A. FROMHOLD.

METALLIC WINDOW FRAME, &c.

APPLICATION FILED AUG. 16, 1910.

996,845.

Patented July 4, 1911.

2 SHEETS—SHEET 1.

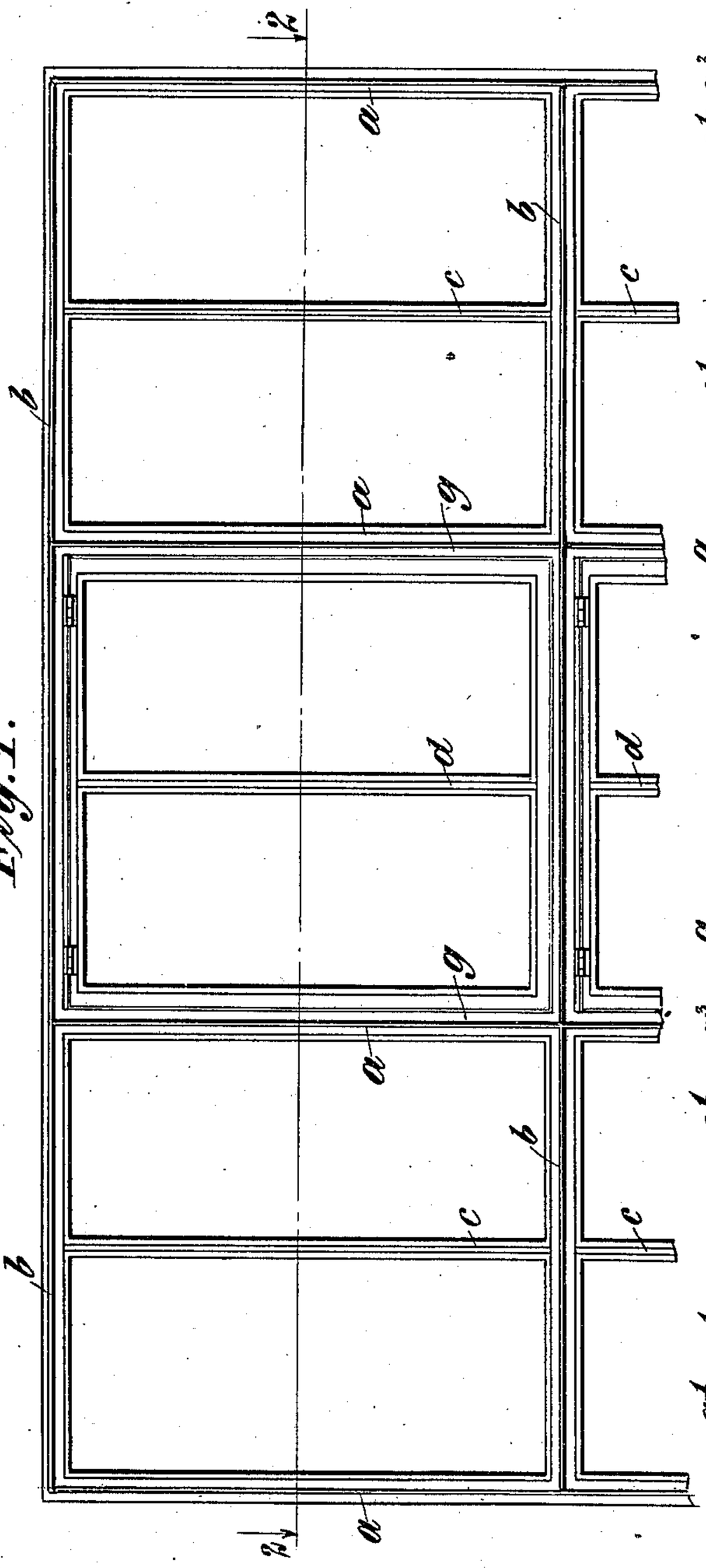

Fig. 1.

