To all whom it may concern:

Be it known that we, CHARLES B. YOUNG and CHARLES J. CASPAR, citizens of the United States, and residents of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have made a new and useful Invention in a Metal Sash Construction, of which the following is a specification.

The invention relates to metal sash constructions and particularly to the corners of such constructions. It has for its principal objects, the provision of an improved slip arrangement whereby the metal sash can give at the corner when the wood framing carrying the construction swells or warps, due to the absorption of moisture either upon the inside of the window or upon the outside. Under such condition of swelling or warping, a strain is thrown upon the glass and in many cases, the glass in the window is broken. A further object is the provision of a slip corner construction which is cheap and which involves no difficulty in applying and removing. One embodiment of the invention is illustrated in the accompanying drawings wherein:

Figure 1 is a plan view of the corner construction. Fig. 2 is a side elevation, partially in section, the section being through the corner piece only and the rest of the corner piece being removed to show the sash bar construction there beneath. Fig. 3 is a vertical section on the line III—III of Fig. 1. Fig. 4 is a horizontal section on the line IV—IV of Fig. 2, the dotted lines showing the corner piece and the clamping members carried thereby in the position occupied before such corner piece is applied. And Figs. 3 and 6 are detail side elevation views showing one of the clamping members in its two positions, Fig. 5 showing the position occupied in positioning the member, and Fig. 6 showing the position occupied when the device is in clamping position.

Referring to the drawings, 1 and 2 are the usual wood framing members and 3 and 4 are the sheets of glass which approach each other at the angle indicated in Fig. 1 to form the corner of the window. Lying to the rear of the glass sheets are the rear metal sash members 5 and 6, preferably secured to the member 1 by means of wood screws 7 (Fig. 4) placed at suitable intervals. These sash members 5 and 6 are provided with bottom flanges 8 extending forward of the glass, as indicated in Fig. 3 and provided with flanges 9, as indicated in Fig. 3.

10 and 11 are the front sash members of metal which approach each other at the corner of the window sash, but are slightly separated, as indicated in Fig. 4. These sash members have hooks 12 at their upper edges bearing against the glass sheets and at their bottom edges are provided with flanges 13 lying beneath the flanges 9 (Fig. 3). The front sash members or cover plates 10 and 11 are secured against the glass by means of the clamps 14 arranged at suitable intervals, as shown in Fig. 3 and secured in position by means of the screws 15.

This metal sash construction is one which is well known in the art under the name of "Easy set", but it will be understood that the corner arrangement, to which this invention is particularly directed, is applicable to other forms of metal sash construction, and in fact to any form of such construction which employs outer sash members of metal clamped or secured against the outer faces of the glass sheets.

The corner member 16 is shaped so that it closely follows the contour of the sash members 10 and 11, as indicated in Figs. 2 and 3, and is arranged to fit up against the glass sheets at its upper edge and against the frame member 2 at its lower edge, thus covering the joint between the members 10 and 11 and serving as a connecting means between such members. The ends of the sash members 10 and 11 are provided with slots 17 and 18 lying beneath and covered by the corner piece 16. The corner piece is locked to the sash members by means of a pair of rotatable clamping members 19, 19 having at their inner ends the elongated cam blocks 20, 20 and provided at their outer
ends with the slotted heads 21, 21 adapted to be engaged by a screw driver in order to turn them.

In positioning the corner piece 16, the members 19, 19 are turned to the positions indicated in the dotted lines in Fig. 4 and in full lines in Fig. 5, the blocks 20 lying at this time longitudinally of the slots 17, 17, so that when the corner piece is pushed inward to full line position, as indicated in Fig. 4, the blocks 20, 20 will pass through the slots 17, 17 to positions at the rear of the sash members 10 and 11. After thus being positioned, the clamping members are turned 90 degrees so that the blocks 20 lie crosswise of the slots 17, as indicated in full lines in Fig. 4 and in Fig. 6. The blocks 20 are rounded on their inner sides, as indicated in dotted lines in Fig. 4 and the members are so proportioned that when they are turned so that the blocks are crosswise of the slots, as indicated in Fig. 6, a clamping pressure is exerted which pulls the sash members up tightly against the inner face of the corner piece. The sash members are thus locked to the corner piece in relatively tight engagement, thus giving a secure connection between the sash members, but at the same time, the connection is not a positive one and it is possible for the sash members to move longitudinally with respect to the corner piece when a severe strain is applied thereto, such as is caused when the wood framing 1 and 2 becomes wet and swells. This permits the metal construction to give the amount which is necessary at the corner under these conditions in order to prevent the glass from being broken.

