

Harris & Howell,

Steam Boiler Covering.

No. 102,116.

Patented Apr. 19, 1870.

Fig. 1.

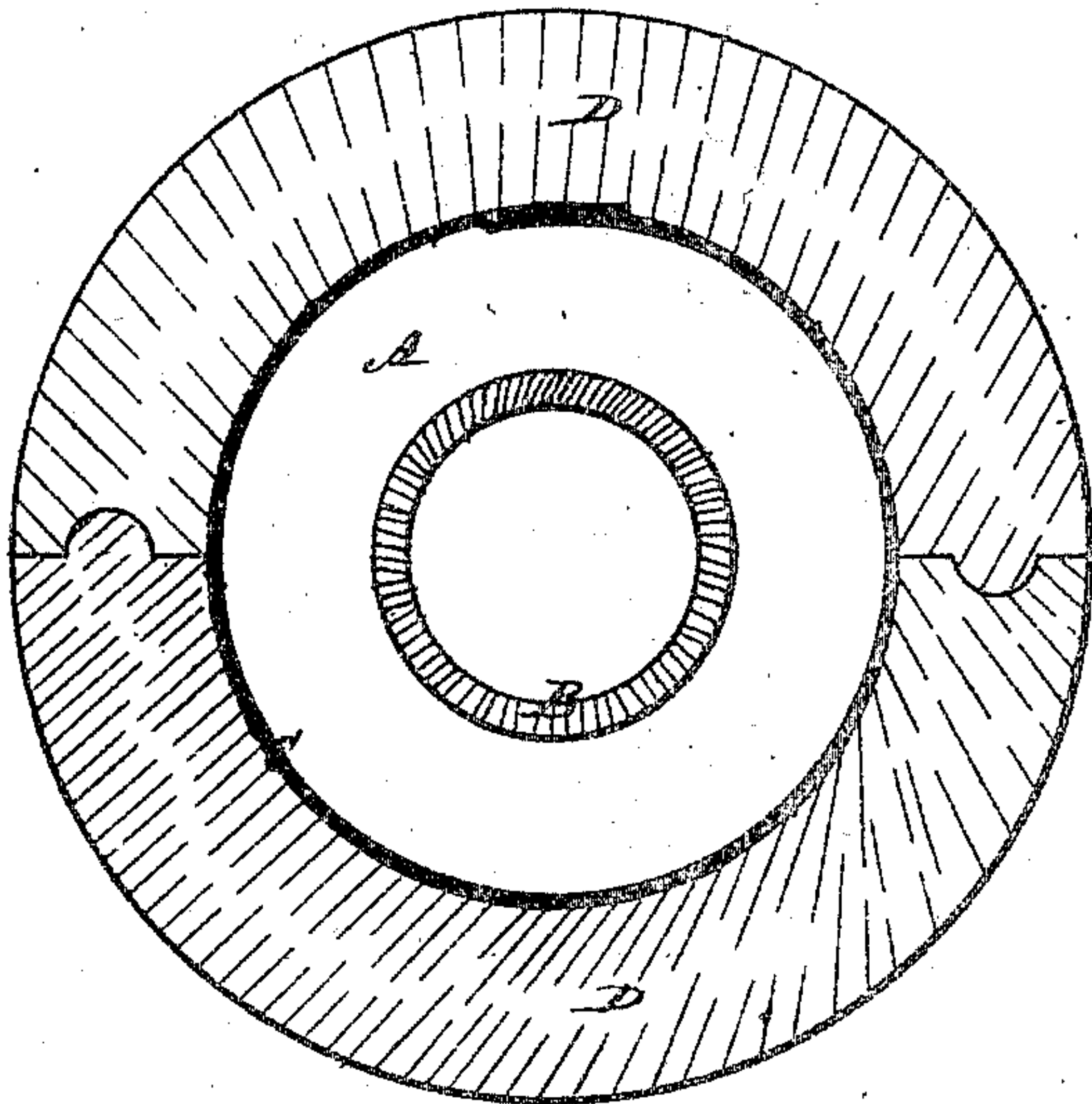
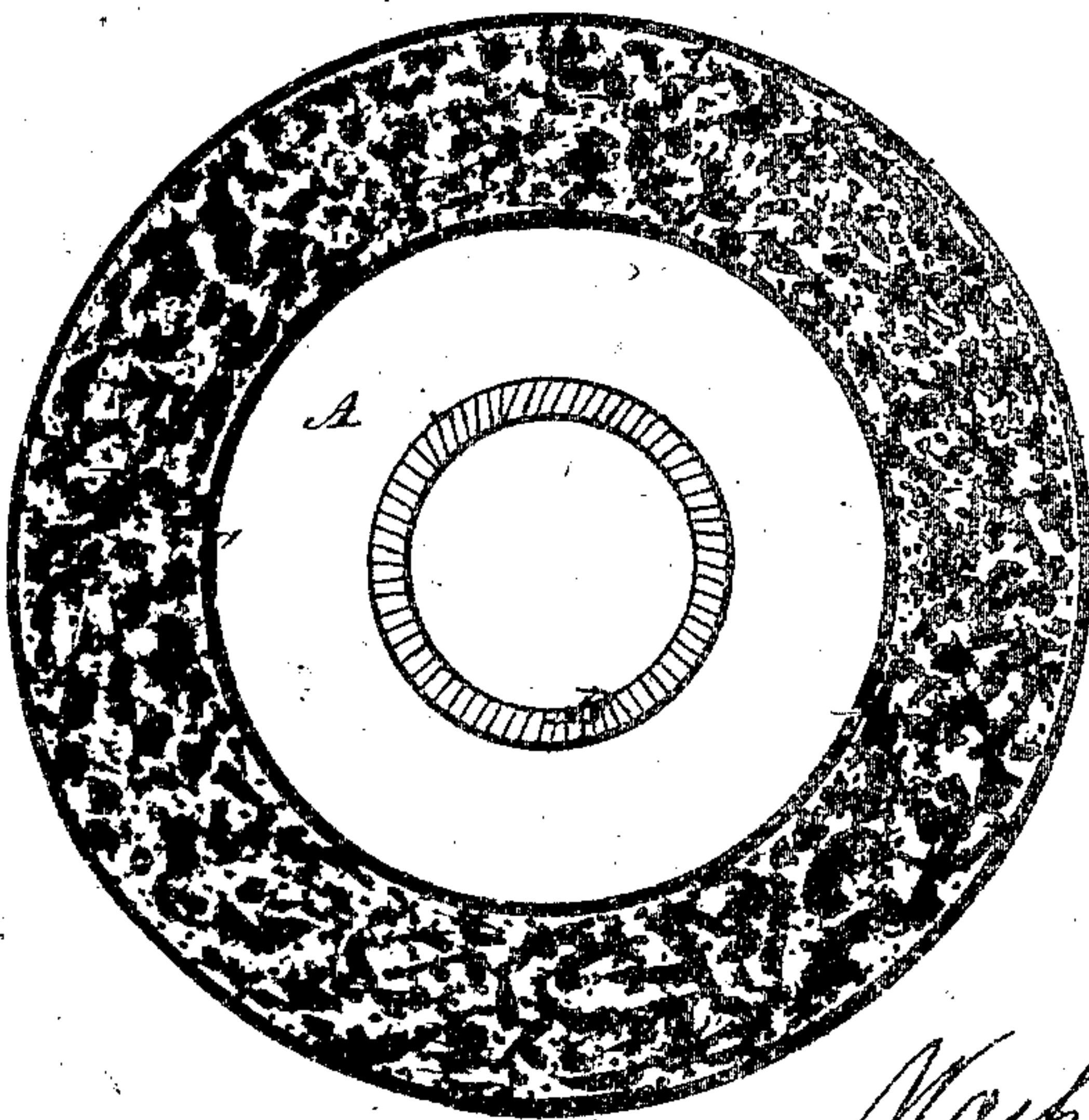