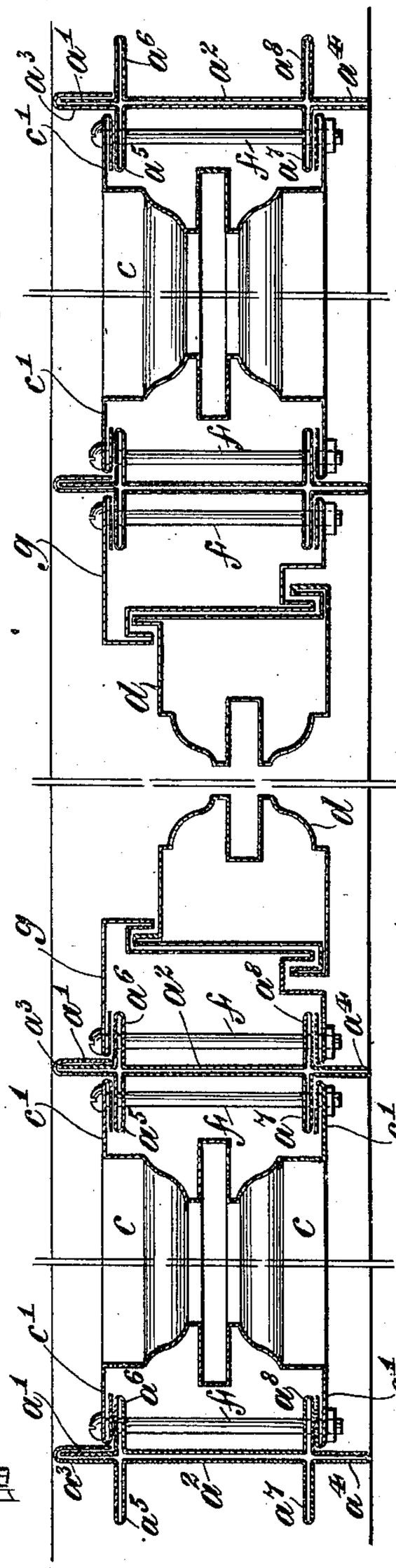

Fig. 2.

Witnesses:
Geo. Schwartz.
Subby Russo.

Inventor
Alexander Fromhold
By his Attorneys
Redding, Ferling & Austin

A. FROMHOLD.

METALLIC WINDOW FRAME, &c.

APPLICATION FILED AUG. 16, 1910.

996,845.

Patented July 4, 1911.

2 SHEETS—SHEET 2.

Fig. 3.

