

No. 633,427.

Patented Sept. 19, 1899.

W. F. COOPER.

GASOMETER.

(Application filed July 12, 1899.)

(No Model.)

Fig. 1.

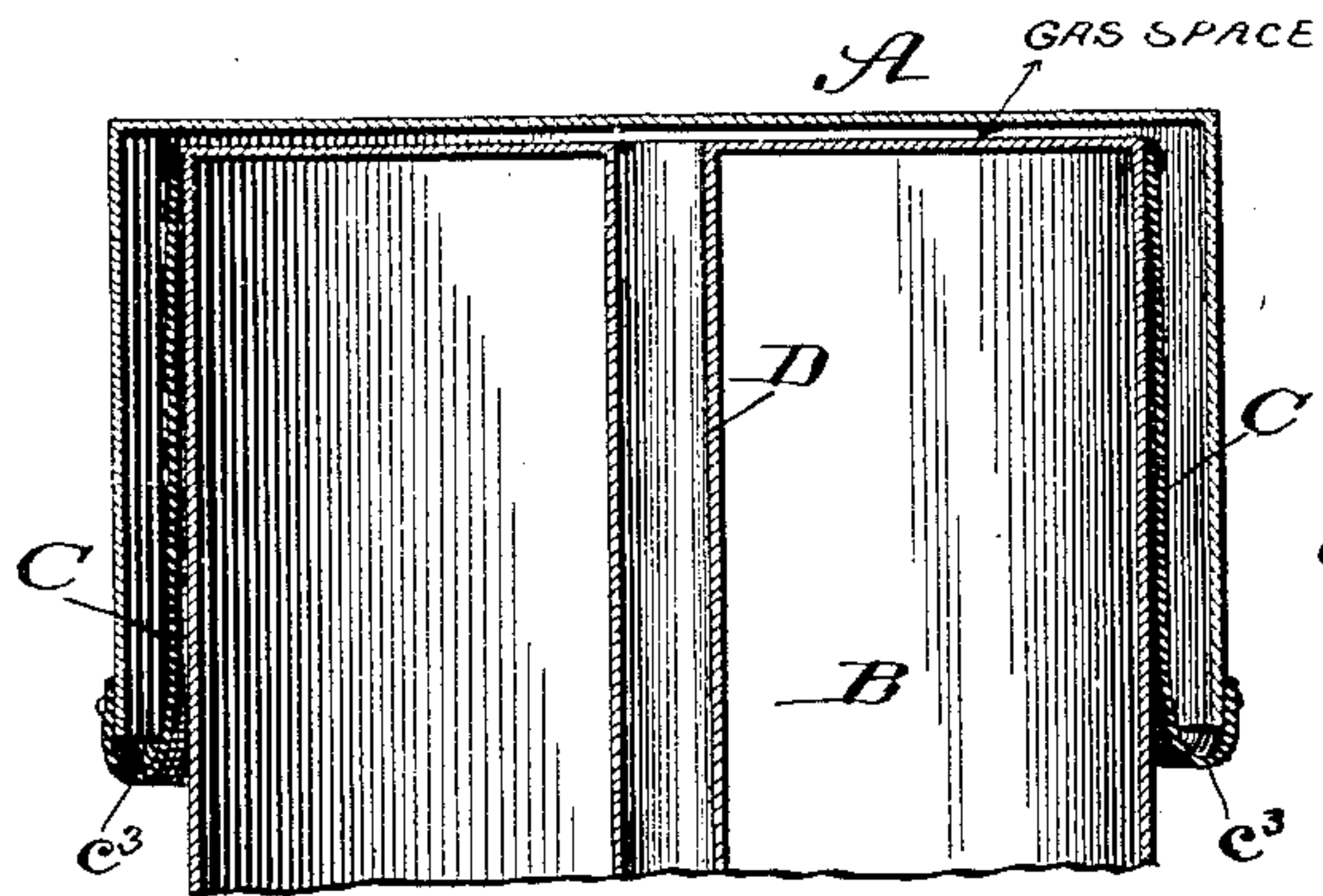


Fig. 1<sup>a</sup>

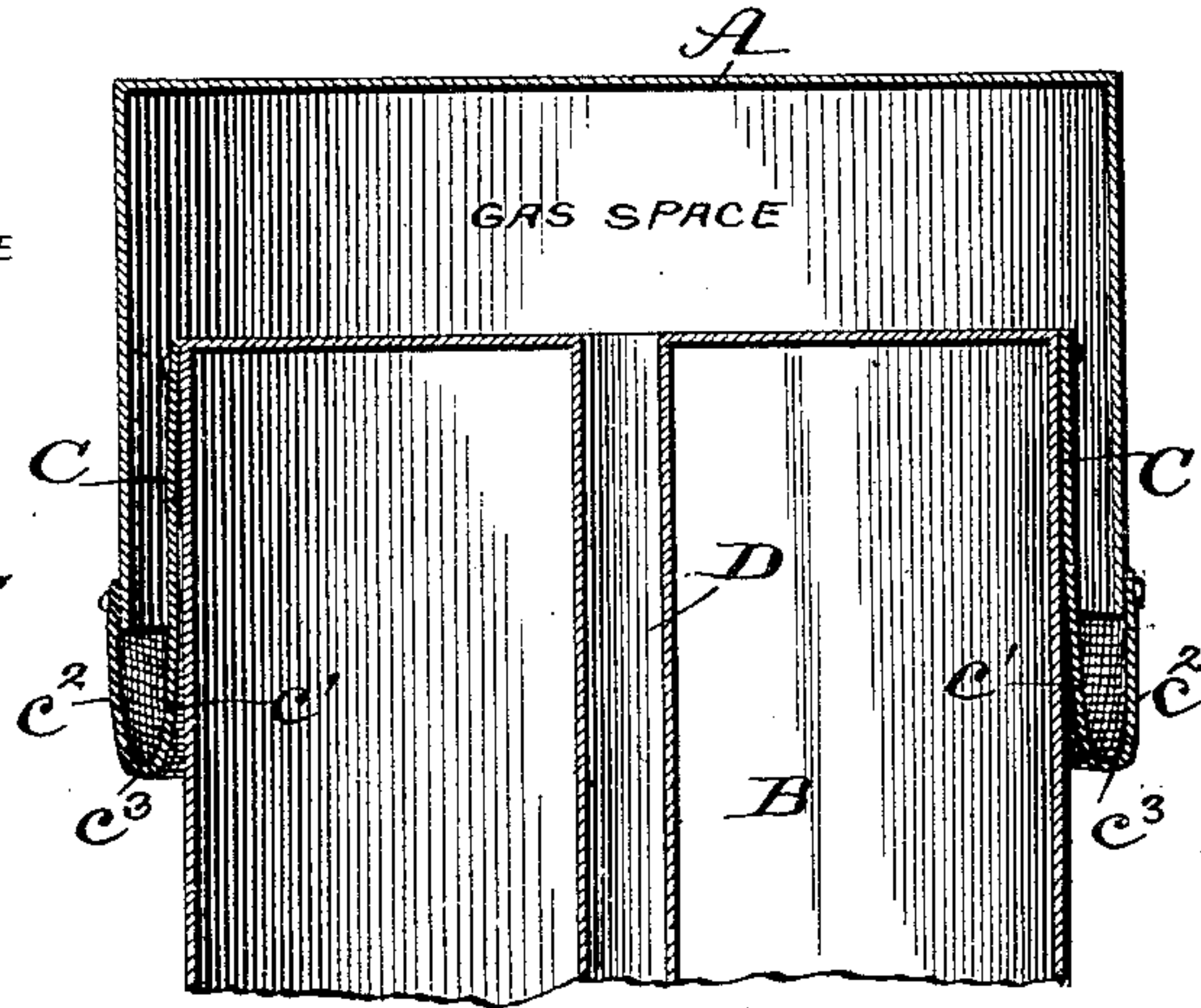


Fig. 2.