Fig. 2.



Witnesses:
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WASHINGTON HARRIS AND WILLIAM HOWELL, OF PHILADELPHIA, PENN.
SYLVANIA.

Letters Patent No. 102,116, dated April 19, 1870.

IMPROVEMENT IN NON-CONDUCTING COVERING FOR STEAM-BOILERS.

The Schedule referred to in these Letters Patent and making part of the same.

We, WASHINGTON HARRIS and WILLIAM HOWELL, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Non-Conducting Coverings for Steam-Pipes, Drums, Generators, and other heated vessels, of which the following is a specification.

Nature and Objects of the Invention.

The first part of our invention relates to the use of ground or granulated cork, in combination with plaster of Paris and hair, or other equivalent materials, as a non-conducting covering for steam-pipes, drums, generators, &c.

The second part of our invention relates to the confinement of a stratum of air around steam-pipes, drums, and over the exposed surfaces of steam-generators, &c., by means of tin plates, or other thin sheet metal, applied so as to produce a close air-chamber around between the said sheet metal and the heated vessel, and then covering the said sheet metal with a thick stratum of ground or granulated cork, or of ground or granulated cork in combination with plaster of Paris and hair, or any other suitable material or materials; the object of our invention being to produce a more effective and reliable covering, for preventing the loss of heat by radiation or conduction.

Description of the Accompanying Drawings.

Figure 1 is a transverse section of a steam-pipe, showing the surrounding air-chamber formed by the sheet metal, and the outer covering of the ground or granulated cork, in combination with plaster of Paris and hair.

Figure 2 is a like transverse section of the steam-pipe, and the surrounding air-chamber formed by the sheet metal, but covered with a thick stratum of ground or granulated cork, retained by an outside casing of sheet metal.

General Description.

Letters Patent numbered 98,865, and dated January 18, 1870, were issued to WASHINGTON HARRIS, one of the present applicants, for "non-conducting covering for boilers, steam-pipes, &c.," the said covering consisting of shells or tiles, so called, made of plaster of Paris and lime, or ashes, and hair, cast in molds, and secured in sections around the pipes, so as to produce a non-conducting covering, either with or without an air-space between them and the pipe, as will more fully appear by reference to said patent.

In the present invention the air-chamber A is formed or produced by surrounding the pipe B with a jacket or casing of sheet metal, C, so as to confine a stratum of air around the said pipe B, and then covering the same with "shells or tiles," D D, consisting of about twenty per cent. of ground or granulated cork, mixed with plaster of Paris and hair, or their equivalents, to cause the particles of cork to adhere

together after the compound has been cast in molds and dried, in the manner described in the said recited patent; or, the compound of cork, plaster, and hair may be applied in its plastic state, thus, in either case, producing a close air-confining chamber of sheet metal, covered by a superior non-conducting compound.

Steam-drums may be surrounded in the same manner, and the exposed surfaces of large steam-generators may also be covered in a similar manner, by a sheet-metal casing to form the air-chamber, and a thick coating of the cork and plaster compound, applied in its plastic state, or even by large sections of "shells or tiles," formed to correspond.

We have found that ground or granulated cork alone, secured, in any suitable manner, in a thick stratum or covering (see D', fig. 2) upon the outside of the sheet metal C, which forms the air-chamber A described, makes a very superior non-conductor, even after the cork may have become charred from an excess of heat in the pipe; and, therefore, we intend to use it in positions where it can readily be secured upon the sheet-metal covering which produces the air-space.

We are aware that felt has been supported around steam-pipes and boilers, by means of open frame-work of gas-pipes, or woven wire, so as to leave an air-space between the felt, or its equivalent non-conductor, and the said steam-pipe or boiler; and that various non-conducting substances have been combined with plaster of Paris, and, in a plastic condition, applied to form a non-conducting covering for such heated vessels; therefore,

We do not desire to claim an air-chamber around between a non-conducting covering and a steam-pipe or boiler; nor do we desire to claim the employment of plaster of Paris in a compound for covering the said vessels; but

What we desire to secure by Letters Patent is confined to the following

Claims.

We claim as our invention—

1. In combination with plaster of Paris and hair, the use of ground or granulated cork, substantially in the proportion and manner described, for the purpose of producing the non-conducting coating for steam-pipes, boilers, &c., hereinbefore set forth.

2. The application of tin plates, or other thin sheet metal, as an inner lining surface for the non-conducting or porous covering of a steam-pipe or boiler, for the purpose of preventing the rapid escape of the heated air, through the said porous covering, from the air-space left between it and the heated vessel, substantially as hereinbefore set forth.

WASHINGTON HARRIS.

Witnesses:

WILLIAM HOWELL.

BENJ. MORISON,

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