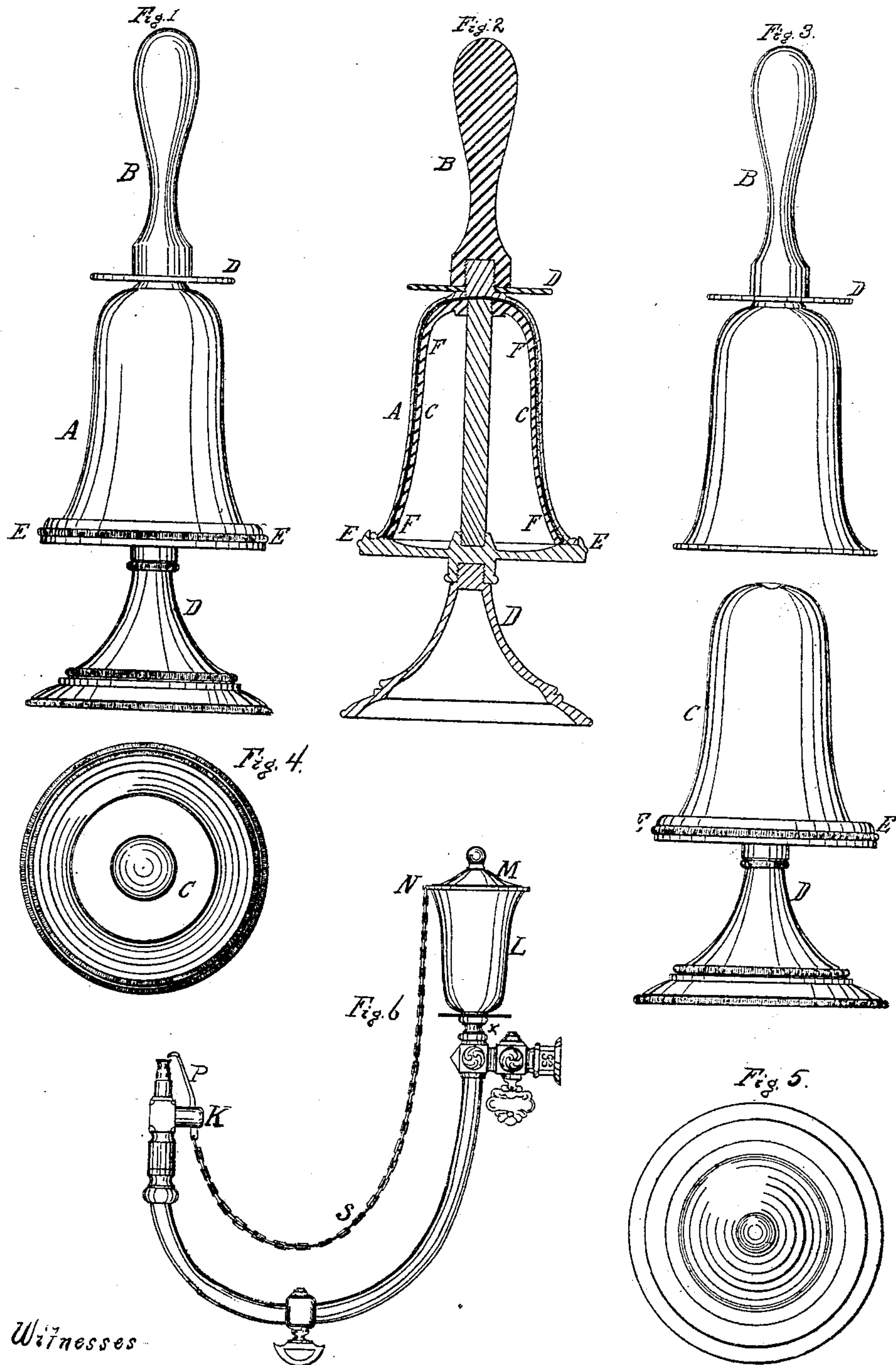


R. CORNELIUS.  
LIGHTING GAS BY ELECTRICITY.

No. 38,562.

Patented May 19, 1863.



Witnesses

*Samuel Child*  
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# UNITED STATES PATENT OFFICE.

ROBERT CORNELIUS, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN LIGHTING GAS BY ELECTRICITY.

Specification forming part of Letters Patent No. 38,562, dated May 19, 1863.

