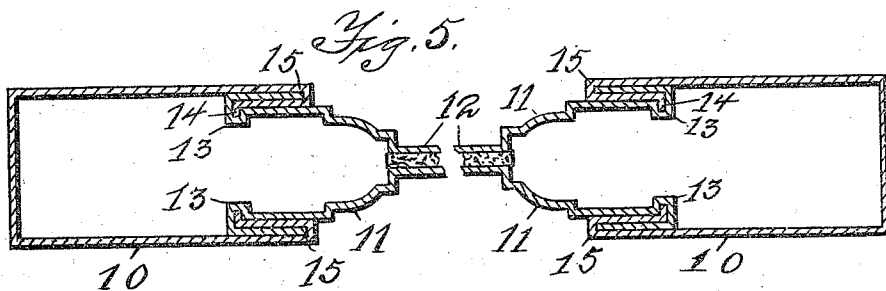
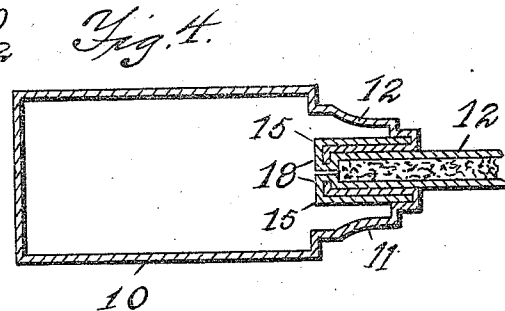
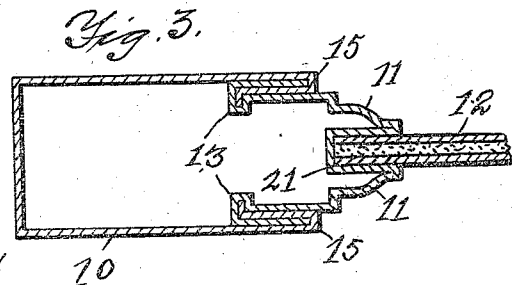
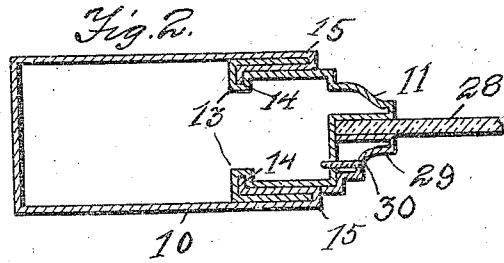
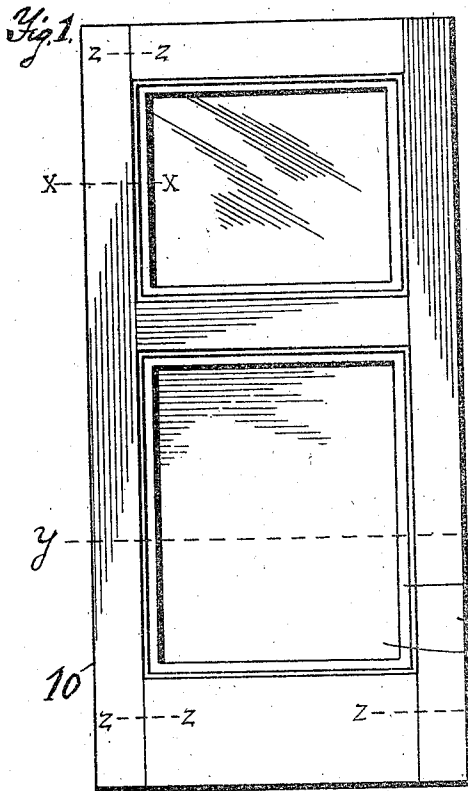


M. ANDERSON.
SHEET METAL CONSTRUCTION.
APPLICATION FILED APR. 7, 1911.

1,062,210.

Patented May 20, 1913.

