

(No Model.)

2 Sheets—Sheet 1.

E. F. CLARKE.

FIREPROOF CURTAIN FOR ELEVATOR SHAFTS.

No. 519,990.

Patented May 15, 1894.

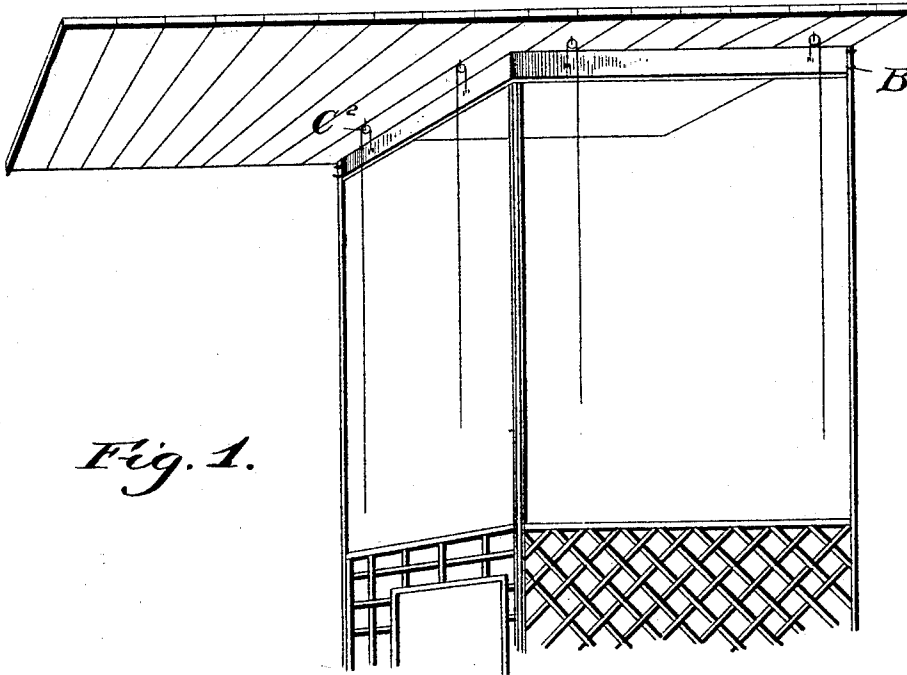


Fig. 1.

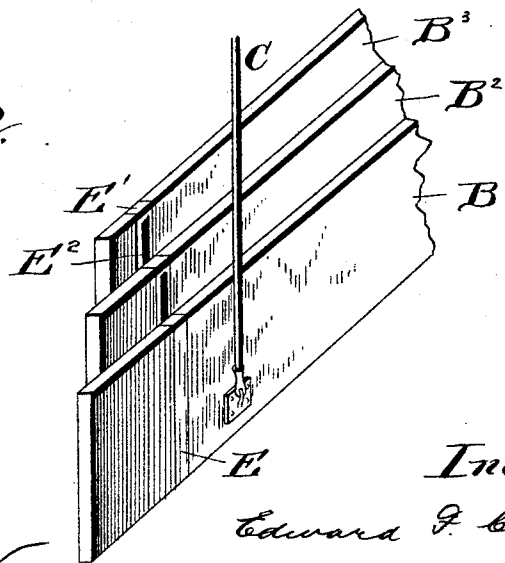


Fig. 2.

Witnesses:

J. B. McGirr.
Howard Hoyer

Inventor.

Edward F. Clarke
by Frank L. Ayer.

his Attorney

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Fig. 3.

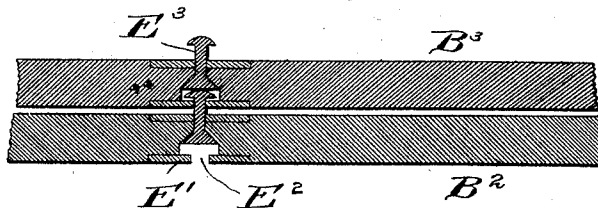


Fig. 4.

