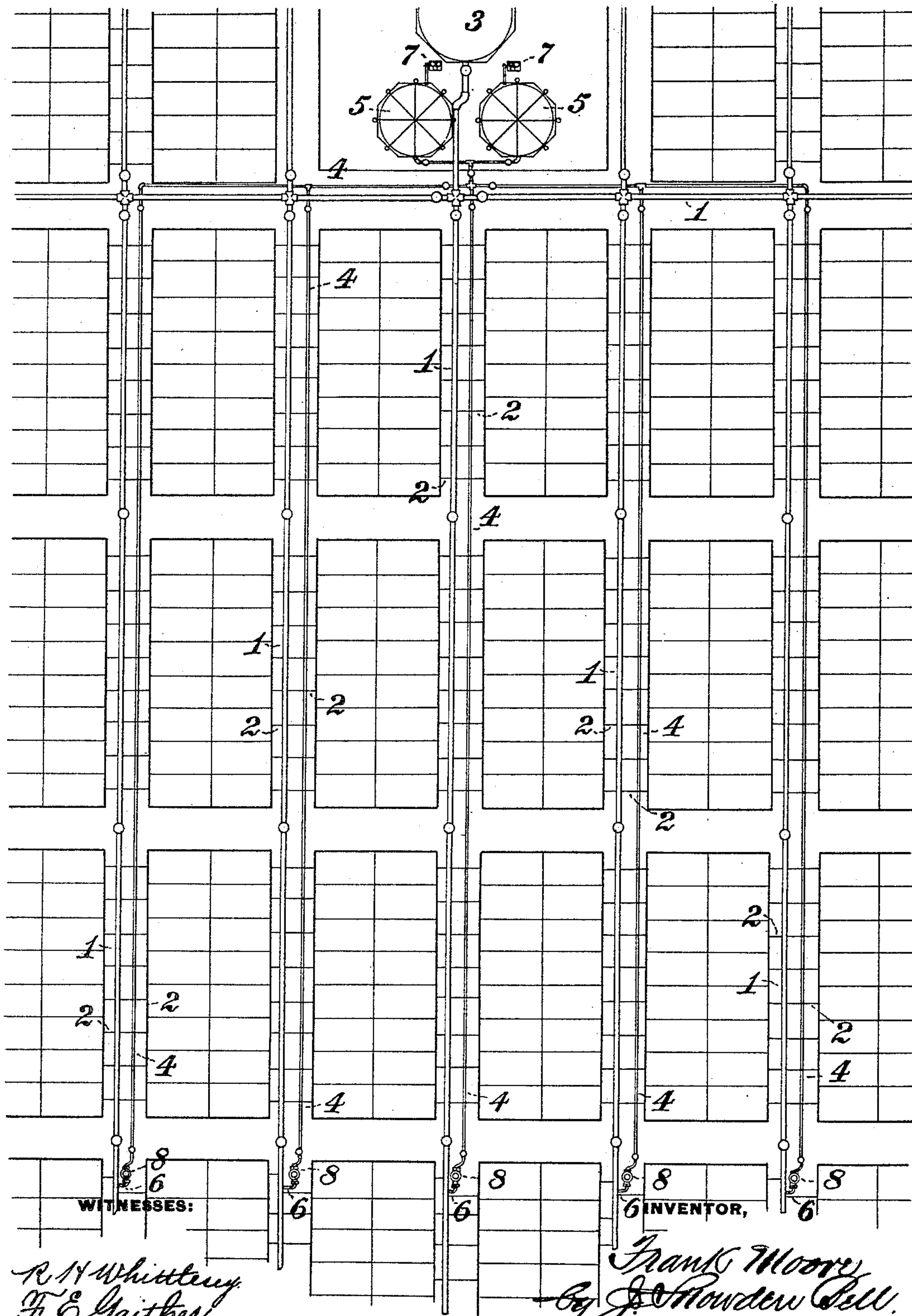


(No Model.)

F. MOORE.
SYSTEM OF GAS DELIVERY MAINS.

No. 442,326.

Patented Dec. 9, 1890.



UNITED STATES PATENT OFFICE.

FRANK MOORE, OF PITTSBURG, PENNSYLVANIA.

SYSTEM OF GAS-DELIVERY MAINS.

SPECIFICATION forming part of Letters Patent No. 442,326, dated December 9, 1890.

