No. 892,281. PATENTED JUNE 30, 1908.

G. E. METTER.

FIRE ESCAPE.

APPLICATION FILED JAN. 15, 1908.

2 SHEETS—SHEET 1.

Fig. 1

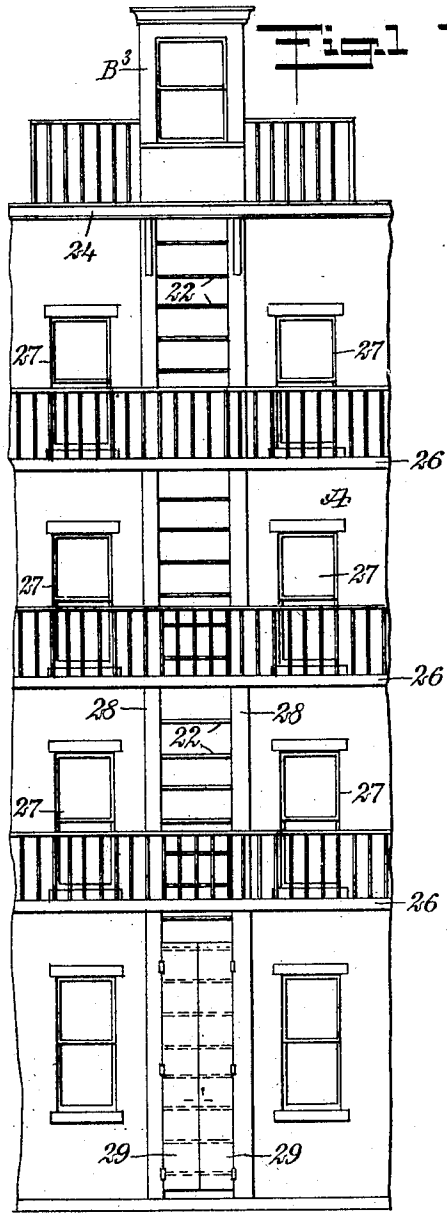
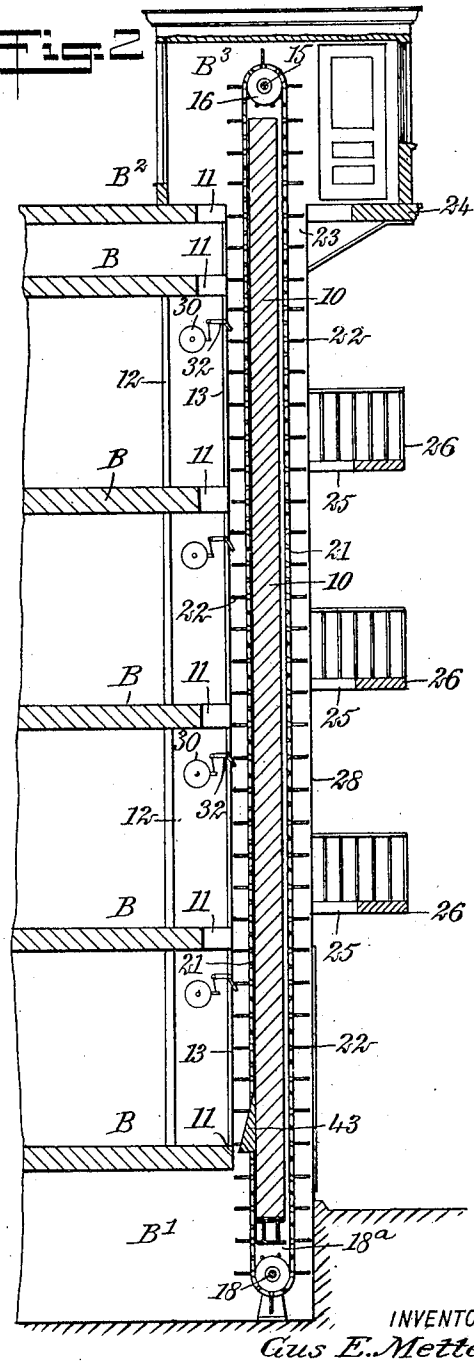


