

(No Model.)

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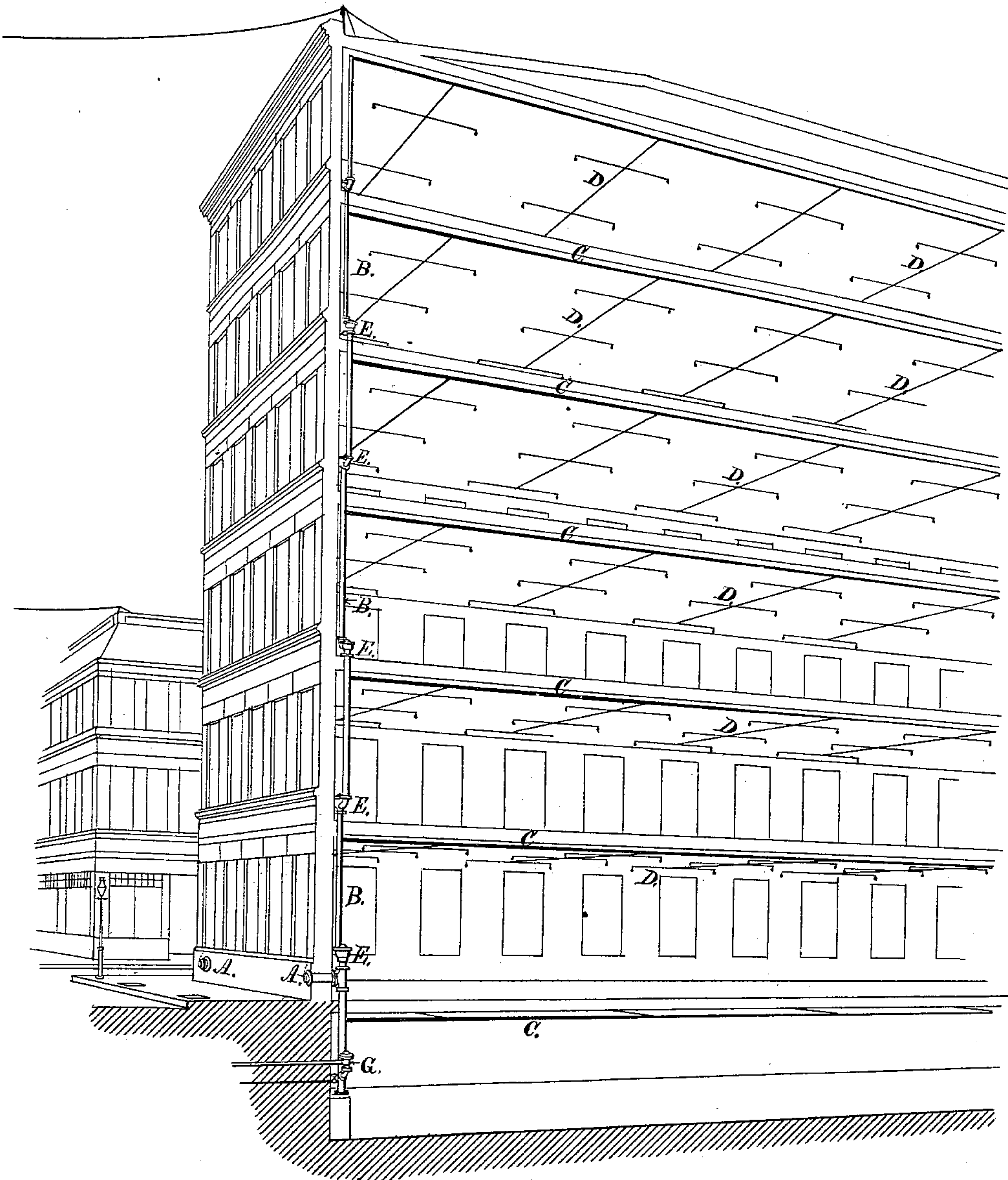
J. A. MILLER, Jr.