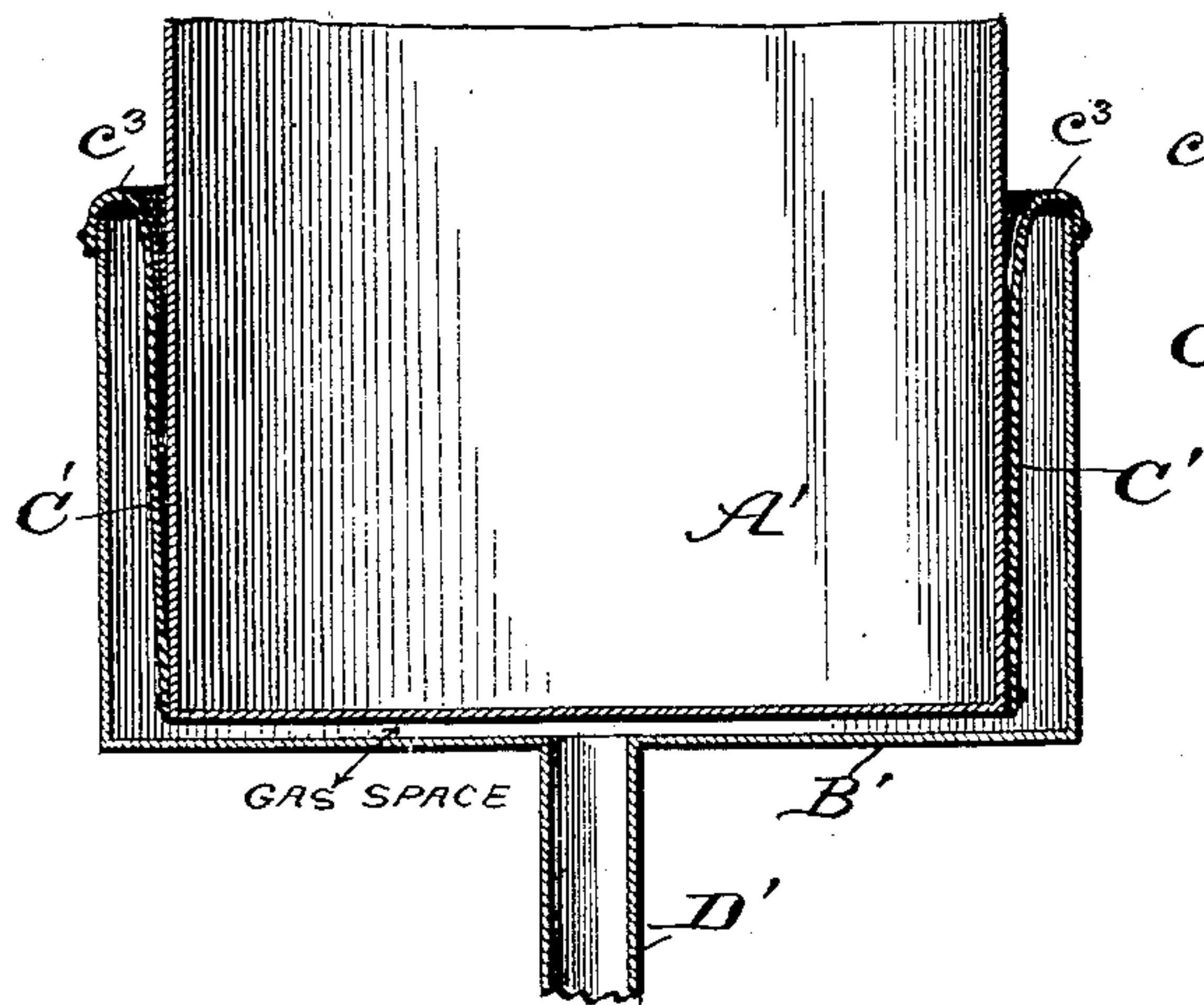
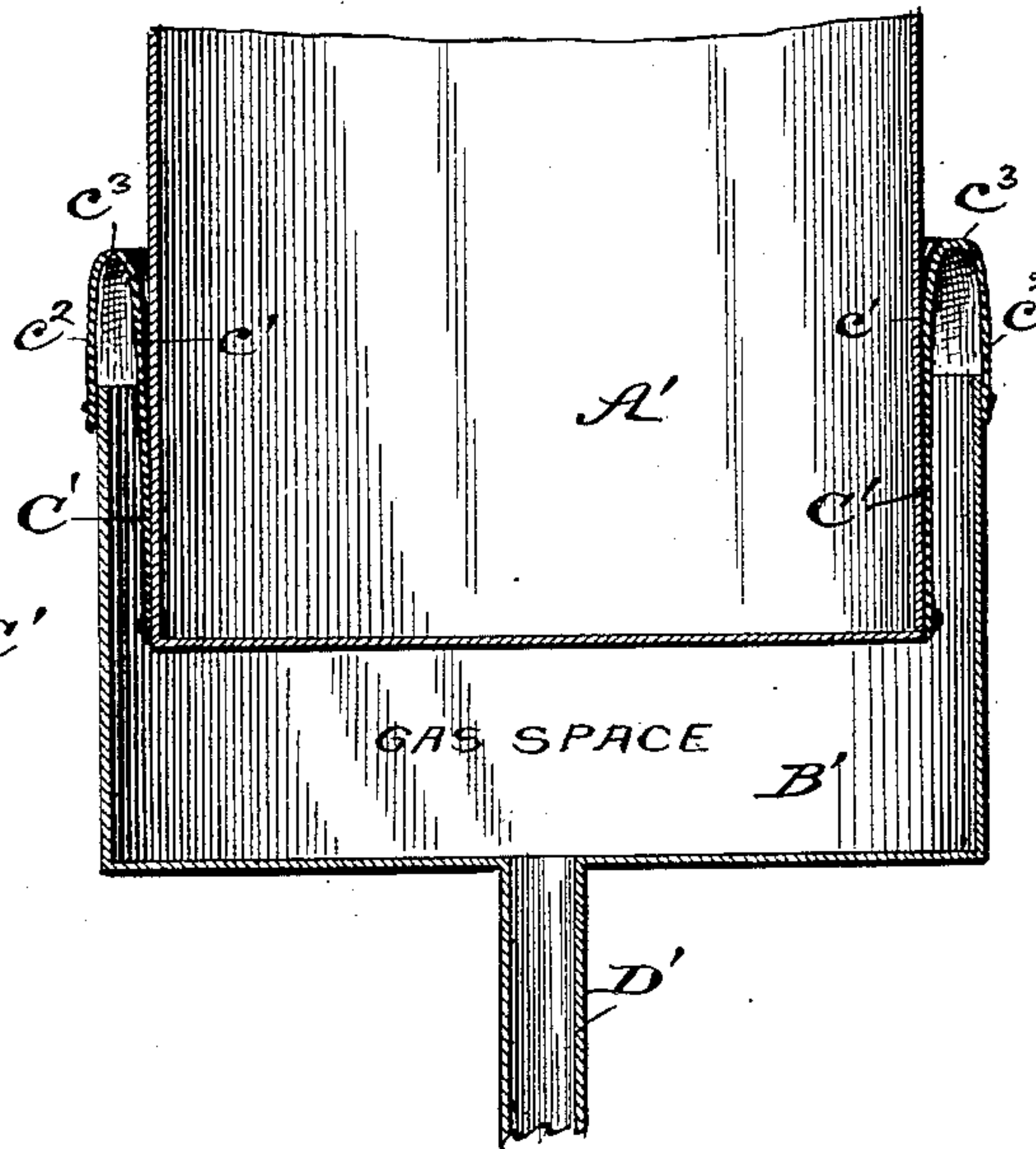


