

(No Model.)

S. STUTZ.

MEANS FOR PREVENTING GAS EXPLOSIONS.

No. 315,082.

Patented Apr. 7, 1885.

Fig: 1.

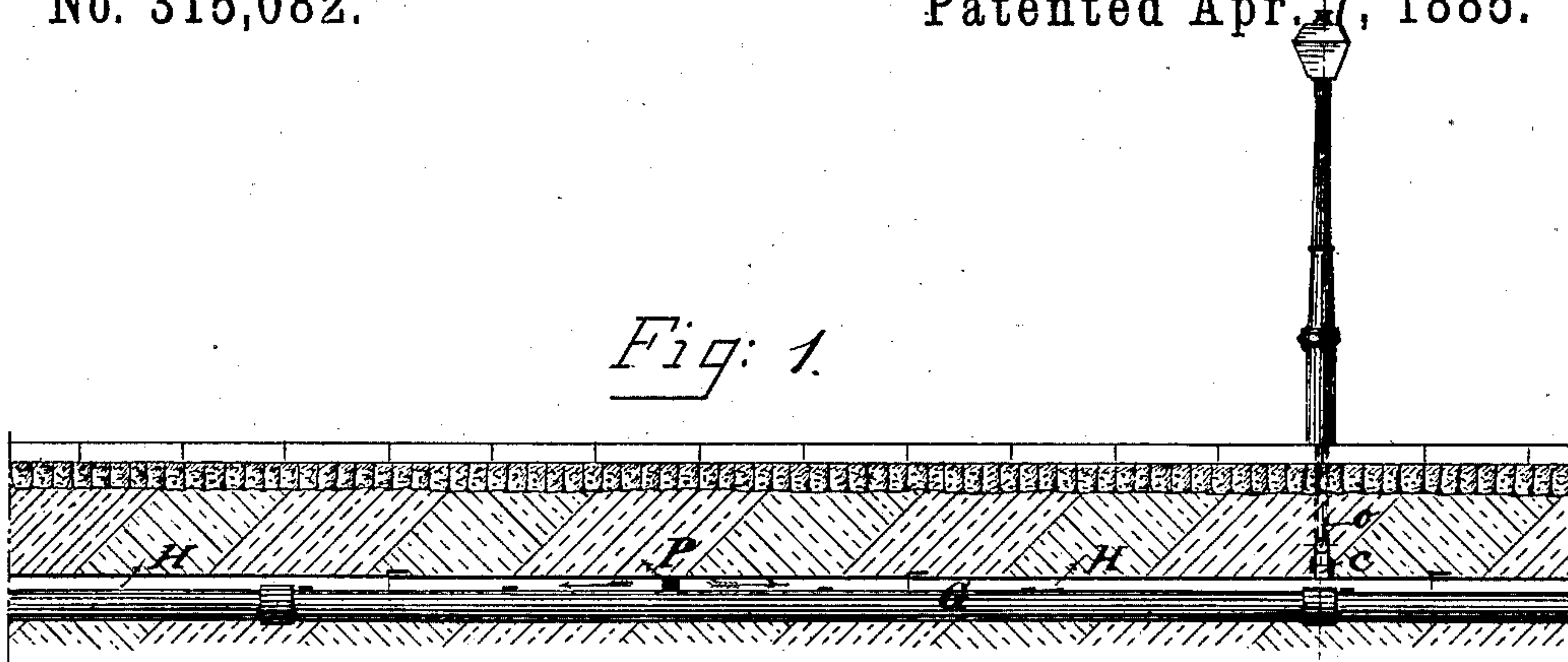


Fig: 5

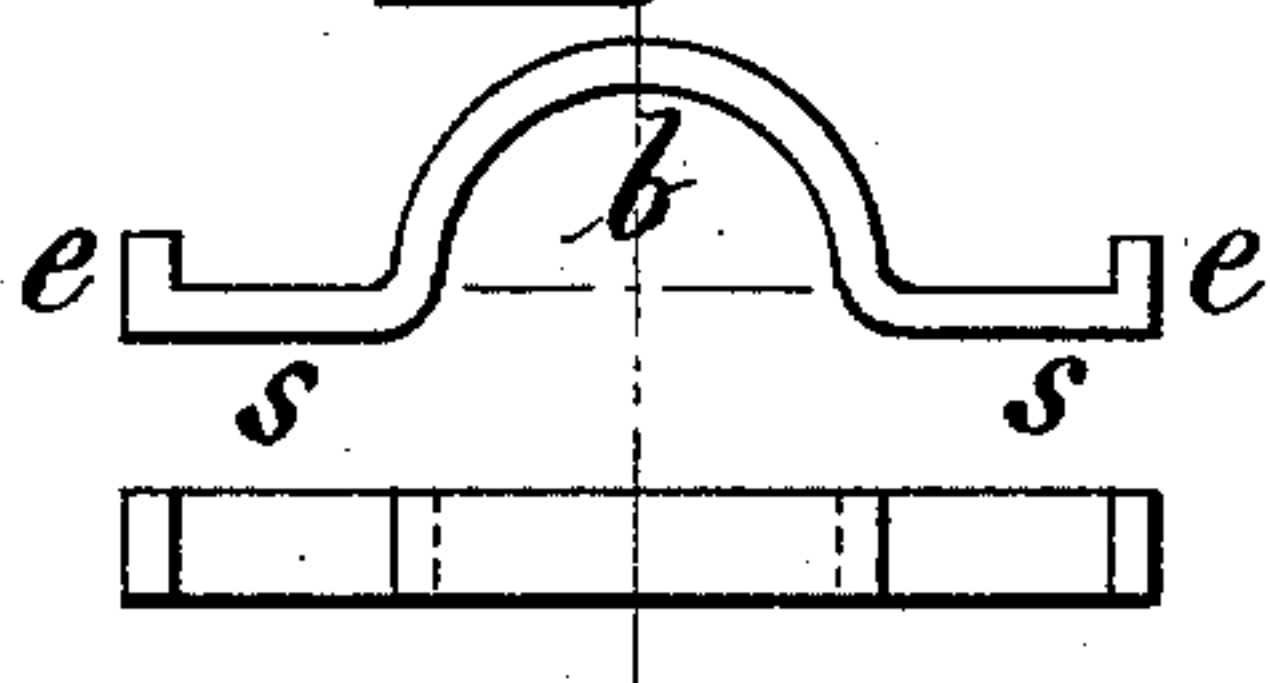


Fig: 2.

