No. 745,915. PATENTED DEC. 1, 1903.

J. SCULLY.

FIREPROOF BUILDING.

APPLICATION FILED MAR. 4, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

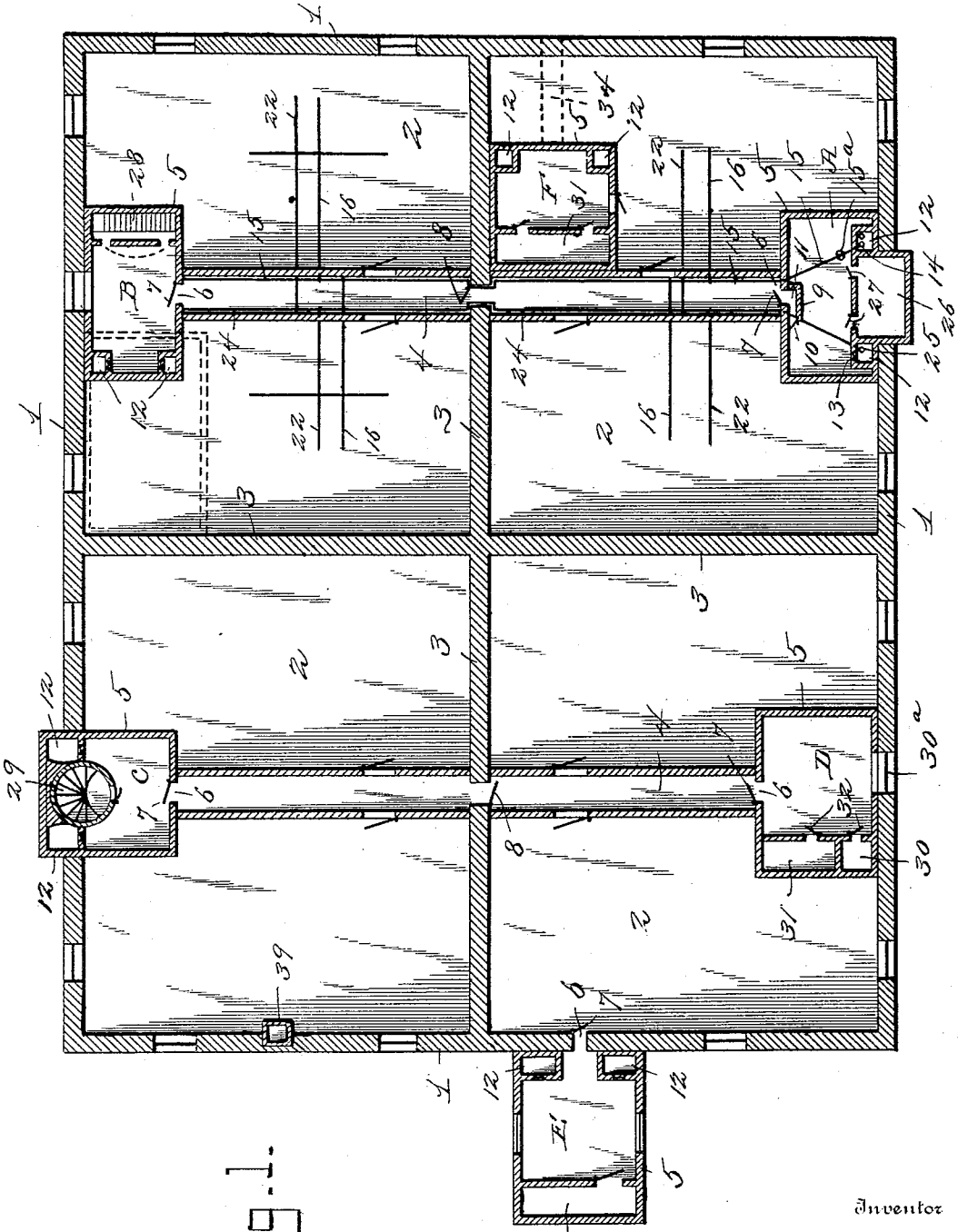


FIG. 1.