Fig. 2<sup>a</sup>



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# UNITED STATES PATENT OFFICE.

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## GASOMETER.

SPECIFICATION forming part of Letters Patent No. 633,427, dated September 19, 1899.

Application filed July 12, 1899. Serial No. 723,586. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. COOPER, of Meriden, in the county of New Haven and State of Connecticut, have invented a new and  
5 useful Improvement in Gasometers, of which the following is a specification.

My invention is in the nature of an improvement in gasometers or gas-holders. Its object is to dispense with the water seal for the rising-and-falling bell and to give the bell a  
10 larger range of movement and to adapt it for small generators, such as are used for the production of acetylene gas.

It consists in the special arrangement of  
15 two receptacles which telescope or nest the one into the other and a connecting-skirt of impervious elastic material which connects the edges of the two members of the gasometer in a peculiar way and for a specific purpose, as will be hereinafter more fully described with reference to the drawings, in which—

Figure 1 is a sectional view of the essential parts of the gasometer when the bell is in its  
25 lowest position. Fig. 1<sup>a</sup> is a similar view showing the bell partly raised. Figs. 2 and 2<sup>a</sup> are similar views showing a modification.

In the drawings, Figs. 1 and 1<sup>a</sup>, A represents the rising-and-falling bell, having pendant side walls and an open bottom and made  
30 somewhat larger than and telescoping over an inner receptacle B. Into the space between A and B there opens an inlet-tube D for gas, which tube is fixed rigidly to the inner receptacle B at any desired point.

