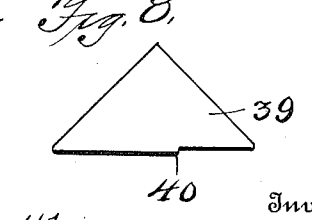
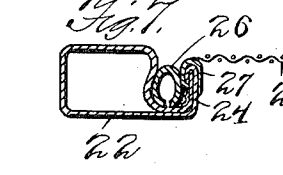
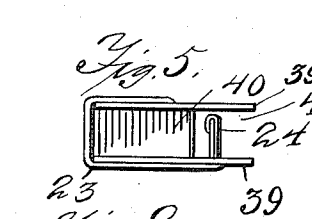
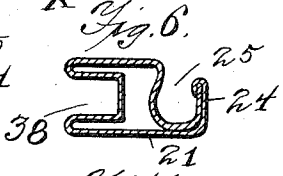
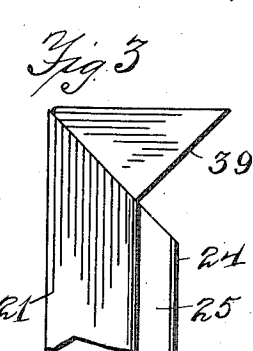
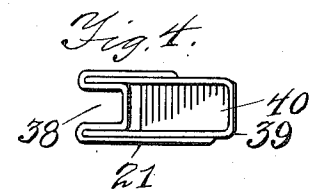
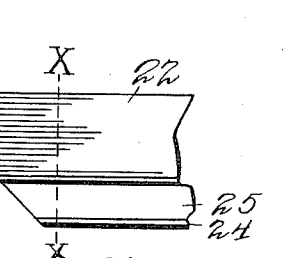
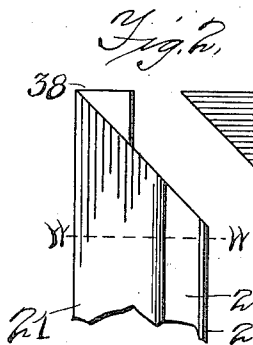
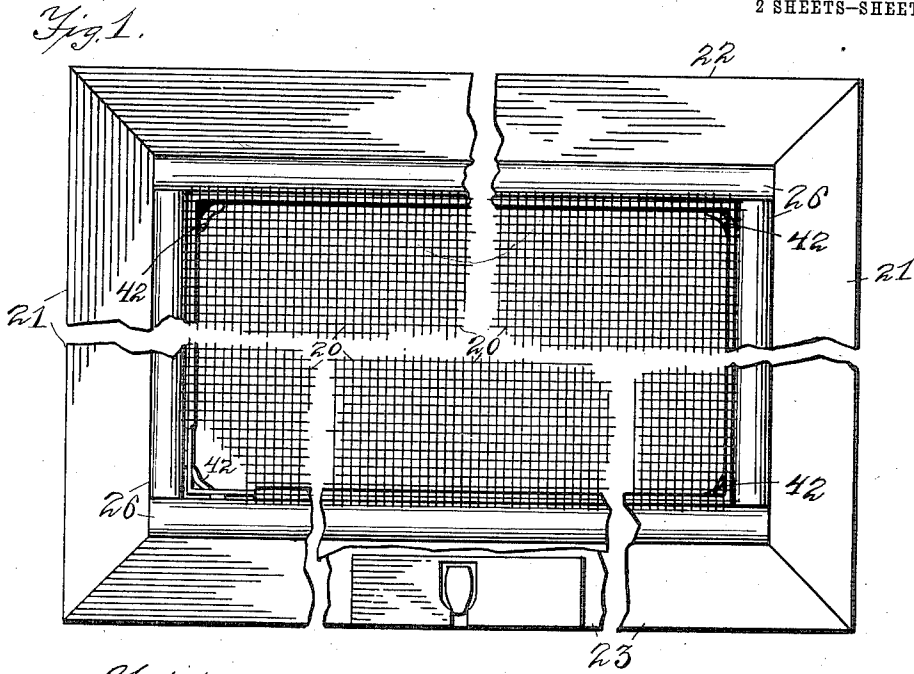


H. W. & W. W. WATSON.
 METALLIC SCREEN.
 APPLICATION FILED NOV. 24, 1911.

1,030,694.

Patented June 25, 1912.

