

UNITED STATES PATENT OFFICE.

MARTIN E. WALDSTEIN, OF NEW YORK, N. Y.

SOLVENT FOR GAS-PIPE DEPOSITS.

SPECIFICATION forming part of Letters Patent No. 411,478, dated September 24, 1889.

Application filed November 22, 1888. Serial No. 291,571. (No specimens.)

To all whom it may concern:

Be it known that I, MARTIN E. WALDSTEIN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Chemical Solvents of Naphthaline and other Deposits in Gas-Pipes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to chemical solvents of naphthaline and other deposits.

The object is to effect the removal of such deposits.

With these objects in view, the invention resides in a composition or mixture of fusel-oil with benzine, gasoline, or other light petroleum products, with wood-alcohol, or with bisulphide of carbon, &c.

In the manufacture of gas, particularly from coal, where the temperature of the retorts is allowed to range too high, or where proper conditions otherwise are violated, sometimes, even when the greatest care is observed, solid hydrocarbon substances—such as naphthaline, as well as carbon—are often deposited in the mains and service pipes employed in the distribution of the fluid, causing these to become greatly constricted and sometimes entirely plugged. Since the exact location of the impediment cannot always be easily determined, and since, even when the precise place of stoppage is known, the pipes generally being buried, they are not, in whole nor in part, readily accessible, such stoppage is a serious inconvenience, and means other than the lifting of the pipes have had to be devised to overcome this difficulty. Naphthaline and tarry deposits have been dissolved out of the pipes by forcing wood-alcohol or alcohol through them; but these liquids are expensive, and, furthermore, act merely as solvents, and even in this respect only upon some of the products, thus failing completely to remove a kind of crust which forms within the pipes. I have found by experiment that by

the use of amylic alcohol, or fusel-oil, a substance of great abundance and much in the nature of a waste product in distilleries, combined or mixed with benzine, gasoline, or other light petroleum products, with wood-alcohol, bisulphide of carbon, &c., all objections to the use of the wood-alcohol or alcohol will be overcome, and that deposits in the pipes may readily be removed at little cost, at the expenditure of comparatively little labor, and with great efficiency. The mixture of fusel-oil and gasoline, &c., besides being a powerful solvent, seems to exert a corrosive action, separating off hard and crusty matter from the inside of pipes, placing it in condition to be removed on removal of the fusel-oil, or mixture thereof, or by flow through the pipes of some other liquid.

To carry my invention into effect, I run my mixture of fusel-oil with gasoline, benzine, or wood-alcohol or bisulphide of carbon, or other suitable solvent for hydrocarbon, into the gas pipe or pipes having the objectionable deposit, and, having allowed it to remain a sufficient time to exert its action, I remove it, when the deposit will come with it, or matters separated off by the mixture may be carried out by some other liquid.

Instead of merely running my mixture into the pipes and allowing it to remain there before removal, I may force it through in a continuous stream, as by pumping.

I do not wish to be understood as claiming a substitute for turpentine, consisting of deoxidized fusel-oil rectified and distilled and then mixed with liquid hydrocarbon; but,

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

A mixture composed of fusel-oil of commerce and benzine or specified equivalent, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN E. WALDSTEIN.

Witnesses:

A. H. MAAS,
ADE. GROSS.