E. CARLSON & F. B. WORDEN.

SHEET METAL FRAME.

APPLICATION FILED FEB. 9, 1914.

1,233,310. Patented July 17, 1917.

FIG. 1.

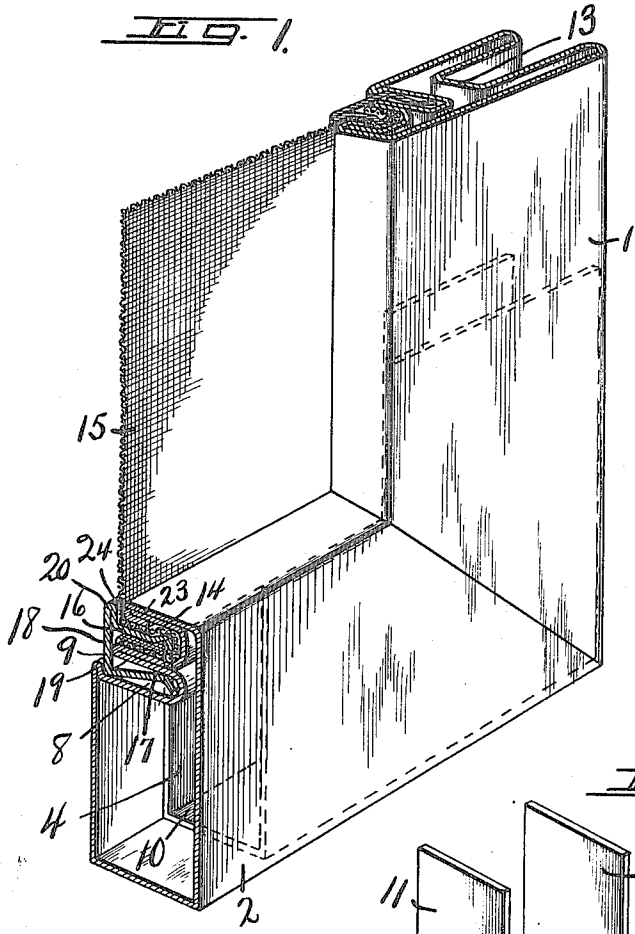


FIG. 3.

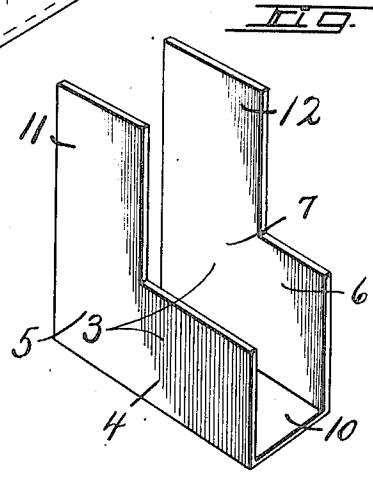
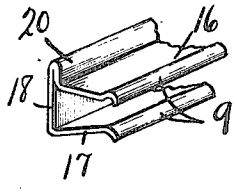


FIG. 2.



WITNESSES:

H. W. Hurst.

E. A. Thompson

Frank B. Worden & INVENTORS
Edward Carlson

BY

Howard P. Denison

ATTORNEY.

UNITED STATES PATENT OFFICE.

EDVARD CARLSON AND FRANK B. WORDEN, OF JAMESTOWN, NEW YORK, ASSIGNORS, BY MESNE ASSIGNMENTS, TO SAID FRANK B. WORDEN.

SHEET-METAL FRAME.

1,233,310. Specification of Letters Patent. Patented July 17, 1917.

Application filed February 9, 1914. Serial No. 817,559.

To all whom it may concern:

Be it known that we, EDVARD CARLSON and FRANK B. WORDEN, of Jamestown, in the county of Chautauqua, in the State of New York, have invented new and useful Improvements in Sheet-Metal Frames, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in sheet metal frames, and more particularly to a sheet metal frame for screens, for doors, windows, and the like.

The primary object of the invention is to provide means whereby the panel or screen retaining strips will firmly retain the screen or panel in operative position, and at the same time allow such strips to be easily and quickly removed or replaced in operative position without displacing, destroying or otherwise mutilating, any of the parts of the frame, to allow, if used in connection with screen frames, the rewiring of the frame.

A further object is to provide novel means operating upon a novel principle for removably retaining the panel or screen in operative position.