2 SHEETS—SHEET 1.



Witnesses
 Arthur O. Moore
 H. U. Harris

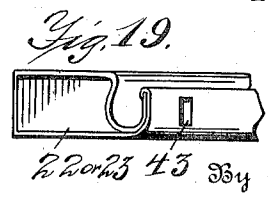
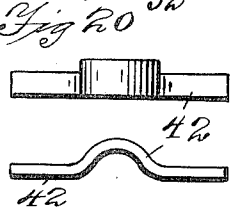
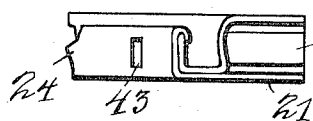
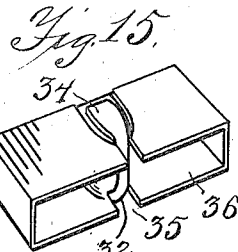
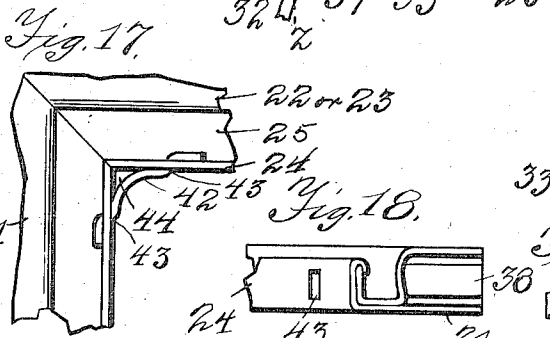
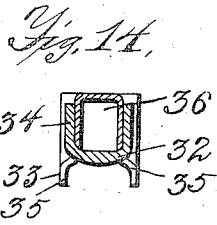
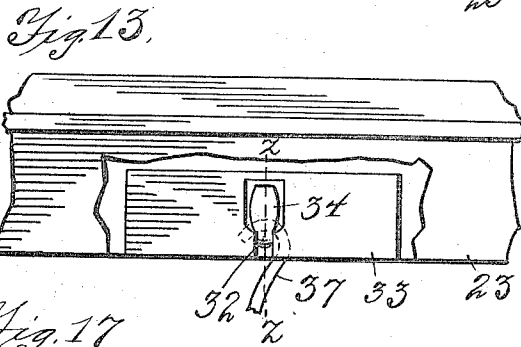
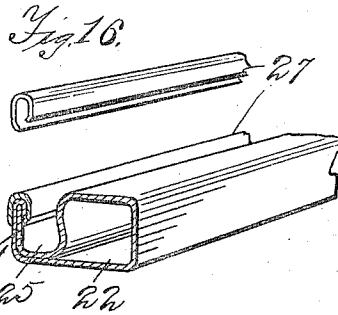
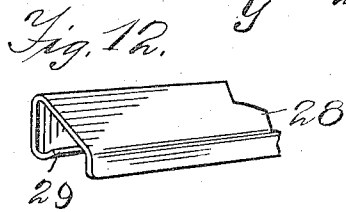
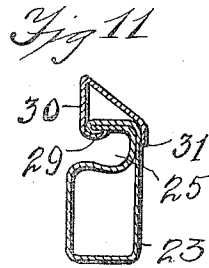
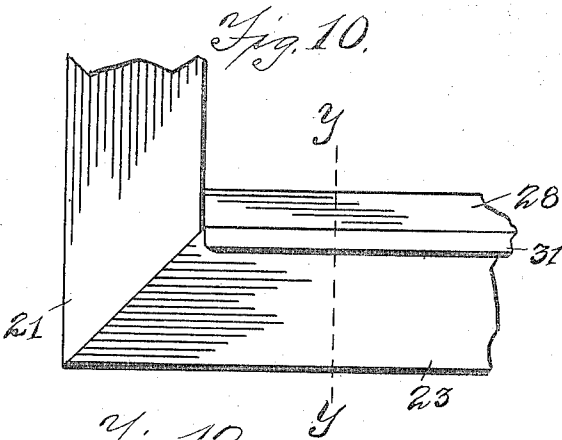
Inventors
 Henry N. Watson
 and William N. Watson
 S. Arthur Baldwin,
 Attorney

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2 SHEETS-SHEET 2.



Witnesses
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 H. U. Harris

Inventors
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 S. Arthur Baldwin
 Attorney

UNITED STATES PATENT OFFICE.

HENRY W. WATSON AND WILLIAM W. WATSON, OF JAMESTOWN, NEW YORK.

METALLIC SCREEN.

1,030,694.

Specification of Letters Patent. Patented June 25, 1912.

Application filed November 24, 1911. Serial No. 662,144.

To all whom it may concern:

Be it known that we, HENRY W. WATSON and WILLIAM W. WATSON, citizens of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Metallic Screens, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention relates to improvements in sheet metal window and door screens, and is an improvement upon our former screen construction as shown in Letters Patent No. 956,239 of April 26th, 1910; and the object of our improvement is to provide a simple and strong sheet metal frame construction which provides against injury from rust or corrosion and may be easily and quickly assembled; and the invention consists in the construction and arrangement of the parts as shown in this specification and the accompanying drawings and pointed out in the claims.

