

(No Model.)

A. E. COLGATE.
METHOD OF TREATING UNDERGROUND ELECTRICAL CONDUITS WITH
CHEMICAL SUBSTANCES.

No. 402,563.

Patented May 7, 1889.

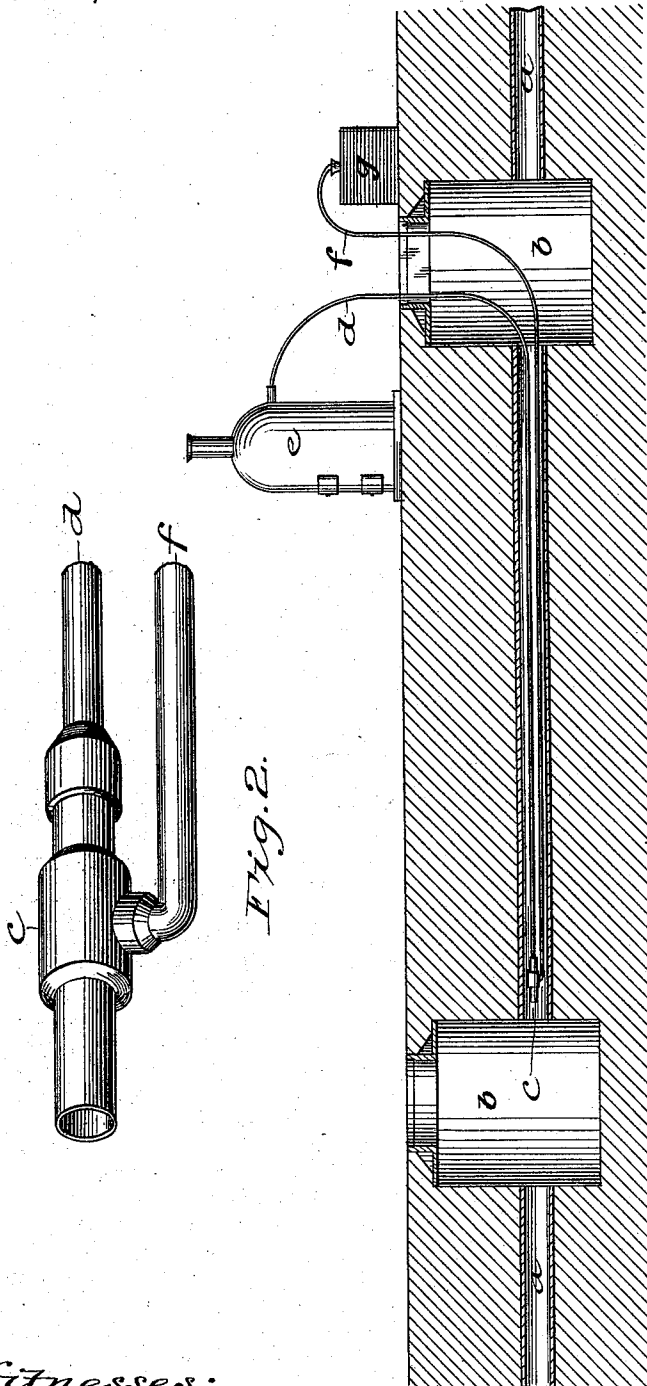


Fig. 1.

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

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METHOD OF TREATING UNDERGROUND ELECTRICAL CONDUITS WITH CHEMICAL SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 402,563, dated May 7, 1889.

Application filed February 2, 1889. Serial No. 298,446. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR E. COLGATE, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented a certain new and useful Improvement in the Method of Treating Underground Electric Conduits with Chemical Substances, (Case No. 2,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Where lead-covered electric cables are laid in subways in cities, it is found that the lead pipe is liable to corrosion from the action of acetic acid and gases of various kinds, which are included under the general and indefinite term "sewer-gas." It has been found, also, that these harmful substances or gases may be neutralized and formed into harmless compounds by treating the conduits with sulphuric acid. In case the walls of the conduit are of wood treated with creosote it is of very great importance to cause the sulphuric acid to penetrate all the joints and pores of the wood.

The object of my invention is to force the sulphuric acid into the conduit in such manner that all crevices and pores may be thus penetrated. This I accomplish by means of an atomizer, which is placed in the conduit and drawn through the same, as hereinafter specified.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view showing my atomizer in the conduit, one tube thereof being connected with the steam-boiler and the other tube thereof being connected with a carboy of sulphuric acid. Fig. 2 is a detailed view of the atomizer.

The sides of the subway *a* may be of wood which has been treated with creosote in the usual manner. Man-holes *b*, with which the cable connects, are provided at suitable distances apart, usually at the intersections of the streets. The atomizer *c* is shown placed in the duct. The pipe *d* of the atomizer is

connected with the steam-generator *e*, while the pipe *f* is connected with the carboy *g* containing sulphuric acid. The atomizer is first drawn through the duct to the position shown, whereupon the steam and sulphuric acid are turned on, while at the same time the atomizer is drawn back through the duct. In this manner the wooden box forming the sides of the duct is permeated with sulphuric acid, thus destroying any acetic acid or other harmful substance that might be present. The sulphuric acid thus injected into the subway should be somewhat in excess of the amount required in the first instance, since it is found that the formation of acetic acid or like substance which is liable to attack the lead may go on to a limited extent after the cables are laid. This will, however, be neutralized by the excess of sulphuric acid.

I have described my method of treating electric conduits with reference to sulphuric acid. It is evident, however, that any liquid may be caused to permeate the joints and sides of the duct by the use of my atomizer used in the manner hereinbefore described. It is also evident that an air-blast might be used in place of steam in the manner well understood.

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

1. The process of treating the electric conduits with a chemical substance, which consists in throwing the same against the interior of the conduit in the form of a spray, substantially as described.

2. The method of treating a conduit which consists in forcing the liquid through an atomizer and at the same time drawing the atomizer through the conduit and throwing the liquid substance against the interior walls of the conduit, substantially as and for the purpose specified.

In witness whereof I hereunto subscribe my name this 31st day of December, A. D. 1888.

ARTHUR E. COLGATE.

Witnesses:

JOSEPH B. BRAMAN,
CHARLES P. HONE.