2 SHEETS—SHEET 1.



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Morris Anderson

Witnesses

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S. Arthur Baldwin

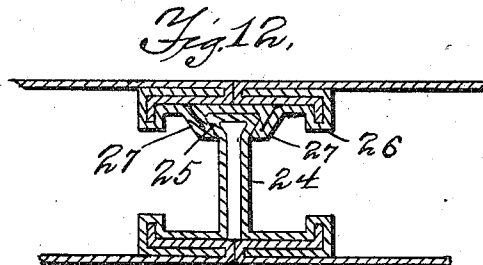
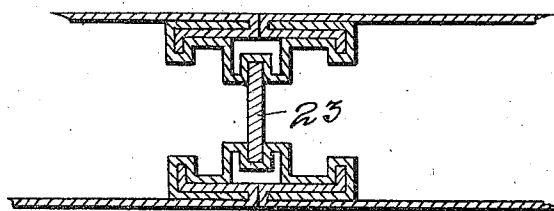
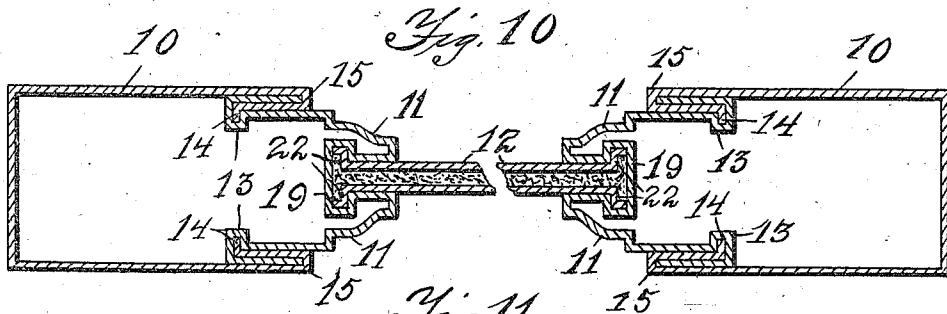
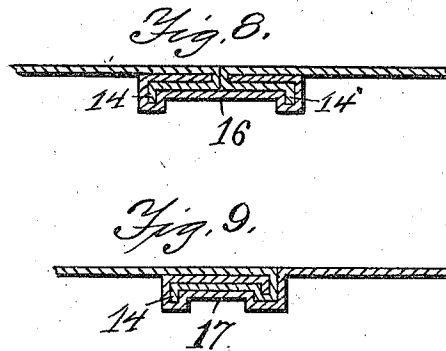
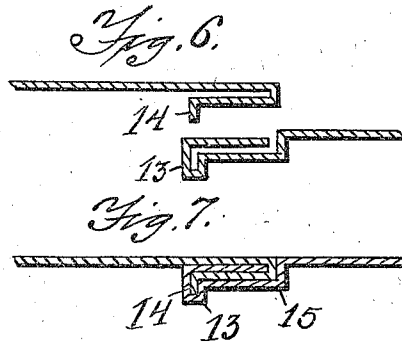
Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

MORRIS ANDERSON, OF JAMESTOWN, NEW YORK.

SHEET-METAL CONSTRUCTION.

1,062,210.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed April 7, 1911. Serial No. 619,508.

To all whom it may concern:

Be it known that I, MORRIS ANDERSON, a subject of the King of Sweden, and resident of Jamestown, county of Chautauqua, and State of New York, have invented new and useful Improvements in Sheet-Metal Construction, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention relates to improvements in sheet metal construction, particularly to sheet metal seams; and the object of my improvement is to provide an interlocking seam which it is practically impossible to open under extreme heat, and the invention consists in the construction and arrangement of the parts and its adaptation to the different parts of a sheet metal door or window, as described in this specification and shown in the accompanying drawings and pointed out in the claim.

The hollow sheet metal construction has proved inadequate in its fireproof qualities on account of the seams separating or opening under intense heat or by accident. My improved sheet metal construction as herein described provides a simple, durable construction in which the seams are so locked that they cannot separate, and the door is so put together that it forms a perfect sheet metal fireproof closure for a compartment and it is apparent that this locked seam is applicable to all forms of sheet metal fireproof fittings, including sheet metal doors, windows and the casings for the same.

In the drawings Figure 1 is an elevation of a sheet metal door. Fig. 2 is a sectional view at line X X in Fig. 1, showing the locked seam at each side and the manner of mounting a plate of glass either in the upper part of the door or in a sheet metal window. Fig. 3 is a sectional view at line Y Y in Fig. 1, showing the construction for holding a sheet metal panel with the improved seam at each side of the stile; and Fig. 4 is a similar view showing a modification of the construction shown in Fig. 3 with the locking seam each side of the panel, the locking ends of the seam serving as a holding means for the sheet metal panel; in most cases this latter form is preferred; and Fig. 5 is a still further modification of the construction at line Y Y showing the adaptation of the seam construction to a continuous panel and molding. Fig. 6 is a detail sectional view of

