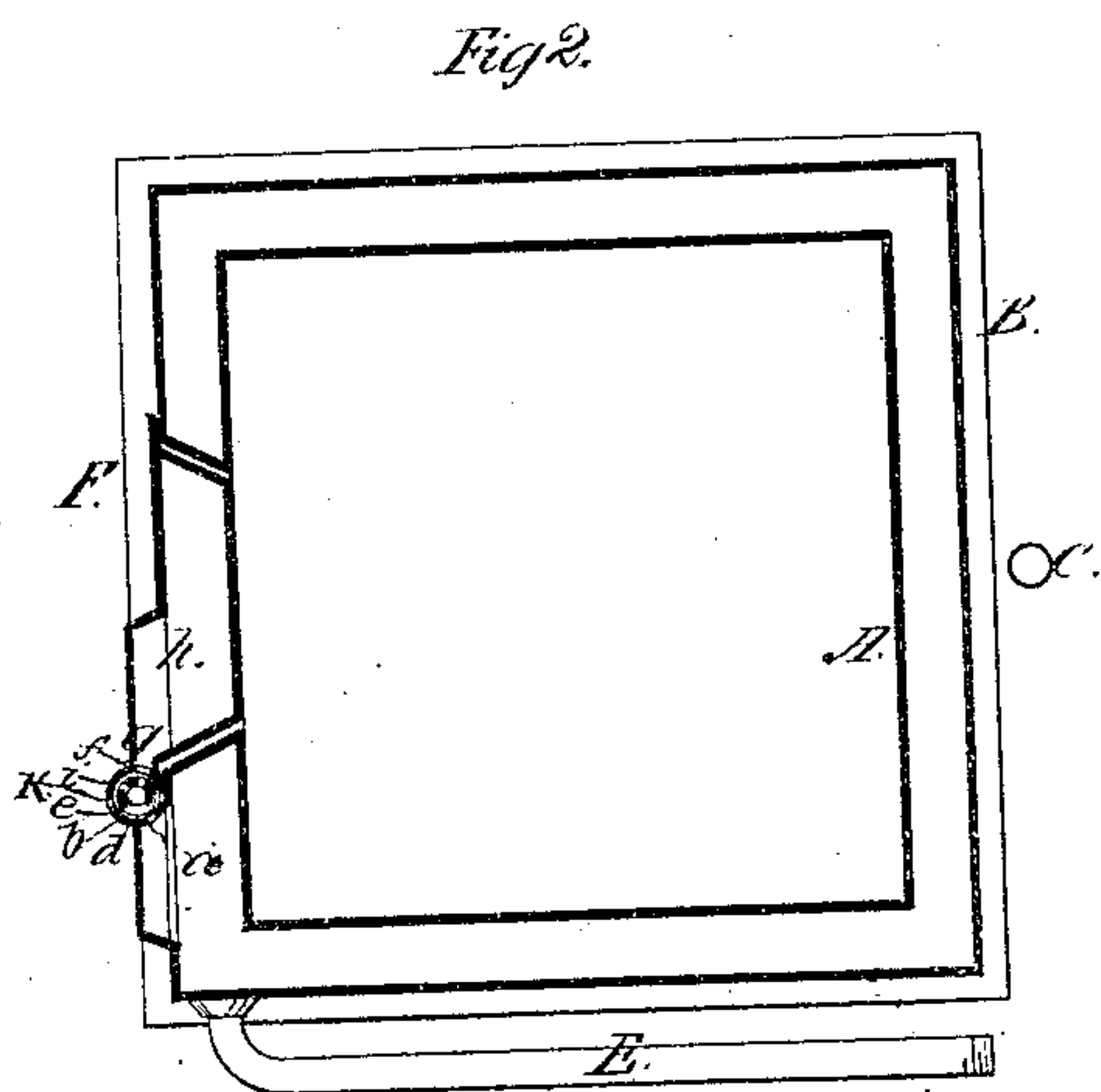
