

UNITED STATES PATENT OFFICE.

JOHN F. WERNER, OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-ESCAPES.

Specification forming part of Letters Patent No. **186,070**, dated January 9, 1877; application filed December 18, 1876.

To all whom it may concern:

Be it known that I, JOHN F. WERNER, of the city, county, and State of New York, have invented a new and Improved Fire-Escape for Theaters, &c., of which the following is a specification:

The object of this invention is to provide a simple and effective fire-escape for theaters, concert-halls, and other public places of amusement, by which the space at the upper parts of the entrances, halls, or vestibules of the buildings is utilized for the purpose of forming additional passage-ways for the persons in the buildings, to be used in case of fire for the more convenient and less dangerous exit of the same.

The invention consists, mainly, of a movable floor, suspended by chains, pulleys, and weights, near the ceiling of the entrances, halls, and vestibules, and lowered in case of fire, to be supported on projecting rests of the side walls, at suitable height above the floor. Sliding extensions and swinging stairs and rear sections connect with the ground outside of the door, and with the staircases of the gallery, so as to form separate exits above the regular entrances.

In the accompanying drawing, Figure 1 represents a front elevation of a theater or other building with my fire-escape lowered and ready for work. Fig. 2 is a rear elevation, showing connection of the fire-escape, by swinging sections, with stairways of galleries; and Fig. 3 is a vertical transverse section on line *c c*, Fig. 1, showing a side elevation of the fire-escape.

Similar letters of reference indicate corresponding parts.

A in the drawing represents the entrance, hall, or vestibule of a theater or other place of amusement, and B a movable floor, which is constructed of wrought-iron, or other material, in the nature of grating or lattice-work, but of such strength as to be capable of carrying the largest number of persons that may stand thereon without breaking. This movable floor B is suspended by chains or wire cords *a*, passed over pulleys *b*, and provided with balancing-weight *d*, near the ceiling of the entrance when not in use, forming, when constructed with regard to ornamental ap-

pearance as well as strength, not an unsightly feature of the same.

In case of danger the floor B is lowered, from any suitable point or points, by means of cords and handles *e* until the same rests on bearings or supports C, in the shape of capitals or other ornamental shape, projecting from the side walls at a height of seven or eight feet above the ground, according to the height of the entrance. In this manner the height of the entrance A is divided into two parts, a lower and upper one, which are both high enough for the passage of persons.

The rear end of the floor B may be connected, either by swinging sections D, hinged to the sides of the floor B, and carried over by pulleys and cords *e*, with the staircases of the galleries, as shown in Fig. 2, or it may be connected by semi-sections D, hinged to the side walls of said staircases, and strengthened by suspension-cords *f* with the same, as shown in Figs. 2 and 3. The front part of the floor B is provided with a sliding extension, B', that is run out to extend to the outside of the door. The outer end of the extension B' is suspended, by wire cords or chains *g*, from one or more sliding top rods, E, of the ceiling, which are operated by suitable cords and pulleys *f*. The outer suspension-cords *g* support also a guard device or railing, *g'*, to prevent the pushing off of the persons from the movable floor. To the front end of floor B, at one or both sides of the same, are hinged swinging and folding stairs F, that serve, when thrown down on the ground outside of the door, as exits for the persons on the floor.

In case of fire the floor is lowered, the swinging sections and stairs swung down, and thereby a second passage formed, which is mainly designed for the people in the galleries, so that they may pass out simultaneously, and without interfering with the people in the parquet.

As it is a matter of experience that the greatest delay in the passage of the people is caused by the choking up of the entrances by the persons rushing out from the parquet, so that those in the galleries have less chance of escape, it is obvious that a practical means by which direct and unobstructed exit for the people in the galleries may be obtained will

in a great measure obviate the danger arising from the present defective construction of our theaters. The means described change every entrance-hall of a theater into two passages, so that the people may get out in half the time as at present, and may easily escape the danger of being exposed to the burning building. The galleries are quickly emptied by means of the fire-escapes of the entrances, the people being compelled by the bridge-sections D to pass onto the movable floors and over the same, and their extensions and stairs, to the outside of the building. If desired, additional movable stairs, running parallel to and being suspended in analogous manner to the movable floor, may be arranged in the lower parts of the staircases of the galleries, so that they may also be divided in their height into two passages, that form additional safety devices for the people.

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

1. A fire-escape for theaters, &c., consisting of a movable floor suspended at the ceiling of the entrances and supported on projecting

bearings of the side walls at suitable distance from the floor, when lowered in case of danger, substantially in the manner and for the purpose set forth.

2. A movable suspension-floor, supported on projecting bearings of the side walls of the entrance of a theater, &c., to divide the same, when lowered, into two exit-passages, substantially as set forth.

3. The combination of the movable floor, with swinging and suspended bridge-sections, connecting with the staircases of the galleries, substantially as described.

4. The combination of the movable floor, with a sliding front extension and swinging and folding side stairs, for the purpose described.

5. The combination of the sliding extension B', of movable floor B with outer supporting-chains or cords *g*, guard-railing *g'*, and sliding top rod or rods E of the entrance, substantially as specified.

JOHN F. WERNER.

Witnesses :

PAUL GOEPPEL,
C. SEDGWICK.