GEORGE W. COOK.

Fire Arresters.

No. 125,663. Patented April 16, 1872.

Fig. 1.

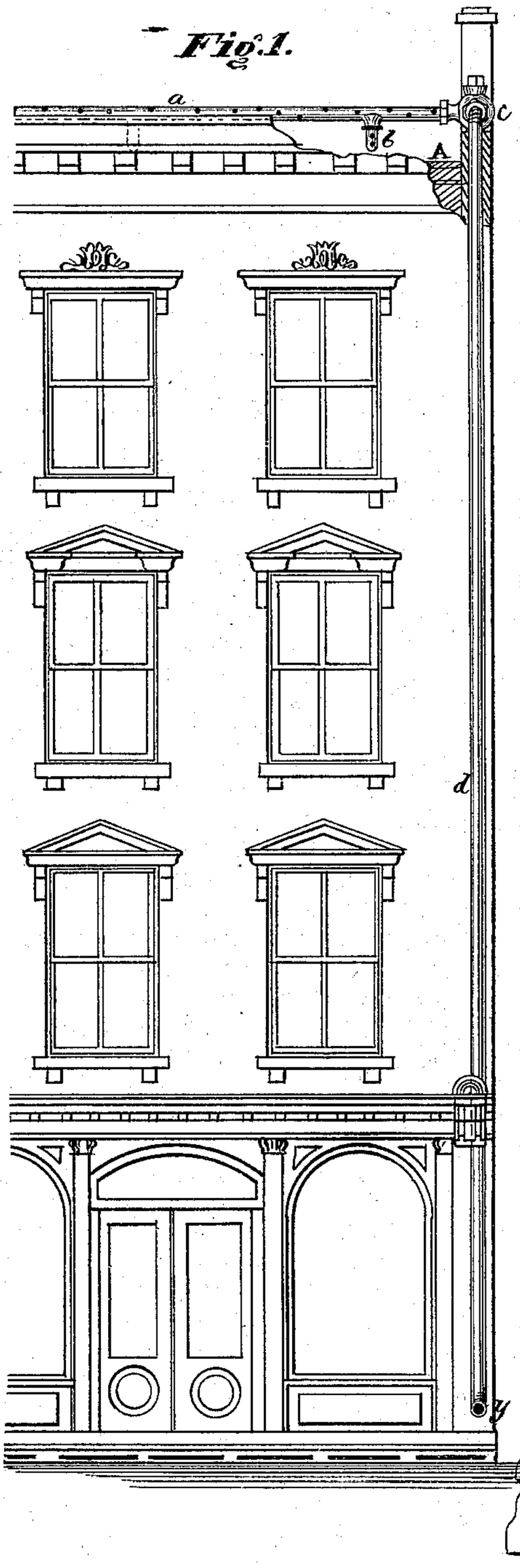
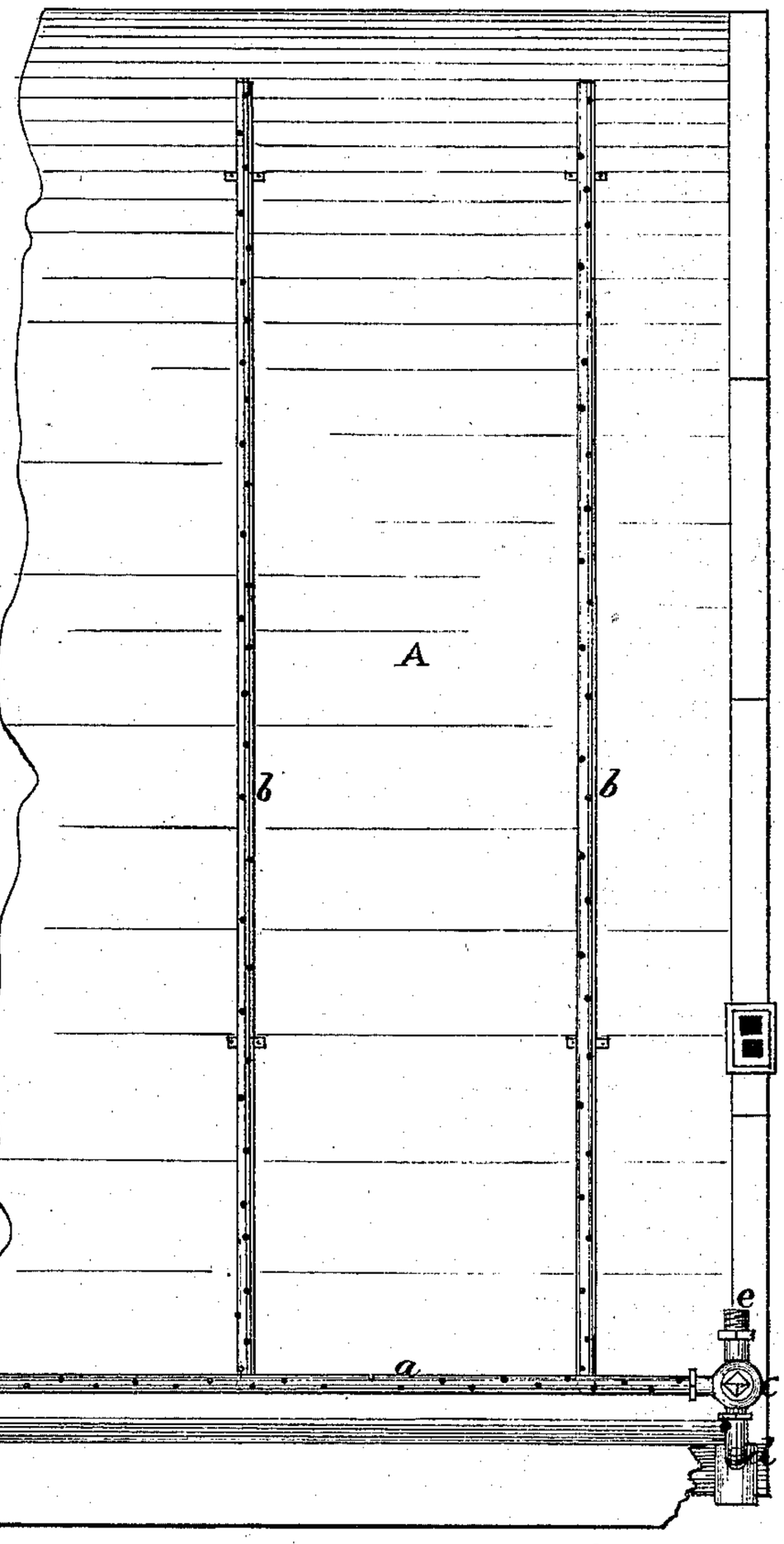


