

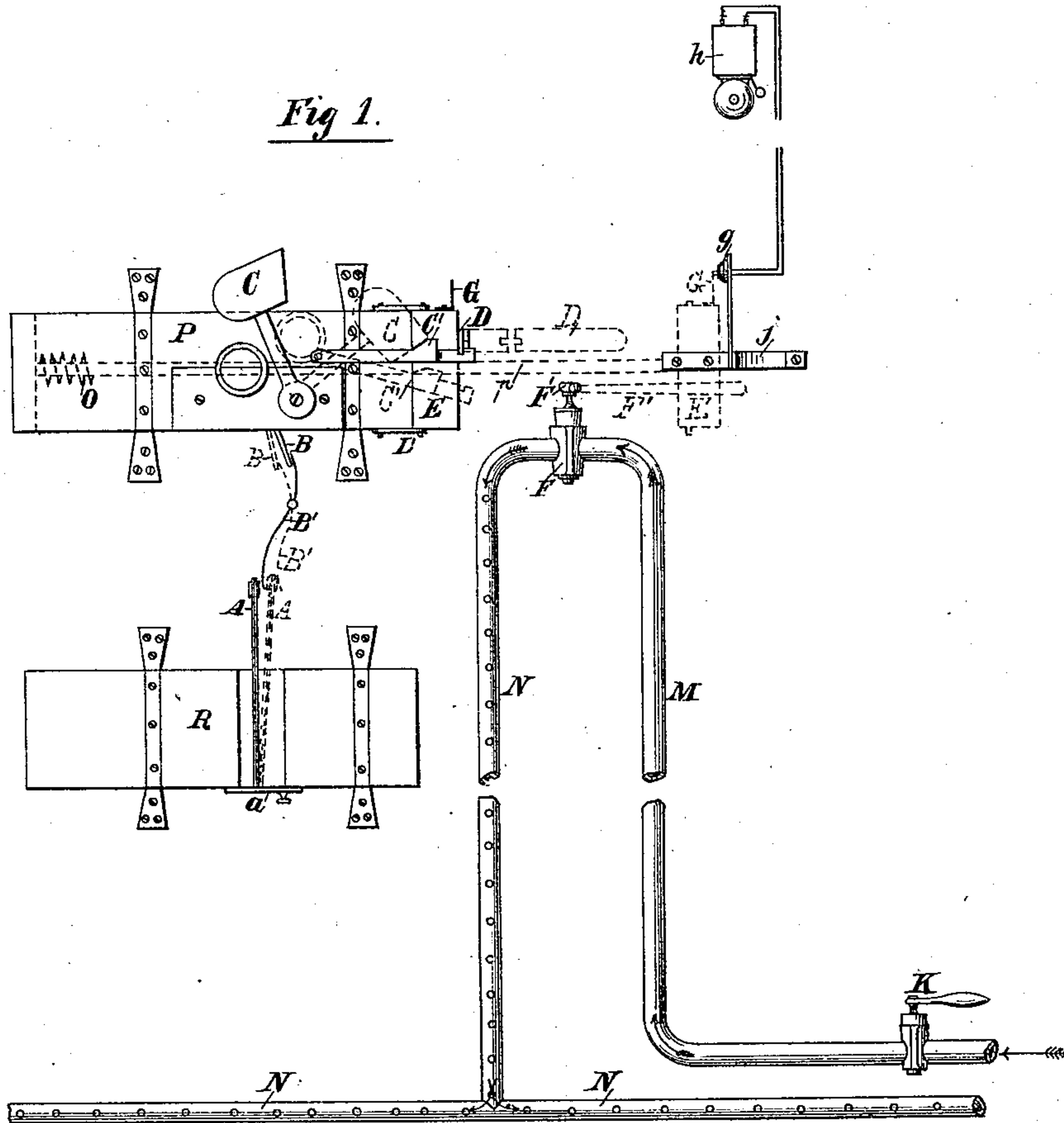
(No Model.)

