No. 673,510. Patented May 7, 1901.

M. VAN ZANTEN.

SHEET METAL LINING FOR WALLS AND CEILINGS.

(Application filed Apr. 29, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

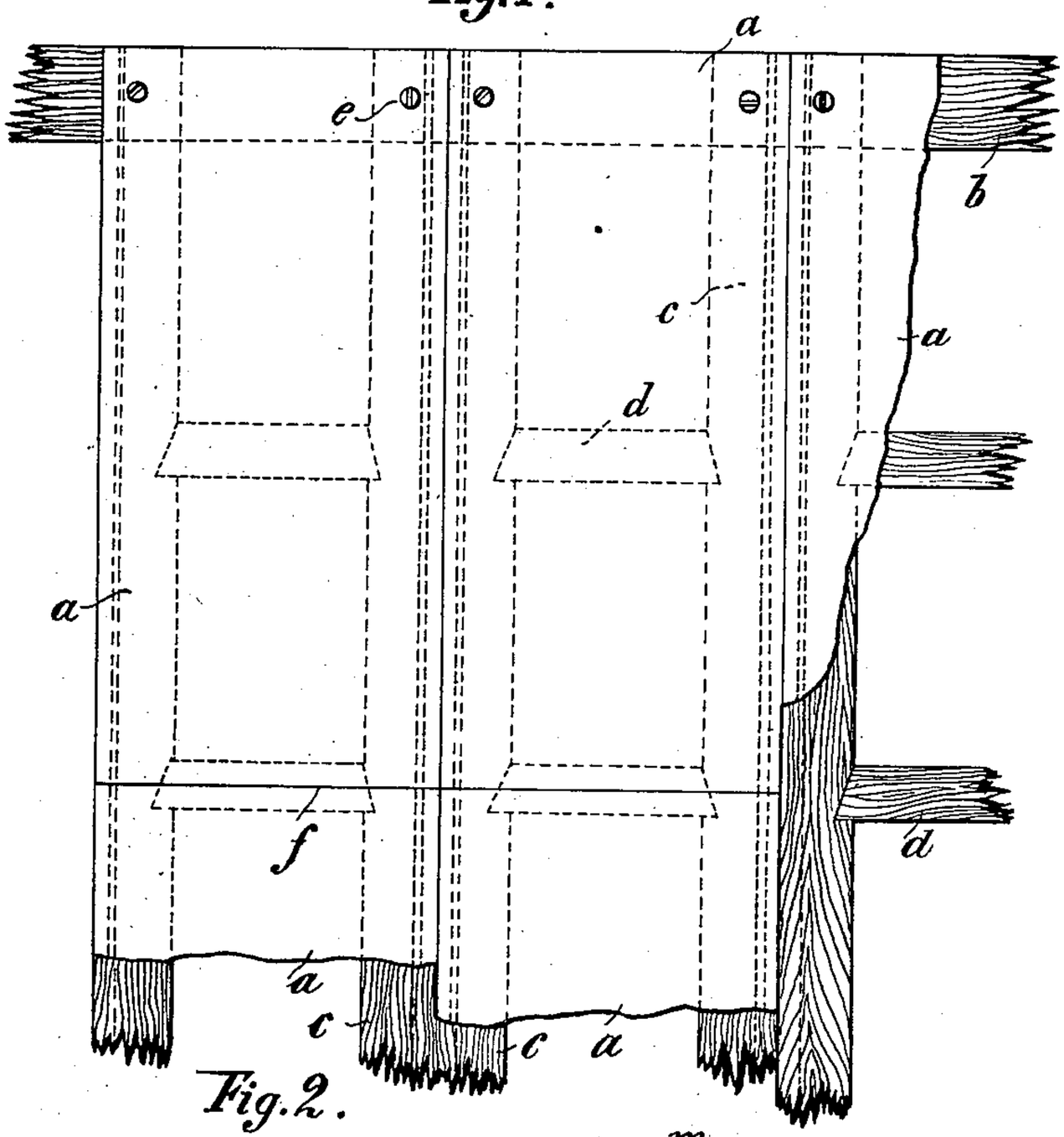

Fig. 2.

