

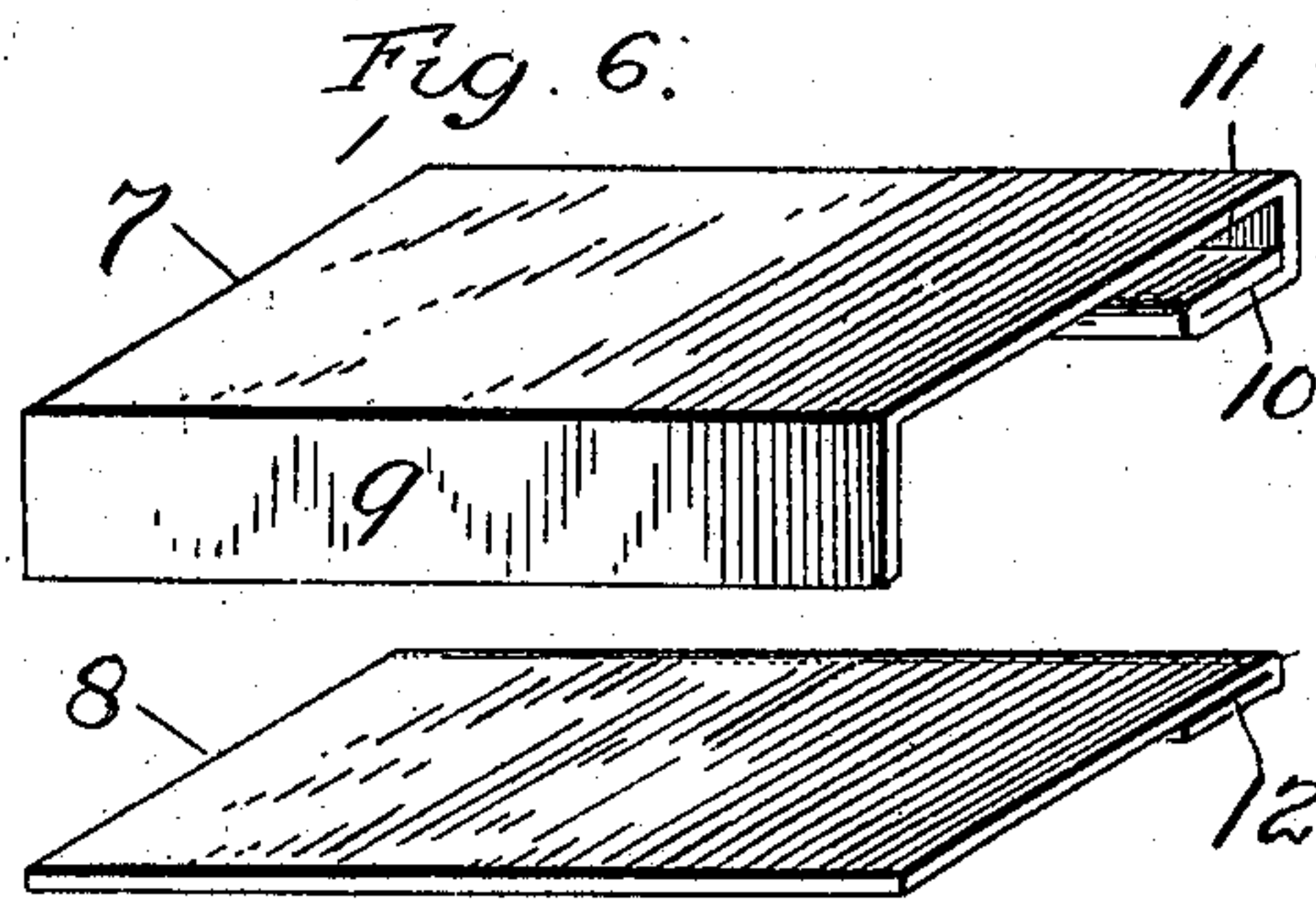