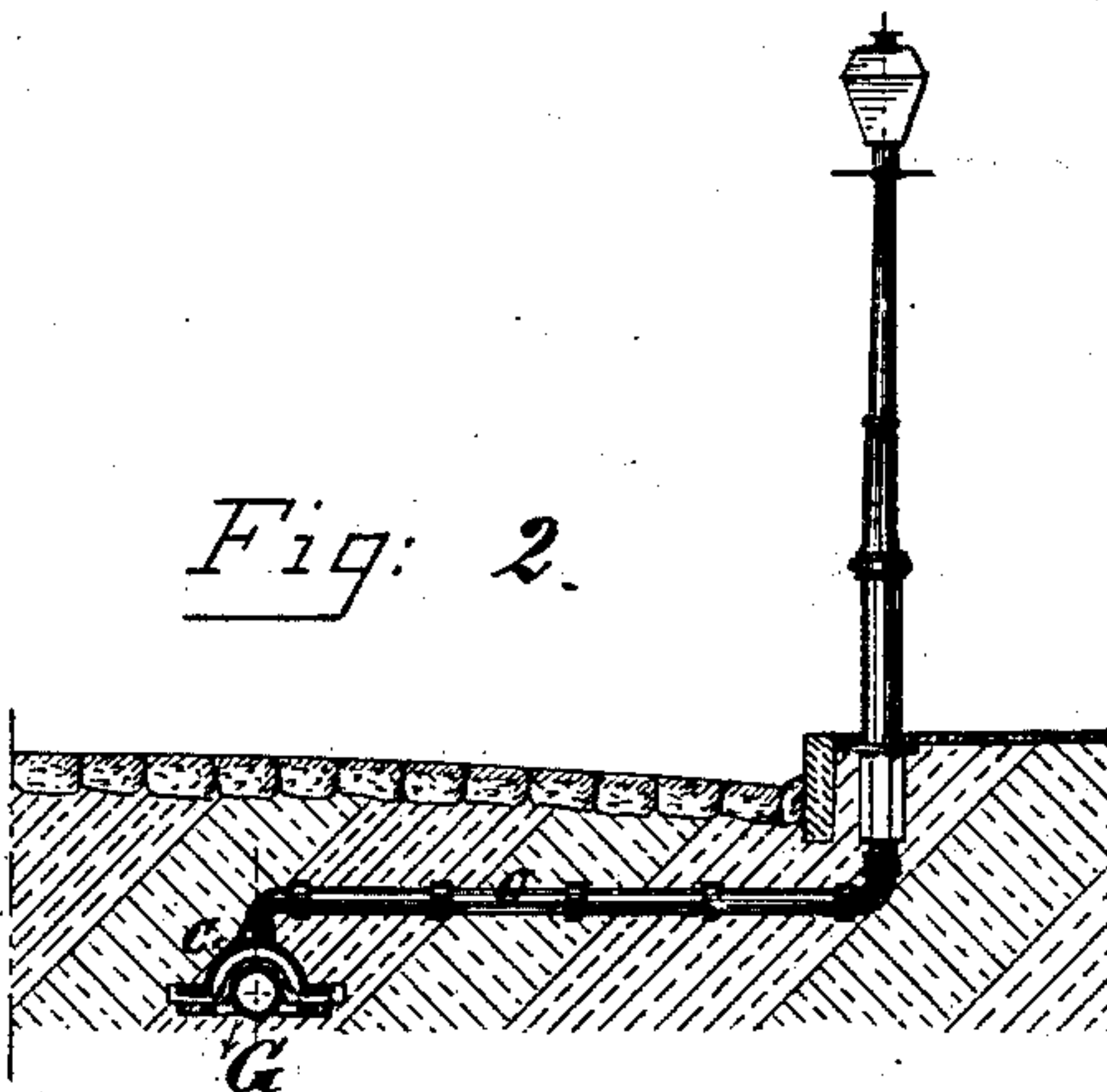


Fig: 6