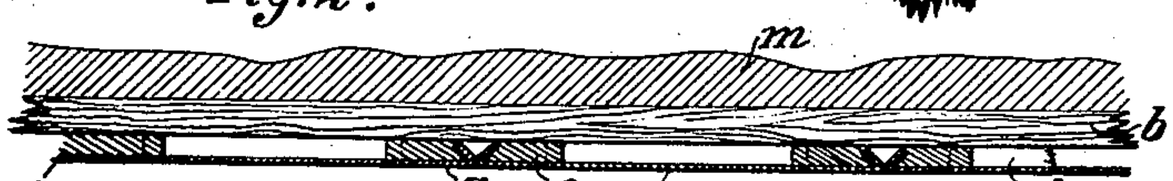

Fig. 3.

Fig. 4.

Attest
R. M. Kelly.
R. M. Hunter.

Inventor
Matthys van Zanten
By his Atty

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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

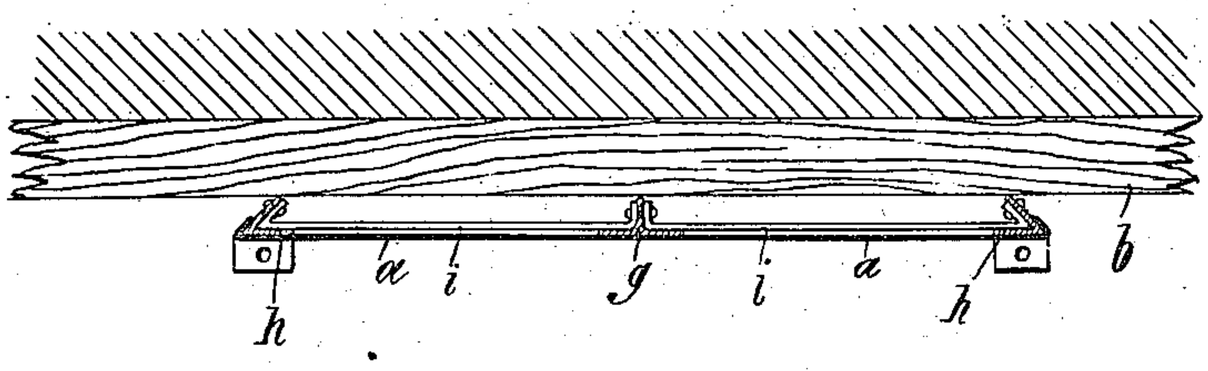
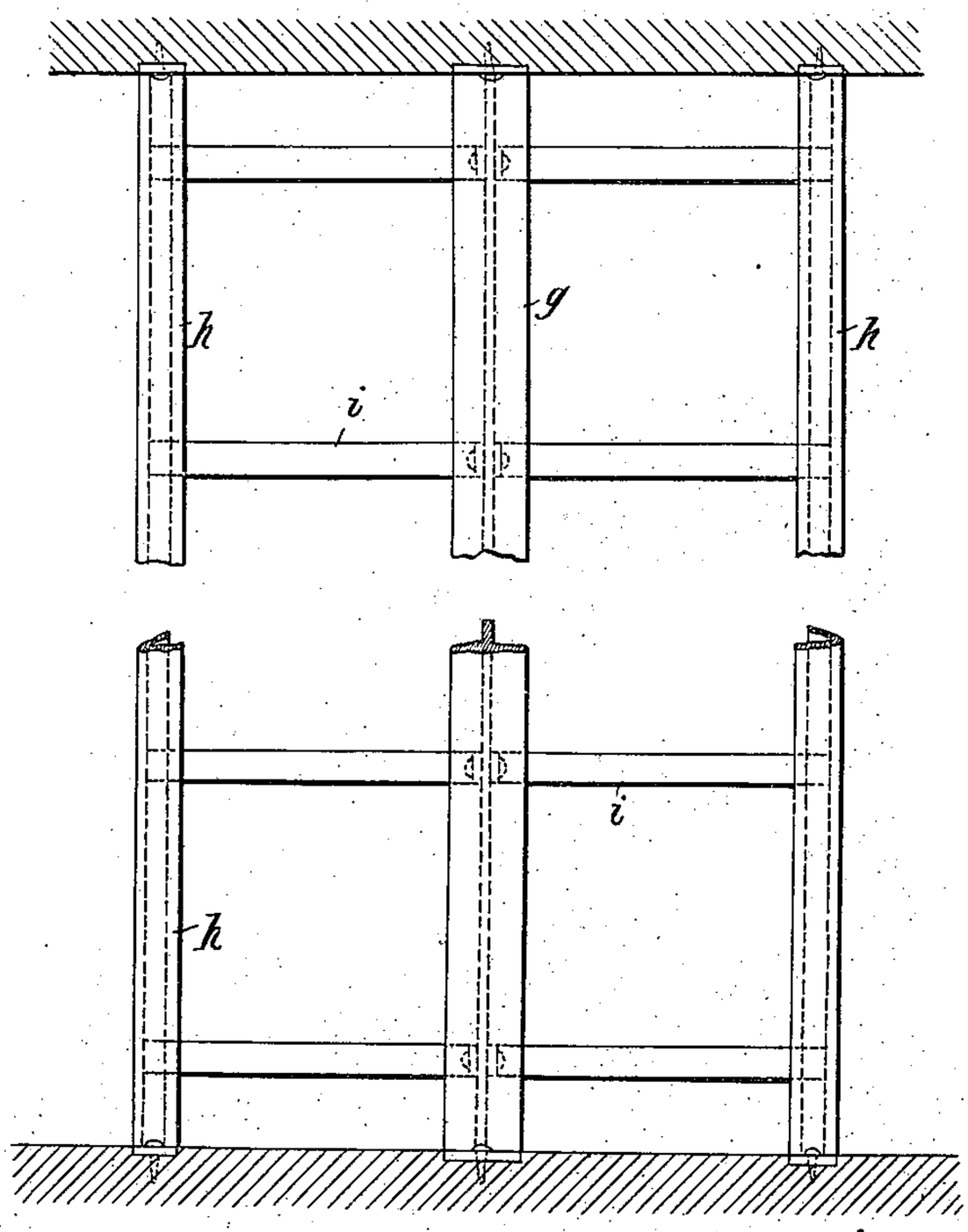


