(No Model.)

H. MATTULLATH.

COVER FOR CLOSING ELEVATOR HATCH OPENINGS.

No. 589,567. Patented Sept. 7, 1897.

Fig. 2.

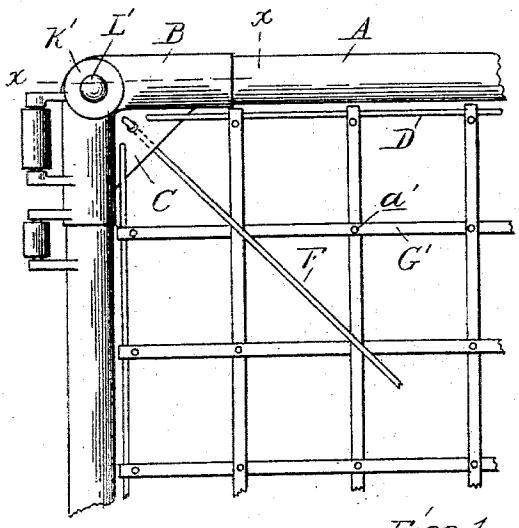


Fig. 3.

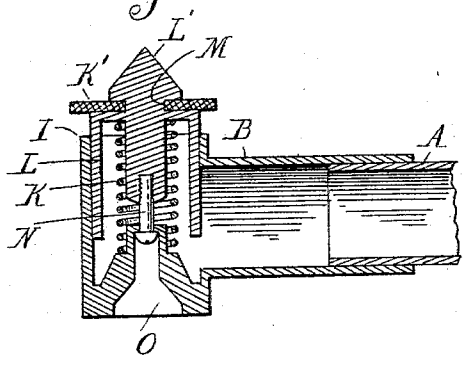
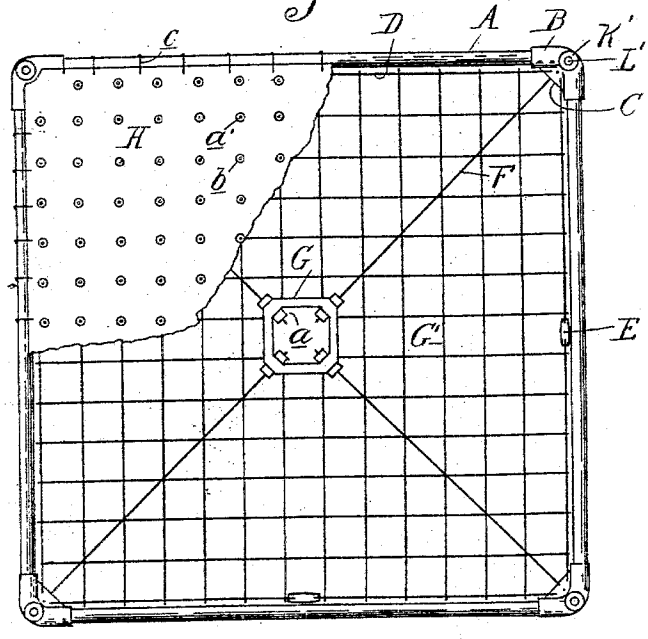


Fig. 1



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UNITED STATES PATENT OFFICE.

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COVER FOR CLOSING ELEVATOR HATCH-OPENINGS.

SPECIFICATION forming part of Letters Patent No. 589,567, dated September 7, 1897.

Application filed February 8, 1896. Renewed February 13, 1897. Serial No. 623,317. (No model.)

To all whom it may concern:

Be it known that I, HUGO MATTULLATH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Covers for Closing Elevator Hatch-Openings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that kind of elevator attachment in which the car carries suitable covers adapted for closing the openings in the floors and which are automatically deposited by the car as it travels up or down the shaft for the purpose of preventing persons from falling down the open shaft and as a protection against fire to prevent it from spreading through a building, as is the case where the hatch-openings are left open.

The object of my invention is to construct a fireproof cover for the purpose, which at the same time combines lightness with great strength, so as to add the least amount of dead-weight to the car, which has to carry a number of them while passing up or down the shaft, and at the same time permit it to sustain any reasonable amount of weight, such as a person stepping accidentally on it while it is supported in the hatch-opening.

A further object is to make it so that it has a certain amount of elasticity, which enables it to withstand the wear and tear occasioned by contact with a fast-traveling elevator.

To this end my invention consists of a tubular metallic main frame and an interior fireproof webbing supported by means of tie-rods within the main frame, all in the manner hereinafter more fully described, and shown in the drawings.

Figure 1 is a plan view of my improved hatch-cover with part of the fireproof covering removed. Fig. 2 is an enlarged plan view of one corner of the cover minus the fireproof covering. Fig. 3 is a section through the corner of the frame on line $x\,x$ in Fig. 2.