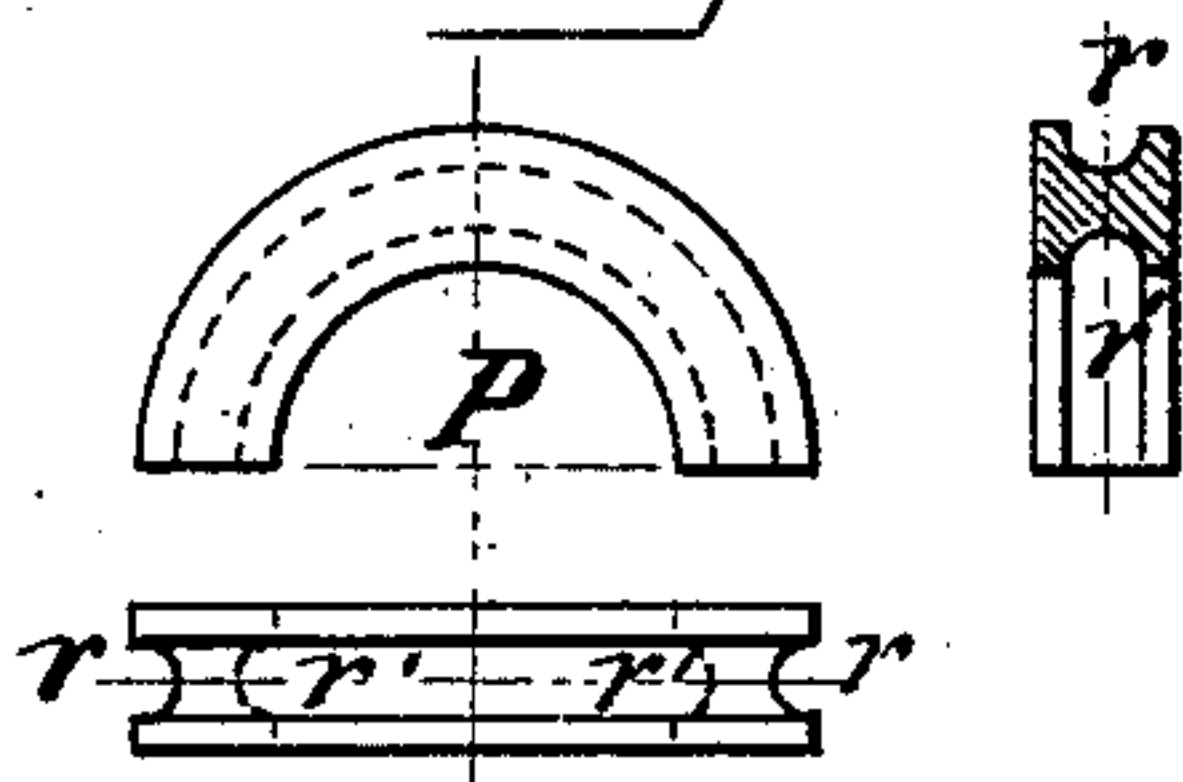


Fig: 3.