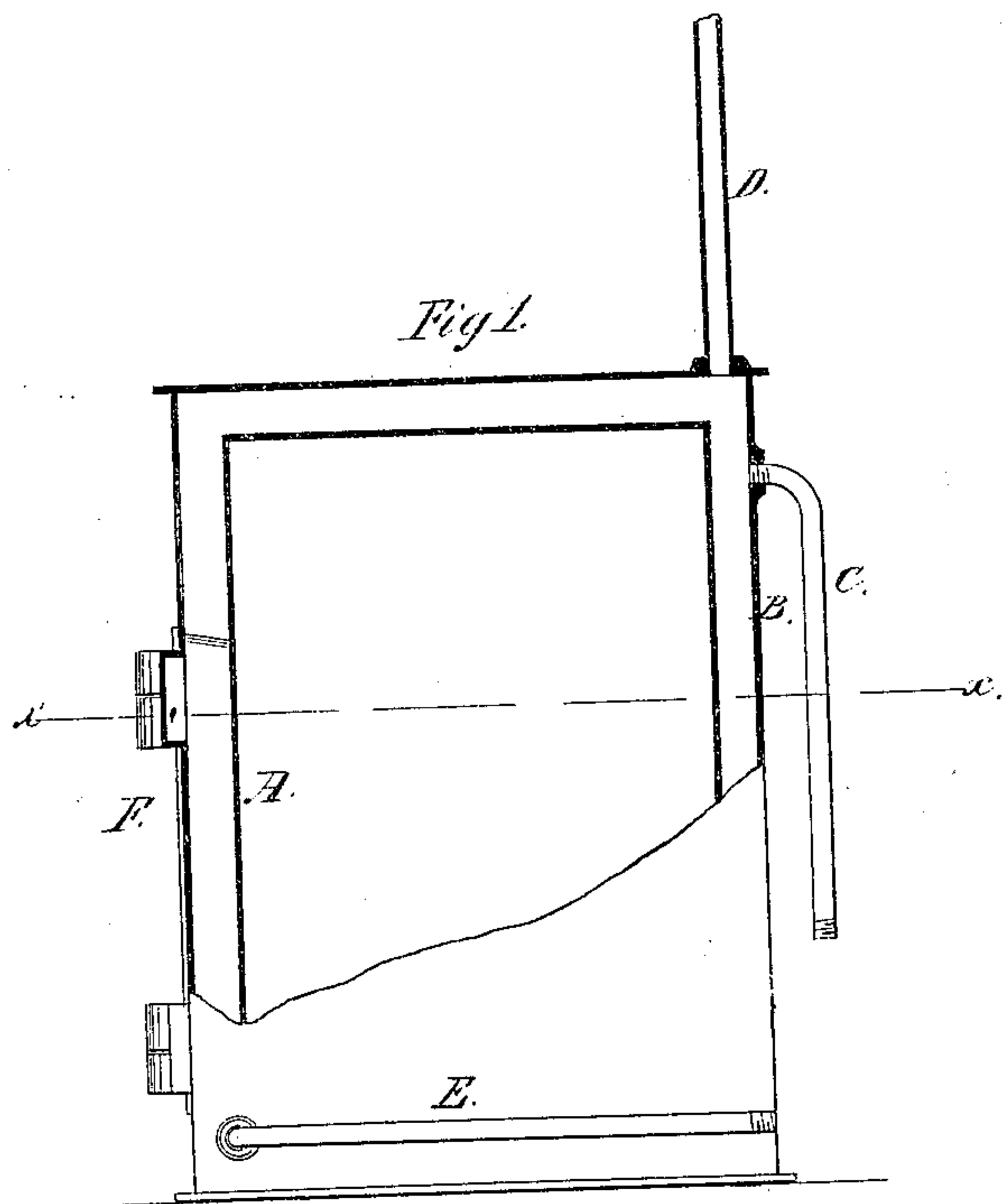