Witnesses
Harry L. Amer.
Herbert D. Lawson.

Inventor
John Scully.
By Victor J. Evans
Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 745,915. PATENTED DEC. 1, 1903.

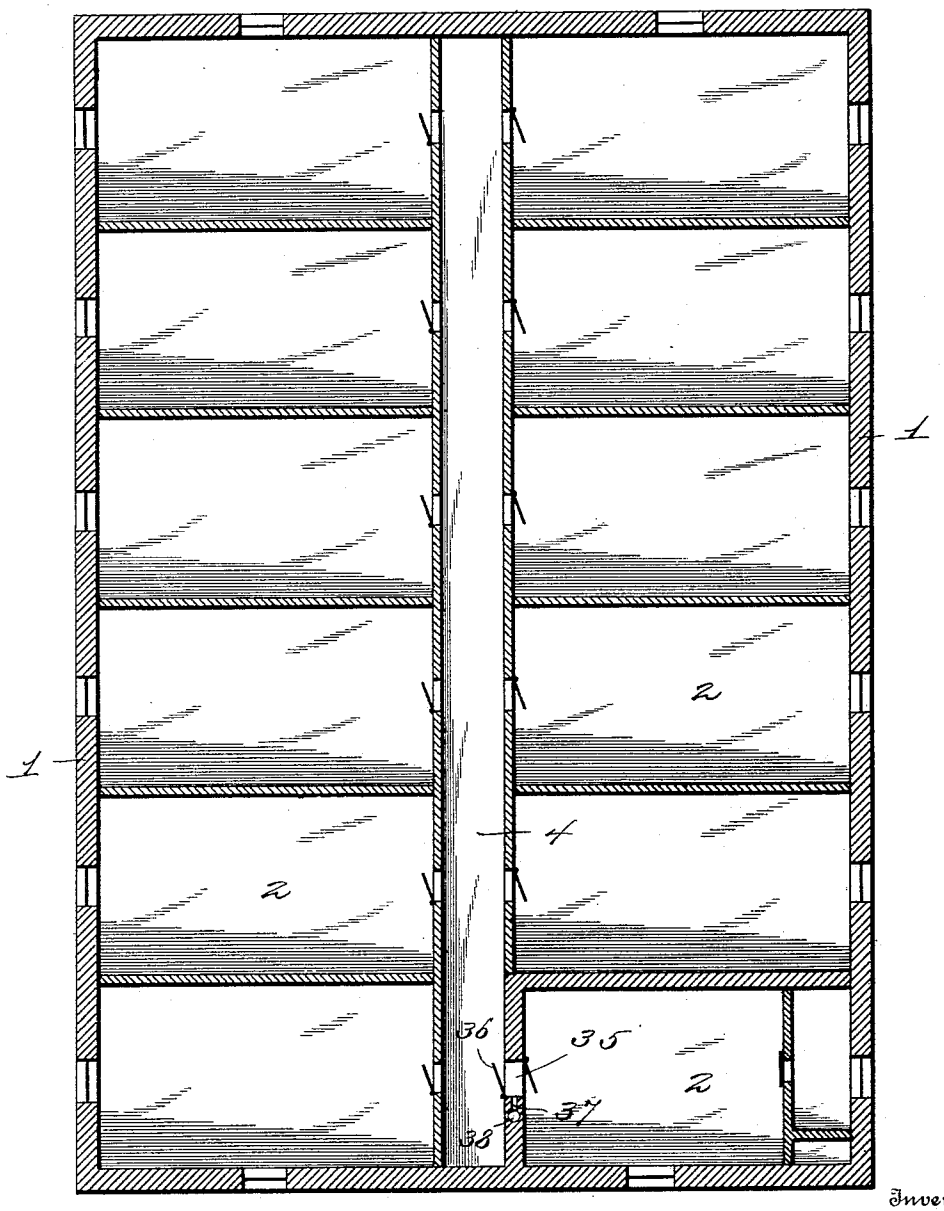
J. SCULLY.