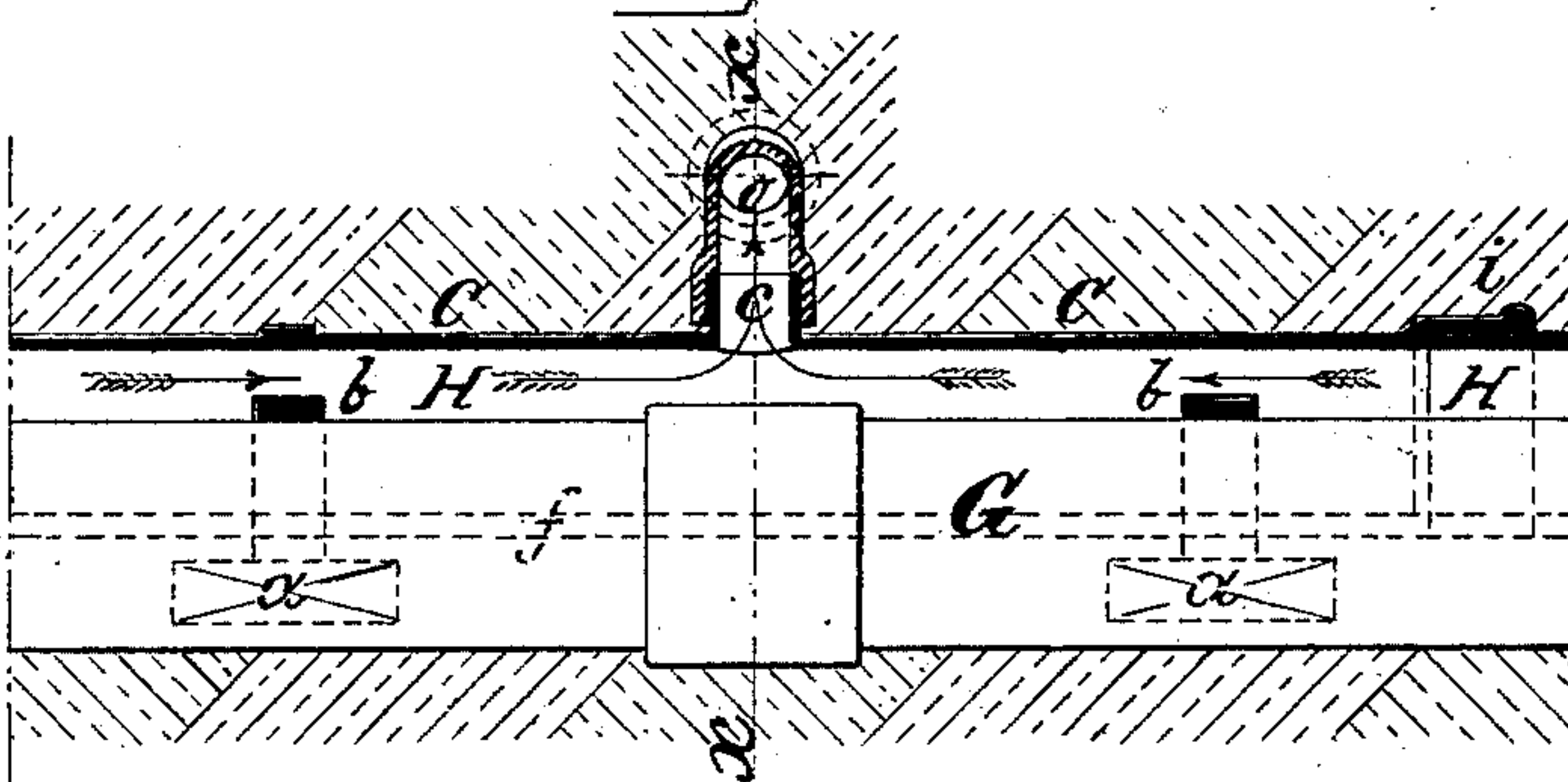