Fig. 6.



Attest
P. M. Kelly.
D. H. Hoffman.

Inventor
Matthys van Zanten
By his Atty
D. H. Hoffman

UNITED STATES PATENT OFFICE.

MATTHŸS VAN ZANTEN, OF DORDRECHT, NETHERLANDS.

SHEET-METAL LINING FOR WALLS AND CEILINGS.

SPECIFICATION forming part of Letters Patent No. 673,510, dated May 7, 1901.

Application filed April 29, 1899. Serial No. 714,958. (No model.)

To all whom it may concern:

Be it known that I, MATTHŸS VAN ZANTEN, a subject of the Queen of the Netherlands, residing at Dordrecht, Netherlands, have invented certain new and useful Improvements in Linings or Coverings of Sheet Metal for Walls and Ceilings, (for which I have applied for patents in England, dated February 11, 1899; in France, dated February 17, 1899; in Belgium, dated February 18, 1899; in Germany, dated February 21, 1899; in Denmark, dated February 25, 1899, and in Austria, dated February 27, 1899,) of which the following is a specification.

This invention relates to a lining for walls, ceilings, and the like for rooms, corridors, and other places, the construction and material of which lining are such that it offers an effective protection against moisture and similar deteriorating influences.

In the accompanying drawings, Figure 1 is a view of a wall with and without the protective lining. Fig. 2 shows a section through a wall with the protective lining. Fig. 3 shows a section through the protective lining. Fig. 4 shows a section through a joint. Fig. 5 shows a section through the wall, in which the frame is made of angle or similar iron instead of wood. Fig. 6 is a front elevation of the construction shown in Fig. 5.

The disadvantages due to ordinary paperhangings and painted or washed walls have led to the use of wood, glass, textile fabrics, and other materials for the lining or covering of walls and ceilings; but though many improvements have been made the results have not been quite satisfactory. The use of thin lining or covering of metal of suitable construction appears to answer all requirements as regards firmness, durability, and cleanliness and will also satisfy other hygienic requirements.

This invention relates to such metallic lining, which is made as follows:

The sheet metal used for the lining is preferably about one-half meter in width. The longitudinal ends of these sheets are bent to about forty-five degrees to form a narrow inturned flange. (See Fig. 3.) The grooves or spaces formed by the strips and the sheet or plate of metal fit to frames of wood, Fig. 1, or iron, Fig. 5. The frames consist of longitudinal and transverse bars and are connected so that the longitudinal bars after having been fitted into the before-mentioned grooves of the metal sheets are stiffened by transverse bars. The sheets or plates of metal are decorated by printing, painting, or similar manner, so that the sheets when joined to one another form a harmonious decoration. The length and width of the frames or sheets thus constructed must correspond with the dimensions of the walls or ceilings to be covered. The frames are then placed beside one another on the ceiling or walls, and their ends are secured to fixed laths or frames. When two sheets are to be joined longitudinally, this is conveniently done by a transverse seam or joint, as shown in Fig. 4, which connects the sheets so that the pattern of the decoration is not interfered with. The great advantage of this arrangement or construction is the simplicity of joining the pieces and of their attachment to the walls or ceilings to be covered.