Fig. 2



WITNESSES

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Fig. 3

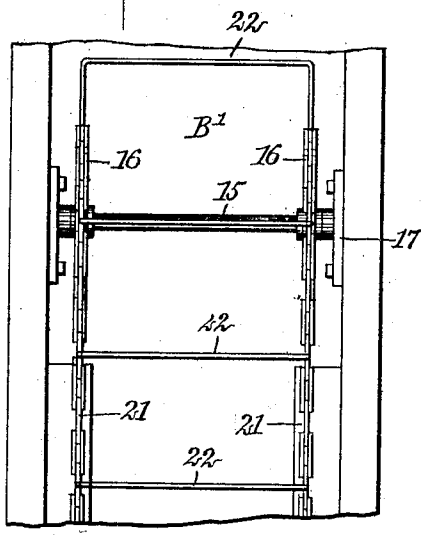


Fig. 4

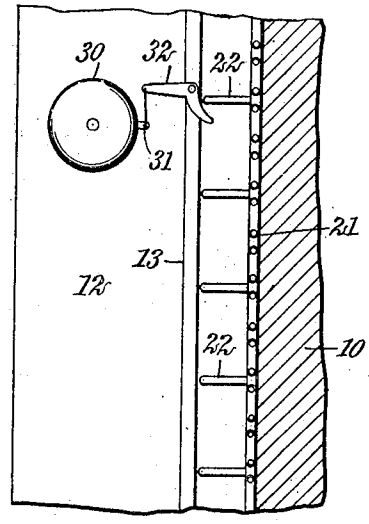


Fig. 5

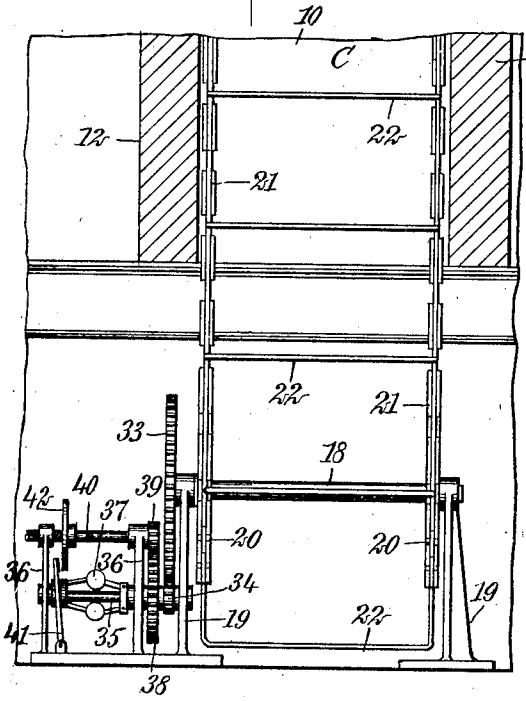
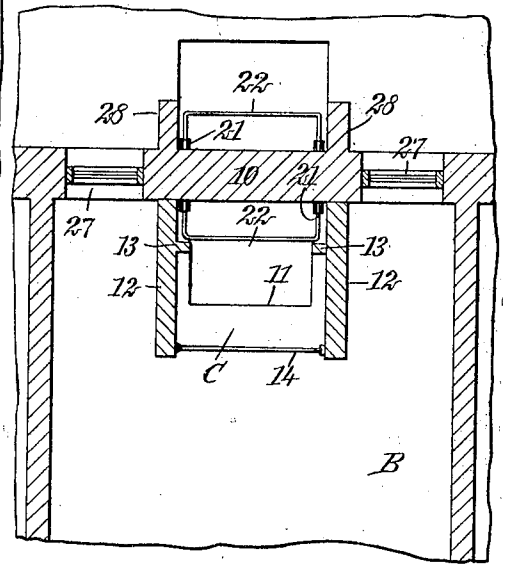


Fig. 6



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GUS E. METTER, OF SEASIDE, OREGON.

