

(No Model.)

C. B. MANVILLE.  
COLD SURFACE COVERING.

No. 393,441.

Patented Nov. 27, 1888.

Fig. 1.

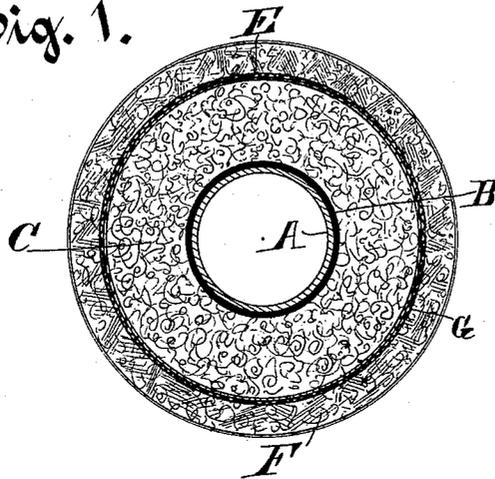
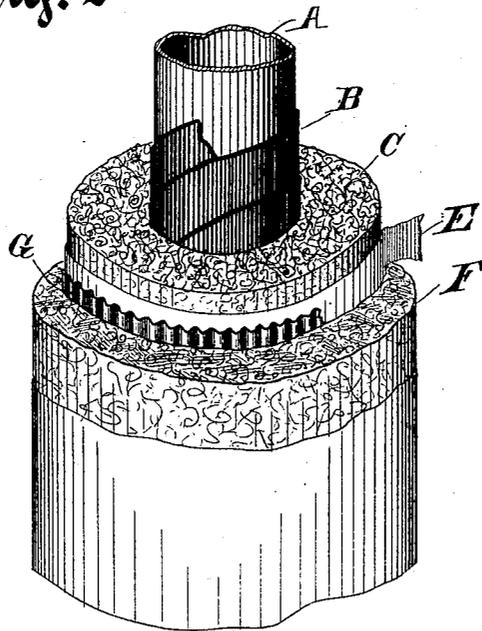


Fig. 2.



Witnesses.  
*C. H. Keeney.*  
*Anna Faust.*

Inventor.  
*Charles B. Manville,*  
By *Erwin & Prudick,*  
Attorneys.

# UNITED STATES PATENT OFFICE.

CHARLES B. MANVILLE, OF MILWAUKEE, WISCONSIN.

## COLD-SURFACE COVERING.

SPECIFICATION forming part of Letters Patent No. 393,441, dated November 27, 1888.

Application filed February 4, 1888. Serial No. 262,991. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. MANVILLE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Cold-Surface Coverings; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in coverings for cold surfaces, refrigerators, cold air and water pipes, &c. In the use of ice-machines, refrigerators, and cold air or water ducts the accumulation of moisture from the atmosphere when at a higher temperature than the pipes has proved a great source of annoyance, and a variety of kinds of surface-coverings have been used to prevent the penetration of heat as well as the condensation of the moisture of the atmosphere upon and around the cold surfaces. In the coverings heretofore constructed it has, however, been found that the air would penetrate through the covering to the pipe or other surface, thereby causing an accumulation of moisture upon the interior of the coverings next the pipe, which in a short time soaks through and spoils the covering; also, that in certain forms of covering heretofore used sufficient cold has been transmitted through the body of the covering to its exterior to produce a condensation of moisture from the atmosphere upon its exterior surface, in which case there is a constant dripping of water from the exterior surface of the covering, which is a great source of annoyance.

The object of my improvement is to provide a covering which is not only sufficiently compact to prevent the transmission of the atmosphere to the inclosed surface, thereby preventing accumulation of moisture upon its interior, but which will also prevent the transmission of cold from the interior cold surface to the exterior of the covering, whereby the accumulation of moisture upon the exterior surface of the covering is also prevented.

The construction of my covering is explained by reference to the accompanying drawings, in which—

Figure 1 represents a cross-section through a cold-air duct and the covering surrounding it. Fig. 2 represents a perspective view, part in section, of the cold-air duct and its surrounding cover.

The following description will refer to the covering as applied to a cold-air duct or pipe; but the same is equally adapted to be applied to cold-air surfaces of any other form.

