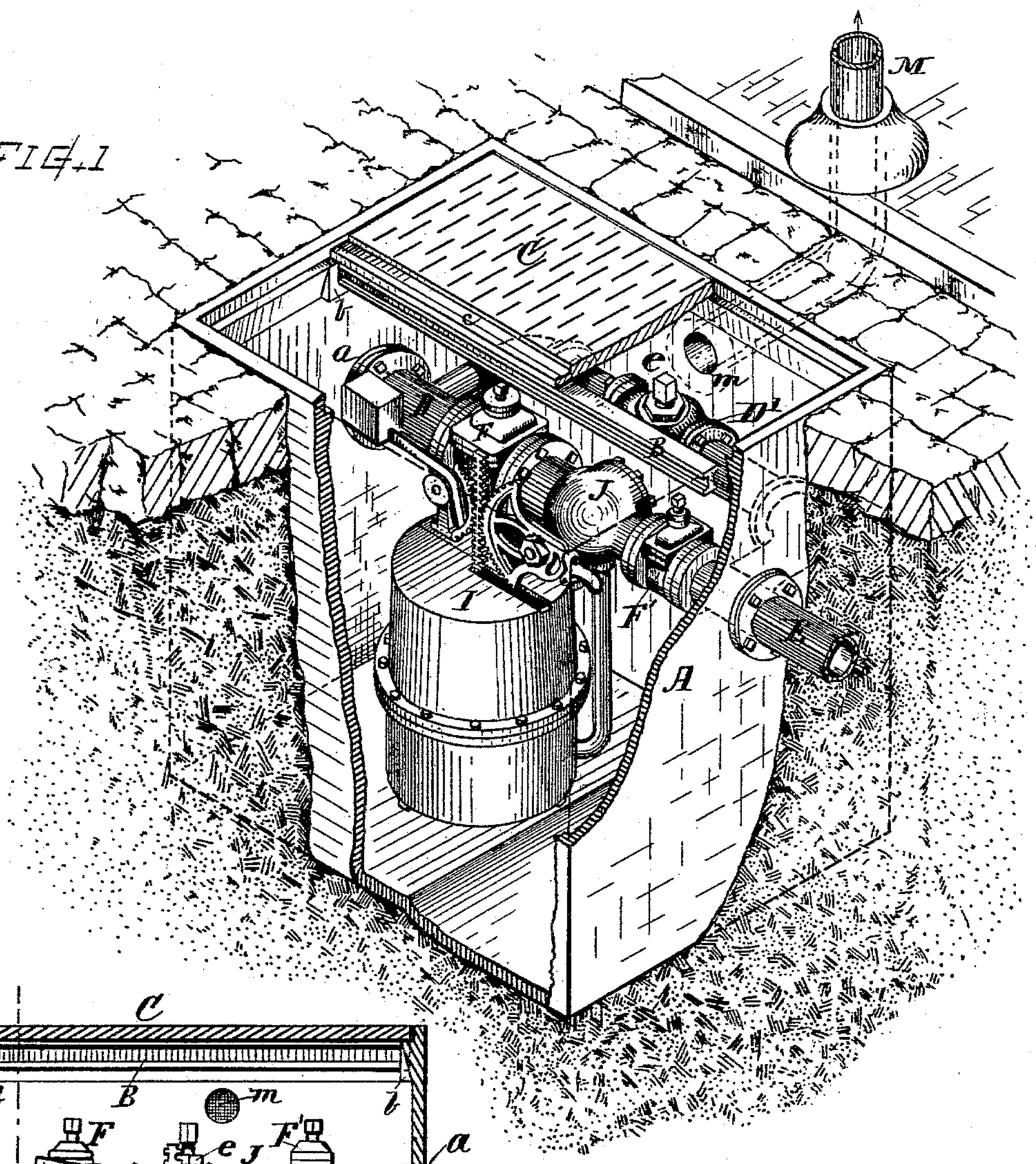
(No Model.) 2 Sheets—Sheet 1.

# J. C. CONROY.

## GAS PRESSURE REDUCING STATION FOR STREETS.

No. 414,498. Patented Nov. 5, 1889.