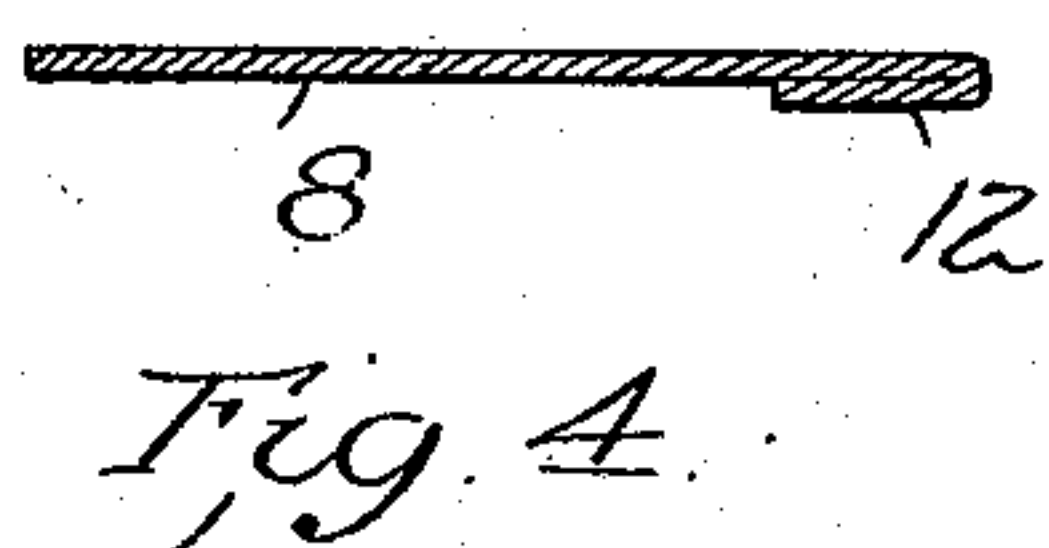
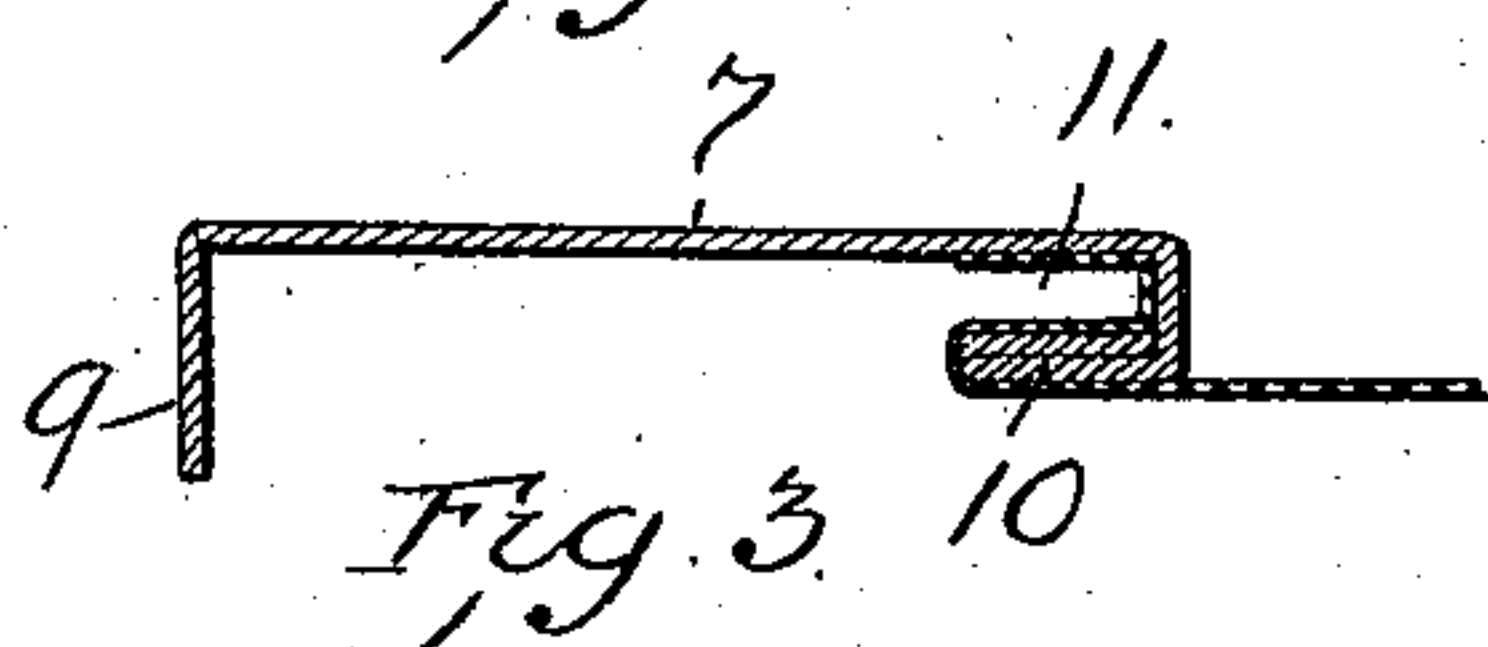
