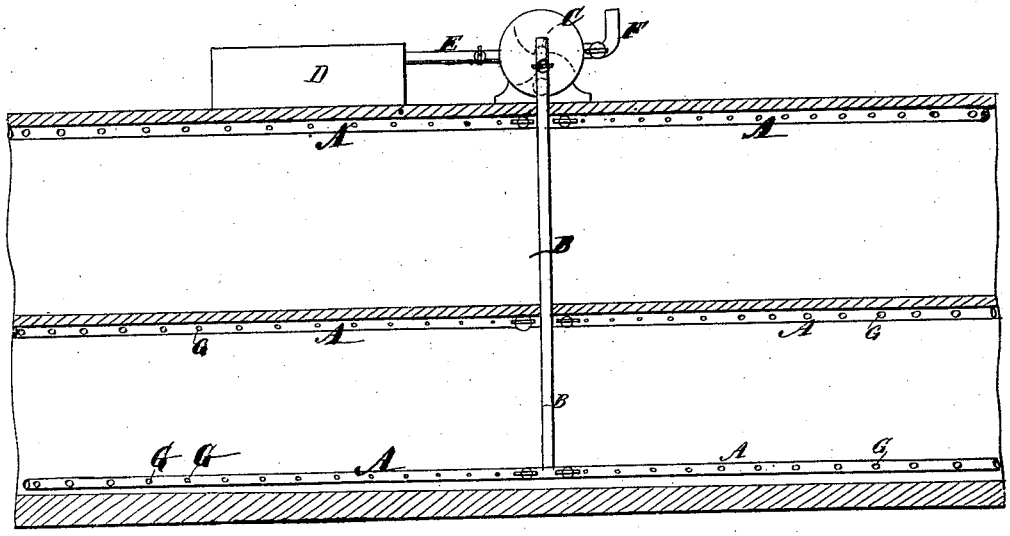
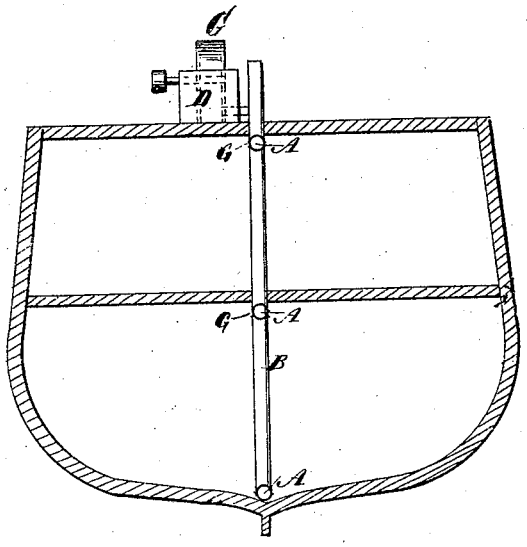


Fig. 2



WITNESSES:

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DANIEL W. HOWES, OF EAST DENNIS, MASSACHUSETTS.

IMPROVEMENT IN METHODS OF DETECTING AND EXTINGUISHING FIRES, &c.

Specification forming part of Letters Patent No. **184,380**, dated November 14, 1876; application filed June 26, 1876.

To all whom it may concern:

Be it known that I, DANIEL W. HOWES, of East Dennis, in the county of Barnstable and State of Massachusetts, have invented a new and Improved Method of Detecting and Extinguishing Fires and Preventing Spontaneous Combustion in Ships, &c., of which the following is a specification:

My invention is mainly intended for application to ships; but it is also useful in warehouses and the like, where goods are commonly stored, so as to prevent access for inspection and afford protection.

It consists of a method of communication from the deck of the vessel, or from any one floor of the warehouse, with all the compartments of the ship or warehouse, and with different parts of the compartments, if necessary, by which air or gas may be either sent down into the compartments or brought out therefrom at will, thus enabling the detection of fire by the smell of the out-going vapor, or by its appearance to the sight; also enabling the extinguishing of the fire by introducing carbonic-acid gas, or other extinguishing matter, and preventing spontaneous combustion by causing the gases generating in the hold to escape.

The apparatus for carrying out the invention may consist of a system of pipes extending throughout the ship or warehouse in all required directions, branching from one inlet and outlet, and being suitably perforated to discharge or receive the vapors into and from any part of the structure, together with a fan or other blower, contrived either for blowing in, or exhausting from, the pipe, and also with a gas-holder to be charged with gas or other material, for extinguishing the fire, and being so connected with said pipe that the gas or other extinguishing material may flow or be forced into the ship or other structure; but I do not limit myself to the pipes, for hollow perforated walls of the structure may be used instead, and the contrivance may be otherwise modified.

Figure 1 is a longitudinal sectional elevation of a section of a ship with contrivance for carrying out my invention. Fig. 2 is a transverse section.

Similar letters of reference indicate corresponding parts.

A represents a system of finely-perforated pipes branching off from a conducting-pipe, B, in different directions and through different parts of the vessel, some being directly over the decks and bottom, and others directly under the deck. C is a fan-blower; D, a holder for extinguishing substance; E, pipe connecting the holder with the fan, and F a pipe for discharging from the fan, or admitting air into it, as may be required.

To determine the condition of the hold, or any other interior part of the vessel, the cock in the pipe E, connecting the extinguishing-holder with the fan, will be closed, the cock in the pipe F opened, and the fan set in motion in the direction for exhausting from the pipes A, which will exhaust the smoke from any part, or any air or vapor having the smell of fire in case there is no smoke, also any dangerous gases, such as are generated in a cargo of coal, so that spontaneous combustion will be prevented, and if fire occurs in that or any other way it will be instantly detected.

In case of fire the cock in pipe F will be closed, the one in pipe E opened, and the fan will be set in motion the opposite way to force down the substance for extinguishing the fire.

The perforations G in the pipes A will increase in size as their distance increases from the conducting-pipe, to equalize the distribution of the vapors.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The method of detecting and extinguishing fires by utilizing the same system of pipes leading from the forcing apparatus to the various compartments of a ship or warehouse, both for the exhaustion of the air for the detection of the fire, and for the forcing in of carbonic-acid gas for extinguishing the same, substantially as described.

2. The fire-extinguishing apparatus for vessels and warehouses, consisting of a series of perforated distributing-pipes, A, conducting-pipe B, fan-blower C, holder D for the fire-extinguishing gas or substance, and the pipe E, all combined as shown to operate in the manner set forth.

DANIEL W. HOWES.

Witnesses:

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ALEX. F. ROBERTS.