The clamping members 19 may be proportioned so that any desired degree of clamping pressure may be secured, thus permitting the parts to be held in frictional engagement with the degree of firmness which conditions are found to require.

The device is inexpensive in construction and can be applied without difficulty after the sash members 10 and 11 are secured in position, all that is necessary being to turn the blocks 20 so that they will pass through the slots 17 in the sash members, after which the rotation of the two members locks the parts securely in position. The device may also be removed very readily by turning the blocks back to the position of Fig. 5, then lifting off the corner piece, or prying it loose in case it has become stuck in position.

What we claim is:

1. In combination in a sash framing corner construction, a window framing, a pair of glass sheets mounted in the framing and lying at an angle to each other to form a corner, a pair of metal sash members lying on the outer sides of the sheets, and secured against the outer faces of said sheets, and provided adjacent their ends with longitudinally extending slots, a metal corner piece fitting over the ends of said sash members, and rotatable clamping members carried by the corner member and provided at their inner ends with blocks adapted in one position of rotation to be passed through said slots, and in another position to lie crosswise behind the sash members and clamp such members to the corner member.

2. In combination in a sash framing corner construction, a window framing, a pair of glass sheets mounted in the framing and lying at an angle to each other to form a corner, a pair of metal sash members lying on the outer sides of the sheets and secured against the outer faces of said sheets, and provided adjacent their ends with longitudinally extending slots, a metal corner piece fitting over the ends of said sash member, and rotatable clamping members carried by the corner member and provided at their inner ends with elongated blocks proportioned so that in one position of rotation, they may be passed through said slots, and in another position of rotation, they will be crosswise behind the sash members, locking such members to the corner member, the said clamping members having screw heads at their outer ends for turning them.

3. In combination in a sash framing corner construction, a window framing, a pair of glass sheets mounted in the framing and lying at an angle to each other to form a corner, a pair of metal sash members lying on the outer sides of the sheets and secured against the outer faces of said sheets, and provided adjacent their ends with longitudinally extending slots, a metal corner piece fitting over the ends of said sash members, and rotatable cam clamping means carried by the corner member and extending through said slots and each adapted in one position to clamp the corner member to a sash member so that the parts may slip relatively under tension, and in another position to release the corner member from the sash member.

4. In combination in a sash framing corner construction, a window framing, a pair of glass sheets mounted in the framing and lying at an angle to each other to form a corner, a pair of metal sash members lying on the outer sides of the sheets and secured against the outer faces of said sheets, and a releasable friction connection between each sash member and the corner member operable from the outer side of the corner member.

5. In combination in a sash framing corner construction, the said framing, a pair of glass sheets mounted in the framing and lying at an angle to each other to form a corner, a pair of metal sash members lying on the outer sides of the sheets, and secured against the outer faces of said sheets, and provided adjacent their ends with longitudinally extending slots, a metal corner piece fitting over the ends of said sash members, and rotatable cam clamping means carried by the corner member and extending through said slots and each adapted in one position to clamp the corner member to a sash member so that the parts may slip relatively under tension, and in another position to release the corner member from the sash member.
on the outer sides of the sheets and secured against the outer faces of said sheets, a metal corner member fitting over the ends of said sash members, and a releasable friction connection between each sash member and the corner member operable from the outer side of the corner member, the said connection permitting the application and removal of the corner member independent of the sash members.

In testimony whereof, we have hereunto subscribed our names this 28th day of April, 1925.

CHARLES B. YOUNG.
CHAS. J. CASPAR.