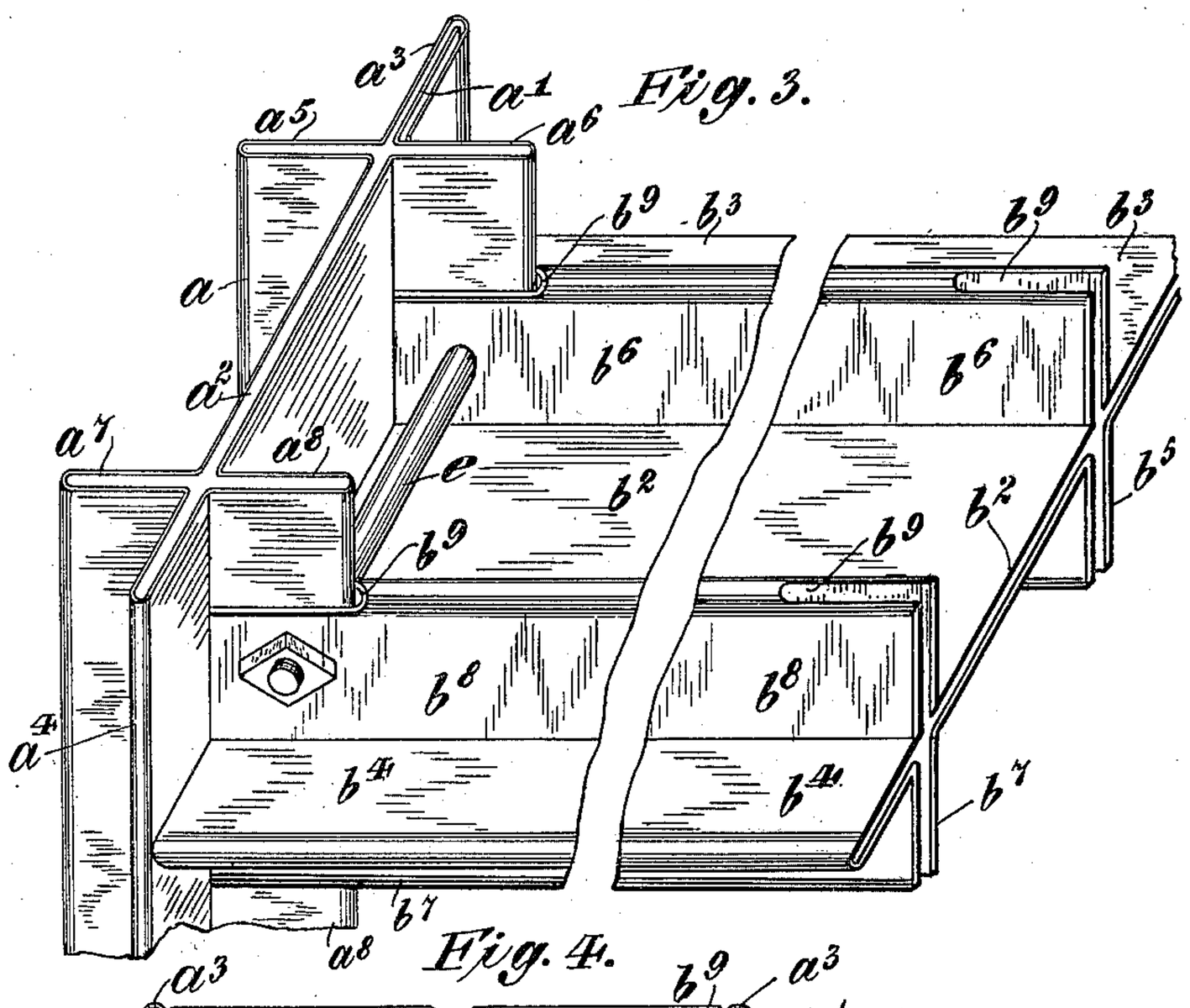

Fig. 4.