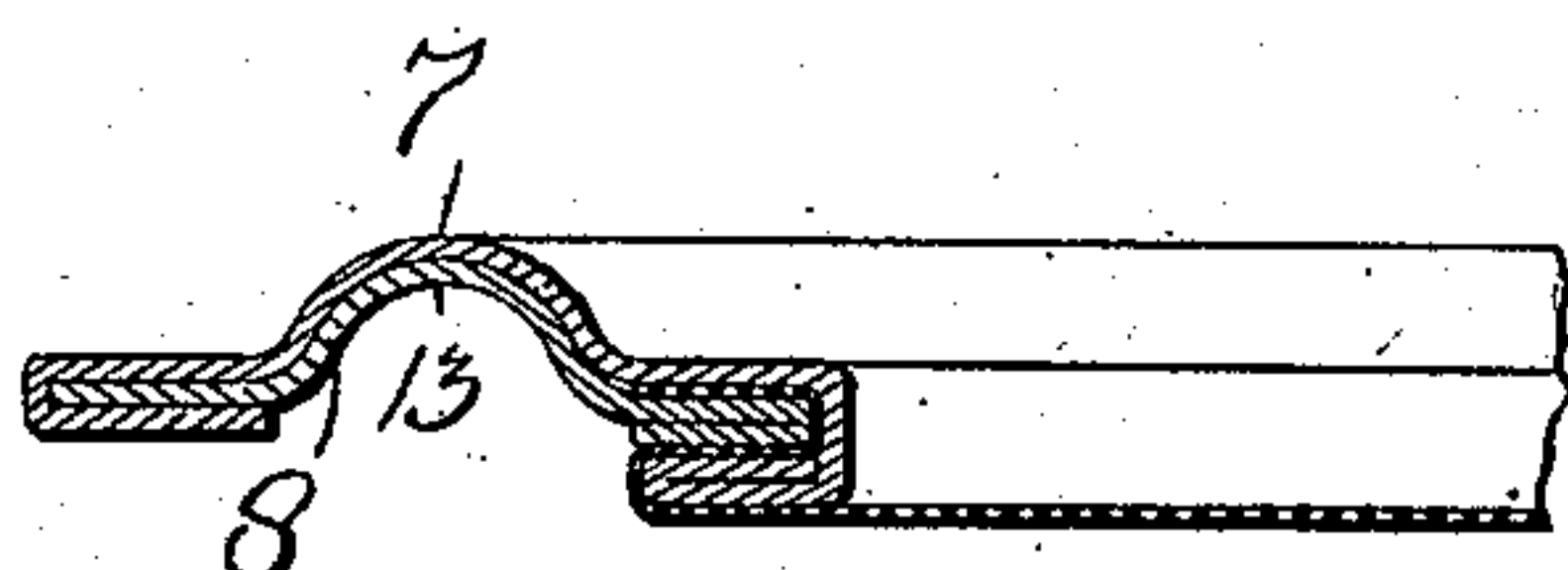