FIREPROOF BUILDING.

APPLICATION FILED MAR. 4, 1903.

NO MODEL. 3 SHEETS—SHEET 2.

Fig. 2.



Inventor

John Scully.

Witnesses

Harry L. Ames.

Herbert D. Lawson.

By Victor J. Evans

Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 745,915. PATENTED DEC. 1, 1903.

J. SCULLY.

FIREPROOF BUILDING.

APPLICATION FILED MAR. 4, 1903.

NO MODEL. 3 SHEETS—SHEET 3.

Fig. 3.

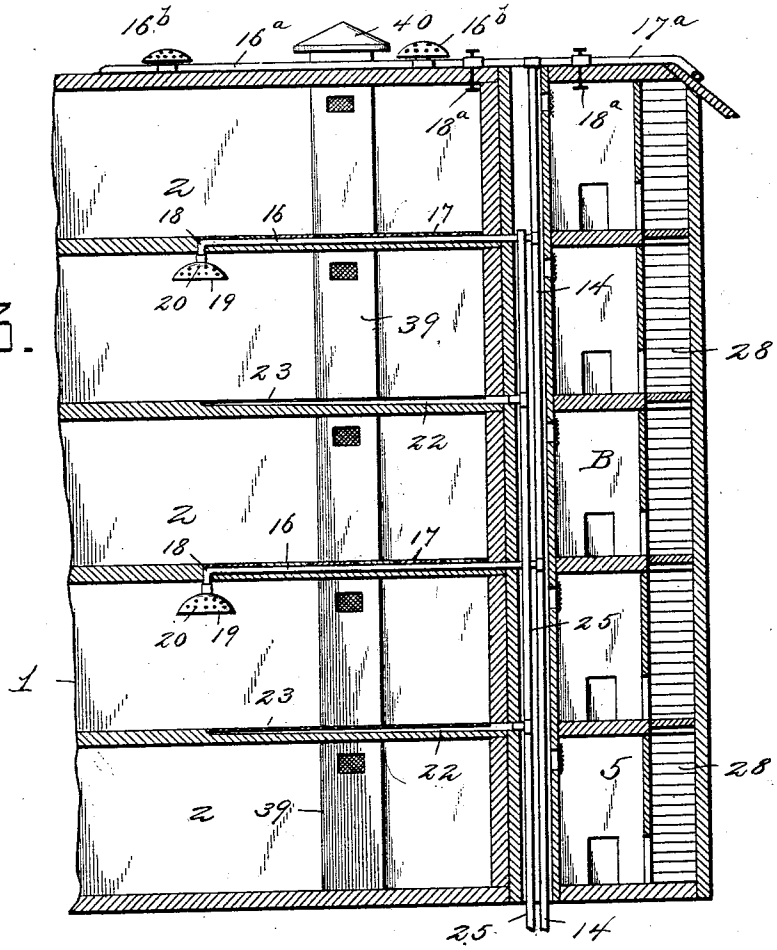
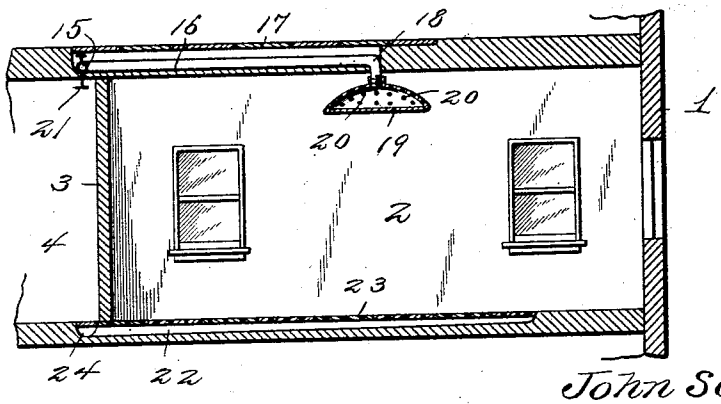


Fig. 4.