FIG. 1



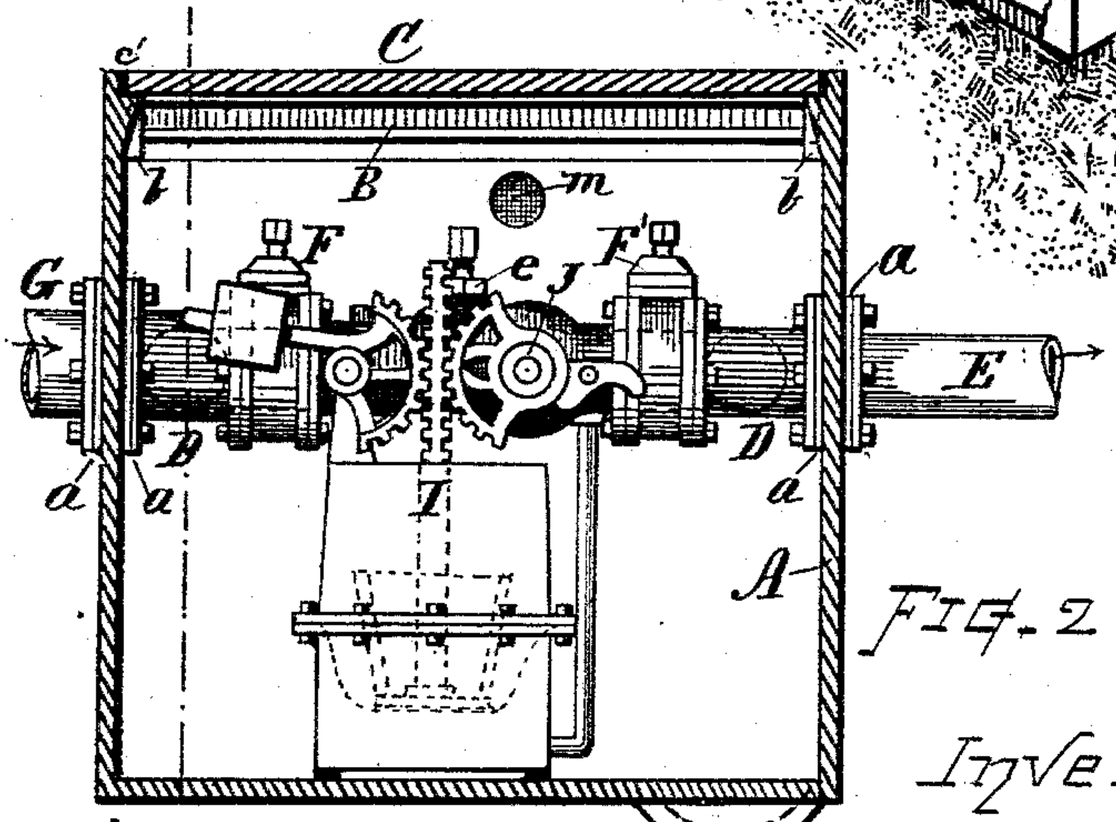




FIG. 2.

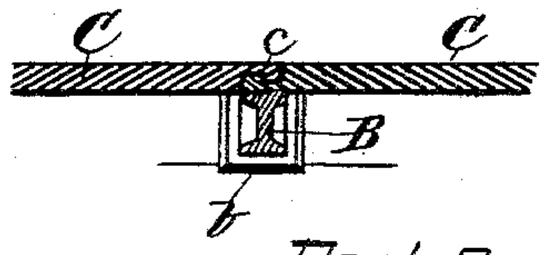



FIG. 3.

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(No Model.) 2 Sheets—Sheet 2.

# J. C. CONROY.

## GAS PRESSURE REDUCING STATION FOR STREETS.

No. 414,498. Patented Nov. 5, 1889.