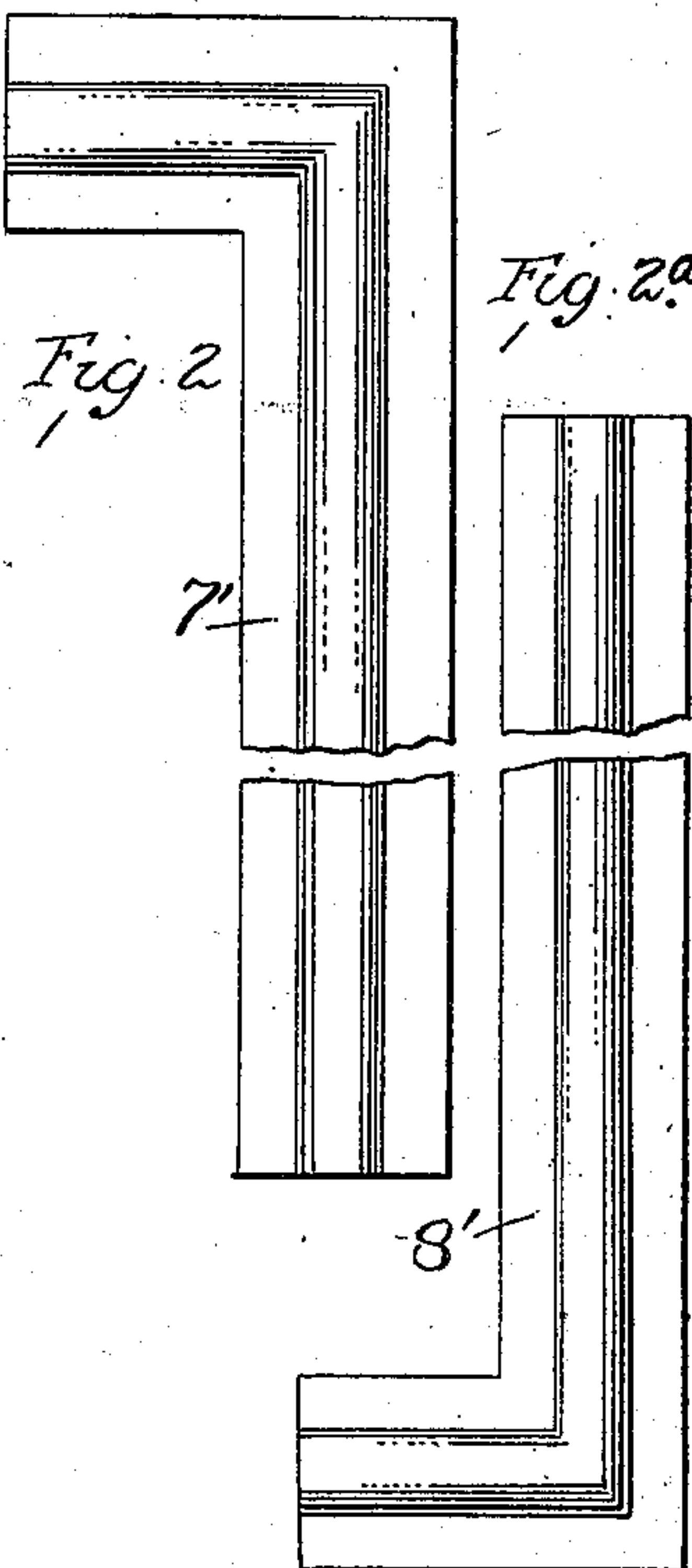
