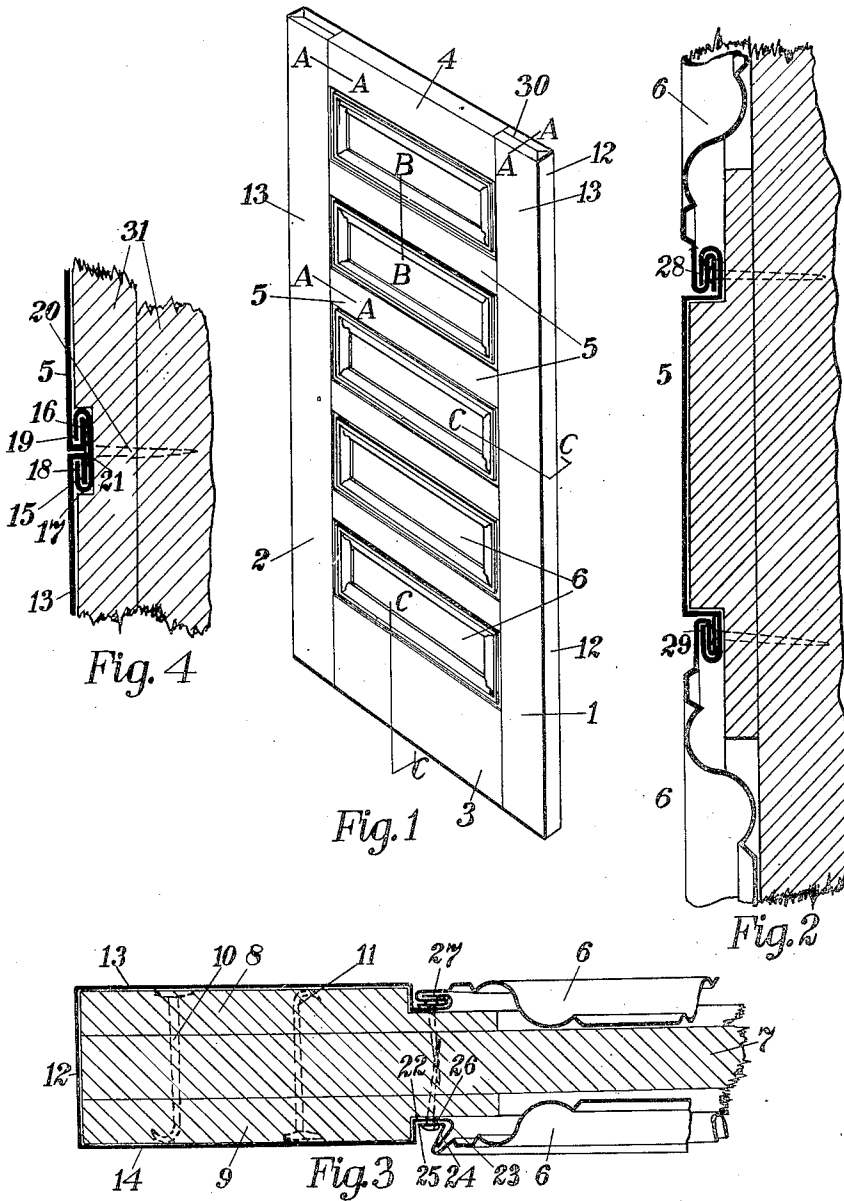


No. 877,922.

PATENTED FEB. 4, 1908.

E. B. GAGER.
METALLIC COVERING FOR DOORS.
APPLICATION FILED MAY 8, 1907.



WITNESSES:

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EDWIN B. GAGER, OF COLUMBUS, OHIO, ASSIGNOR TO THE KINNEAR AND GAGER MANUFACTURING COMPANY, A CORPORATION OF OHIO.

METALLIC COVERING FOR DOORS.

No. 877,922.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed May 8, 1907. Serial No. 372,570.

To all whom it may concern:

Be it known that EDWIN B. GAGER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, has invented certain new and useful Improvements in Metallic Covering for Doors, of which the following is a specification.

My invention relates to improvements in metallic coverings for doors, and contemplates especially the application of a metallic sheathing preferably to a frame door, whereby the latter is rendered, to a great degree, proof against fire.