Inventor

John Scully.

Witnesses

Harry L. Amer.

Hubert D. Lawson.

By Victor J. Evans

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 745,915. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

JOHN SCULLY, OF MINNEAPOLIS, MINNESOTA.

FIREPROOF BUILDING.

SPECIFICATION forming part of Letters Patent No. 745,915, dated December 1, 1903.

Application filed March 4, 1903. Serial No. 146,145. (No model.)

To all whom it may concern:

Be it known that I, JOHN SCULLY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented new and useful Improvements in Fireproof Buildings, of which the following is a specification.

My invention relates to new and useful improvements in safety apparatus especially adapted for use in hotels, factories, and other large structures of a similar nature, whereby the occupants of the structure can quickly escape therefrom in the event of a fire and said fire readily extinquished.

One of the objects of the invention is to provide fireproof compartments or towers which are adapted to be built within the structure and are provided with stories equal in number to the stories of the building in which said towers are located. Suitable means, as an elevator, stairway, ladder, or other similar device, are arranged within each tower, whereby persons entering the same can readily escape from the building.

A further object is to provide a novel arrangement of doors for preventing the admission of smoke, hot air, &c., to the various compartments of the towers.

Another object is to employ a system of water-distributing pipes extending from supply-pipes arranged within the towers, said distributing-pipes having nozzles detachably secured thereto for spraying the water in all directions therefrom.

A further object is to employ a system of drain-gutters upon the floors of the various rooms of the structure, whereby water discharged from the nozzles may be carried off through suitable outlet-pipes.

Other objects are to employ means for ventilating the rooms of the several towers and of the rooms of the building in which the towers are located and to employ means whereby smoke, hot air, &c., will be directed out of the building from the entrances to rooms in the towers and from the rooms in the building.

With the above and other objects in view the invention consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a horizontal section through a building having six towers therein, said building being shown constructed in four sections which are separated by fireproof partitions. Fig. 2 is a similar view of a smaller structure and showing a modified form of tower. Fig. 3 is a vertical section through a portion of a building and one of the towers located therein, said view showing the water-distributing pipes and the gutters connected with their supply and outlet pipes, respectively; and Fig. 4 is an enlarged section showing the position of a water-distributing pipe and of a gutter within a room.

In the accompanying drawings like characters designate the same parts.

Referring to the figures of the drawings, 1 1 are walls of a structure, and said structure is preferably divided into a suitable number of sections 2 by means of fireproof partitions 3, which may be constructed of masonry, ironwork, or other suitable material and extend from the foundations of the structure to the roof thereof. Each section 2 may contain upon each floor of the structure one or more rooms. In Fig. 1 I have shown two rooms to each section, and a corridor or hallway 4 extends from one end of the building to the other and is provided with doorways opening into each of the rooms of two of the sections. Towers 5, constructed of masonry or other fireproof material, extend the full height of the building and are divided into stories to correspond with those of the building in which the towers are located. An entrance 6 opens from each tower 5 into the adjacent hallway 4 and is provided with a door 7, which is adapted to be held normally closed by means of a spring-hinge or other suitable device. (Not shown.) This door is constructed of a metal or other fireproof material and is adapted when closed to prevent the admission of smoke, hot air, &c., to the tower from the hallway. A similar door 8 is arranged within the hallway at the point where it passes through the fireproof partition 3 and is adapted when closed to shut off communication of all kind between the two sections 2, communicating with the hallway. The interiors of the towers may be of differ-