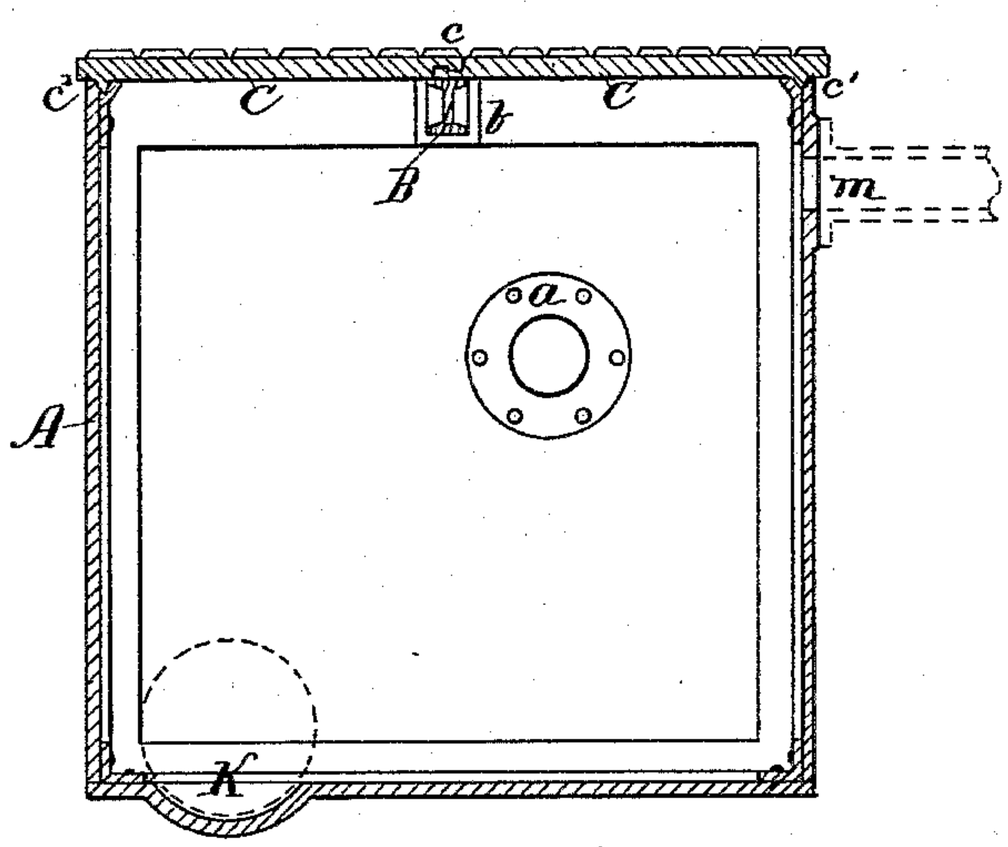


FIG. 4.