FIRE-ESCAPE.

No. 892,281. Specification of Letters Patent. Patented June 30, 1908.

Application filed January 15, 1908. Serial No. 410,930.

To all whom it may concern:

Be it known that I, GUS E. METTER, a citizen of the United States, and a resident of Seaside, in the county of Clatsop and State of Oregon, have invented a new and useful Improvement in Fire-Escapes, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a fire escape that is a fixture upon a building, and which is in the nature of an endless conveyer extending from the cellar to the roof, which conveyer is so constructed as to provide foot- and hand-holds for the persons ascending and descending.

Another purpose of the invention is to so locate the conveyer that one portion thereof will be within, and the other without the wall of the building, whereby while the occupants of the building are descending, firemen, and those having the work of rescue in hand, may simultaneously ascend, means being provided for permitting the firemen and rescuers to readily enter any floor of the building.

It is also a purpose of the invention to provide means whereby when persons clinging to the conveyer reach the ground floor, said persons will be automatically induced to leave the floor.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a view of the outside portion of a building and the applied fire escape; Fig. 2 is a vertical section through the building and the improved escape; Fig. 3 is an enlarged section through a housing on the roof, and an inner face view of the upper portion of the building; Fig. 4 is a vertical section through a portion of the outside wall and the conveyer, illustrating how an alarm is sounded during the operation of the conveyer; Fig. 5 is a section through the lower portion of the building illustrating the lower portion of the conveyer in front elevation, and the driving and regulating mechanism therefor; and Fig. 6 is a horizontal section through that portion of one of the floors through which the conveyer passes, the conveyer being also shown in horizontal section.

A represents the outside of a building, B the various floors, B′ the extreme lower or basement portion of the building, and B^2 the roof.

B^3 represents a superstructure that is erected on the roof and which overhangs the outer face of the outer wall 10 of the building, as is shown particularly in Fig. 2. Each floor B is provided with an opening 11 produced therein, and from the wall 10 at each side of the opening 11 on each floor, walls 12 are erected, extending from the floor to the ceiling of each story, and each wall 12 is provided upon its inner face with a vertical guide strip or member 13 that extends from the floor to the ceiling, the strips on opposing walls being in horizontal alinement, and all of the strips 13 on all of the floors being in vertical alinement, and the walls are connected at their inner ends by gates 14, thus forming a series of cabinets C on each of the floors, access thereto being had when the doors 14 are open.

In the superstructure B^3 on the roof, a shaft 15 is mounted to turn in suitable bearings 17 secured to the walls of said superstructure, or otherwise supported, and the shaft 15 is provided with sprocket wheels 16, preferably two in number, located one near each end. In the basement or the extreme lower story of the building, a second shaft 18 is located within a space 18^a that is located beneath the outer wall 10, the upper shaft 15 being immediately above said wall, and the shaft 18 is mounted to turn in suitable bearings 19 and is provided with sprocket wheels 20 that correspond to the sprocket wheels 16. Endless chains 21 are passed over the upper sprocket wheels 16 and the lower sprocket wheels 20, and these endless chains 21 are connected by supporting bars 22, which bars are substantially of yoke-shape, comprising an outer straight member that is parallel with the shafts 15 and 18 when passing over said shafts, and inwardly extending members that are fixed to the endless chains 21, as is illustrated in Fig. 6, and these supporting arms 22 are so attached to the said chains 21 that when the said chains are on their upper or lower stretches, the supporting arms 22 will be horizontally located. These supporting arms 22 are so placed relatively to each other that when a person of ordinary stature is standing on one of said arms, the person may grasp the one above with the hands, thus insuring their position upon the conveyer, which is constructed as described, of the end-

less chains 21 and the connecting supporting bars 22.