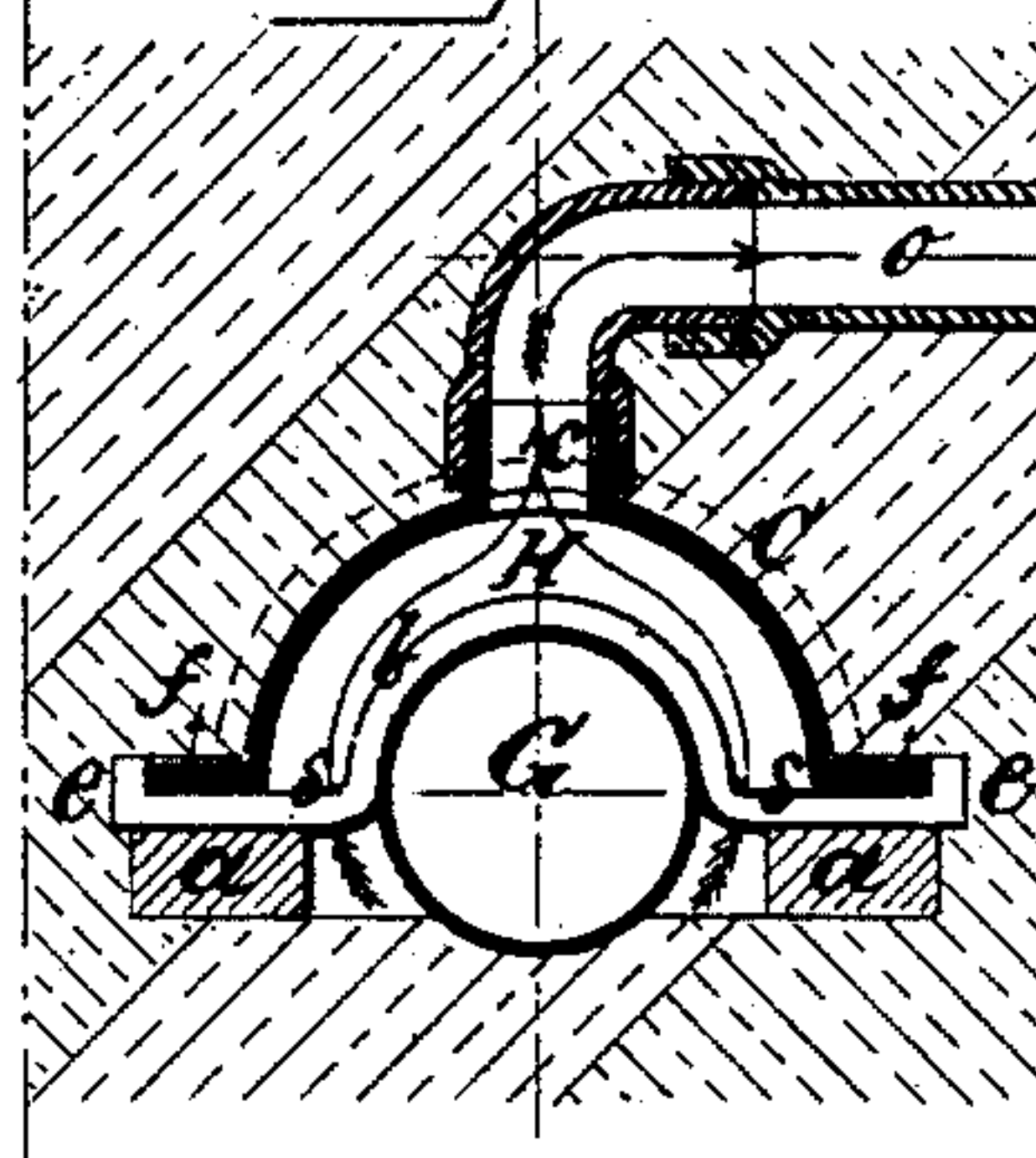