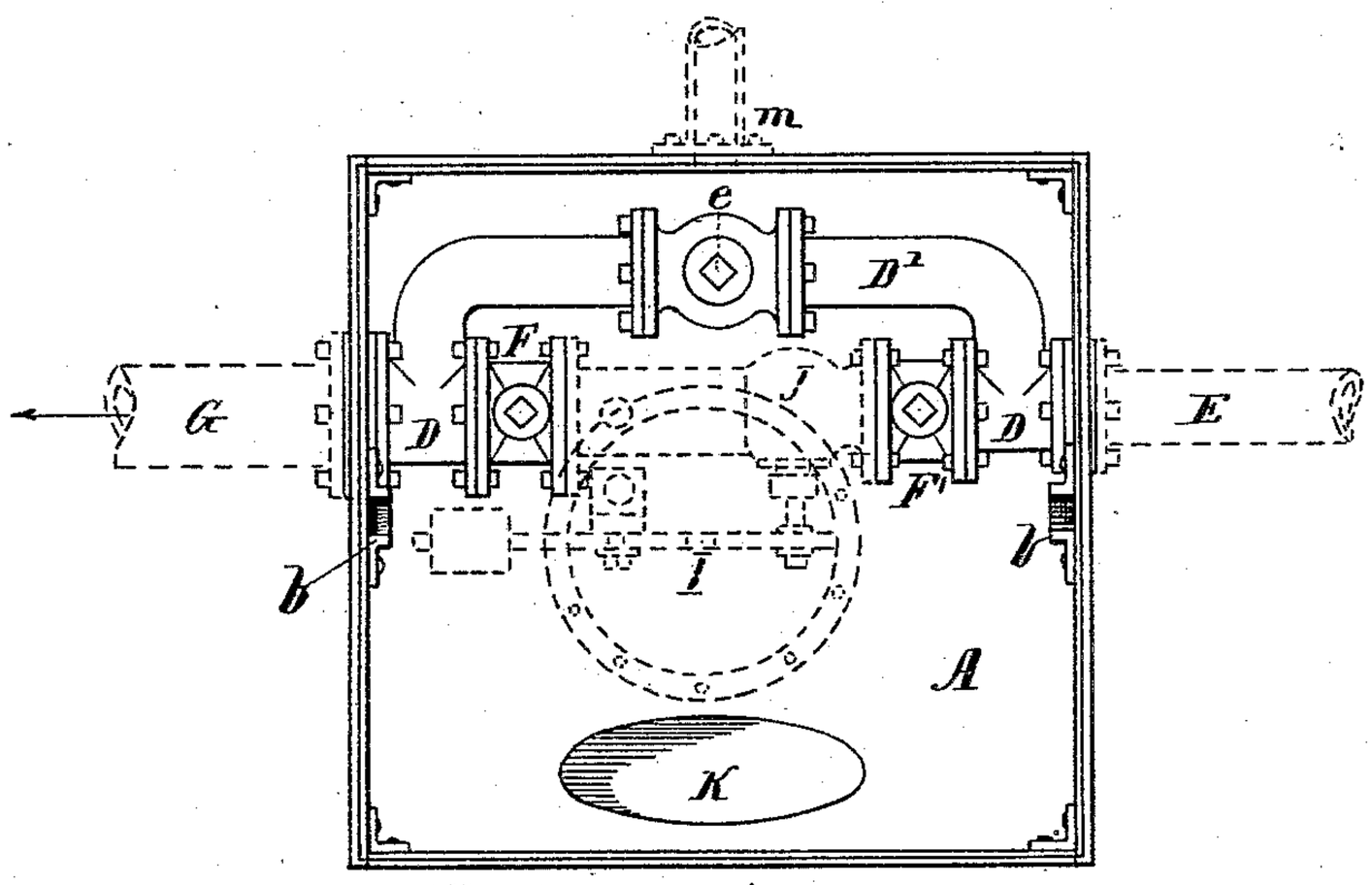


FIG. 5.

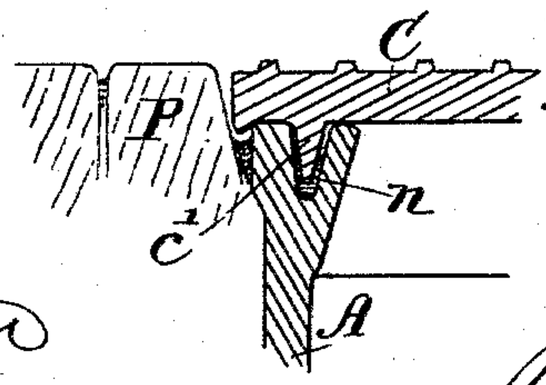


FIG. 6.

WITNESSES—

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# UNITED STATES PATENT OFFICE.

JAMES C. CONROY, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO THE UNION WATER METER COMPANY, OF WORCESTER, MASSACHUSETTS.

## GAS-PRESSURE-REDUCING STATION FOR STREETS.

SPECIFICATION forming part of Letters Patent No. 414,498, dated November 5, 1889.

Application filed April 12, 1889. Serial No. 307,016. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. CONROY, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Pressure-Reducing Stations for Streets, of which the following, together with the accompanying drawings, is a specification, sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide convenient facilities for introducing reducing-regulators in city streets in connection with gas-distributing pipes, and to afford a reducing-station of close, compact, and convenient form; also, to provide a gas-reducing station for the purpose named, which will give facility for the ready removal and replacing of the gas-pressure regulator; also, to afford, in connection therewith, means for diverting from the street any escaping gas in case of leakage. These objects I attain by an improved apparatus, such as shown and described.

The particular subject-matter claimed is hereinafter definitely specified.

In the drawings, Figure 1 is a perspective sectional view illustrating the arrangement of my improved reducing-station in the street. Fig. 2 is a vertical section of the reducing-station. Fig. 3 is a section of the cover-joint and its support. Fig. 4 is a transverse vertical section of the chamber. Fig. 5 is a plan view of the cover removed. Fig. 6 is a sectional view showing a form of rim-joint for the cover.

My reducing-station consists, essentially, of a metallic box, receptacle, or chamber having suitable attaching-seats for the gas-distributing pipes and escape-pipe and provided with removable top-plates supported by a removable beam or center bar and fitted to the outer edges of the chamber in a secure and close-fitting manner. Within said chamber there are arranged couplings and valves for the attachment of a pressure-regulator and a by-pass pipe, so that the pressure-regulator can at any time be quickly and conveniently removed for repairs or for other purposes. A dip-well is formed in the bottom of the chamber to collect and facilitate the removal of any water or liquid that enters the chamber.