Figure 1 is a plan view of the screen with the central portion broken away and showing the corners and the centrally placed catch or draw on the lower side, the screen fabric being broken away on one corner to show the brace. Fig. 2 is an elevation of the two parts of the corner, separated. Fig. 3 is an elevation of the upper end of the frame side having the lengthwise channel in the outer edge, and showing the inner corner brace; and Fig. 4 is an end elevation of the parts shown in Fig. 3 with the corner brace in position; and Fig. 5 is an end elevation of the bottom rail or frame side with the inner brace in position therein. Fig. 6 is a sectional view at line W W in Fig. 2, showing the construction of the channeled frame side. Fig. 7 is a sectional view at line X X in Fig. 2, showing the construction of the top rail with the screen fabric attached thereto. Fig. 8 is a side elevation, and Fig. 9 an edgewise elevation, of the inner corner brace. Fig. 10 is an elevation of one of the lower corners of the frame. Fig. 11 is a sectional view at line Y Y in Fig. 10, showing the construction of the upper edge of the lower cross rail. Fig. 12 is a perspective view of a portion of the beveled strip which is attached over the upper edge of the lower cross rail to prevent injury to the screen frame. Fig. 13 is an elevation of the central portion of the lower cross rail with the beveled strip attached along its

upper edge and a catch or draw inserted in the lower edge. Fig. 14 is a sectional view of the catch at line Z Z in Fig. 13. Fig. 15 is a perspective view of the catch box before insertion. Fig. 16 is a perspective view of a portion of the frame side showing the tubular protective strip for the folded edge of the inner channel over which the screen fabric draws. Fig. 17 shows a detail of the outer corner brace as attached to the two frame sides; and Fig. 18 is an elevation of the mitered end of one side of the screen frame and Fig. 19 shows the opposite side with the slots in both for the outer corner brace. Fig. 20 shows plan and edgewise elevation of the outer corner brace before insertion through the slots in the frame sides and having the ends bent into the bracing position.

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

The numeral 20 designates the screen fabric.

The numeral 21 designates the lateral frame sides, and the numeral 22 the upper cross rail or frame side, and the numeral 23 the lower cross rail or frame side. The cross rails and lateral frame sides are preferably formed with solid tubular construction, having the inner edges 24 united and folded one over the edge of the other and bent in the form of an angular flange to form the channel 25 which extends entirely around the inner side of the frame, for attaching the screen fabric 20 therein by means of the split tubular strip 26 which is sprung into the groove 25, groove 25 being narrow at the mouth and enlarging inwardly. The tubular frame sides are preferably made of thin sheet metal, since it forms a rigid and strong frame. In order to protect the folded edges 24 of the frame sides from rust, a folded strip 27 of bronze or non-corrosive sheet metal is folded with inturned lower edges, so that it may be slipped onto the folded edges 24 and when in place aids in the correct formation of the groove 25, contracting the mouth of the groove and giving it a greater enlargement inwardly. The water runs down the wires of the screen fabric and rests upon the upper edge of the lower rail and drips down over the frame side, defacing the same, should even a small amount of rust or corrosion be permitted. The bronze strip 27 entirely overcomes this difficulty and is pref-

erably placed over the edges 24 around the entire screen frame with the exception that on the edge 24 of the lower cross rail 23 it is preferably broadened and given a bevel as shown at 28. This arrangement causes the water to flow out down the bevel and not stand on the horizontal upper edge of frame side 23, and also prevents careless people from racking the screen frame by catching hold of one corner of the frame to pull it down since the bevel gives no finger hold. The beveled strip 28 is formed with the inner lip or flange 29 which catches within the folded edges 24 and extends vertically alongside the screen fabric on the side 30, then extends on the downward bevel to the other side of the rail and is attached by soldering or brazing at 31, thereby bracing and strengthening said lower rail and performing the offices enumerated.

In order to correctly and easily lower or draw down the screen, a catch or draw 32 is inserted in the lower edge of the tubular frame side 23, which catch is constructed in the following manner: A sheet metal box 33 is provided which is open on its lower side. A wire catch 32 is flattened on its ends 34 and formed in the U-shape shown in Fig. 14. A notch 35 is provided in each side of the box 33 to receive the U-shaped catch 32, and the sides of the box 33 each side are indented for the flat ends 34 which are brazed or soldered in place, thereby holding strongly upon the box 33. This leaves the open side 36 of the box 33 so that a hook 37 may be inserted around catch 32 for drawing down the screen. The box 33 is inserted in the lower edge of the rail 23 with the opening 36 in said side so that the hook 37 may be inserted, thereby insuring the accurate drawing of the screen from its central portion.