Figs. 1 and 2 show three longitudinal frames placed beside one another, with and without the sheet-metal lining or covering. The longitudinal strips *c* are beveled on their outer edges and fitted into the grooves formed by the bent flanges of the metal sheets *a*. The strips *c* are stiffened by transverse bars *d*, and the metal-faced plates or strips are fastened at their ends, as by the screws *e*, to transverse bars or laths *b*, fixed to the wall *m*. The thickness of the longitudinal and transverse bars is such that the frame projects slightly beyond the bent strips. If transverse seams are used, as at *f*, Fig. 1, a transverse stiffening *d* is provided at this place, to which the sheet-metal lining is fixed, so as to prevent the metal sheets from buckling and standing out from the frame.

In Fig. 5 is shown a frame *h* of iron instead of the wooden frame *c*, and in this case the shape of the iron corresponds also to the shape of the groove or space formed by the metal sheets and the bent strips. If desired, a middle bar of T-iron *g* may be arranged longitudinally between the longitudinal side bars. The transverse stiffening devices are rods *i*, riveted to the longitudinal bars. The whole construction may be protected against rusting by galvanizing it or other process. The

ends of these frames *g h* may be provided with flanges, by which they may be screwed to the floor and ceiling or other portions of the framework.

The lining or covering described may be used for the rooms of dwelling-houses, for hotels, restaurants, lavatories, hospitals, &c. The advantages, compared with other coverings for walls or ceilings, are as follows:

First. The moisture of walls, which is injurious to paint, paper-hangings, tapestry, and wood lining, has no effect on this new lining.

Second. Vermin—such as rats, mice, &c.—are kept out by this lining.

Third. The lining permits the circulation of air behind it—stone and iron acting favorably—thus complying with all hygienic requirements. The germs injurious to health, which are easily attracted by other linings or coverings, can be easily washed off with water. This lining or covering is therefore very suitable for hospitals or other rooms where the greatest cleanliness must prevail.

Fourth. This lining is very suitable to form light partitions without the use of stone or brickwork, the absence of great weight adapting it for all purposes where the supports may be too heavily weighted by ordinary walls. These partitions require very little space and can be removed and erected at other places without materially interfering with the surrounding surfaces.

Fifth. By leaving a space between the lining and the wall sound is intercepted.

Sixth. This lining or covering is very suitable for kitchens, halls, &c., avoiding the necessity of yearly whitewashing or painting.

Seventh. Walls to which this lining or covering is applied need not be prepared with mortar.

Eighth. When iron frames are used, the wall or ceiling is entirely protected against fire, and even when wooden frames are used the fire cannot extend through the sheet metal.

Ninth. The cost of this lining or covering is little more than for ordinary paper-hanging. When it is taken into consideration that this new lining or covering is practically indestructible and always retains its value, it will be evident that its use is much cheaper though of somewhat greater initial cost than other wall-covering. For the use of partitions this form of construction will be found to be cheaper than anything else.

Tenth. This lining enables a flat-metal-faced wall or ceiling to be formed without projecting ribs or joints at the lines of meeting of adjacent sheets.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A covering for walls, ceilings, &c., consisting of a metallic sheet having its side edges bent to form longitudinal inbent angular flanges, and a frame having longitudinally-beveled side edges engaging said inbent angular flanges, the whole forming a metal-faced plate adapted for attachment to the wall or ceiling.

2. A covering for walls, ceilings, &c., consisting of a metal sheet having its edges bent into angular flanges, longitudinal strips having their outer edges engaged by the bent angular flanges of the metal sheet and cross-pieces *d* between the longitudinal strips *c*, the whole forming a metal-faced plate adapted for attachment to the wall or ceiling.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

MATTHŸS VAN ZANTEN.

Witnesses:

ALBERT CHESTOL,

AIRE H. VOORWINDEN.