the separated edges of the sheet metal as formed to slide together into the improved seam for the abutting edges as shown at line Z Z in Fig. 1; and Fig. 7 is a sectional view of the completed seam after the parts are slipped together. Fig. 8 is a sectional view of a double or two-way seam for abutting edges, showing the double lock upon the same; and Fig. 9 is a sectional view of a single-way seam having a double lock; these modifications shown in Figs. 8 and 9 may be used in place of the seam shown in Figs. 6 and 7, to give added security in heavy doors. Fig. 10 is a sectional view at line Y Y showing the use of the seams the same as in Fig. 3, in connecting the molding to the stiles and also showing the turned edge locking principle applied to the edges of the panel sheets, a box being formed in the groove between the moldings to receive said locking edge. Fig. 11 is a sectional view at line Z Z for a double-way seam for heavy doors to hold the stiles and rails a spaced distance apart; and Fig. 12 is a sectional view at line Z Z of a multiplication of this double seam construction for heavy doors to hold the stiles and rails a fixed distance apart so that they cannot be separated.

Like numerals of reference refer to corresponding parts in the several views.

The numeral 10 indicates the hollow sheet metal stile, the numeral 11 the molding and the numeral 12 the sheet metal panel. The seam 15 consists of a return bend sheet metal seam and the improvement consists in turning the edge of the sheet metal both in the looped part 13 and the edge 14 of the return bend which enters into the looped portion and forms a seam 15, as shown in Fig. 6, so that the two may be slipped together, as shown in Fig. 7, and it is obvious that when so slipped together and placed under heavy pressure the entire seam will be locked in place so that neither accident nor intense heat can force the two edges apart. For added security in certain kinds of sheet metal, a double or two-way seam as shown at 16 in Fig. 8 having the two turned or locking ends is used, or this turned edge of the seam may be applied to a single-way seam in the double locking form, as shown at 17 in Fig. 9. It is apparent that either of these two-way seams shown in Figs. 8 and 9 can be pressed into place by means of a suitable die and press. This locking prin-

5 ciple of the turned seam is shown in the seams between the molding and stiles in Figs. 2, 3, 5, 10 and 11 and forms a cheap and convenient means for affording absolute security against separation of these seams. This same principle may be utilized also in holding the panel 12 by extending the edges of the sheet metal panel around the outwardly turned ends 18 as shown in 10 Fig. 4, thereby making the locked seam each side of the edge of the sheet metal panel 12 in such a manner as to absolutely prevent the separation of the sheet metal panel from the hollow stile 10. This form of construction is preferably used in light doors. For 15 heavy doors the modifications shown in Fig. 10 may be used which applies still further this locking principle at 19. The groove 21 as shown in Fig. 3 is formed with a box at 20 its inner end and the edges 22 of the sheet metal panels 12 are turned in a locking closure within said box, said edges 22 stop at each side of the box.

25 In order to hold and brace the sides of the door a spaced distance apart, particularly in heavy doors, the two-way seam shown in Fig. 8 is preferred, and the locking strip is formed on one side in its central portion by an extension 24 having a dove-tail-shaped end 25. The strip 26 on the op- 30 posite side is formed with oppositely placed flanges 27 which form a dove-tail-shaped opening therebetween, into which the dove-tail-shaped edge 25 of extension 24 is 35 slipped, thereby holding the two parts firmly in position and bracing the sides of the door so they cannot be separated or changed in their relation to one another. It also braces these two sides of the door at

the point of the abutting seam between the 40 two parts, as for example, between the stiles and cross rails, which will be recognized as the weakest portion of the hollow door construction. The locked seam is also used for the connection of the molding to the stiles 45 in holding the glass panels 28 in which construction the molding is formed for one side only and a loose molding 29 is attached by a suitable screw 30 within the angle on the opposite side of the glass 38, as shown in 50 Fig. 2.

It is obvious that all of these parts may be easily formed with suitable dies and slipped together into the forms shown, and when so slipped together may be spot 55 welded or acetylene welded if so desired.

I claim as new:

In a sheet metal door, stiles and cross rails, oppositely placed seams on the opposite sides of the door to connect said parts 60 having inwardly and oppositely turned edges, a binding strip fitting over said oppositely turned edges to hold the same, the edges of said seams turned in angular flanges to lock the same against withdrawal, said 65 binding strips having grooves bent therein, and a strip of metal fitting within said grooves on the oppositely placed binding strips to hold said parts a spaced distance 70 apart.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MORRIS ANDERSON..

Witnesses:

ARTHUR O. MORSE,
CHARLES H. WIBORG.