AUTOMATIC SPRINKLER FOR EXTINGUISHING FIRES.

No. 329,585.

Patented Nov. 3, 1885.

Fig .1.



WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2 .

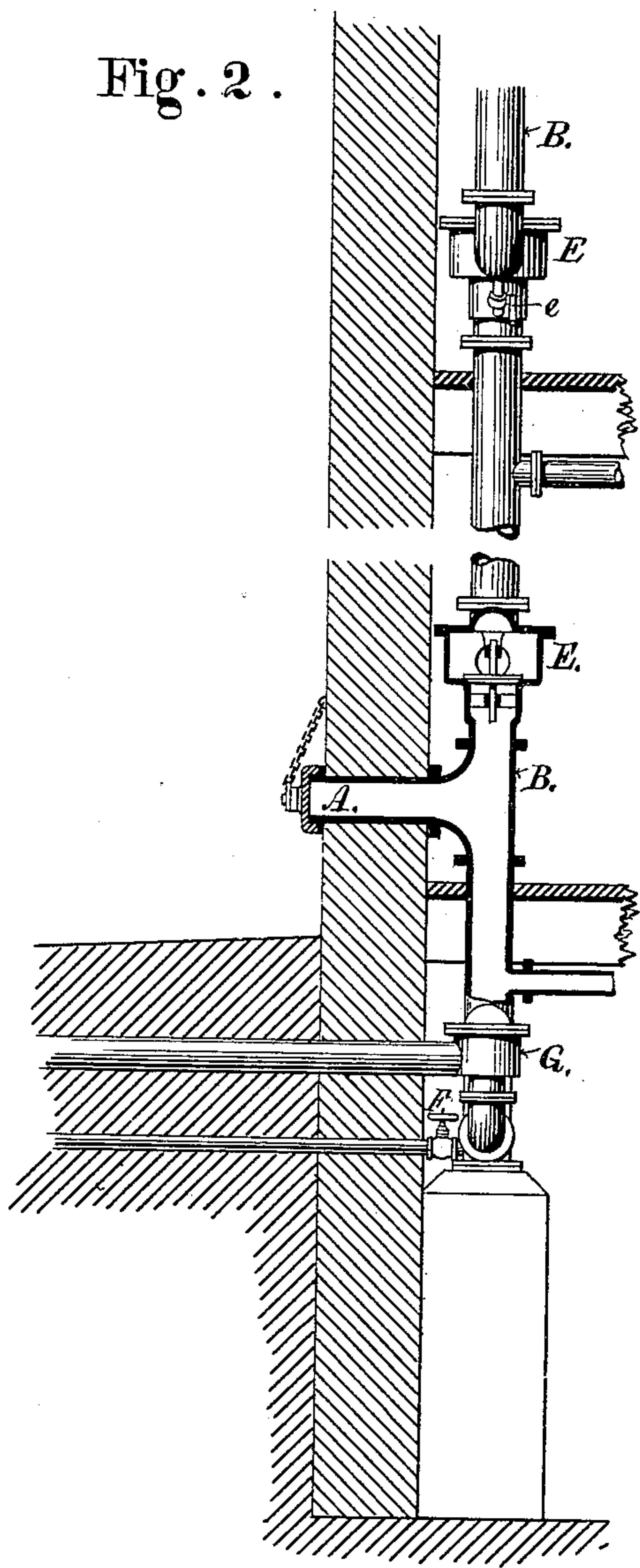
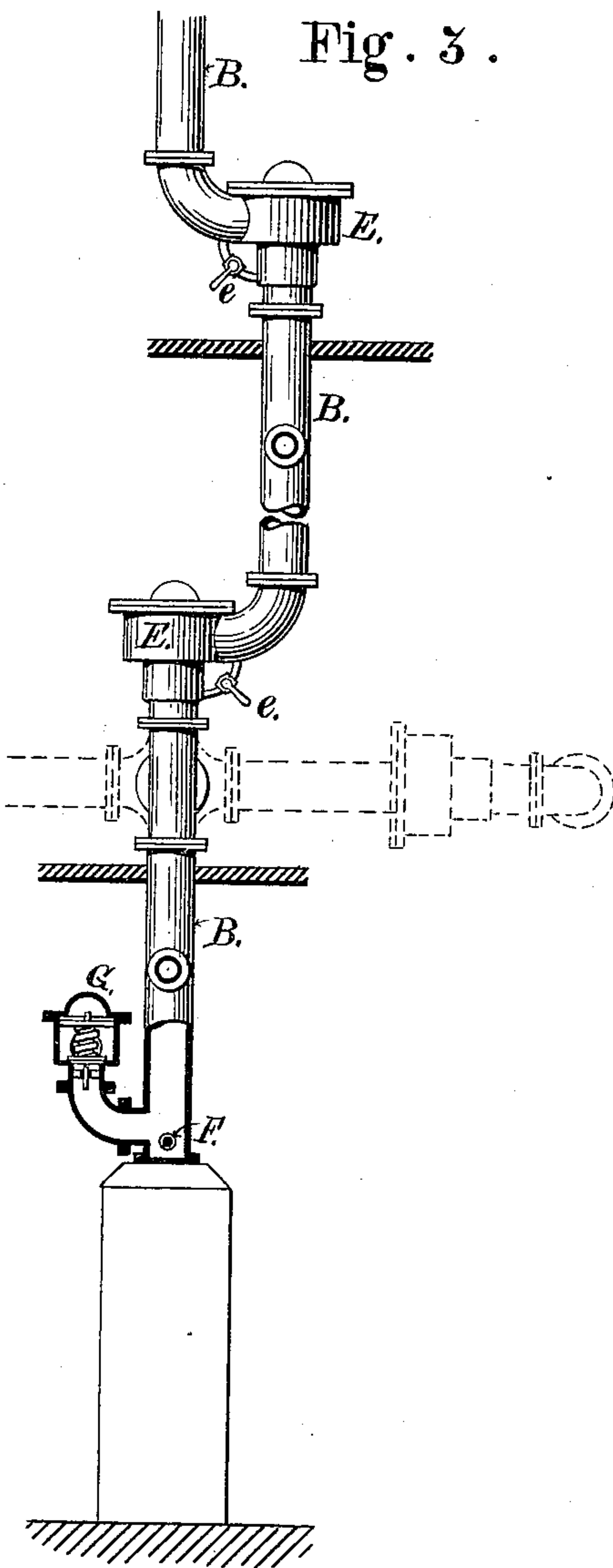