V. VANKEERBERGHEN.  
AUTOMATIC FIRE EXTINGUISHER.

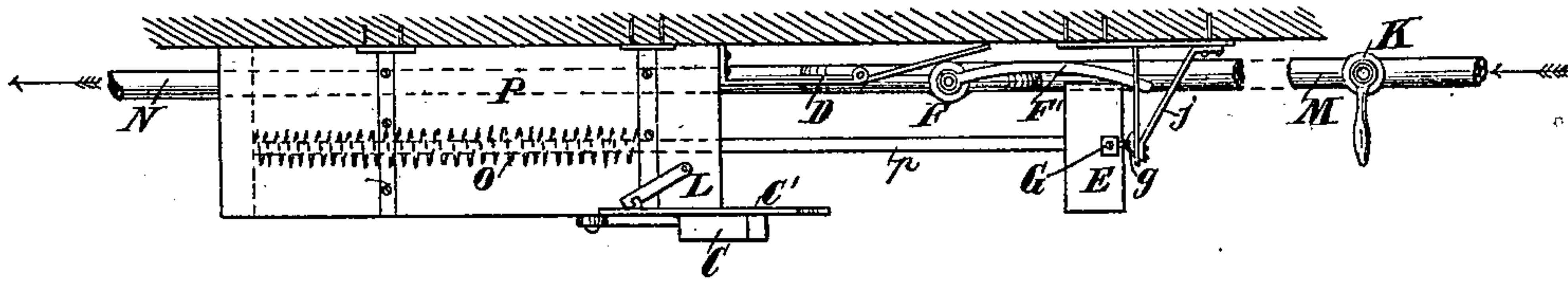
No. 272,803.

Patented Feb. 20, 1883.

*Fig 1.*



*Fig 2.*



*Witnesses:*

*Fred Wagner*  
*Geo. B. Byington*

*Inventor:*

*Victor Vankeerberghen*  
*by his Attorney*  
*Brown & Brown*

# UNITED STATES PATENT OFFICE.

VICTOR VANKEERBERGHEN, OF BRUSSELS, BELGIUM.

## AUTOMATIC FIRE EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 272,803, dated February 20, 1883.

Application filed October 4, 1882. (No model.) Patented in Belgium July 25, 1882, No. 53,578; in France July 31, 1882, No. 138,183; in Italy August 11, 1882, No. 14,479, and in Luxemburg August 14, 1882, No. 213.

*To all whom it may concern:*

Be it known that I, VICTOR VANKEERBERGHEN, a subject of His Majesty the King of the Belgians, residing at Brussels, in said Kingdom of Belgium, have invented a new and useful Improvement in Automatic Fire-Extinguishers, of which the following is a full, clear, and exact description.

The object of my invention is to provide novel means for automatically opening a cock in a pipe for the purpose of admitting steam, gas, or water into a burning room or building, and also to provide novel means for giving an alarm when the cock is operated to admit the steam, gas, or water into the room or building.

The objects of my invention are accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation, showing the general arrangement of the apparatus, and Fig. 2 represents a plan of the same.

A is the plate, composed of different metals of unequal expansive powers, provided with a slide, *a*. B is the trigger. B' is a pivoted intermediate piece in contact with plate A and serving to release trigger B; but its use is optional. C is the hammer, which strikes upon the hook catch or plate C'. D is a hinged locking-plate. E is a metal-faced spring-mallet, which opens steam-cock F. F is a steam-cock connecting pipes M and N. F' is the key of said cock. G is a spring-plate attached to mallet E, adapted to ring alarm-bell *h* through electric button *g* when mallet E is released. M is main steam, gas, or water pipe from boilers, tank, or reservoir to cock F. N N N are perforated pipes, through which the steam, gas, or water is admitted into the burning room or building. K is a stop-cock on pipe M. L L' are two small catches to hold mallet E in case of necessity. O is a spiral spring on shaft *p*, by means of which mallet E is projected. *p* is the shaft of mallet E. P is the case containing shaft *p* and spiral spring O. R is a mortised block, holding plate A. *j* is a buffer or stop faced with rubber to limit the movement of mallet E.