Like parts are represented by the same reference-letters in both views.

A is a cold-air pipe, to which my covering is applied as follows: The pipe A, being dry and at the normal temperature of the atmosphere, is first covered with a sheet of the ordinary tarred paper, B, which, for convenience in applying to pipes, is preferably cut in strips and wound spirally around the pipe, as shown in Fig. 2. When the tarred paper is thus wound I preferably apply a coat of paint or varnish to its exterior surface, which coat of paint or varnish serves to more perfectly close up the pores of the paper and the spaces or joints, if any, between the layers, whereby the surrounding atmosphere is prevented from coming in direct contact with the cold-air pipe. When the pipe has been thus covered with tarred paper, I next apply a layer of wool shoddy or hair felt, C, in sheets of about an inch and a quarter in thickness, when the same is wrapped and held firmly in place by a sheet of muslin, E. Next in order, upon the muslin E, I apply a second sheet of tarred paper, G, which may be plain, but is preferably corrugated, as shown. The tarred paper G forms the groundwork upon which the next layer of covering, F, is applied.

The covering F is formed of a plastic composition composed of one part clay and three parts wool shoddy or dustings, which are thoroughly intermixed and ground together with sufficient water added to make the same plastic, so that it may be easily spread upon the surface to be covered. To each barrel of the composition I add, as it is being mixed and ground together, one pound of dextrine or glue, which, when thoroughly mixed with the composition, adds greatly to its adhesive qualities, so that when dry said composition forms a hard, smooth, tenacious substance which is both strong and durable. When the composi-

tion is applied and its surface nicely smoothed, it is then preferably covered with a coat of paint.

In a covering thus formed it will be obvious that the twofold object desired—namely, to both prevent the radiation or transmission of cold outwardly from the pipe through the covering and the transmission of air through the covering to and in contact with the surface of the pipe—is accomplished, the transmission of the cold outwardly from the pipe being prevented in the greater part by the thick layer of wool shoddy or hair felt C, as such layer is a good non-conductor of heat and cold, while the plastic covering F, which is applied while in a plastic condition, forms an air-tight hermetically-sealed covering, which prevents the transmission of the exterior air to the pipe, while the tarred paper, which is in contact with the surface of the pipe, also serves to prevent the transmission of air to the surface of the pipe, as well as the transmission of any such slight quantity of moisture as might pass through the pores of the iron from being transmitted outwardly to the wool shoddy or hair felt, whereby by the combined action of the several parts of the covering moisture is prevented from accumulating either upon its interior around the pipe or upon the exterior surface of the covering.

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

1. In a cold-surface covering, the combination, with the cold-air pipe or other surface to be covered, of, first, a layer of tarred paper secured upon and in contact with the surface of said pipe; second, a layer of wool shoddy

or hair felt secured upon and in contact with the exterior surface of said tarred paper; third, a layer of tarred paper, and, fourth, a layer of plastic material spread upon and around said hair felt or wool shoddy, and adapted when dry and hardened to form a hermetically-sealed air-tight inclosure around said pipe, substantially as and for the purpose specified.

2. In a cold-surface covering for refrigerators and cold-air ducts, the combination, with the exterior surface of the refrigerator or duct, of a layer of tarred paper, B, secured around and in contact with the surface to be covered, layer of wool shoddy or hair felt C, secured in contact with the exterior surface of said tarred paper by an inclosing sheet of muslin, E, sheet of muslin E, layer of corrugated tarred paper G, and plastic exterior inclosure, F, composed of a compound of clay and wool shoddy or dustings and dextrine or glue, substantially as and for the purpose specified.

3. The combination, with the cold-air pipe A, of paper B, secured in close contact with said pipe A and covered with a coat of paint or varnish, layer of wool shoddy C, secured in close contact with and upon the tarred paper B, inclosing sheet of muslin E, sheet of corrugated tarred paper G, secured firmly upon the exterior surface of said layer C, and exterior cover, F, composed of a compound of clay, wool shoddy, and glue, substantially as and for the purpose specified.

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

CHARLES B. MANVILLE.

Witnesses:

JAS. B. ERWIN,  
C. H. KEENEY.