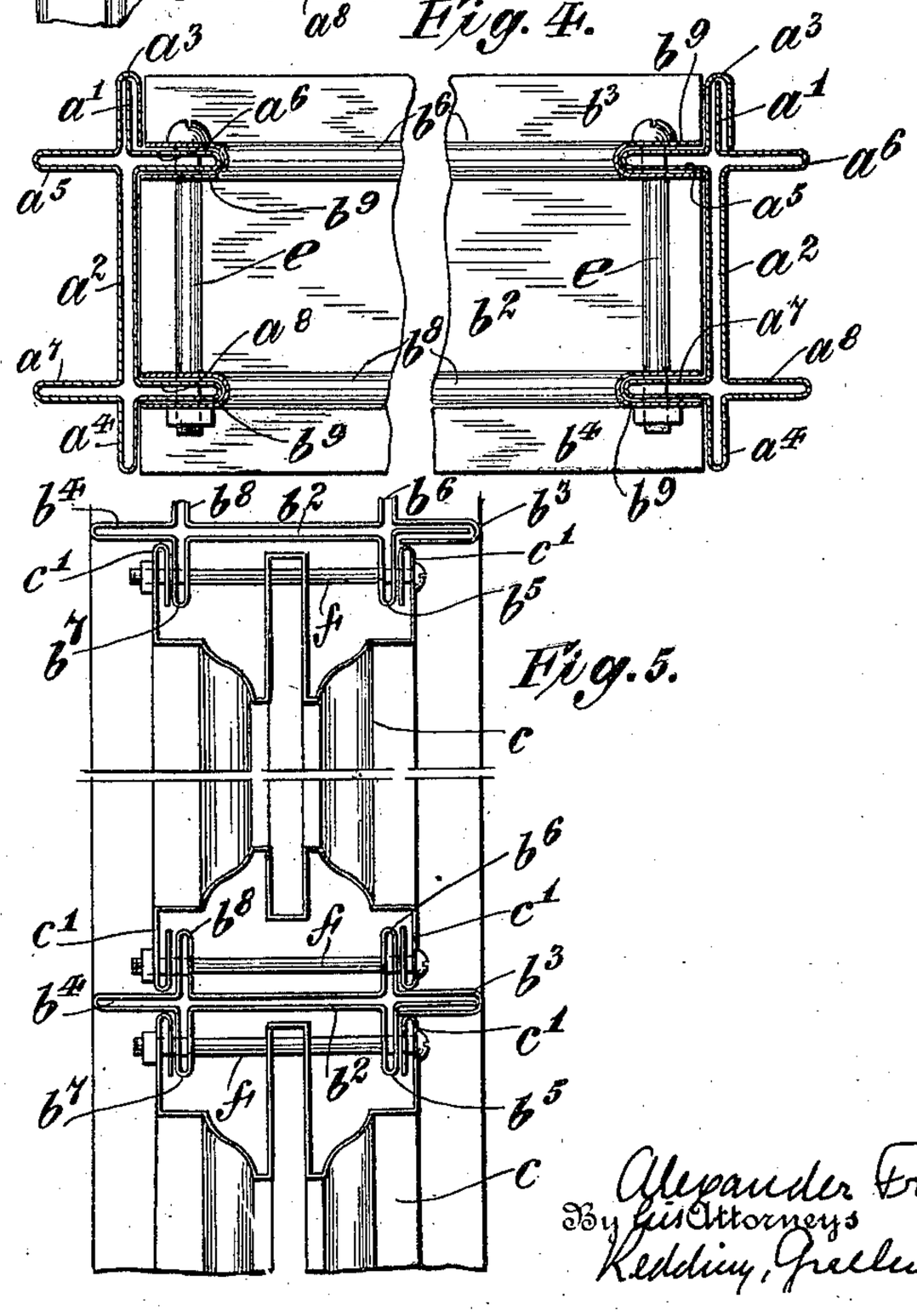

Fig. 5.

Witnesses:
Geo. Schmaltz.
Sully Russo.

Inventor
Alexander Fromhold
By his Attorneys
Redding, Ziegler & Austin

UNITED STATES PATENT OFFICE.

ALEXANDER FROMHOLD, OF RUTHERFORD, NEW JERSEY, ASSIGNOR TO S. H. POMEROY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

METALLIC WINDOW-FRAME, &c.

996,845. Specification of Letters Patent. Patented July 4, 1911.

Application filed August 16, 1910. Serial No. 577,455.

To all whom it may concern:

Be it known that I, ALEXANDER FROMHOLD, a citizen of the United States, residing at Rutherford, in the State of New Jersey, have invented certain new and useful Improvements in Metallic Window-Frames, &c., of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to structural metal work such as is adapted specially to the construction of window frames and sashes of sheet metal and has for its special object to facilitate the manufacturing, handling, transportation and installation of sectional window work for large openings, the improved construction reducing very little the available area for glass and possessing at the same time the strength necessary to sustain the superimposed weight and to resist wind pressures.