J. A. Robertson.

Fire-Proof Safe.

N^o 101,044.

Patented Mar. 22, 1870.



Witnesses.

Gustave Dietrich
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JOHN A. ROBERTSON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 101,044, dated March 22, 1870.

IMPROVEMENT IN STEAM PROTECTION FOR SAFES, VAULTS, &c.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN A. ROBERTSON of Boston, Suffolk county, Massachusetts, have invented an Improved Steam Protection for Safes, Vaults, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention relates to the employment of steam as a means of protection for safes, bank-vaults, &c., and for giving alarm when they are attacked by burglars; and

It consists in covering the safe, vaults, and the like, with coils of pipe or jackets of any kind, to be kept full of steam by connection in any suitable way with steam-boilers, at all times when burglars might work upon them, and so arranged that access cannot be had to the safe or vault at any part without cutting away the steam-pipe or through the jacket, and allowing the steam to escape, which will prevent further operation by filling the room with an atmosphere of steam in which it would be impossible to work.

It is also designed to provide alarm apparatus in connection with the steam-pipe, in any way, to be caused to act when the steam pressure falls in the pipes, as it would if they were cut or if the engineer fails to keep up a supply, or pointers may be arranged in illuminated dials to be set up where they can be seen from the street, so as to indicate whether the steam is properly kept up by their position relatively to the dial, or the arrangement may be such as to cause the light to be extinguished by the subsidence of the steam.

I propose to arrange the said coils of pipe or jackets so as not to interfere with the opening and closing of the doors of the safes for legitimate operations during business hours, when the steam would be shut off, and to make the arrangement such that when the steam is on, if the doors be opened, valves at the joints of the hinges, by which the door is connected to the other part, will be moved so as to open escape-pipes and allow jets to be discharged against the person opening it.

These pipes may be built into the walls of the safe or around the same, and in the latter case any coating or covering of non-heat-conducting substance may be used to prevent giving off of too much heat in the warm weather. Escape-pipes and safety-valves are to be used to maintain the steam at the required pressure without danger.

The apparatus may be made available for heating purposes in cold weather.

Figure 1 represents an elevation, with a part broken away, of a safe, provided with a steam jacket according to one arrangement which I propose, and

Figure 2 represents a horizontal section of the same.

A is the safe, and B the jacket surrounding the same, which, in this instance, is represented as made of sheet metal and in one continuous shell, extending around the safe with an opening for the door, but which may be made in any preferred way and of any suitable material; for instance, a jacket of tubes, joined together in sections, or otherwise, similar to the manner of constructing steam-generators of tubes, may be built around the safe or vault, or it may be a jacket of hollow flat cast-metal sections, suitably joined. C is the steam-supply pipe. D, a pipe leading from the jacket to any suitable alarm apparatus, which will sound a whistle, move a pointer, or extinguish a light on the falling of the steam, and it may have a safety-valve attached. E is an escape-pipe for the water of condensation. All these may be arranged in any approved way.

F is the door, which I also propose to make hollow, or provide with jackets of any sort for containing the steam, so that access to the interior of the safe through the shell cannot be had in any part without causing the escape of the steam.

The best means of admitting the steam to the hollow spaces in the door, or to the jackets thereon, will be through the hinges, the pintles and ears of which may be made hollow and provided with ports arranged to admit the steam when the doors are closed, and the said ports may be so arranged that in case the doors may be forced open or opened by picking the locks, they will, as soon as the door is swung open a short distance, allow the steam to escape against the burglars and into the room, so as to prevent further operation by the said burglars.

a is a port leading from the jacket through the ear *b* into the long port *d* of the hollow pintle *e*, and *f* is a port leading from the pintle to the port *g* in the wing of the hinge, and leading into the space *h*. These passages admit the steam to the door while shut; *i* admits steam when open, and *k*, coming into connection with the long port *d* as soon as the door is opened, allows the steam to escape into the room. The said ports, or other steam connections of the jacket with the door, may be arranged in any approved way.

I propose, in case it is found necessary to protect the contents of the safes from the effects of the heat of the steam, to arrange ventilating-ducts or spaces between the jackets and the shells of the safes or vaults for the circulation of air, and these ducts may be connected with heating apparatus so that the heat taken up by the air may be utilized in cold weather for heating purposes; or I may place between the steam-jackets any arrangement of non-heat-conducting material.

As at present used, the safes and vaults are much exposed to the bad effects of damp air in warm weather,

and to the dampness generated by frost in cold weather, when placed in cellars or basements, or other like places where it is most desirable to place them, on account of the greater economy of such space, which is less valuable for other purposes.

These objections will be wholly avoided by my improved means of protection, as the heat of the steam will keep them dry. The same plan is also a protection against fire, as the steam maintains the safes at a lower temperature than they would have when buildings are burning around them, as is now well known.

Having thus described my invention,

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

1. The combination of jacket B, water-outlet E, steam-supply pipe C, pipe D, and hinge-joint, as set forth, whereby, when the steam-chamber is entered, the decrease of steam pressure will cause the whistle to blow and an alarm to be given.

2. The arrangement of the hinge-joints of the doors for admitting the steam to the cavities thereof, and for allowing the escape of the same when the door is opened or partially opened, substantially as specified.

JOHN A. ROBERTSON.

Witnesses:

GEO. W. MABEE;

ALEX. F. ROBERTS.