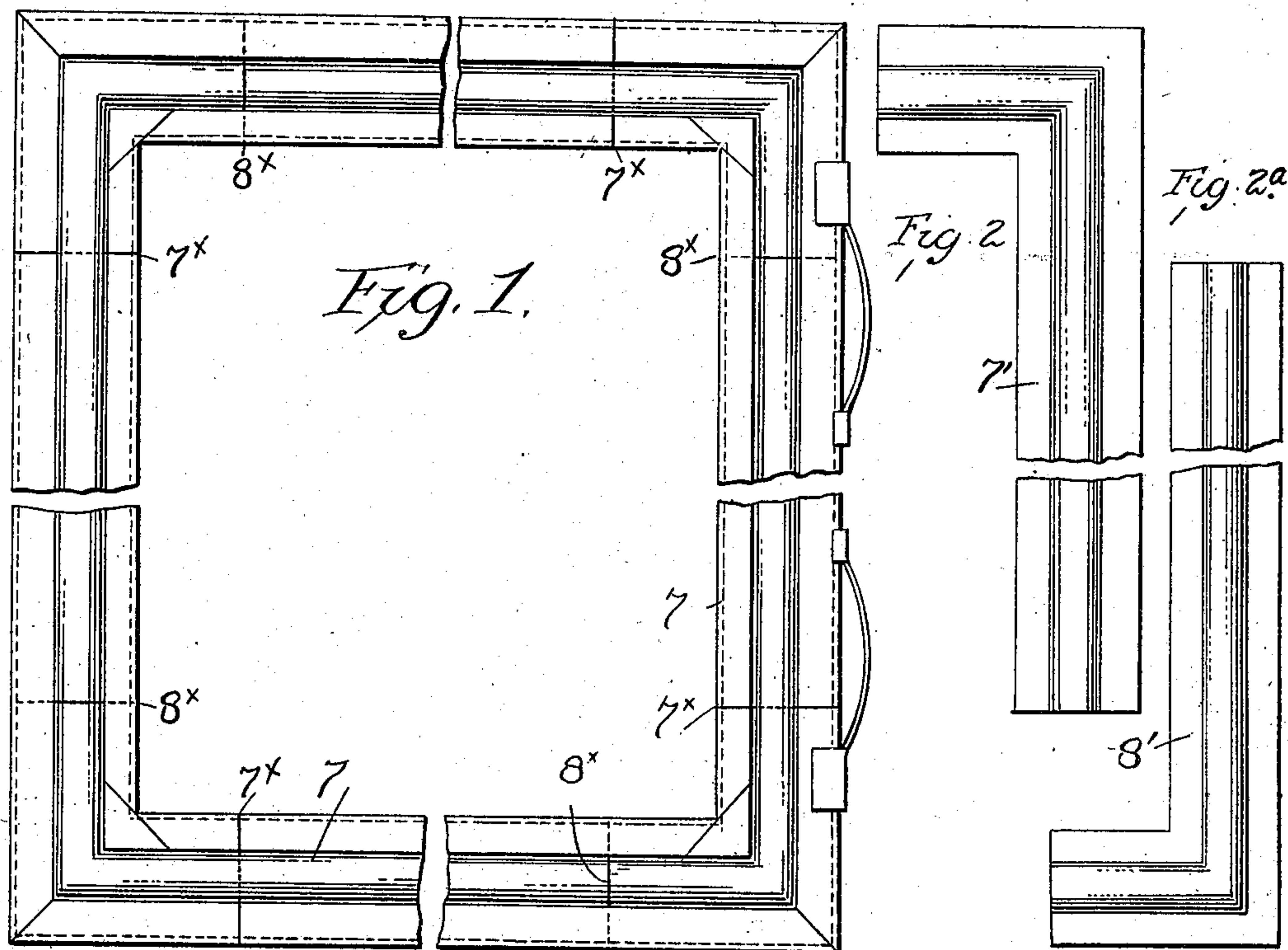
No. 885,725.