Fig. 3.



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JOSEPH A. MILLER, JR., OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC SPRINKLER FOR EXTINGUISHING FIRES.

SPECIFICATION forming part of Letters Patent No. 329,585, dated November 3, 1885.

Application filed March 9, 1881. Renewed April 27, 1883. Serial No. 93,223. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. MILLER, Jr., of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Means for Extinguishing Fires; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

10 The object of this invention is to protect a building by a system of pipes and distributors and also by automatic means for giving an alarm, so that a fire may be extinguished before much damage can be done to the building
15 or its contents.

The invention consists in the peculiar and novel arrangement of stand-pipes, branch pipes, distributors constructed to be opened by the action of heat, and exterior connections
20 by which fire-engines can connect with the system of pipes and force the water onto the fire, and there only, as will be more fully set forth hereinafter.

25 The construction of buildings of great height in cities where the ground is valuable or where the business is concentrated in a special locality is practiced to such extent that ten-story buildings are not uncommon. To force water into the higher portions of such buildings from a
30 fire-engine is, to say the least, very difficult. To find the location of the fire in such a building and to get a hose to the fire is still more difficult, as the smoke from any room will fill the whole fabric and make access to the fire
35 often an impossibility. To protect such buildings I distribute a system of pipes over the building and place distributors that will open automatically by the heat of the fire into all
40 parts of the building. I also place some kind of automatic alarm into the building, so that when a fire takes place the fire department is at once notified and proceeds to the building, where one or more exterior couplings are provided to which the fire-engines can connect
45 and pump the water into the building, where it will be thrown onto the fire in a spray, and as all the water is concentrated on the fire, one steam fire-engine is more efficient than ten used in the present manner, while the damage
50 by water is limited to the room in which the fire is.