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE W. COOK, OF GENESEO, ILLINOIS.

IMPROVEMENT IN FIRE-ARRESTERS.

Specification forming part of Letters Patent No. 125,663, dated April 16, 1872.

To all whom it may concern:

Be it known that I, GEORGE W. COOK, of Geneseo, in the county of Henry and State of Illinois, have invented a new and useful Roof-Protector and Fire-Arrester; and I do hereby declare the following to be a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to fully understand and to make and use the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 is a front elevation of a building provided with my protector. Fig. 2 is a plan view of the roof thereof.

In blocks of buildings, especially commercial warehouses of four, five, or more stories, in large cities, fire is frequently communicated from the place in which it originates to buildings in the vicinity by flames and sparks spread by the wind. It has been found to be very difficult, if not impossible, with the best steam fire-engines to throw water to the roofs of these tall buildings, the heat of the fire being often so intense as to forbid the near approach of the firemen. If an attempt be made to carry the hose to the top of the building and use it there, it will be found that the pressure is so great that the hose is generally burst.

The object of my invention is to avoid the difficulties mentioned and provide means whereby a roof can be effectually flooded to protect it from fire and arrest the spread of the flames, at the same time making provision for the attachment of hose on the top of the building, whereby the liability to burst from excessive pressure is much lessened and the firemen are enabled to use the hose with much better effect than from the ground. To acccomplish these ends my invention consists in the combination and arrangement of a series of perforated pipes on the roof and leading from a distributer thereon, in communication with a main pipe or conductor running down from the roof to a point sufficiently near the ground to admit of the ready connection thereto of the hose from a steam fire-engine, whereby, the water being forced into and up the main pipe by the engine, is made to flow in copious streams from the perforated pipes, thus flooding the roof. The invention further consists, in a three-way cock provided with a nozzle, which forms the connection between the main and distributing pipes, so that the water can be entirely turned off from the roof, or kept from the perforated pipes and the whole body allowed to flow through a hose attached to the nozzle, or permitted to escape partly through the hose and the remainder from the perforated pipes.