Fig: 4.



Witnesses:
N. A. Humphill
J. M. Horner

Inventor:
Sebastian Stutz

UNITED STATES PATENT OFFICE.

SEBASTIAN STUTZ, OF PITTSBURG, PENNSYLVANIA.

MEANS FOR PREVENTING GAS-EXPLOSIONS.

SPECIFICATION forming part of Letters Patent No. 315,082, dated April 7, 1885.

Application filed March 5, 1885. (No model.)

To all whom it may concern:

Be it known that I, SEBASTIAN STUTZ, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Means for Preventing Gas-Explosions, and Detecting and Locating Leaks in Gas-Mains, of which improvements the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a longitudinal section in the center line of an underground gas-main with my improvements applied and shown; Fig. 2, a transverse section through the gas-main and along the connecting-pipe between the latter and the outside; Fig. 3, a longitudinal section in the center line of the gas-main, on an enlarged scale; Fig. 4, a transverse section at the line *x x* of Fig. 3. Figs. 5 and 6 represent details of a supporting-yoke and a partition-wall, respectively.

My present invention relates to that class of improvements for preventing explosions of natural or manufactured "carbureted hydrogen gas" while conducted through pipes from one point to another. Its object is to detect and locate leakages or escapes of gas and to conduct the same to the surface of the ground.

To this end my invention, generally stated, consists in the combination, with an underground gas-main, of a series of special independent chambers for collecting the waste gas, and a series of escape-pipes, each one leading from a chamber to or above the surface of the ground, as hereinafter more fully set forth.

In practice, to carry out my invention the gas-main *G* is laid below the surface of the ground, as usual, the lower portion of the pipe, from the bottom up to or near the center line, being embedded and packed with any loose material at hand, while the upper half of the main from the top down to or below the center line is left uncovered with earth, but surrounded and inclosed by a special cover or casing, *C*, to form a series of chambers, *H*, for the escaping gas. Said casing or cover *C* will be best made in the shape of a half-pipe concentric with the gas-main *G*, and provided with lateral flanges *f* to set upon the material surrounding the lower portion of the

pipe. They may be of iron, terra-cotta, cement, or any other suitable material, and receive special lengths with overlap-joints *i* and connecting-pipes *c*, as is shown by Figs. 3 and 4.

To assure to the cover *C* a position absolutely certain in regard to the main *G* and prevent its sinking or settling down upon the latter, because of the weight or charge to support, special supporting-yokes *b* are fixed upon the main in such a manner that their straight ends *s* take sufficient bearing upon properly-leveled ground, stones, or bricks *a*, and thus greatly help supporting the cover *C*.

For the purpose of rendering any lateral movement of the latter impossible, both ends *s* of the supporting-yoke *b* are provided with hooks *e*, taking hold against the flanges *f*.

By means of special partition-walls *P*, closely fitting into the space between the gas-main *G* and the cover *C*, a series of chambers, *H*, each one comprising one or more coupling-joints of the gas-main or places of leakage, is formed. Thus the entire pipe-line may be divided into numbered sections, and the escaping gas of each section or chamber *H*, by means of suitable branch pipes, *o*, connected with lamp-posts or otherwise taken to the outside and made harmless.

To prevent the escape of gas from one section or chamber into another, the partitions *P* are provided with grooves *r r'* to receive a packing of brick-clay, mortar, &c., and thus make the joints tight.

In cities or towns where lamp-posts exist along and near the gas-main *G* it will be most convenient to connect each chamber or section with one or more of the lamp-posts, as shown by Figs. 1 and 2, and keep the escaping gas burning as a means of control. If a sudden leak occurs in a chamber or section, it will readily show itself at once, and in such case can be promptly repaired.

I claim herein as my invention—

1. The combination, with an underground gas-main, of a cover or casing having longitudinal side flanges, one or more escape or leakage pipes, and being put together by overlap-joints, and a series of supporting-yokes, substantially as set forth.

2. The combination, with an underground

gas-main, of a cover or casing having longitudinal side flanges, one or more escape or leakage pipes, a series of supporting-yokes, and one or more partition-walls, substantially
5 as set forth.

3. The combination, with an underground gas-main, of a cover or casing, a series of partition-walls having packing-grooves, and a se-

ries of supporting-yokes, substantially as set forth.

Pittsburg, March 2, 1885.

SEBASTIAN STUTZ.

Witnesses:

JOHN ALLEN,
WM. M. ALLEN.