The corners of the screen frame are made in the following manner: The frame sides are mitered with the exception of the sides of the inwardly bent groove 38 which extends the full length of the frame side and out against the inner side of the adjoining frame side. An inner brace 39 is constructed as follows: Two triangular sides of sheet metal are connected a portion of the length of the one side, the sheet metal being bent in line with the side of the triangle. The connecting portion 40 is of sufficient length to press the triangular sides of brace 39 firmly against the inner sides of the hollow tubular mitered ends. The connecting side 40 is cut away for a portion of the length in order to provide two free ends of the triangular sides of the brace which shall extend in each side of the projecting groove portion 38, as shown in Figs. 3 and 4, just sufficient space being allowed between the sides of the groove portion 38 and the outer sides of the tubular rail to receive said ends of the sheet

metal brace 39. In assembling the corner the sheet metal brace is inserted as shown in Figs. 3, 4 and 5, and the two frame sides shut over the same after which they are soldered into place thereby firmly closing the corner and bracing the same. In order to still further brace said corner and particularly to strengthen the folded flanges 24, an outer brace 42 is provided across the corner, which is preferably curved in its central portion to bend into the corner, the ends extending out in lugs which are insertible through the slots 43 in the flanges 24 and are then bent against the inner sides of the flanges 24. In order to so brace across the corner it is necessary that the inserted ends shall continue along the inner flange side toward the center of the frame and not toward the corner, since if bent backward toward the mitered corner the end of the brace would be in the line of the strain and not holding against said strain as when bent as shown in Fig. 17. The brace 42 is inserted when the corner is assembled with the inner brace 39 in place and before it is soldered, and the solder is preferably flowed into the space 44 between the brace 42 and the corner formed by the flanges 24, thereby forming a solid brace which greatly strengthens said corner. It is apparent that in a large screen frame it is necessary to construct the light tubular frame sides as rigidly as possible, or the frame will be a failure. This construction of the corner gives great rigidity and yet is simple and easy to assemble.

We claim as new:

1. In a screen, a frame consisting of tubular side and end pieces, a lengthwise flange on the inner edge of said frame forming a lengthwise recess on said tubular side and end pieces, a folded strip of sheet metal over the edge of said flange, screen wire, and means for holding said screen wire in said recess over said folded strip.

2. In a screen, a sheet metal frame consisting of side and end pieces having a lengthwise recess on the inner edges formed by the edges of the sheet metal, a folded strip of sheet metal fitting over said edges, screen wire, and means for holding said screen wire in said recess over said folded strip.

3. In a screen, a frame comprising tubular side pieces having a lengthwise recess on their inner edges, screen wire and means for holding said screen wire in said recess, a tubular folded strip of sheet metal fitting against said edge adjacent to said screen wire, said tubular strip having a beveled face extending away from the screen wire.

4. In a screen, a frame composed of sheet metal tubular sides, the corners of said frame mitered, an internal corner brace composed of connected sheet metal side

plates spaced to fit against the opposite inner sides of the mitered tubular ends of the frame sides and connect the same, said mitered ends attached to said internal corner
5 brace.

5. In a screen, a frame composed of tubular side and end pieces mitered at the corners, said tubular side pieces having lengthwise grooves inturned in the outer edge, an
10 internal brace consisting of triangular sheet metal plates connected for a portion of one side to provide triangular ends to fit within the tubular frame ends each side of the sheet metal sides of said lengthwise grooves,
15 said tubular frame sides soldered to said internal brace at said mitered joint.

6. In a screen, a frame consisting of tubular side and end pieces, a lengthwise flange on the inner edges of said side and end
20 pieces to form a lengthwise recess, said

flanges having slots therethrough a spaced distance from each corner, and a corner brace inserted through said slots and attached to said flanges to brace said corner.

7. In a screen, a frame consisting of tubular side and end pieces, screen wire attached
25 to said side and end pieces, a draw consisting of a box having oppositely placed notches therein, a U-shaped wire catch inserted in said notches and attached to the
30 sides of said box, said box inserted in the edge of said tubular frame sides, substantially as and for the purpose specified.

In testimony whereof we have affixed our signatures in the presence of two witnesses. 35

HENRY W. WATSON.

WILLIAM W. WATSON.

Witnesses:

H. U. HARRIS,

ARTHUR O. MORSE.