C is a flexible skirt of impervious flexible material, such as fabric soaked in some substance to fill its pores, fine soft leather, or any other similar material. For rendering it im-  
40 pervious, flexible, and free from friction a compound of oil and plumbago may be used. This skirt extends all the way around the gasometer and is connected at its upper edge to the upper edge of the inner receptacle B and  
45 at its lower edge to the lower edge of the side walls of the bell A.

I am aware that the two parts of a gasometer have been heretofore connected by a flexible skirt in the place of a water seal; but the  
50 peculiar arrangement of the flexible skirt in my invention is new and of very great importance in that it forms when the bell rises

and falls an annular sheath, as in Fig. 1<sup>a</sup>, in which the gas is contained between the two walls  $c'$   $c^2$  of the doubled skirt in the form of  
55 an annular film. This keeps the moving wall  $c^2$  of the skirt separated some distance from the stationary wall  $c'$  and has the important result of making a large rolling bend in the bottom of the fabric at  $c^3$  instead of a sharp  
60 one, which latter quickly breaks the material and forms leaks. In keeping the wall  $c^2$  out of sliding contact with  $c'$  as the bell rises and falls it also entirely avoids the great friction of rubbing contact between the two walls of  
65 the fabric, thus securing great sensitiveness for the rise and fall of the bell instead of being cramped and retarded, as when one layer of the fabric slides in contact with the other layer.  
70

As a modification of my invention I may, as in Figs. 2 and 2<sup>a</sup>, invert the bell, as at A', and also the other receptacle B', the inlet-pipe D' entering the stationary part B' below. In this case the bell A' enters the part  
75 B', and the flexible skirting C' is connected at the top to the upper edge of the receptacle B' and at its bottom with the lower edge of the bell A'. The same principle, however, is involved in that the flexible skirting forms  
80 an annular gas-holding sheath as the gasometer moves, whose flexible walls are out of contact with each other, causing the skirting to bend or roll at the bottom with a large curve.  
85

Although not absolutely necessary, it is desirable to use for the skirting of the gasometer a fabric or material that is elastic in the direction of the circumference, since as it rolls up it occupies a somewhat larger cir-  
90 cumference.

In defining my invention with greater clearness I would state that the two cylindrical telescopic members of my gasometer are made of a sufficiently different diameter to leave  
95 considerable space between the side walls, so that the flexible skirting forms a gradual bend whose concave side faces inwardly to the gas-space and not only relieves friction, as hereinbefore described, but the annular  
100 rolling gas-sheath thus formed centralizes and guides the movable member in a very delicate and sensitive manner without the necessity of any separate mechanical guides.



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

1. A gasometer comprising two cylindrical  
5 members with closed heads telescoping the  
one into the other and having their side walls  
separated a distance from each other to give  
loose play, and a flexible skirt connecting the  
10 upper edge of one member to the lower edge  
of the other member and bending with a gradual  
curve whose concave side faces inwardly  
to the gas-space, forming a flexible annular  
sheath centralizing and guiding the movable  
15 member substantially as and for the purpose  
described.

2. A gasometer comprising two cylindrical  
members with closed heads telescoping the  
one into the other and having their side walls  
separated a distance from each other to give  
20 loose play, one member being movable and  
the other stationary, and the stationary member  
having a central gas-inlet, and a flexible  
skirt connecting the upper edge of one member  
to the lower edge of the other member  
25 and bending with a gradual curve whose concave  
side faces inwardly to the gas-space,

forming a flexible annular sheath centralizing  
and guiding the movable member substantially  
as and for the purpose described.

3. A gasometer comprising two cylindrical  
30 members, with closed heads, telescoping the  
one into the other and having their side walls  
separated a distance from each other to give  
loose play both of these members having their  
heads at their upper ends and their chambers  
35 opening downwardly, and the lower and  
smaller member being stationary and having  
a central inlet-pipe opening through its head,  
and a flexible skirt attached at one edge to  
the lower edge of the larger and movable  
40 member and at its other edge to the upper  
edge of the smaller and stationary member  
and bending with a gradual curve whose concave  
side faces inwardly to the gas-space  
forming a flexible annular sheath centralizing  
45 ing and guiding the movable member substantially  
as and for the purpose described.

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Witnesses:

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