The invention will be more fully explained hereinafter with reference to the accompanying drawings in which it is illustrated and in which—

Figure 1 is a view showing a portion of an extended window frame or casing such as is adapted for use for factories, etc. Fig. 2 is a detail view in section on the plane indicated by the line 2—2 of Fig. 1 but on a larger scale and partly broken out. Fig. 3 is a detail view in perspective illustrating the manner of joining horizontal and vertical members of the frame. Fig. 4 is a detail view in horizontal section partly broken out, also showing the manner of joining the vertical and horizontal members. Fig. 5 is a detail view, on the same scale as Fig. 2, in vertical section or in end view with the end frame member removed, showing particularly the relation of the window sashes to the horizontal members.

Fig. 1 of the drawings shows an extended window frame or casing, such as is adapted for use in a factory building, having vertical members a and horizontal members b which form a series of openings adapted to receive fixed window sashes, as c, and hinged or swinging window sashes, as d.

Each frame member, whether vertical or horizontal, is formed of a single, continuous strip of sheet metal folded upon itself so as to form, in cross-section, a double rectangular cross. The structure is double throughout while the edges of the strip of sheet metal are overlapped, as at a'. Each member has therefore a central portion a^2, two edge webs a^3 and a^4 in the plane of the central portion, and near each edge two transverse webs a^5, a^6 and a^7, a^8 on opposite sides respectively of the central body portion a^2.

Each horizontal member b is formed in the same manner as each vertical member a, having likewise a central body portion b^2, edge webs b^3 and b^4 in the plane of the central body portion and transverse webs b^5, b^6 and b^7 and b^8.

It will be seen that the frame members formed as described are very rigid and strong, yet light, being capable of resisting distorting strains in every direction.

For the joining or connection of horizontal members and vertical members, it is only necessary to cut out the webs b^5, b^6 and b^7, b^8, as at b^9, so as to receive or fit upon the corresponding webs a^6 and a^8 of the vertical member with which the joint is to be made. Obviously, the vertical members, if made to fit between the horizontal members, will have their transverse webs cut out in like manner to fit upon the corresponding transverse webs of the horizontal members. When the parts are assembled and a hole has been punched or otherwise formed through the overlapping horizontal and vertical members bolts e are passed through the overlapping webs to maintain them in fixed relation.

It will be observed that the improved frame is not only very strong and rigid but is easily and cheaply constructed and that its parts may be easily and quickly assembled on the job.

So much of the structure shown and described herein as involves the combination of the sash and the frame, is not claimed herein, but is made the subject of a separate application.

I claim as my invention:

1. A sheet metal frame or casing for windows, etc., comprising vertical members and horizontal members, each being formed of a strip of sheet metal doubled upon itself to form projecting webs, the projecting web of one of such members being slotted along its edge to permit it to embrace the corresponding web of the other member.

2. A sheet metal frame or casing for windows, etc., comprising vertical members and

horizontal members, each being formed of a strip of sheet metal doubled upon itself to form, in cross-section, a double rectangular cross with edge webs in the plane of the body and transverse webs on opposite sides of the body near each edge thereof, the transverse webs of one member being slotted at their edges to permit them to embrace the transverse webs of the other member.

3. A sheet metal frame or casing for windows, etc., comprising vertical members and horizontal members, each being formed of a strip of sheet metal doubled upon itself to form projecting webs, the projecting web of one of such members being slotted along its edge to permit it to embrace the corresponding web of the other member, and a pin or bolt passed through the overlapping webs.

4. A sheet metal frame or casing for windows, etc., comprising vertical members and horizontal members, each being formed of a strip of sheet metal doubled upon itself to form, in cross-section, a double rectangular cross with edge webs in the plane of the body and transverse webs on opposite sides of the body near each edge thereof, the transverse webs of one member being slotted at their edges to permit them to embrace the transverse webs of the other member, and a pin or bolt passed through the overlapping webs.

This specification signed and witnessed this 13th day of August A. D., 1910.

ALEXANDER FROMHOLD.

Signed in the presence of—

LAUGHLIN J. RICE,

WM. D. LAWTON.