PATENTED APR. 28, 1908.

C. M. CONKLIN.

WINDOW SCREEN AND THE PROCESS OF MAKING THE SAME.

APPLICATION FILED JAN. 25, 1907.



Attest:
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UNITED STATES PATENT OFFICE.

CHARLES M. CONKLIN, OF CINCINNATI, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
THE LUNKEN STEEL WINDOW CO., A CORPORATION OF OHIO.

WINDOW-SCREEN AND THE PROCESS OF MAKING THE SAME.

No. 885,725.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed January 25, 1907. Serial No. 354,028.

To all whom it may concern:

Be it known that I, CHARLES M. CONKLIN, a citizen of the United States, residing at Cincinnati, Ohio, have invented certain new and useful Improvements in Window-Screens and the Process of Making the Same, of which the following is a specification.

My invention relates to the manufacture of window or other screens containing a flexible fabric, and it concerns the process by which the screen is made and also the article produced by the said process.

In carrying out my invention I aim to provide a screen frame of simple construction, which will be free from miter joints at the corners and will have its joints on opposite sides out of alinement or "broken" so that the screen frame at the corner will be as strong as any other portion thereof.

I also aim to provide a construction which will enable the screen cloth to be readily placed in position, and an important feature of my invention relates to the step in the process employed by me for tightening the screen cloth in all directions, this step being the final one in the process of manufacture of the screen.

Another object of my invention is to provide a screen in which the screen cloth at the point where it is clamped in place will be protected from the collection of moisture and thus the cloth and the clamping parts will be prevented from rusting.

The invention is illustrated in the accompanying drawings, in which,—

Figure 1 is a front view of a screen frame embodying my invention. Fig. 2 is a view of one of the frame members. Fig. 2^a is a view of another frame member. Fig. 3 is a cross sectional view of the main frame member with the screen cloth in place ready to be clamped by the clamping member. Fig. 4 is a cross sectional view of one of the clamping members. Fig. 5 is a sectional view showing the members of Figs. 3 and 4 assembled and after they have been subjected to the last step in the process and their form changed so as to stretch the screen cloth. Figs. 6 and 7 are perspective views of the frame members of Figs. 3 and 4.

The frame is composed of a channel, or, what may be termed for convenience, an outer member 7 and an inner or clamping member 8. The outer member is made up of a plurality of sections of the form shown

in Fig. 2 at 7' of right angular form having a long and a short leg. Likewise the inner clamping member is made up of a plurality of sections, such as shown in Fig. 2^a, which also is of right angular form and having a long and a short leg. The cross sectional form of these members is illustrated in Figs. 3 and 4 before they are finally assembled and fastened together.

As shown in Fig. 3, the channel or outer member is provided with a flange 9 extending from the edge of the channel member and at its other edge it has an overlying flange 10 formed by doubling the metal back upon itself, said flange being positioned to leave a groove or recess 11 to receive the edge of the screen cloth which is brought over the flange 10 around its doubled portion and thence into the groove, where it is clamped by the section 8' of the clamping member 8. This clamping member has its edge doubled upon itself at 12 so as not to present a raw edge to the screen cloth, but a slightly rounded edge instead, and it is inserted into the channel member with its edge 12 in the groove 11 so that the edge of the screen cloth is gripped thereby. After the clamping member has been seated in the channel member the flange 9 of the latter member is forced or folded down thereupon as shown in Fig. 5 so as to firmly grip the same. The screen cloth is thus doubly bent as shown in Fig. 5 and is firmly clamped between the edge portion of the clamping member and the adjacent walls of the groove or recess 11. After being thus clamped in place the screen cloth is stretched and the frame is brought to its final form and dimensions by subjecting the frame to the action of dies, which acting upon the members of the frame at the part 13 press the same laterally to form the corrugation, and, this action taking place at a point intermediate of the width of the frame bar, the inner and outer margins of the frame members will be drawn towards this central intermediate part, performing thus a double function, viz., the screen cloth will be stretched in substantially all directions from the center of the frame outwardly and the frame will be given its final form and dimensions. The corrugation will also add strength to the frame.

It will be seen from the above that the stretching of the wire cloth is performed in a simple manner, and simultaneously at all

four sides of the screen by drawing the clamping portions of the frame members outwardly and that this action results from the act of changing the width of said frame members by forming the corrugation therein intermediate of their width. I do not limit myself however to the simultaneous action upon all four sides of the screen, as I may obtain the same result by pressing one side at a time.