One stretch of the endless chain or conveyer passes down through the openings 11 at the inside of the wall 10 of the building, while the other stretch of the conveyer passes down at the outside of said wall, as is shown in Fig. 2. The outer stretch of the conveyer extends down through a suitable opening 23 in the outwardly extending floor portion 24 of the superstructure B^3, as is also shown in Fig. 2, and the said outer stretch of the conveyer likewise passes down through suitable openings 25 in balconies 26, one of which balconies is provided for each story except the lowermost story of the building, and these balconies lead to windows 27, or other entrances to the inside of the building. The conveyer passes down at the outside of the building between guide strips 28 secured to the building in any suitable or approved manner, and these guide strips at the lowest or ground story of the building are provided with doors 29 that are normally closed so as to prevent persons from ascending the supporting bars at the outside of the building when such ascent is not necessary. The guide bars 13 forming a portion of the cabinets C, serve to guide the conveyer at the inner side of the building.

An alarm 30, a gong for example, is preferably secured to the inner wall of each cabinet C adjacent to a guide strip 13, and the actuating lever 31 of each gong is connected with an elbow lever 32, or the equivalent thereof, suitably mounted, as for instance as is illustrated in Fig. 4, upon a guide strip 13, and one end of each elbow lever 32 is in such a position that it will be engaged by the supporting bars 22 of the conveyer when the said conveyer is set in motion, thus sounding a substantially continuous alarm.

The lower shaft 18 of the conveyer, which is the drive shaft, may be driven in various ways, preferably, however, it is driven as is shown in Fig. 5, wherein a large gear wheel 33 is secured to one end of the shaft 18, which gear wheel 33 meshes with a pinion 34. This pinion is mounted on a shaft 35 that is journaled in suitable bearings 36, and the said shaft 35 carries a ball governor 37, and the gear 38. A gear 38 on the shaft 35 meshes with a pinion 39 on a drive shaft 40, likewise journaled in the aforesaid supports 36, and a lever 41 is pivoted usually to the base of the said supports 36, or at a convenient point, and the lever 41 is moved by the expansion and contraction of the governor 37, and when the governor is expanded unduly, this lever 41 engages with a disk 42 that is located on the shaft 40. In this manner the movement of the conveyer is regulated, so that it will move practically at the same speed at all times.

An inclined plane 43, shown in Fig. 2, is secured to or constitutes an integral portion of the inner face of the wall 10 between the chains 21 of the conveyer, and the bottom of this inclined plane is practically on a level with the upper face of the floor of the ground story so that when persons clinging to the conveyer and carried down thereby, reach the lower floor they are compelled to relinquish their hold and find a footing at that point by reason of their feet coming in contact with the aforesaid inclined plane. At the same time that persons are descending from any one of the floors of the building at the inside thereof, it is possible, the doors 29 being open, for the firemen to avail themselves of the supporting bars 22 on the outer stretch of the conveyer, and to be carried up to the balcony of any floor, enabling them to enter said floor quickly and conveniently. At the same time, during the entire operation of the device a continuous alarm is sounded on each floor, as has been stated.

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

1. In fire escapes, the combination with an outer wall of a building, shafts mounted above and below the wall, sprocket wheels on said shafts, endless chain belts passed over said sprocket wheels, the stretches of which chains are at the outer and inner sides of said wall, and yoke shaped hand- and foot-holds connected with the chains, extending at right-angles therefrom, of alarm devices, trips for the alarm devices operating by contact with said hand- and foot-holds, an inclined plane upon the inner face of the wall between the said connected endless chains, mechanism driven by the endless chains, and controlling mechanism for the driven mechanism.

2. In fire escapes, the combination with the outer wall of the building having openings at the top and the bottom thereof, of an endless conveyer mounted for vertical movement on the inner and outer faces of the wall, said conveyer passing through the openings, yoke-shaped foot and hand-holds fixed to said conveyer, and extending at right angles therefrom, cabinets upon each floor through which the inner run of the carrier passes, and doors for closing the cabinets.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUS E. METTER.

Witnesses:
NELS BERGMAN,
F. J. CARNEY.