A further object is to provide a reinforcing corner piece of simple construction and high efficiency in connection with frames of this kind.

Figure 1 is a view of one corner of a metal frame showing a portion of one of the end and one of the side rails, all constructed in accordance with this invention.

Fig. 2 is a perspective view of a portion of the panel retaining strip.

Fig. 3 is a perspective view of the corner reinforcing piece shown in dotted lines, Fig. 1.

The frame is formed of separate, hollow, side and end rails —1— and —2— respectively, having their meeting ends mitered and abutting and held in operable position by an internal corner brace —3— preferably formed of a single piece of sheet metal as best shown in Fig. 3.

The front portion —4— of the side —5— of this corner piece —3— is of less height than the front portion —6— of the side —7—, so that the part —4— will contact with the wall of the groove or channel —8— for receiving a portion of the retaining strip —9— hereinafter described, while the part —6— is of substantially the same width as the depth of the frame so as to contact with the inner and outer walls thereof. The sides —5— and —7— are spaced apart by an integral portion —10— a distance substantially equal to the interior width of the frame, so that they will contact with the respective sides of the frame and strengthen and support the same.

The parts —11— and —12— of the corner piece —3— are of substantially equal height from the portion —10—, but the part —11— is of less width than the part —12— in like manner as the part —4— is of less height than the part —6—, and they fit in the side rail in the same manner as the parts —4— and —6— fit in the end rail. The parts —11— and —12— are unconnected along their outer edges and receive between them the grooved or channeled portion —13— of the side rail —1— and the respective rails —1— and —2— may be soldered, brazed, or otherwise attached to the corner brace if desired.

The inner side of both the side and end rails —1— and —2— respectively is provided with substantially parallel grooves or channels —8— and —14— respectively, the inner groove —14— adapted to receive the panel or screen —15— and one arm —16— of a retaining strip having a second arm —17— seated in the channel —8— and a connecting portion —18— extending across both channels. In the form shown in Fig. 1, the rails —1— and —2— are each provided with a longitudinal lip or bead —19— overhanging the outer channel —8— and preferably the retaining strip —9— is provided with a bead —20—, as best shown in Figs. 1 and 2, projecting in the same direction as the bead —19— and overhanging the inner edge of the rails —1— and —2—.

The side and end rails —1— and —2— are each preferably formed from a single strip of sheet metal bent in substantially tubular form and may have, as shown in Fig. 1, their lengthwise edges —23— and —24— bent together to form a reinforced inner wall for the rail, the edge —24— bent around the edge —23— and terminating in the inner channel —14—. These edges may be soldered, brazed, welded, or otherwise united if desired.

The arm —16— of the retaining piece preferably is turned inwardly toward the

arm —17— so as to more firmly grasp the fabric, but this likewise is not essential, as the device will operate efficiently with a perfectly straight arm if the channel —14— is not of too great width.

For the purposes of the claims of this application, we have termed the corner piece —3— a U-shaped corner piece having L-shaped wings —5— and —7—. The parts —4— and —6— are termed the bases of the respective wings —5— and —7—, and the parts —11— and —12— are termed the arms of the respective wings —5— and —7—.

It will be apparent that many changes may be made in the details of construction and arrangement of the features hereinbefore described without departing from the spirit of this invention as set forth in the appended claims, the essential feature of which is the use of two channels in combination with a two-armed retaining strip, one arm adapted to be seated in each of said channels.

What we claim is:

1. A frame having its side rails consisting of sheet metal bent to form a closed tube, each side rail having a pair of longitudinally extending channels embodying an interposed rib, said channels formed by depressing adjacent portions of one side of the rails toward the opposite side, a lip projecting over the outer channel, a panel having a portion positioned in the inner of said channels, and a retaining strip having an arm in each channel, and a connecting portion engaged with said lip, the arm in the outer channel provided with a flanged portion frictionally engaging the wall of the channel.

2. A sheet metal frame having channels formed in one side, a lip projecting over the outer channel, a panel having a portion in one of said channels and a retaining strip having an arm in each channel and a connecting portion engaged with said lip, and a bead formed on said retaining strip and overlying the inner wall of the inner channel.

In witness whereof we have hereunto set our hands this 31st day of December, 1913.

EDVARD CARLSON.
FRANK B. WORDEN.

Witnesses:
MARTIN L. BADHORN,
BELLE STEWART WALKER.