The frame members 7 and 8 are put together as shown in Fig. 1 so that their sections will not register or be co-terminous. The joints of the channel frame member 7 occur at the points 7^x, while the joints of the sections of the clamping member 8 occur at the points 8^x. In this way each short leg of each section of one member laps upon the long leg of the adjacent section of the other member. The effect of this is that the joints are "broken" and no joints occur at the corners. This makes a particularly strong corner, the sections lapping one upon the other at this point. No fastening means other than the interlocked sections which are in clamping contact is necessary to hold the frame together.

It will be observed from Fig. 5 that the flange 10, when the screen is set upright, shields the screen cloth lying in the groove and also the edge of the clamping member and the inner wall of the groove from entrance of water or moisture, thus enabling me to employ less expensive material than would otherwise be the case.

One essential feature of my invention consisting in making up the frame and then subjecting it to pressure after the cloth is clamped therein so as to cause a clamping portion or portions to move outwardly or away from the clamping portion on the opposite side of the frame, it will be understood that I do not limit myself to the displacement of all the sides of the frame as it is simply necessary to effect a relative movement between said oppositely located portions in order to obtain the tightening effect desired, and where in the appended claims I refer to drawing or pressing the frame, I mean either the whole or a portion thereof.

Where I employ the term "transformed" herein, I do so in a generic sense to include the change in the screen frame due to corrugating it or to any other change which will accomplish the stretching.

While I have described my invention as carried out in connection with window screens, I do not wish to limit myself in this respect, as my invention may be carried out in connection with a frame for holding a fabric of a character other than that of a screen.

I claim as my invention:—

1. In the manufacture of articles of the class described, the process of tightening the

fabric consisting in clamping the same in a frame and then moving outwardly a clamping portion or portions of the said frame, substantially in the plane of the frame by transforming the material itself, of which the said portion is composed, substantially as described.

2. In the manufacture of articles of the class described, the process of tightening the fabric consisting in simultaneously moving outwardly the margins of all the sides of the frame at which the fabric is held by transforming the material of which the frame is composed, substantially as described.

3. In the manufacture of articles of the class described, the hereindescribed process, consisting in making up the frame and clamping the fabric therein and then pressing or drawing the material of the frame transversely to the plane of the frame to form a corrugation therein and thereby cause its fabric holding portions to move outwardly to stretch the said fabric, substantially as described.

4. The hereindescribed process consisting in clamping the fabric beneath the flange 10 of the channel member by the clamping member, then folding down the flange 9 and subjecting the members to dies to draw the inner margin outwardly and thereby stretch the fabric, substantially as described.

5. An article of the class described, comprising the frame carrying the fabric attached thereto at or near its inner edge and corrugated at a point out beyond this point of attachment to thereby stretch the same after the fabric is clamped in place, substantially as described.

6. An article of the class described comprising a frame carrying the fabric attached thereto at or near its inner edge and transformed in the body of its material, after the fabric is attached, at a point out beyond this inner edge to thereby stretch the fabric, substantially as described.

7. An article of the class described comprising a frame carrying the fabric attached thereto at or near its inner edge, and corrugated intermediate the width of its side member after the fabric is attached to thereby stretch the said fabric, substantially as described.

8. An article of the class described, comprising a frame carrying the fabric, said frame consisting of a channel member having a flange on one side with a groove thereunder in which the fabric lies, a clamping member extending into the groove to hold the fabric therein, and an overlying flange at the opposite edge of the channel member for holding the clamping member in place, said clamping member extending from side to side of the channel member substantially as described.

9. An article of the class described, comprising a frame composed of a channeled

member having a flange at one margin with a groove beneath the same, a clamping member for holding the fabric in said groove, a flange at the other margin for holding the
5 clamping member in place, and a corrugation between the margins formed after the frame members have been attached, substantially as described.

10 10. The process hereindescribed, consisting in securing a fabric to a frame and then

transforming the material of said frame to thereby stretch the said fabric, substantially as described.

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

CHARLES M. CONKLIN.

Witnesses:

ALBERT F. KLOYER,
EDWIN E. KAISER.