

(No Model.)

C. C. DUGGER.

FIRE EXTINGUISHING ATTACHMENT FOR ELEVATOR SHAFTS OR
STAIRWAYS.

No. 495,402.

Patented Apr. 11, 1893.

Fig. 1.

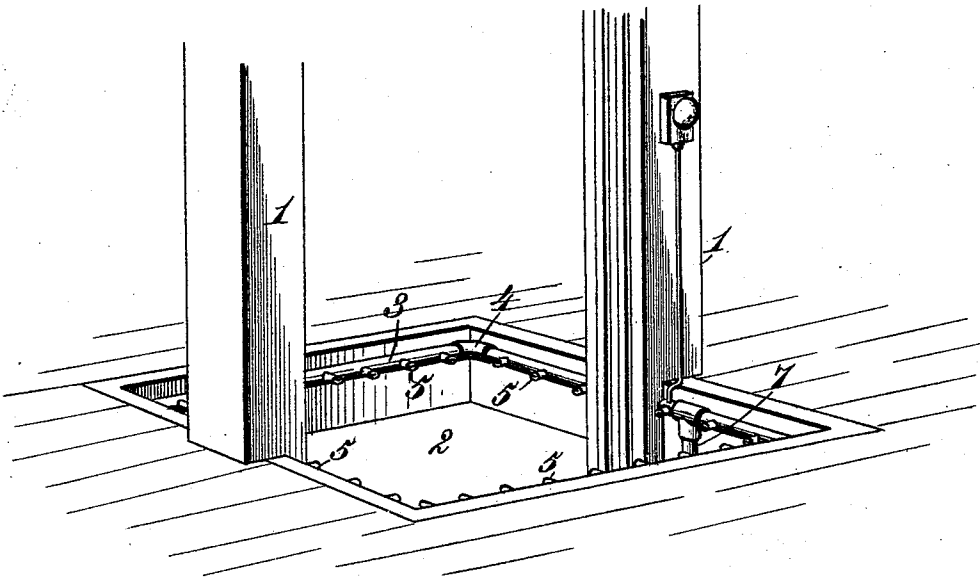
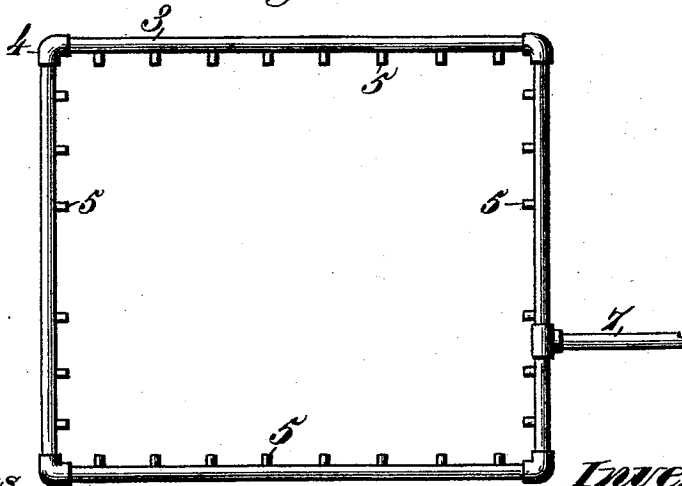


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

COLLIN C. DUGGER, OF NASHVILLE, TENNESSEE, ASSIGNOR OF TWO-THIRDS
TO ELGER M. CARRELL AND DAVID A. NUNN, OF SAME PLACE.

FIRE-EXTINGUISHING ATTACHMENT FOR ELEVATOR SHAFTS OR STAIRWAYS.

SPECIFICATION forming part of Letters Patent No. 495,402, dated April 11, 1893.

Application filed July 25, 1892. Serial No. 441,177. (No model.)

To all whom it may concern:

Be it known that I, COLLIN C. DUGGER, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented new and useful Improvements in Fire-Extinguishing Attachments for Elevator-Shafts or Stairways, of which the following is a specification.

My invention relates to passenger and other elevators and the purpose thereof is to provide and combine with the shaft, or "well" in which the elevator moves a stand-pipe having such adjuncts as may be necessary, or desirable, to properly equip said stand-pipe for use as a pressure-reservoir, in case of fire. It is my purpose, in other words, to combine with the well, or shaft of an elevator, a fire-extinguishing attachment, comprising a stand-pipe of suitable dimensions which shall traverse the shaft, or well, vertically, or such portion of the same as may be considered necessary, a fluid-supply for said pipe capable of filling the same and maintaining the supply therein, and a series of tubular sections of suitable form and arranged within the said shaft, or well, in such manner that when free communication is established between the supply-pipe and said tubular sections a continuous, or practically continuous discharge takes place from each tubular section and from all parts thereof.