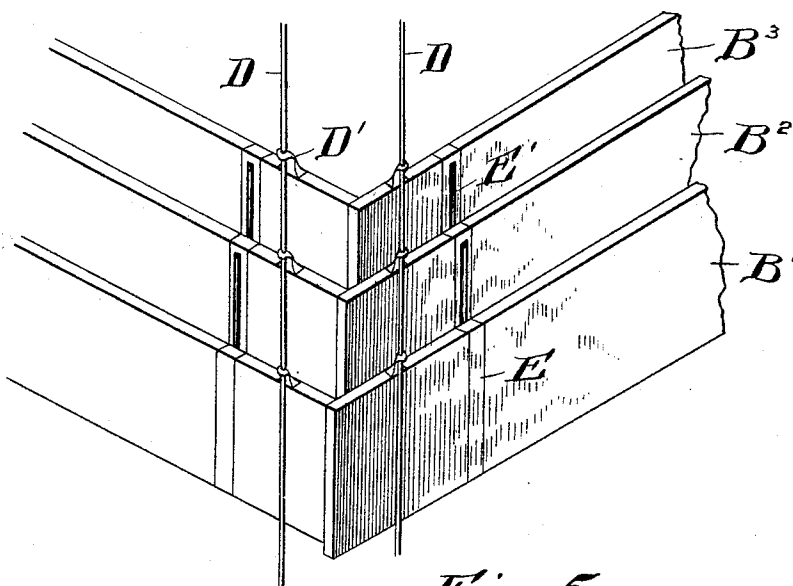
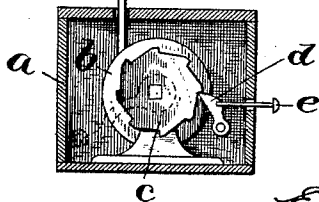


Fig. 5.



Witnesses:

J. B. McGinnis.
Almond Hodge.

Inventor:

Edward F. Clarke.
by Frank L. Ayer,
his Attorney.

UNITED STATES PATENT OFFICE.

EDWARD F. CLARKE, OF DULUTH, MINNESOTA.

FIREPROOF CURTAIN FOR ELEVATOR-SHAFTS.

SPECIFICATION forming part of Letters Patent No. 519,990, dated May 15, 1894.

Application filed October 27, 1893. Serial No. 489,328. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. CLARKE, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Fireproof Curtains for Elevator-Shafts; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

It is a fact of common knowledge that the elevator shafts in large buildings are extremely dangerous in case of fire, which is caused thereby to spread from one floor to another.

My invention relates to an improved fireproof curtain which is adapted to let down so as to box in the elevator shaft, whereby the liability of the spreading of the flames in a building will be materially decreased.

The objects of the invention are to produce a curtain which can be easily attached to an elevator shaft, which will occupy but little space when raised, and which can be quickly lowered into place in case of necessity.

The principal novelty in the invention consists of a curtain made of a number of slats adapted to slide upon one another and normally held up against the ceiling of each floor on all four sides of the elevator shaft and adapted in case of fire to be instantly lowered so as to close in the elevator shaft and prevent the spreading of the flames therein.

For a better comprehension of my invention, attention is directed to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 shows a perspective view of a portion of the elevator shaft with the curtain in a raised position; Fig. 2, an enlarged view of a portion of the curtain; Fig. 3 a sectional view thereof; Fig. 4 a perspective view of a portion of two of the curtains, showing the method of joining the edges thereof, and Fig. 5, an internal view of one form of mechanism for instantly lowering the curtains.

In all the above views corresponding parts

are designated by the same letters of reference.

The elevator shaft illustrated in Fig. 1 is of the usual construction, being provided with gates to allow entrance to the elevator and being fenced in the usual way.

B is a curtain which is adapted to be lowered down on each side of the elevator shaft for the purpose above explained. In Fig. 1 these curtains B are shown in a raised position, being entirely out of the way and in no wise effecting the light or draft in the elevator shaft. Each one of these curtains B is composed of a number of slats B', B², B³, of proper width, each slat being made of some fireproof material, such as asbestos, although these slats may be made of metal, as will be understood.

E is a metal strip which encircles each slat B' and serves to strengthen the same. Any number of these strips E may be used but in practice it will probably be only necessary to place one at each end of the slats. The strips E are provided with a slot E' therein and each slat is cut away behind the slot as shown in Fig. 3, so that a recess E² will be formed therein.