It further contemplates a provision for the use of nails or screws in securing said sheathing, at its seams, to the wooden structure, whereupon the said seams are closed so that said nails or metallic binders are completely concealed by the overlapping portions where said seam is formed.

With these and other objects in view which will be more definitely hereinafter set forth, I have shown one embodiment of my invention in the drawings, in which

Figure 1 is a perspective of a door having my improved metallic covering applied thereto; Fig. 2 is a section along the line B—B of Fig. 1; Fig. 3 is a section along the line C—C of Fig. 1, through the side stile; Fig. 4 is a section along the line A—A of Fig. 1, through the side stile and the cross stile.

Referring to the drawings, 1 and 2 are the side stiles of a door, 3 and 4 are the end stiles, and cross stiles are indicated at 5; the panels lie between the cross stiles and are designated as 6. It will be understood that the door as shown in elevation in Fig. 1 has the metallic covering applied thereto, but I have used the reference numerals above, not to designate the covering, but the various parts of the door indicated.

Referring to Fig. 3, 7 and 8 and 9 indicate the courses of wood forming the side stile 1, the metallic covering extending over the end thereof at 12, and along the sides thereof at 13 and 14; at the end of the side stiles, as indicated at 30, the metal covering the sides and the end is overlapped and united in the same manner as shown in Fig. 4, for the joining of the metallic covering for the side stile and the cross stile, indicated on Fig. 1 along the line A—A. Therefore a description of the seam formed in Fig. 4 will also show how

the seam at 30 is formed, and consequently attention is now directed to Fig. 4.

31 represents the wooden frame-work, and 5 and 13 represent respectively the metallic covering for the cross stile and the side stile; the metallic covering 13 is bent at an angle inwardly and then folded as shown at 15, the cover 5 being bent at an angle and folded in the opposite direction as shown at 16. A clasp member 17 is provided, having the hook portions 18 and 19, the hook portions being adapted to receive the folded portions of the metallic covers 5 and 13.

When the hook and folded portions are engaged, they are open, somewhat as appears at 24 in Fig. 3. While they are in the open position, a nail 20 is driven through the body portion of the clasp member 17 into the wooden frame, and when this member is thus securely positioned, a stamp or die may be applied to the coverings 5 and 13 to press the parts into a close union, whereupon the hook portions of the clasp member and the folded portions of the covering members are securely locked together, forming a seam which effectually covers and conceals the head 21 of the nail. As stated, this form of lock seam is used at the opposite ends of the side stiles, and also at the junctions of the cross stiles and the side stiles. The clasp member 17 is inserted between the panels on the face of the door, where the coverings for side and cross stiles are found, as well as at the other points mentioned, and its length is determined by the length of the seam to be thus formed. Another form of seam is also used in securing the metallic covering in place upon the door, which is illustrated at 27, 28 and 29, the manner of forming such seam and of positioning the nail, being shown in Fig. 3 at 24.

Referring to Fig. 3, the metallic covering 14 for the side stile is seen to be bent at a sharp angle inwardly at 22, and then bent outwardly at 23; the panel 6, at its edge 24 is seen to be bent inwardly at a sharp angle and then bent approximately at a right angle as shown at 25; the angles thus described on the edge of the panel are embraced by the angular portions formed on the stiles adjacent the panels, and at this point an open space is left into which a nail 26 is inserted and driven through the contiguous ends of the metallic portions into the wooden frame. A die or press is then applied to the out-

standing metallic portion 24, and said portion and the embracing portion 23 are pressed inwardly and the latter thereby is made to form a hook embracing the portion 24, thus forming a secure locking seam and also covering and completely concealing the nail. It will appear, therefore, that two forms of lock seams are used in securing the metallic covering upon the wooden door, one uniting the panels to the stile portions, and the other uniting one stile portion to another, and also uniting the ends of the metallic sheathing covering the side stiles, as indicated at 30.