*To all whom it may concern:*

Be it known that I, ROBERT CORNELIUS, of Philadelphia, in the State of Pennsylvania, have made certain new and useful Improvements in Apparatus for Lighting Gas or other Inflammable Materials, being an improvement upon the apparatus heretofore patented by me, and entitled an "Improvement in the Electrophorus;" and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and in which—

Figure 1 represents an outside view of my improved lighting apparatus. Fig. 2 represents a vertical section. Fig. 3 represents an outside view of the two parts composing the apparatus when separated. Fig. 4 is a top view of Fig. 3. Fig. 5 is a bottom view of Fig. 3. Fig. 6 is a view of the burner arranged for being lighted by the apparatus shown above.

I construct my improved apparatus as follows:

A, Figs. 1, 2, 3, is a hollow metallic bell-shaped piece, (brass I prefer.) This is attached to a hard-rubber handle, B, above, with a small shield, D.

C is a hollow bell-shaped piece of hard rubber, corresponding in its outer periphery very closely with the inner surface of the metallic bell-piece A. This hard-rubber piece C is secured to a small metallic base or pedestal, D, having a disk or saucer shaped top, *ee*, rather larger in diameter than the base of the hard-rubber bell C. Inside of the hard-rubber bell C is placed a roll of tin-foil, F, which tin-foil is in contact with the inner surface of the hard-rubber bell, and also rests upon the plate E E of the metallic stand D within the hard-rubber bell.

The inside of the metallic bell A is lined with a very thin sheet of lamb's skin secured to the metallic bell by gum-shellac. I also prefer to attach strips of silk to the inside of the lamb's skin, as I find that a combination of silk and fur gives the best electrical action in practice.

It is obvious that instead of hard rubber, glass, shellac, or other non-conductor might be used; but I find hard rubber to be the best.

Instead of tin-foil, plumbago or other good conductor might be used. Instead of a bell shape, the hard-rubber piece C and the cover A might be made cylindrical or semi-spherical, &c., although I prefer a bell or conical shape.

The apparatus is used as follows: A metallic point, P, is secured to the burner by a hard-rubber insulator, K, as shown in Fig. 6. A chain is attached to this metallic point, and hangs down, as heretofore fully described in my former patent, on which this is an improvement. The lighting apparatus can stand in any part of the room in the condition shown in Fig. 1, the metallic bell-cover A resting upon the lower stand, D, the hair lining of the bell-shaped cover being in contact with the hard-rubber bell-piece C. When it is desired to light the burner the gas is turned on and the metallic bell raised by means of its handle B and just touched to the chain which hangs from the metallic point P. The mere act of lifting the piece A charges it with electricity, and as soon as it touches the chain the spark passes to the burner and instantly ignites the gas.

This apparatus has the advantage of giving an increased spark over the simple electrophorus, and also, from its construction, it is apparent that the parts liable to be impaired in action by atmospheric influence are in a great measure excluded from contact with the atmosphere by reason of the hard-rubber surface being nearly always closely enveloped by metal lined with fur. The metallic bell-shaped piece is so formed as to form a metallic connection with the plate E whenever the cover A is in its place on the hard-rubber bell. This secures a more certain spark than would be otherwise obtained.

This apparatus may be reversed by making the interior bell of metal and the outer bell of hard rubber and a metal or foil case outside of the hard rubber.

The apparatus may be neatly secured to the bracket of the burner, as shown in Fig. 6, where L represents an inverted metallic bell having a hard-rubber bell inside to the metallic top M. The chain S passes from the point P to the metallic bell, and is secured to it at *n*. When the hard-rubber bell is lifted out of the metallic bell L, the electricity developed in L at once

passes along the chain S to the point P and ignites the gas, being prevented by the non-conductor X from passing into the bracket.

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

1. The combination of the cylindrical or bell-shaped metallic piece A, the cylindrical or bell-shaped hard-rubber piece C, and the fur or woolen lining of the metallic piece, arranged and operating as above described.

2. The employment of a combination of silk and fur to form a lining to this metallic piece C.

3. The combination of the metallic bell-shaped or cylindrical piece A, the bell-shaped or cylindrical hard-rubber or non-conducting piece C, and the metallic foil or its equivalent within the same, and the fur or woolen lining of the metallic piece A.

4. The connection of the metallic bell A with the pedestal D at the outer circumference of the pedestal.

ROBERT CORNELIUS.

Witnesses:

EDMUND WELD,  
JAMES MCCALUM.