

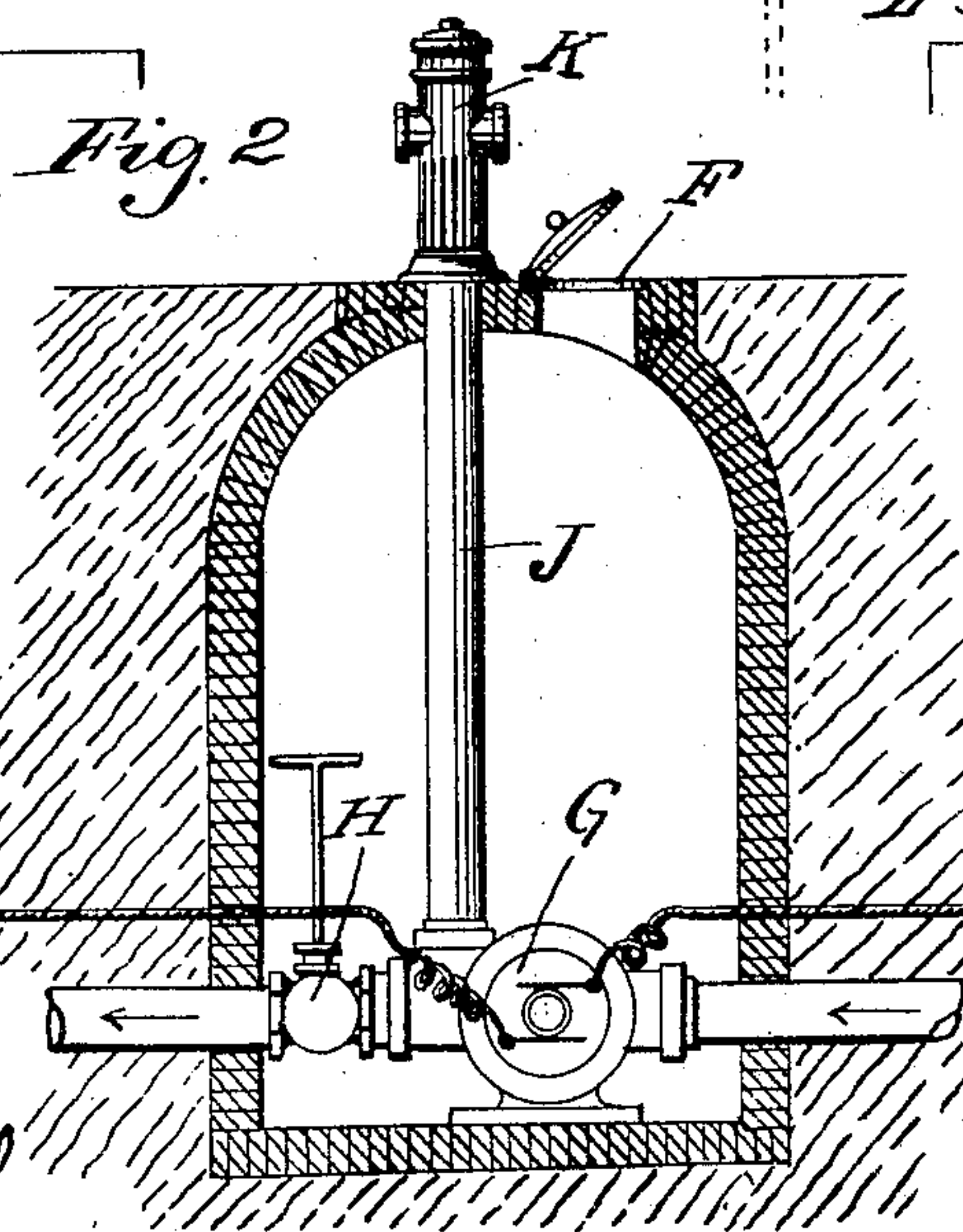
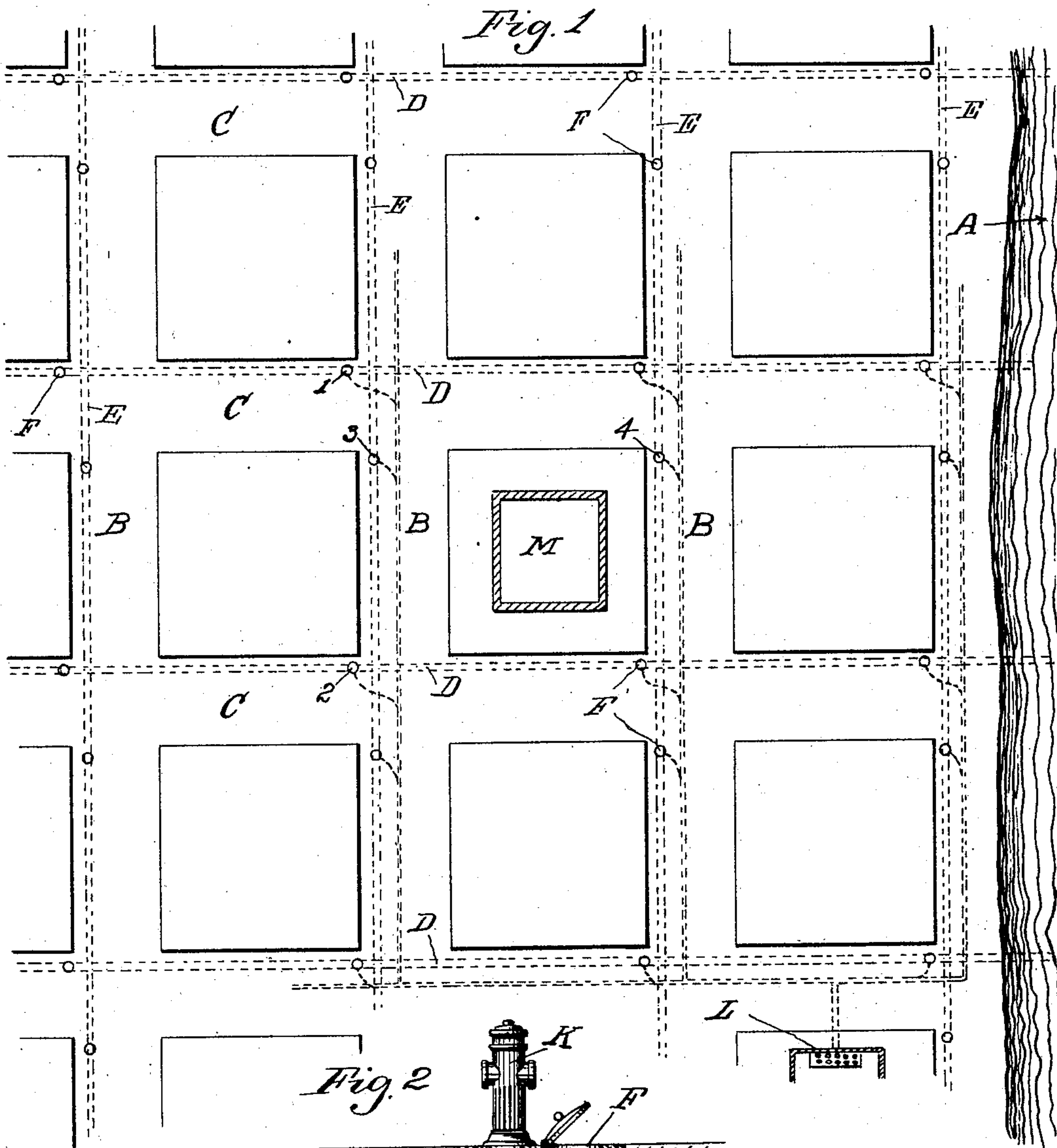
No. 745,351.

