C. C. WALWORTH.

Application of Steam Pipes to Buildings.

No. 164,700. Patented June 22, 1875.

Fig. 1

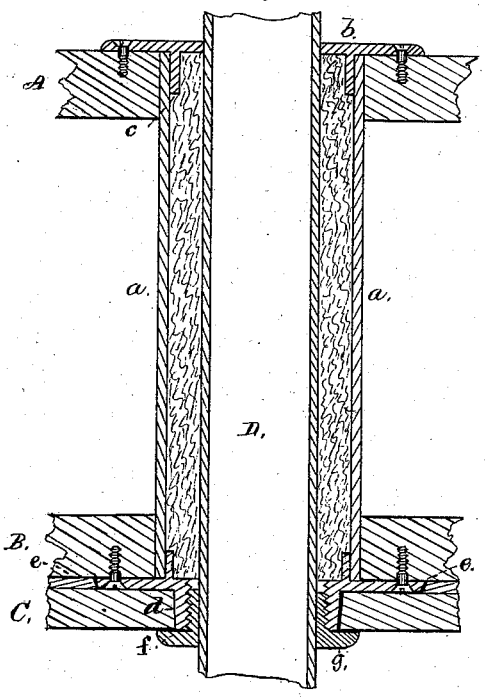


Fig. 2.

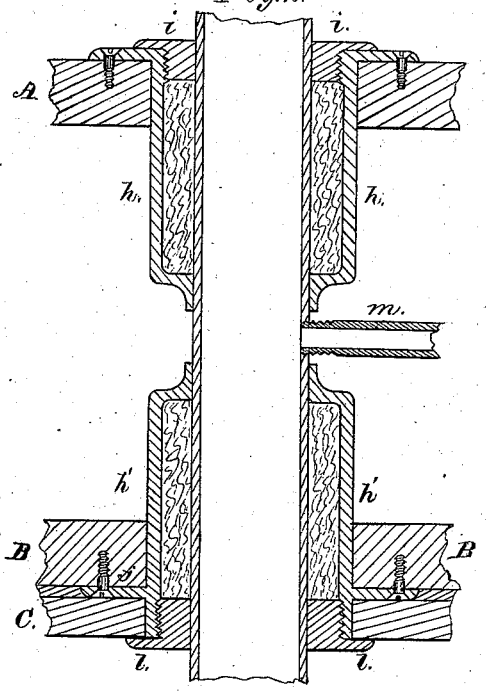


Fig. 3.

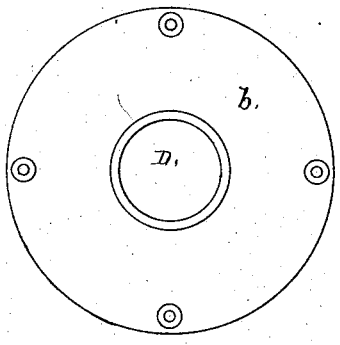
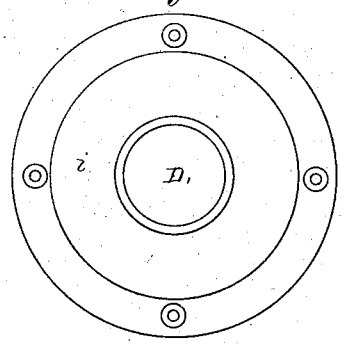


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

CALEB C. WALWORTH, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN THE APPLICATION OF STEAM-PIPES TO BUILDINGS.

Specification forming part of Letters Patent No. **164,700**, dated June 22, 1875; application filed April 23, 1875.

To all whom it may concern:

Be it known that I, CALEB C. WALWORTH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Application of Steam-Pipes to Buildings; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the ordinary application of steam-pipes to buildings, when the same are carried through the ceilings and floors thereof, a hole is made through the ceiling and floor of each story, through which the pipe is to be carried, such hole being of much larger diameter than the pipe. Into this hole is inserted a tin tubular guard, of a larger diameter than the steam-pipe to be carried through the same, and of sufficient size to allow currents of cold air to pass up between the two, such guard at its upper end being turned down upon and nailed to the floor, and covered by a finishing-cap, its lower end being unflanged, and extending down through the ceiling a distance equal to the thickness of the plastering. Through this guard the steam-pipe is carried.

This application of the steam-pipe to the building is objectionable on several accounts, as the space between the pipe and the guard for the ascent of currents of cool air not only allows any impure air, smoke, disagreeable odor or noise contained or generated in a room to ascend into the room above it, but it affords a passage-way for bugs, roaches, &c., to migrate from one room to another. It also affords a very imperfect barrier against unduly heating or charring of the wood-work in the immediate vicinity of the pipe.

To remedy these objections is the object of my invention, which consists in surrounding the steam-pipe with one or more capped sleeves or guards, and packing such sleeves or the space between such and the steam-pipe with asbestus or other non-combustible material, whereby not only a perfect protection against undue heating of the wood is attained, but the passage of noise, disagreeable odors, smoke, &c., from one room to another is completely obviated, the same being as will be hereinafter referred to and claimed.