One manner of securing the metallic portions in place may be described as follows, namely, the metal is applied to the side stiles, the interlocking portions thereof standing open, the clasp member 17 is then positioned, and the nails are driven in, whereupon the press is applied to the open locking members and they are forced into a closely locked seam, the nail being completely concealed. The cross stile coverings are then positioned and secured to the side stile coverings in the manner hereinbefore described; the panel coverings, which are each formed (integrally), and without open or exposed miters, are then positioned, the nails driven into place, and a die or press is then applied to the seams, forcing them into locked engagement and concealing the nails. The application of the die or press to the parts to form the locked seams, may be made to the door covering in sections, or it may be applied at one operation to one complete face thereof, so that one application to each face and one to each end, which might take place at one operation, would effect the formation of all the locking seams necessary, with the result that the door is completely covered by a metallic sheathing, which discloses only a trace of the meeting points of the various pieces of metal.

When a door provided with my metallic covering is attacked by fire, the wood core may be charred by the intense heat, but the metallic covering, bound together by the lock seams and the nails, will retain its form and effectually arrest the progress of the flames. The nails therefore perform the double function of securing the metallic covering to the wood core, and when the latter has become charred, of holding together the sections of the metal, which might otherwise be disengaged at the seams by the heat.

I desire to call attention particularly to the manner in which the sections of the coverings are positioned; it will be noted that there are four seams disposed around the door transversely thereof, each of which will permit some expansion or contraction, whereby the covering may adjust itself to the door under varied conditions. Around the door longitudinally thereof there are disposed a plu-

rality of seams uniting the sections of the metal, which will permit expansion and contraction of the covering upwardly and downwardly of the door. This distribution of a plurality of seams binding the sections of the metal coverings together both transversely and longitudinally on both sides of the door provides a construction which is, to some extent, flexible, and therefore very well adapted to the various and changing conditions under which the door may be used. It will be noted further that in forming the covering I distribute the metal in such a manner as to prevent buckling or cupping thereof, whereby a smooth even surface is always presented.

I claim:

1. A door comprising a combustible core including side stiles and panels; a metallic covering for said door comprising a covering for each side stile formed of a single strip embracing both sides thereof and the ends, and being united at its ends by means of a concealed lap joint, a covering for each end stile formed of a single sheet and secured at its edges to said side stile coverings by means of concealed lap joints, a covering for each side of each panel, a covering for each side of each cross stile, said end stile coverings being joined at their ends to the panel coverings on opposite sides of said door, said cross stile coverings being secured at their ends to said side stile coverings, and being secured at their sides to said panel coverings, all of said connections being made by means of overlapping the ends of said coverings, and inserting a nail therethrough and pressing the outer portions of said overlapping portions into position to conceal said nail.

2. A metallic covering for combustible doors comprising a covering for each side stile formed of a single sheet of metal adapted to embrace said side stile, a covering for each end stile comprising a single sheet of metal adapted to embrace said end stile, and a panel covering having its edge portions reversely curved to form overlying loops, a single loop formed on said cross stile covering adapted to embrace the lower loop formed on said panel covering, a nail driven through said cross stile and panel coverings and adapted to secure the same together and having its head positioned in the lower loop formed on said panel covering, the upper loop inclosing the end portion of the loop formed on said cross stile covering and being adapted to be pressed inwardly to cover said nail head and to form a concealed joint.

3. A metallic covering for combustible doors comprising a covering for each side stile formed of a single sheet of metal adapted to embrace said side stile, a covering for each end stile comprising a single sheet of metal adapted to embrace said end stile, a

covering for each side of each cross stile, a
covering for each side of each panel united at
its ends to said side stile coverings and at its
sides to said cross stile coverings by a joint
5 formed by reversely curving the edge por-
tions of said panel covering to form two loops
thereon lying one above the other, a single
loop formed upon said side stile or cross stile
covering and adapted to embrace the lower
10 loop on said panel covering and to lie with its
end in the upper loop formed on said cross
stile covering, a nail adapted to be inserted

through said coverings into said combustible
core and having its head positioned in the
said lower loop, the said upper loop adapted 15
to be then pressed into engagement with said
nail to conceal the same, the joint thus
formed being practically concealed.

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

EDWIN B. GAGER.

Witnesses:

GEO. W. RIGHTMIRE,
A. D. BIERMAN.