PATENTED DEC. 1, 1903.

O. T. HUNGERFORD.
WATER SUPPLY SYSTEM
APPLICATION FILED JULY 3, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



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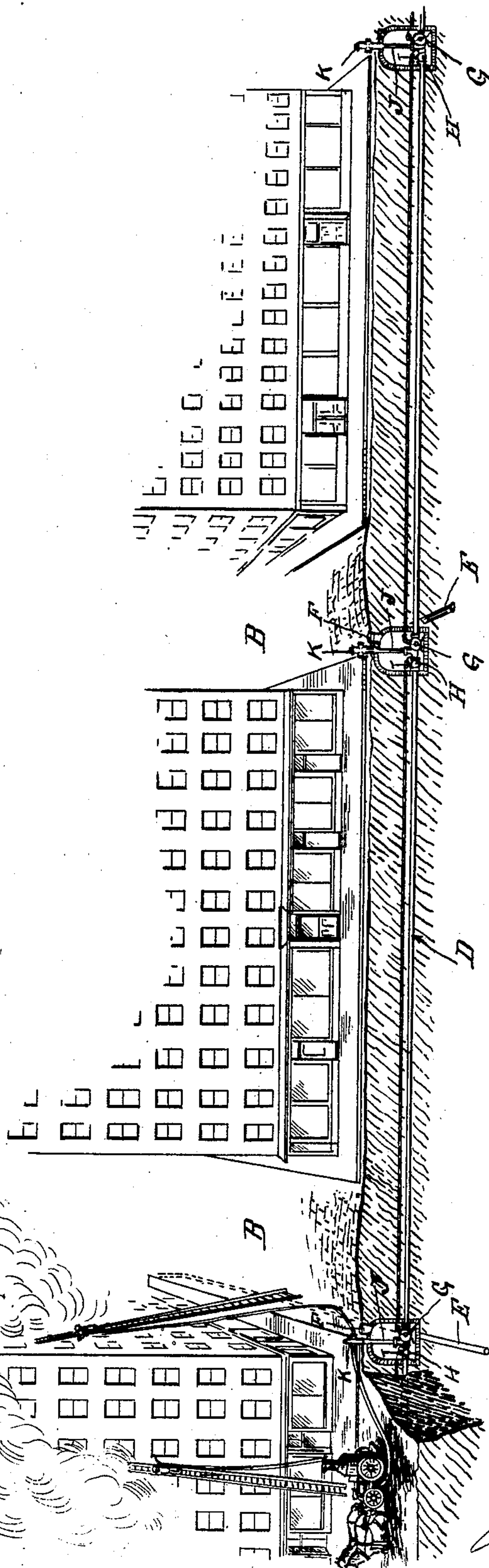
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Fig. 3