My invention consists, for the several objects stated, in the novel features of construction and new combinations of parts hereinafter fully set forth and then more particularly pointed out and defined in the claim annexed to this description.

To enable others skilled in the art to understand and to make, construct, and use my said invention, I will now describe the latter in detail, reference being had, for such purpose, to the drawings accompanying this specification, in which—

Figure 1 is a view in perspective, showing one form in which the invention is applied to use. Fig. 2 is plan view of one of the tubular sections, and a portion of its supply-pipe.

In the said drawings the reference numeral 1 denotes the vertical guide-ways of an ordinary elevator, or lift, of any type, and the

numeral 2 denotes one of the openings, or passages, whereby the cage, or platform, passes through the several floors of the building in which it is arranged.

In most passenger elevators, the space traversed by the cage is usually inclosed, forming a continuous well, or shaft, while in elevators used in warehouses for hoisting and lowering goods and in similar uses, the inclosure is frequently omitted, substantially as shown in the accompanying drawings. As both constructions are well known, I have illustrated the simplest one, only, it being clearly evident that my invention is applicable to either, or both, without any material change.

Within the space traversed by the elevator, as for example, within the floor-opening 2, is arranged a tubular section 3, composed of pipes of suitable diameter, connected at their ends to form a frame which will lie within the space mentioned, but without danger of obstructing the movement of the elevator. This frame may consist of a single pipe, bent at proper points, or a plurality of pipes connected by pipe-unions 4. In said pipes are inserted, in any suitable manner, a series of short, spraying, or exit-terminals 5, their openings being preferably so formed as to cause the water to issue in sheets. To this end, the orifices of said terminals may be formed in a proper manner, and the intervals between said terminals so adjusted that the laterally spread streams will unite at a short distance from the points of exit.

It will be seen by reference to Fig. 1 of the drawings, that the exit-openings in the nozzles 5 are elongated horizontally, for the purpose described above. As horizontal sheets of water are thus produced, each takes a form resembling that of a fan, and unites with the two adjacent streams. In this manner the water-jets upon any one of the four sides of the elevator-well, or stair-casing, will unite with each other and form a continuous sheet of water, as wide as, or wider than, the corresponding side of the well. As this action takes place upon all the four sides of the casing, or stairway, it will readily be understood that the escaping fluid will form, practically,

a solid, continuous, fluid-arch, filling the well at that point and cutting off draft, which is one of the chief sources of dangerous conflagrations in buildings supplied with elevators.

5 Besides cutting off the draft, the fluid-arch intercepts glowing cinders and extinguishes them. The surplus water, after forming the fluid-arch, or arches, flows from the common point of intersection of the four sheets into
10 any suitable receptacle.

The tubular sections are supplied by a stand pipe 7, connected with a main, or with any other source suitable for the purpose.

As a means of signaling to the occupants
15 of the several floors that a fire is in progress, I propose to place upon each floor an alarm, or audible signal of any known form, connecting the same to the pipe conveying the fluid, or to supports within accessible distance for
20 the utilization of the "head," or pressure of water in said pipe. Each signal may consist of an alarm gong, operated by any form of fluid-motor, or it may belong to the class which includes the large variety of whistling-signals,
25 which I may operate by compressed air, the compression being effected by the gravity of the vertical water-column in the supply-pipe, and a separate air-pipe may be used to communicate pressure, thus generated to all the
30 floors.

My invention is also specially adapted for use in stair-ways, the tubular sections, in such

cases, being arranged at or near each landing, or floor, and supplied from a stand-pipe in substantially the same manner already de- 35 scribed.

What I claim is—

In a fire-extinguishing attachment for elevator-casings and stairways, the combination with an elevator-well, or casing, of a rectangular fluid-conducting frame arranged in said well, a series of short tubes, or exit-terminals, projecting from the inner side of each of the four parts of the rectangular frame, said terminals being arranged at suitable close intervals and provided with exit-openings which are elongated horizontally, or in substantially the same plane, and means for supplying fluid to said frame, whereby the discharge-jets from said exit-terminals will be in thin fan-shaped sheets, which will unite near the several points of discharge, whereby a substantially continuous fluid arch will be formed in the elevator-casing, to cut-off the draft of air, extinguish falling cinders and drench the elevator-casing, substantially as described. 55

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

COLLIN C. DUGGER. [L. s.]

Witnesses:

LEE BROCK,
E. L. DOAK.