This reducing-station is constructed complete and ready for use as a market product, and when applied to use is sunk in the street, so that the cover is flush with and forms a part of the pavements, and the gas pipe or main is attached directly to the exterior of the station-box.

In referring to parts, A denotes the station box or casing, which embraces a chamber about five feet, more or less, in its respective dimensions and formed of cast-iron or of plates riveted at the angles. Near the top edge are seats or recesses *b*, fitted to receive a removable girder or support-bar B, which extends from side to side, and on which are supported covering-plates C, said plates being best fitted with interlocking joints *c c'*, that securely retain them in place, while permitting ready removal of the plates when it is desired to enter the chamber. On the sides of the station-box are provided suitable seats *a* and openings for the attachment of the pipes thereto.

D D indicate couplings attached to the seats *a* at the interior of the chamber, having connected therewith the by-pass pipe D', which latter is provided with a stop-valve or stop-gate *e*.

F F' indicate gates or stop-valves attached to or formed on the couplings D at the positions indicated.

E and G indicate the gas pipes or mains attached directly to the seats *a* on the exterior of the station-box.

I indicates the gas-pressure regulator, which is arranged within the chamber at the position indicated, and attached to the couplings or gate-heads at the opposite sides by the bolts and flanges or other suitable means, so that the regulator-valve J will control the flow of gas from the pipe E to the pipe G when the valves F F' are open and the by-pass valve *e* is closed. The style of pressure-reducing regulator here shown and preferably employed is what is known as the "Union Gas-Pressure Regulator," in which a dia-

phragm-piston works the valve J, substantially as illustrated in Letters Patent No. 370,715; but other suitable well-known form of regulator mechanism can be employed if preferred, since I do not claim any particular construction of regulator mechanism as of my present invention.

An opening *m* is formed in the upper part of the station-box, having a seat, to which an escape-pipe M′ is attached, leading to a stand-pipe M at the street-line, the top of which is open and which serves for diverting from the street and discharging into the upper air any gas which might otherwise accumulate within the chamber by reason of leakage in the regulator valves or connections.

K indicates a drip-well or depression in the bottom plate, from which water or liquid can be dipped by means of a bucket or dipper (see dotted line, Fig. 4) in case any collects within the chamber.

The top surface of the covering-plates C are best roughened. The outer joint *c′* along the top edges of the wall can be fitted, as shown in Fig. 6, with a downwardly-projecting lip formed on the cover-plate C, which lip enters a groove *n*, formed in the top of the wall. Said groove *n* can be filled with cement or any suitable luting to prevent the escape of gas around the covers.

With my improved reducing-station herein described pressure-reducing regulators can be placed at any convenient position where desired about the city or town, and located in the streets without interfering with the traffic; also, in case of any derangement in the working of the apparatus, the regulator can be readily detached and taken out from the chamber for repairs or be replaced by another.

I am aware that metal street-boxes or manholes have been heretofore employed in streets for various purposes, and I do not, therefore, claim such irrespective of construction; but my invention relates to the particular construction and combination therewith of parts, substantially such as shown and described, whereby the apparatus is adapted and made specially available for gas-distributing plants, as specified.

I claim as my invention to be secured by Letters Patent—

1. The within-described reducing-station for gas-distributing plants, consisting of the metallic station-box A, having side openings with seats *a* for attaching gas-mains thereto, and provided with the removable cover C, with intermatching flanges and supports, in combination with the couplings D D, attached to the interior seats *a*, the gate-heads F, fixed to said couplings and provided with fittings for receiving and attaching the pressure-regulator, the by-pass pipe D′, connecting the coupling-hubs at the opposite openings, and the by-pass valve *e*, arranged therein, all substantially as shown and described.

2. In a reducing-station for the purpose specified, the combination of the station-box A, having openings and pipe-attaching seats *a* and *m*, supporting-recesses *b*, and border-groove *n*, the removable covering-plates C, with intermatching joints *c c′*, the removable girder or bar B, the coupling-hubs D, the shut-off gates F F′, the by-pass pipe D′, with stop-gate *e*, and the pressure-reducing regulator I, with its controlling-valve J, connected between said shut-off gates, substantially as and for the purpose set forth.

Witness my hand this 5th day of April, A. D. 1889.

JAMES C. CONROY.

Witnesses:
CHAS. F. CONROY,
H. E. TROUTMAN.