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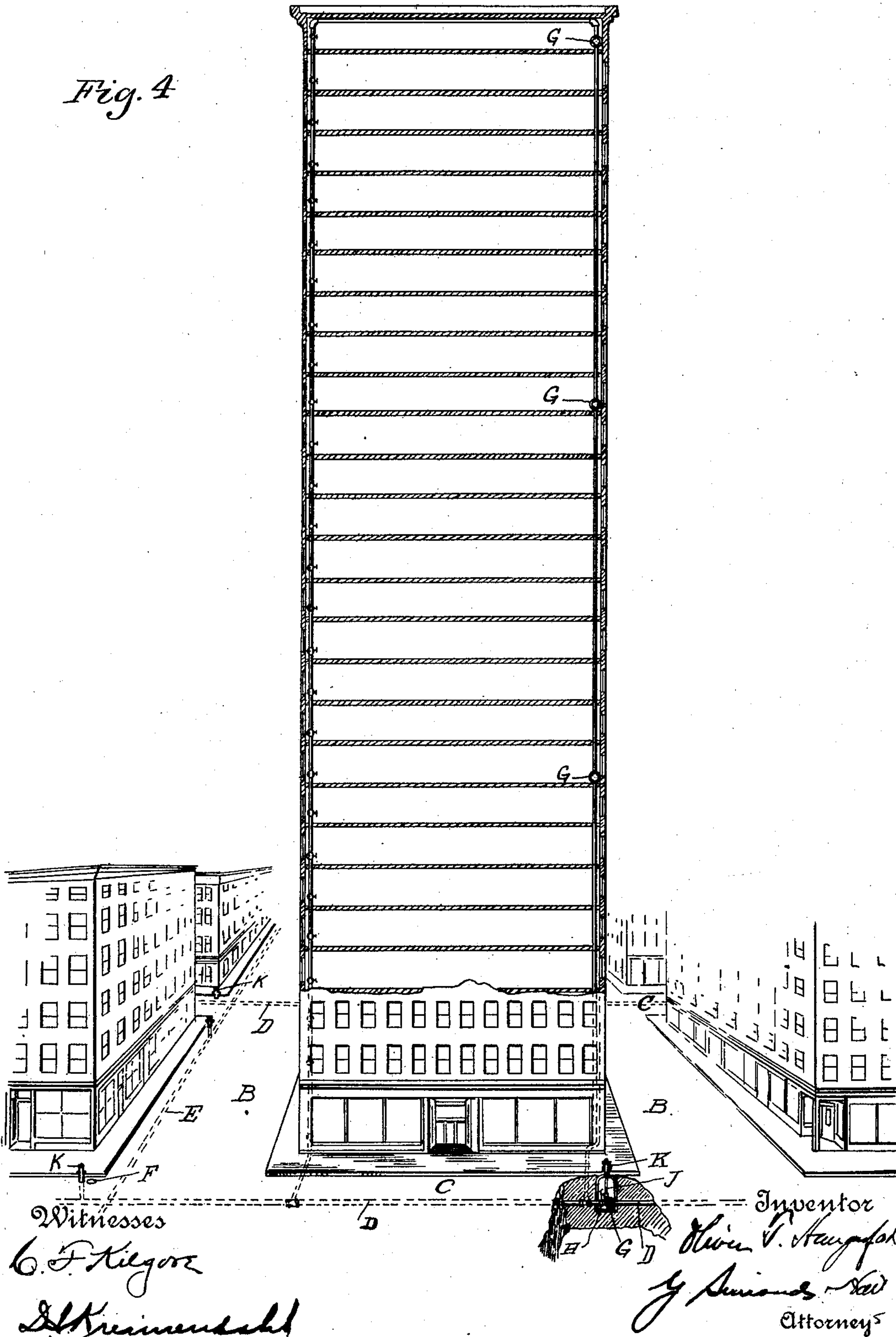
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3 SHEETS—SHEET 3.