ent arrangements, and I have shown varied modifications in Fig. 1. Six towers have been shown in this figure, and the same have been lettered A, B, C, D, E, and F, respectively. Tower A is shown with a fireproof screen 9, arranged in rear of the entrance 6 and parallel therewith. This screen is preferably angular in horizontal section, as shown, and a person entering the tower from the hallway must first pass through the entrance 6 after opening the door 7 thereof and then turn to one side and open a fireproof door 10, which is so arranged as to close the open end of the passage 11, formed between said screen and entrance 6. When the two doors 7 and 10 are closed, the passage 11 forms a substantially air-tight compartment, which prevents the admission of smoke, hot air, &c., from the hallway to the tower. This tower A is shown provided at each side with a ventilated shaft 12, which extends from the top to the bottom of the tower and is provided with outlets 13, opening into each of the rooms in the tower. These outlets are for the purpose of admitting fresh air to said rooms and for conducting vitiated air therefrom. A supply-pipe 14 may extend vertically within one of the ventilator-shafts 12 from the base to the roof of the building, and a distributing-pipe 15 is adapted to extend therefrom into each room in the tower and thence preferably along the hallway for a suitable distance into the building proper. The supply-pipe is connected at its lower end to a water-main or else is so located as to permit the attachment of a fire-hose thereto. A valve 15^a is arranged in each pipe 15 at a point in the tower, and by means thereof the flow of water through the pipe can be readily regulated. Each of the pipes 15 extends a suitable distance into the building within which the tower is located and may be provided with branch pipes 16 at any suitable points. Pipes 15 and 16, as illustrated in Figs. 3 and 4, are located within the floors of the structure and are adapted to be covered by removable plates 17. The ends 18 of the pipes 16 are bent downward through the ceilings of the rooms under the floors in which said pipes are arranged, and a nozzle 19 is detachably secured to each of these ends and is provided with apertures 20 therein, which are so located as to direct water discharged therethrough upward against the ceiling. A valve 21 is preferably located in the pipe 15 at a point in the hall 4, and the stem thereof extends down through the floor and also up to a point above the pipe, but under the plates 17. With this arrangement the valve can be operated either by raising one of the plates 17 or by reaching up to the stem projecting through the ceiling of the hall below. Roof-pipes 16^a, having suitable sprinklers 16^b, may be connected to the pipe 14, and, if desired, a pipe 17^a may also be connected thereto and extended along the eaves of the building. Suitable valves 18^a may be arranged in these pipes for controlling the flow of water therethrough.

Gutters 22 of any suitable non-corrodible material are also located in the floors of the building, and these gutters are normally covered by means of perforated plates 23, which are flush with the upper surface of the floor surrounding the same. The gutters upon each floor are preferably inclined toward a main gutter 24, which may, if desired, be located within the hallway and which extends into the tower A and is adapted to open into a discharge-pipe 25, located in one of the shafts 12, before referred to. This discharge-pipe extends from the top to the bottom of the building and is adapted to convey the water discharged thereinto to any suitable point outside the building. An elevator-shaft 26 may be arranged within the tower A and is adapted to be entered through doors 27, which when closed serve to prevent the discharge of smoke or gas to or from the said shaft.

Tower B (illustrated in Fig. 1) is somewhat different in construction from tower A, in that in lieu of an elevator-shaft 26 I employ a stairway 28, whereby persons within any one of the rooms in said tower may readily escape therefrom to the lower floor. Tower C shows a spiral stairway 29 arranged therein, and tower D shows a shaft 30, within which is adapted to be located a ladder. (Not shown.) This last-mentioned tower is more especially adapted for use in bed-chambers in private residences, and I have shown the same provided with a closet 31, within which may be stored jewelry and other valuables. This closet, as well as shaft 30, is adapted to be closed by an air-tight door 32, as shown. Tower E is shown constructed outside of the building, the outer wall of said building serving as the inner wall of the tower. This tower is substantially the same in construction as towers A, B, C, and D, and either an elevator or a stairway can be arranged within the shaft 33. Every one of these towers with the exception of tower D is provided with the ventilating-shafts 12, referred to in connection with tower A. Tower D does not require the same, in view of the fact that a window 30^a opens through the outer wall of the tower.

