(No Model.)

H. A. CLIFFORD.

COVERING FOR GAS, WATER, AND OIL PIPES.

No. 329,720. Patented Nov. 3, 1885.

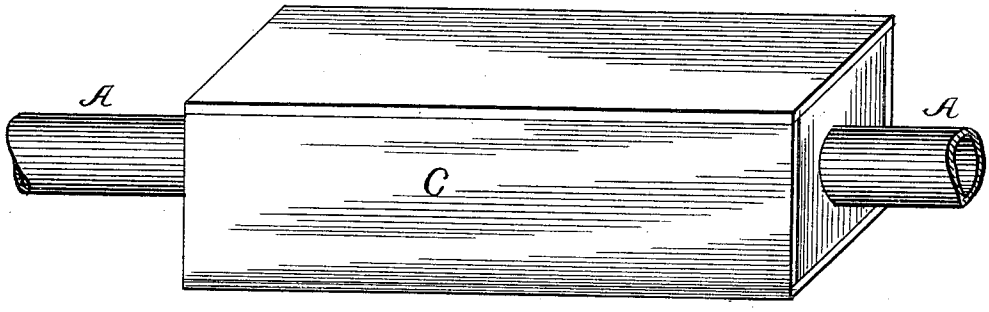


Fig. 1.

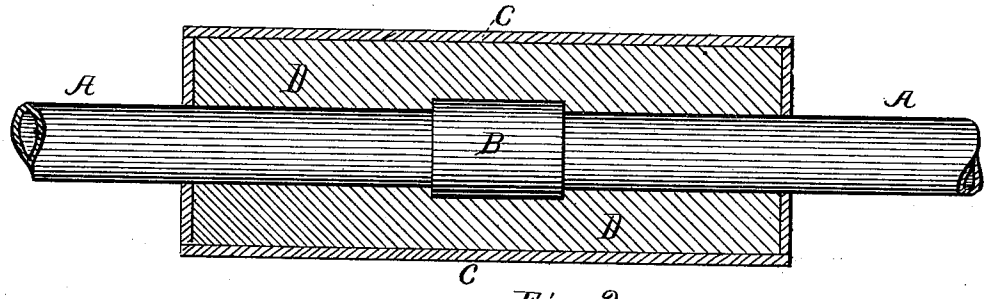


Fig. 2.

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UNITED STATES PATENT OFFICE.

HENRY A. CLIFFORD, OF ALLEGHENY, PENNSYLVANIA.

COVERING FOR GAS, WATER, AND OIL PIPES.

SPECIFICATION forming part of Letters Patent No. 329,720, dated November 3, 1885.

Application filed April 20, 1885. Serial No. 162,860. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. CLIFFORD, of Allegheny city, Pennsylvania, have invented a new and useful Improvement in Coverings for Gas, Water, and Oil Pipes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Similar letters of reference indicate corresponding parts.

My invention relates to means by which natural or artificial gas may be securely held in the pipes that serve to convey the same from wells or from the place where it is manufactured to the consumers. In the conveying of gas through pipes a large amount is lost by escape through defective joints and defects in the pipes, and it is a great desideratum to apply something to prevent this loss.

In the accompanying drawings, Figure 1 is a plan view of my apparatus for gas-pipes, and Fig. 2 is a sectional view taken lengthwise.

A A represent a gas pipe. B is a sleeve-joint. C is a boxing, and D is the interior of the same. This box C is intended to hold a product composed of coal-tar residuum, as a base, mixed with pine-tar in the proportions of seventy-five per cent. of coal-tar residuum to twenty-five per cent. of said pine-tar. I prefer these proportions when the pipes are much exposed to cold and liable to crack from the effects of the same; but when the pipes are placed where they will be beyond excessive cold I make said proportions vary about as follows, viz: eighty-five per cent. of coal-tar residuum and fifteen per cent. of pine-tar. In the proportions aforesaid the articles are heated to fluidity and poured into the box C till the same is filled, thus forming a gas-tight joint, which I have demonstrated to my entire satisfaction. Along with the coal-tar residuum, as aforesaid, pitch or resin may be used in about the same proportions, resin being used where great heat is to be endured, as it would resist melting more than with the other articles.

In addition to using coal-tar residuum as a base for the purpose aforesaid, I prefer to use either Cuban, Trinidad, or German asphalt, where pipes are exposed to a great degree of cold, as these asphalts are non-conductors of heat, or conductors of heat to a much less degree than the other base referred to.

When it is desired to utilize my preparation for the purpose of making gas-pipes tight, they are laid inside of box C, as seen in Fig. 2. Then the compound is poured in till the box is well filled up. If the object is to tighten joints of large pipe where the pressure from within is very great, this box C is allowed to remain over the joint, and a lid is fastened thereon; but where the pressure is moderate this box may be removed after the compound is solidified, and it may be removed and used at other points.

This compound may be used not only over the joints of pipes, but it may be found necessary to place it all along the main pipes conveying gas to the consumers; and, indeed, this is highly probable in the case of natural gas under high pressure, for it seems to be difficult to confine, even in metallic pipes that are dense enough to hold manufactured gas.

On the smaller pipes leading into and through buildings this compound of mine may be put as a preservative as well as for the holding of gas. Under a high pressure the compound, as aforesaid, is put on from two to three inches thick, and from this down to about half an inch under low pressure.

Good results may be obtained by use of my compound or product by utilizing the same for oil-pipe and even on water-pipe, especially water-pipe where the same is exposed to severe cold and is likely to freeze, in which case a good coating of the described product would prevent, to a considerable degree, said pipes from freezing, and the same may be said of the said product in making oil and water pipes secure against leakages. To secure these pipes against contraction and expansion in passing through different degrees of heat and cold is an object of considerable consequence, and this I can do with my preparation hereinbefore described, and in doing this the percentages given may be varied somewhat and produce the same effect.

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

The combination, with the box C, having

openings at the ends for the pipe, of the pipe-sections A, the sleeve-joint B, and the filling consisting of a compound impervious to gas, whereby the pipe is protected at its joint and the parts secured firmly in place, substantially as specified.

In testimony that I claim the foregoing as my invention I hereto set my hand in presence of two witnesses.

HENRY A. CLIFFORD.

Witnesses:
A. C. HENRY,
J. HARVEY.