E³ is a bolt which is passed through the body of each strip near the upper edge thereof and engages with the recess E² in the strip directly behind it, being kept in this recess by the head of the bolt engaging with the metal strip E, as will be understood. A sufficient number of these slats are thus placed together so that when extended they will reach from the ceiling to the floor of each story of the building. The strips E in addition to serving to strengthen the slats also offer convenient bearing surfaces for the slats, as will be understood, and will prevent wear on the material of the slats.

D, D, are ropes or wires which extend down from the ceiling to the floor of each story, and sliding over these ropes D, are the eyes D', one of said eyes being placed on each slat to engage with each of said ropes. The ropes D being stretched very tight will offer perfectly rigid guides for the curtain, which will in this way be kept in a firm position and can-

not be disturbed or affected by drafts in the elevator shaft. Any number of these guide ropes D may be used or the said ropes D may be dispensed with without departing from the spirit of this invention.

The manner in which the ends of the slats B², B³, engage with the slats of the adjacent curtain is illustrated in Fig. 4. It will be observed that the slats of one curtain overlap the edges of the corresponding slats of the adjacent curtain, which is effected by making the top slats B³ of a certain length and by making the slats B² directly beneath sufficiently long to overlap the edge of the corresponding slat B², and so on. In this way a tight joint at the corners of the elevator shaft will be obtained. Instead of this arrangement, the slats B³ of one curtain may be rigidly connected to the corresponding slats of the adjacent curtain in any suitable way, so that all four curtains may be joined together and movable simultaneously. If this latter arrangement is made use of, it will be observed that the guide ropes D may be dispensed with. The curtains are adapted to be simultaneously raised and lowered by means of ropes C which are attached to the lower slat B' of each curtain, and which extend up over pulleys C² placed on the ceiling, said ropes being handled in any suitable way. A convenient device for hauling these ropes is illustrated in Fig. 5, to which attention is now directed. *a* is a box or casing which is placed on the floor of the elevator shaft or any place near the same, and which has a drum *b* mounted within it. On the shaft of the said drum is placed a ratchet wheel *c* within which a pawl *d* engages, said pawl preventing the drum *b* from unwinding. *e* is a small handle connecting with the pawl *d* and by means of which the said pawl will be disengaged from the ratchet wheel *c*. A crank *f* (shown in dotted lines) may be used for winding up the drum. All of the ropes or handling lines C are united together in any way and connect with a single rope D which extends down and passes around the drum *b*. By operating the crank *f* the drum *b* will be rotated and the rope D will be wound up thereon, elevating the curtains. In case of fire the handle *e* is pulled out, disengaging the pawl *d*, from the ratchet wheel *c*, allowing the drum *b* to be unwound by the weight of the curtains, which will in this way be dropped

simultaneously so as to surround the elevator shaft and prevent the flames from spreading out through the same to any floors above the fire.

Instead of operating the handle *e* manually, the said handle may be connected in any way to the thermostat or to a fuse adapted to be operated when heated above a normal point so as to lower the curtains, but I do not consider this arrangement advantageous since it is desirable to lower the curtains on all the floors of the building before any great heat reaches those floors.

What I claim is—

1. The combination with an elevator shaft, of a fire-proof curtain B, composed of slats B', B², B³, engaged together and adapted to be lowered so as to surround said elevator shaft, substantially as described.

2. The combination with an elevator shaft, of a fire proof curtain B normally elevated above the same, said curtain being composed of slats B', B², B³, sliding upon each other and adapted to be extended so as to surround said elevator shaft for the purpose mentioned.

3. The combination with an elevator shaft, of a fire proof curtain B composed of slats B', B², B³, engaged together and guide ropes D for said slats, substantially as described.

4. The combination with an elevator shaft, of a fire proof curtain B, composed of slats B', B², B³, engaged together, guide ropes D, for said slats, and a handling rope or line C attached to the lower one of said slats B', substantially as described.

5. The combination with an elevator shaft, of a fire proof curtain B on each side thereof, each curtain being composed of slats B', B², B³ of unequal length so as to overlap the edges of the adjacent slats as described for the purpose mentioned.

6. An improved fire proof curtain for the purpose mentioned, composed of slats B', B², B³, the strips E, on each slat, the slot E', on each strip E; and the bolt E² in each slat, engaging with the slot directly behind it, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD F. CLARKE.

Witnesses:

WALTER S. TRAPHAGEN,
F. L. RICHMOND.