The towers hereinbefore described are all so constructed that one of the walls of the building is used to reinforce one of the walls of the tower. If desired, however, the tower can be built at a point removed from the outside walls of the building, and I have shown one arranged in this manner at F in Fig. 1. This tower is substantially similar in construction to tower E; but the lower room thereof has an exit which communicates with a tunnel or covered passage 34, constructed of fireproof material and opening through one of the outer walls of the building.

For small buildings I provide a tower in

one corner, so as to permit two of the walls of the building to constitute two walls of said tower. This construction has been illustrated in Fig. 2, and I have also shown in dotted lines in Fig. 1 a tower located in this position. In said Fig. 2 I have also illustrated a modified form of entrance to the tower. This comprises a passage-way 35 of suitable length having a door 36 hinged at each end thereof and adapted to be held normally closed in any suitable manner. These doors when closed form an air-tight compartment for the purpose explained in connection with the passage 11, before referred to. Should any smoke or hot air enter the compartment formed by passage 35, the same will pass therefrom through outlets 37, which communicate with a pipe 38, extending from the bottom to the top of the tower and having an outlet at the upper end thereof.

Each of the sections 2 may, if desired, have a ventilating-flue 39, which extends upward to a point above the roof of the building in which it is located and which may be provided with a suitable cap 40, whereby the draft through said flue may be cut off.

In the event of a fire persons within the building assemble within the rooms of the towers, and the doors within partitions 3 and within the entrances 6, Fig. 1, and 35, Fig. 2, are closed. Smoke and hot air are thus prevented from passing into the towers, and the flames cannot spread from one section 2 to the other, as the only passage therebetween is closed by the fireproof doors 8. Moreover, smoke, hot air, and flames are prevented from passing from one floor to another, because all means of communication between said floors, as by stairways, elevators, &c., are located in the towers, which are adapted to be promptly locked when a fire is discovered. Should the fire be discovered in the third story, the valves of the pipes 16 in the floor of the fourth story of the building are opened, and water is thus spread upon the ceilings of the rooms in which the fire exists. After the water has been discharged into the rooms it is conducted therefrom by the gutters 22 and is then discharged into pipes 25. The doors of all of the rooms are mounted upon spring-hinges or have other means whereby they are held normally closed, and it is therefore obvious that as the fresh air cannot be supplied to the flames the same will soon be smothered by the steam and smoke accumulating within the room. It will of course be understood that the ventilating-flues 39 are promptly closed upon the discovery of fire by placing the caps 40 in position thereon. Should it be desired to wash the floor of any one of the rooms or to test the pipes 16, the nozzles 19 upon said pipes can be unscrewed therefrom and a hose coupled to the ends 18. The hose can be used for flushing the gutters, which can be kept clean in this manner.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described the invention, what is claimed as new is—

1. The combination with the walls and floor of a structure; of a fireproof tower within the structure and extending through the floor, a ventilating-shaft within the tower and communicating with the interior thereof, means for sealing the tower against the admission of gases from the interior of the structure, a supply and discharge pipe within the ventilating-shaft, distributing-pipes within the floor, ends thereto extending through the floor, sprays upon the ends and gutters within the floors communicating with the discharge-pipe.

2. The combination with the walls and floor of a structure; of a fireproof tower within said structure and extending through the floor thereof, an escape-shaft within the tower, ventilating-shafts within the tower and communicating with the interior thereof, means for sealing said tower against the admission of gases from the interior of the structure, a supply and a discharge pipe within the ventilating-shafts, distributing-pipes within recesses in the floor, a valve for the distributing-pipes, a stem thereto extending through the floor and above the pipes, a removable covering for the recesses and pipes, discharge ends to the pipes extending through the floor, gutters within the floor, and perforated coverings therefor, said gutters communicating with the discharge-pipe.

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

JOHN SCULLY.

Witnesses:
ENOCH B. BROBERG,
F. E. CROSS.