Fig. 4



UNITED STATES PATENT OFFICE.

OLIVER T. HUNGERFORD, OF NEW YORK, N. Y.

WATER-SUPPLY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 745,351, dated December 1, 1903.

Application filed July 3, 1902. Serial No. 114,208. (No model.)

To all whom it may concern:

Be it known that I, OLIVER T. HUNGERFORD, a citizen of the United States of America, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Water-Supply Systems, of which the following is a specification.

This invention relates to a system for providing a supply of water for municipal purposes independent of the regular system.

The object of the invention is to provide an independent water system which will be comparatively cheap to construct, operate, and maintain and which will always be ready to supply a large quantity of water for extraordinary uses at a required locality, such as for sprinkling or flushing streets or putting out fires, without interfering with or affecting the supply of the regular system. This system comprises lines of pipe laid from a natural source of supply—such as the sea, a river, or lake—under each street of the district to be equipped. In suitable manholes at intervals (for instance, at the corner of each block) pumps are connected with these lines of pipe and provided with motors which are connected electrically with a switch at a central station. The pumps are normally idle; but when a supply of water is needed in any section the necessary series of motors are set in operation from the central station by means of the electrical connections.

Figure 1 of the accompanying drawings represents a section of a city with the electrical connections and pipes of an independent system which embodies this invention below the surface of the streets, indicated by dotted lines. Fig. 2 shows a vertical section of a manhole containing a pump and motor. Fig. 3 shows a section of a street containing this system and an elevation of portions of buildings facing the street in a manner to indicate the use of the system. Fig. 4 shows the adaptation of the system to high buildings.

The source of water-supply A may be a river, lake, or tide-water. Pipes D are laid in the ordinary manner below the surface of the streets C and are open to the water-supply, and pipes E are laid in the ordinary manner below the surface of the cross-streets B.

At intervals, preferably near each corner of each block, manholes F are built about these lines of pipe. In these manholes force-pumps connected with electrical motors G are connected with the pipes in a common manner. In the pipes on the discharge side of the pump in each manhole is a shut-off valve H. A stand-pipe J, with an ordinary hydrant K above the surface, is connected with the pipe between the pump and the shut-off valve in each manhole. The electrical conductors from each motor are run beneath the surfaces of the streets in suitable conduits to a switchboard L in a central power-station.

Should there be a fire in the block M, the valves H in the manholes 1, 2, 3, and 4 would be closed and the motors in those manholes would be set in operation from the switchboard at the central station. The pumps then would draw water from the source of supply and force it through the pipes of the system to the localities where the valves were closed. The pump nearest the supply would first draw water and deliver it to the next pump, which would in turn deliver it to the succeeding pump, and so on to where the water was needed. With such an arrangement as this around any block there are many operative hydrants communicating with a practically inexhaustible supply of water.

In order to supply water to high office-buildings, as shown in Fig. 4, a feed-pipe may be run from the independent main in the street up one side of the building, across the top, and down on the other side to the independent main. At different levels motor-pumps G may be connected as necessary for forcing the water to the highest level of the pipe. A plug is provided at each floor for the attachment of a hose, as usual.

With this system it is possible to equip a large area of a city at comparatively small initial expense with a water-supply of great efficiency. It is not necessary to locate an expensive pumping plant at the source of supply and force water into a reservoir and there have a second plant for the purpose of distributing the water, nor is it necessary to provide stand-pipes or water-towers, which are liable to topple over or collapse. As the supply of water is practically unlimited, this

system can be used to provide water for sprinkling, flushing, and cleaning streets, as well as for fire purposes, and without in any way interfering with the regular system, 5 which supplies water for domestic purposes, for this system is entirely independent of the regular system. This being so, if the city is near the sea salt water could be used to advantage.

10 The invention claimed is—

15 An emergency water-supply system for municipal purposes which consists of mains laid below the surfaces of the streets independently of the pipes of the regular water system, and connected with a comparatively inexhaustible supply of water, manholes built at intervals along the mains, a pump connected with the main in each manhole, a shut-

off valve in each manhole beyond the discharge side of the pump, a stand-pipe connected with the main between the discharge side of the pump and the shut-off valve in each manhole, a hydrant connected with each stand-pipe, a motor located in each manhole and connected with the pump, a central 25 power plant, and electrical connections leading from each motor to a common switchboard that is electrically connected with the power plant, substantially as specified.

In testimony whereof I affix my signature 30 in presence of two witnesses.

OLIVER T. HUNGERFORD.

Witnesses:

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JOHN S. HONEYCOMBE.