My invention will be fully understood from the following detail description.

In the accompanying drawing, wherein similar letters of reference indicate like parts in the two figures, I have shown my invention applied to a building of four stories. The invention is mainly intended for buildings of five, six, or more stories, or so high that the upper parts and roof will be beyond the effective reach of water thrown from a hose directed from the ground. The drawing represents a building with a roof which is nearly flat, as this is the prevailing style of building at the present time, besides there is not so much danger of the lodgment of sparks upon a peaked roof as upon those which are nearly flat.

I will now describe the preferred construction and arrangement of parts composing my protector, and will afterward mention several modifications which may be made therein.

On the roof A, near the front, is arranged a transverse pipe, *a*, which I term the "distributer." To this pipe are connected longitudinal pipes *b b*, extending nearly or quite to the rear of the roof and closed at that end. These pipes *a b b* are perforated, as clearly shown in the drawing, the orifices being preferably made before the metal is formed into a pipe, when sheet metal is used, so that there will be slight projections or nozzles on the exterior around the orifices when the pipe is finished. This provision can be also easily made if the pipes are cast. *c* represents a combined stop-cock and coupling, which forms the connection between the distributer *a* and the conductor *d*. This pipe runs down to a point sufficiently near the ground to permit the ready attachment of the hose from an engine, a suitable nozzle, *y*, being placed at or near the lower end of the conductor. The coupling-cock *c* is provided with a nozzle, *e*, to which hose may be attached for playing upon the fire or the buildings exposed. This avoids the liability of bursting the hose, which frequently re-

sults from the great pressure when the hose is carried directly from the engine to the upper stories or the roofs of high structures.

It will probably be necessary to make the conductor *d* of cast-iron to withstand the immense pressure to which it may be subjected, and the distributing and sprinkling pipes may also have to be made of the same material, although it is believed that in some instances, at least, sheet metal can be used for the roof pipes without the danger of bursting under ordinary pressure. In size the conducting and distributing pipes will generally be made about the same as the ordinary hose in use for fire-engines, while the diameter of the longitudinal sprinkling-pipes need not exceed one-half that of the others.

I prefer to locate the roof pipes at a distance of from six to twelve inches above the roof; and the distributer should be placed at the highest part of the roof.

The conductor may be situated as shown in the drawing, on the front of the building, or upon the side, or in any other accessible location. When the protector is to be applied to a building in course of construction the conducting-pipe can be easily inclosed and concealed within the wall.

My invention is designed as a protector against fire rather than as a fire-extinguisher. In other words, if a building provided with my protector should be on fire in the lower stories there would be but little to be gained by flooding the roof; but if the fire should be in an adjoining building, or in the immediate vicinity, the flooding of the roof of the exposed building would, under ordinary circumstances, protect the structure by extinguishing the falling sparks and arresting the spread of the flames.

When a building provided with this protector is exposed to danger from a fire the hose from a steam fire-engine will be attached to the nozzle at the lower part of the conducting-pipe, and, as water is supplied, it will be forced up to the roof and copiously showered upon the same through the numerous perforations in the pipes; and a separate hose may be carried up and attached to the nozzle *e*, into which all or a portion of the water may be directed by properly turning the cock at the junction of the pipes *a d*. This hose may be used from any part of the roof to throw a stream directly upon the fire for extinguishing the flames.

It should be noticed that my protector can remain in full operation near the fire, all the parts being metallic, when the heat is so intense that firemen could not approach sufficiently near to use their hose with any effect.

It may be found an advantage, in cases where the roof is rather slanting, to place or form ridges of zigzag or other contour, to retard the escape of water from the roof.

I am aware that it is not new to diffuse water within and upon buildings through perforated pipes, several patents having been granted therefor, insomuch that the differences between them, though substantially real and patentable, are not more distinct than the diference between the present invention and any one of them, this consisting mainly in the provision of means for concentrating the whole flow of water at will through a hose and pipe, an arrangement in many instances essential to the successful use of the supply, especially when the diversion of the stream to a neighboring building becomes desirable.

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

The roof-protector herein described, consisting of the perforated pipes *a b b*, three-way cock *c*, provided with a nozzle, *e*, for the attachment of hose at the top of the building, and conductor *d y*, all arranged, constructed, and operated in the manner and for the purpose set forth.

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Witnesses:

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