Application filed January 6, 1890. Serial No. 335,994. (No model.)

To all whom it may concern:

Be it known that I, FRANK MOORE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Systems of Gas-Delivery Mains, of which improvement the following is a specification.

The object of my invention is to enable the delivery capacity of a low-pressure gas-main or system of mains to be increased beyond that due to the ordinary and normal supply thereof, and a uniform degree of pressure to be maintained as far as may be throughout said main or system by the provision of means for effecting an additional supply under the required pressure at a point or points remote from the normal or prime source of supply.

To this end my invention, generally stated, consists in the combination of a low-pressure main or mains, a holder primarily supplying gas thereto at the required delivery-pressure, an auxiliary holder supplying gas at a pressure higher than the required delivery-pressure, a high-pressure main or mains communicating with the auxiliary holder, and a pressure-regulator controlling an inlet from the high-pressure to the low-pressure main at a point remote from the source or primary low-pressure supply to the latter.

The improvement claimed is hereinafter fully set forth.

The accompanying drawing is a diagrammatic plan of a portion of a town, illustrating the application of my invention.

In the practice of my invention a system of ordinary gas-delivery mains 1, extending in proper directions for conveying gas at a determined low-pressure to service-pipes 2 at the points of consumption, is primarily supplied in the usual manner from a suitable source of supply, as one or more gas-holders 3, which are charged with gas at a pressure corresponding substantially with or but slightly greater than that at which it is desired to be delivered, the appliances so far as described being similar, both separately and collectively, to those heretofore and now employed in gas distribution.

In order to increase the available delivery capacity of the low-pressure mains beyond

that due to its ordinary source of supply and maintain a uniform determined delivery-pressure therein unimpaired by the reduction incident to the friction of the gas in its traverse through a considerable length of main and by numerous deliveries between the source of supply and points at a distance therefrom, I provide a system of high-pressure mains 4, which are supplied with gas at a higher pressure than that which is desired to be maintained in and delivered from the low-pressure mains 1 by one or more auxiliary holders 5, which are charged with gas at such higher pressure. The increase of pressure in the auxiliary holders above that in the low-pressure mains may be effected in any suitable manner known in the art, as by the use of gas generated or produced at such higher pressure, or by the compression of low-pressure gas before being supplied to the holders. I prefer, however, to employ auxiliary holders which are adapted to be depressed in their tanks by the application of mechanical power in order to effect the compression of the gas within the holders, as exemplified in an application for Letters Patent filed by me January 2, 1890, Serial No. 335,621, the holders 5 being connected by suitable gearing with steam-engines or other motors 7, which may be either employed to directly depress the holders or to indirectly perform the same function by elevating them into position, from which they are depressed by the gravity of connected weights.

The high-pressure gas is led from the auxiliary holders 5 through the high-pressure mains 4 to inlet 6, connected to the low-pressure mains 1 at points remote from their source of supply 3, each of the inlets 6 being controlled by a suitable pressure-regulator 8, which is adjusted to deliver the gas to the mains 1 at the determined pressure desired therein. The distance of the inlets 6 from the preliminary source of supply 2 is such as may be rendered necessary by the reduction of the pressure due to friction in the mains 1 and the character and extent of the intermediate service distribution, so that the re-enforcement of supply derived from the high-pressure mains may compensate the reduction of pressure resultant from the above conditions, and by thus

maintaining a practically uniform pressure in the mains I effect a corresponding increase of their delivery capacity.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of a source of gas-supply, a low-pressure-main system communicating therewith, an auxiliary source of higher-pressure gas-supply, a high-pressure-main system communicating therewith, an inlet from the high-pressure main to the low-pressure main at a point remote from the source of low-pressure supply, and a pressure-regulator controlling said inlet, substantially as set forth.

2. The combination of a low-pressure gas-holder, a low-pressure-main system communi-

cating therewith, an auxiliary holder adapted to effect the compression of gas by the application of power to the holder, a motor actuating said auxiliary holder, a high-pressure-main system communicating with the auxiliary holder, an inlet from the high-pressure to the low-pressure main at a point remote from the low-pressure holder, and a pressure-regulator controlling said inlet, substantially as set forth.

In testimony whereof I have hereunto set my hand.

FRANK MOORE.

Witnesses:

J. SNOWDEN BELL,
R. H. WHITTLESEY.