Figure 1 is a perspective view of a six-story

and basement building provided with my improved system of fire protection. Two places are shown for connecting with the fire-engine. 55 Fig. 2 is an enlarged view, partly in section, showing the interior stand-pipes, the inlet extending to the outside of the building, so that fire-engines can be quickly connected with the system; also, the check-valves placed on each 60 floor, the safety-valve, and the valve for drawing the water from the system of pipes. Fig. 3 is another view of the stand-pipe and valves shown in Fig. 2, showing in broken lines how several exterior inlets can be connected with 65 the stand-pipe.

When a building is to be protected against loss from fire by means of automatic fire-extinguishers, a source of water with sufficient head or pressure to reach the highest parts of 70 the building is required. In few cities can such a water-supply be obtained. When a tank is used placed above the highest part of the building to be protected, the damage by water in a small fire is liable to be greater 75 than the loss by fire.

My system is applicable to cities and other places where no high head of water is available without the use of tanks, and by dividing the system by the use of check-valves the loss by 80 water is reduced.

In the drawings, A A are nozzles provided with a coupling, so that fire-hose can be readily connected with the same, the nozzles being protected by a cap when not in use. Two or 85 more such nozzles can be placed on different parts of a building near the street. The pipes from such nozzles are connected at any convenient place with the rising main inside the building, so that any one of them, when connected with a pumping-engine or with the 90 water-main, (if the head of water is sufficient,) will force the water into the system of pipes.

B is the rising main, from which the distributing-mains C C extend horizontally along 95 the ceiling of each floor, and smaller branch pipes D D lead from these mains C C to the various parts of the building, the ends of which are provided with distributors constructed so as to open automatically when a 100 fire takes place and distribute the water on the fire; but any other kind of automatic fire-extinguisher may be used.

To allow the water to rise freely to the

highest floors and prevent the water from the upper floors to train on the place of any of the lower floors where a fire has been extinguished and the distributors are still open, I
5 place the check-valves E E on each floor, and thus prevent damage by water after the fire-engine has ceased to pump water and the fire is extinguished.

To empty the system of the water after the
10 fire, I provide the check-valves with the by-ways *e e*, having valves or cocks, by the opening of which the water can be drawn from the system, provided the outlet F at the lowest part of the stand-pipe is opened.

15 As in some cases but few of the automatic distributors will be opened, the force of a powerful pumping-engine is liable to injure the pipe-connections of the system. * To prevent any excessive pressure, I provide the safety-
20 valve G, connected with the rising main and with the street or the sewer, so that the excessive pressure can be released and the water discharged.

When a building is provided with a fire-
25 alarm and notice of a fire is given to the fire department, the fire-engine can be connected with any one of the nozzles A A and water pumped into the system which will reach the fire and the fire only. No person need enter
30 the building, no windows need be broken to add air to the fire, but the water must be thrown directly on the fire, and the steam

generated will add materially to the prompt extinguishing of the fire more effectually if all doors and windows are left closed.

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

1. The improved means for protecting buildings against fire, the same consisting in a rising main provided with one or more nozzles extending to the outside of the building, a system of horizontal mains and branch pipes provided with distributors constructed to open by the action of heat, so that water pumped into the building is distributed on the fire, and the check-valves E E, placed one above each of the horizontal mains except the uppermost main, as described.

2. In a system for extinguishing fire, the combination, with the rising main and the horizontal mains and distributors, of the check-valves E E, one above each of the horizontal mains except the uppermost main, constructed to prevent the descent of the water from the upper to the lower stories, as described.

3. The combination, with the rising main and the distributing-mains, of the drain-outlet F, the check-valves E E, and the by-ways *e e*, constructed to draw the water from the system, as described.

JOSEPH A. MILLER, JR.

Witnesses:

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