In the drawing I have illustrated my invention under two forms, one in which the steam-pipe is untapped, a single sleeve or packing-chamber being employed, and the other in which a branch pipe is led from the steam-pipe, and in which two sleeves or packing-chambers are employed.

In the said drawing, Figure 1 denotes a central and vertical section of my invention as applied to a ceiling and floor above it, in accordance with the first part of my invention. Fig. 2 is a similar section of my invention as applied to a ceiling and floor above it, illustrating the second part of my invention. Figs. 3 and 4 are, respectively, top views of the cap-plates of Figs. 1 and 2.

In the drawing, A may be supposed to represent a floor of a building; B, one of the furring-boards, and C the ceiling or plastering. D is the steam pipe.

In Fig. 1, *a* denotes a hollow cylinder or sleeve, the same being disposed concentrically around the pipe D, such sleeve being made of such diameter as to leave a free space between the two, so as to constitute a packing-chamber. *b* is a cap-plate having a hole through it, having a diameter sufficient to receive and closely fit to the pipe D. Such cap-plate has an annular flange, *c*, on its under face to enter the chamber or end of the cylinder, such plate being secured to the top of the floor by means of screws passing through the plate and into the floor. *d* is a short cylindrical tube, which has an annular flange, *e*, projecting from its upper end, the same being affixed by means of screws to the under face of the furring B. The upper end of this tube extends up into the lower end of the cylinder, while its lower end projects down below the furring a distance equal to the thickness of the plastering C. *f* is a screw-cap, embracing the steam-pipe and screwing into the bottom of the tube *d*, the said cap having an annular flange, *g*, upon its lower end, which screws up against the plastering, and serves to hold the same in place and make a tight joint therewith. The space between the steam-pipe and its enveloping-tube *a* is to be packed with as-

bestus or other elastic non-combustible packing.

In Fig. 2, *h* denotes a hollow tube, which embraces the upper portion of the steam-pipe D, and is of a diameter somewhat larger than the pipe, the upper end of the tube being flanged and secured by means of screws to the top of the floor A. The bottom of this tube or sleeve is formed with a contracted neck, and has a hole made through it of the size of the steam-pipe D. *i* is another screw-cap, having a hole made axially through it of a diameter corresponding with that of the steam-pipe, such latter cap screwing into the upper end of the sleeve *h;* or, if preferable, the latter cap may be screwed to the flange of the sleeve *h*. By this construction of the tube *h* a packing-chamber is produced which is to be filled with asbestus or other elastic heat-resisting packing. *h'* is another hollow sleeve or tube, which is disposed below the sleeve *h*, and concentrically around the steam-pipe, such sleeves being of such a length as to leave a portion of the steam-pipe exposed between the two, the object of this arrangement being to allow the steam-pipe to be tapped to receive a branch pipe. The tube *h'* is formed with an annular flange, *j*, near its lower end, by which the tube is secured by means of screws to the under surface of the furring B, such tube extending a little below the flange, or a distance equal to the thickness of the ceiling or plastering. A screw-cap, *l*, screws into the lower end of the said tube, and impinges against the outer surface of the plastering. The upper end of this tube or sleeve is contracted, and has a diameter corresponding with the diameter of the steam-pipe. By this means a chamber is formed in the sleeve *h'*, which, like the sleeve *h*, is to be filled with asbestus or equivalent elastic heat-resisting packing. *m* is a branch pipe leading from the main steam-pipe, the same being tapped into the latter between the sleeves *h* and *h'*.

Having described my invention, what I claim is—

1. The combination, with a steam-pipe passing up through a ceiling and contiguous floor of a building, of a protecting-sleeve, packed as described, and having each of its ends provided with a flanged fastening-cap, the lower one having a screw-cap, *g*, screwing into its inferior end and against the plastering, the whole being constructed and applied in manner as shown, and for the purpose set forth.

2. The combination, with a steam-pipe passing up through a ceiling and a contiguous floor of a building, of a sectional sleeve or two sleeves, each provided with a packing-chamber and packed as described, the upper one of such sleeves being provided with a fastening-flange and a screw-cap, and the lower one having a fastening-flange and a screw-cap to screw into the inferior end of the sleeve and against the outer face of the plastering, the whole being substantially as and for the purpose set forth.

3. The combination, with a steam-conducting pipe, of a circumscribing sleeve packed with asbestus or other non-combustible material, such packing impinging against the pipe, and filling the space between the latter and the sleeve, as and for the purpose set forth.

4. The combination with a steam-pipe, D, of the tube or thimble *d*, provided with a flange, *e*, and the screw-cap *f*, provided with a flange, *g*, the said flanges being, respectively, applied to the under surface of the furring and the lower face of the plastering, substantially as shown and described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

CALEB C. WALWORTH.

Witnesses:
F. P. HALE,
F. C. HALE.