A are tubular metallic frame-bars forming the sides of the main frame.

B are metallic corner-brackets formed with two tubular sleeves adapted to receive the ends of the frame-bars, to which they are firmly connected in any suitable manner, preferably by brazing.

C is a corner-web uniting the tubular sleeves of the corner-brackets.

D are side tie-rods connecting the adjacent corner-brackets within the main frame. They are preferably formed with hooks at their ends, which engage into holes formed in the webs of the corner-brackets.

E are turnbuckles for tightening the tie-rods D.

F are diagonal tie-rods connecting diagonally opposite corners of the frame. They are secured at their ends to the web of the corner-brackets and may be provided near the middle with turnbuckles for tightening them in the same manner as the tie ends D, or preferably, as shown, the sections are secured to a metallic frame G, (which in the use of the cover may be required to form a passage for the hoisting-cable of the elevator,) to which the inner ends of the sections are secured by screw-nuts a for tightening them.

G′ is a metallic screen formed of strands of wire or, preferably, of thin metallic ribbons, the ends of the strands being secured to the tie-rods D and the parts where the strands cross each other being preferably secured together by brazing or rivets a'. This screen may also be secured in any suitable manner to the diagonal tie-rods wherever the latter cross the strands thereof.

H is a fireproof covering preferably formed of asbestos sheet treated with a solution of silicate of soda and reinforced by uniting it with a strong fabric, preferably to so-called "grass-cloth," united to the asbestos sheet by cementing together by means of a fireproofing solution, such as silicate of soda. This fireproofing covering may be secured to the screen in any suitable manner. Preferably the rivets a' are passed through the covering also, and suitable washers b are used to prevent the covering from tearing out at the rivets. The edges of the covering may also be bound to the frame by wire bands c or in any other desired manner.

In practice when the covers are not deposited in the hatch-openings they are piled on top of each other, either at top or bottom of the hatchway or above and below the

car, as the peculiar construction and operation may require. For facilitating the proper piling of the cover and preventing noise and jar the following provision is made: Each corner-bracket is provided at the junction of the sleeves with a vertical tubular branch I, extending a little distance above and below the corner-bracket. This branch forms a socket in which is supported by means of a coil-spring K the buffer L, the projecting end of which carries a rubber pad K' and has a projecting conical stud L', provided with a neck M, which holds the rubber pad in place. The buffer is held in place in the socket by a screw N, passing through the bottom of the socket. The under side of the latter is formed with a recess O, adapted to receive the conical stud of a like buffer.

By means of this construction it will be seen that the covers when piled on top of each other are supported on the buffers. Any and all possible damage by contact is therefore avoided. At the same time the buffers prevent noisy contact in coming together, and each additional cover will be guided into proper place by the conical stud engaging into the socket of the adjacent cover.

A cover constructed in accordance with my invention may be made very light and still possess all the requisite strength, rigidity, and other qualities which its peculiar use requires. It will also be seen that the tie-rods not only impart to the cover great rigidity, but they also form inner frame-bars, which serve as the foundation and support for the interior panel, and any weight brought upon the interior panel, such as a person stepping on it, will be borne by the tie-rods and the interior panel and produce simply a compression strain on the frame-bars, which in no way can produce any deflection, as would be the case if the panel were secured to the frame-bars intermediate between the corners.

The corner-brackets may be made of cast metal, the alloy of aluminium being well adapted on account of increased lightness. The frame-bars should be of light steel tubing.

What I claim as my invention is—

1. A hatch-cover composed of an outer frame and an interior filling or panel supported on tie-rods connecting the corners of the outer frame, substantially as described.

2. A hatch-cover having an outer frame formed of frame-bars and corner-brackets connecting the same, tie-rods connecting adjacent corner-brackets within the outer frame and a panel or filling supported by said tie-rods, substantially as described.

3. A hatch-cover having an outer main frame composed of frame-bars and corner-brackets connecting the same, an interior flange or webbing in the angle of the corner-brackets, tie-rods connecting with their outer ends the flanges of adjacent corner-brackets and a filling or panel connected to and supported by said tie-rods, substantially as described.

4. A hatch-cover comprising the tubular frame-bars A, the corner-brackets B connecting the same, the side tie-rods D connecting adjacent corner-brackets, the diagonal tie-rods F, the screen G secured to the tie-rods and the fireproof covering secured to the screen, substantially as described.

5. A hatch-cover formed with spring-buffers at its corners, each consisting of a branch I, formed with the corner-bracket, the spring-buffer L in the top of the socket and provided with the conical stud L' and elastic pad K', and the conical seat or recess O in the bottom of the sockets.

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

HUGO MATTULLATH.

Witnesses:
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