The operation of the apparatus is as follows: Being set as represented in Fig. 1, as soon as there is any material increase of temperature,

as in the case of fire, the compound metal expansion-plate A expands, but so unequally as to cause it to curve over and release the trigger B either directly or through the intermediate pivoted piece, B'. The trigger, being released, causes mallet C to fall, striking the hook or catch C', and thereby releasing the hinged locking-plate D. The action of spring O forcibly projects mallet E outward, when it strikes and turns the key F' of the cock F, which is thereby opened, permitting the steam, gas, or water to pass from pipe M into the perforated pipes N, from whence it immediately escapes into the burning room or building. The spring-plate G at the same time comes in contact with the button *g* of an electric alarm-bell, *h*, thereby giving immediate and automatic notice of the fire.

In factory-rooms or in other places where the necessary temperature is at all times very considerable an ordinary steel spring may be substituted for the plate A, said spring being curved back from the trigger and held in position by means of a readily combustible cord or strap, which in turn is connected with a number or net-work of inflammable threads stretched along the room or building to be protected. In this case should fire break out the combustible threads will rapidly communicate the fire to the holding-cord, and by its burning the steel spring will be released and fly forward, striking the trigger B and putting the entire system into operation.

Having thus described my invention and how the same may be employed, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in an automatic fire-extinguisher, of a spring-impelled mallet, a cock adapted to be opened by said mallet, a device for holding the mallet in a position to retract the spring, a hammer arranged to release said device to permit the mallet to move longitudinally under the action of the spring to open the cock in a steam, gas, or water pipe, and a compound metal expansion-plate arranged to actuate the hammer, substantially as described.

2. The combination, in an automatic fire-extinguisher, of a cock located in a steam, water, or gas pipe, a longitudinally-movable mallet arranged to open said cock, a locking device



for normally holding the mallet at a distance from the cock, and mechanism actuated by a compound metal expansion-plate for disengaging said locking device and permitting the mallet to move and open the cock, substantially as described.

3. The combination, in an automatic fire-extinguisher, of a cock located in a steam, gas, or water pipe, a spring-impelled mallet arranged to move longitudinally and open the cock, locking devices for holding the mallet in a position to retract its impelling-spring, a hammer having a trigger and arranged to release locking devices to permit the mallet to move under the action of its spring, and a compound metal expansion-plate arranged to operate on the trigger to actuate the hammer, substantially as described.

4. The combination of a cock located in a steam, gas, or water pipe, a spring-impelled mallet, a guide-shaft for the mallet, a locking-plate for holding the mallet in a position to retract its spring, a hammer having a trigger and arranged to release the mallet locking-plate, and a compound metal expansion-plate arranged to operate the trigger to actuate the hammer, substantially as described.

5. The combination of a cock located in a

steam, gas, or water pipe, a longitudinally-movable mallet, means for holding the mallet at a distance from the cock, mechanism for automatically releasing the mallet and moving the same longitudinally to open the cock, and an alarm set in motion by the longitudinal movement of the mallet, substantially as described.

6. The combination of a cock located in a steam, gas, or water pipe, a spring-impelled mallet carrying a metal plate, devices for holding the mallet in a position to retract its impelling-spring, mechanism for releasing the mallet to permit its longitudinal movement to open the cock, and an electric alarm-bell operated by the metal plate of the mallet on its longitudinal movement, substantially as described.

7. The combination of the compound metal expansion-strip A, the hammer C, having a trigger, B, a spring-impelled mallet, E, a locking-plate, D, hook catch or plate C', and the cock F, located in a steam, gas, or water pipe, substantially as described.

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Witnesses:

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