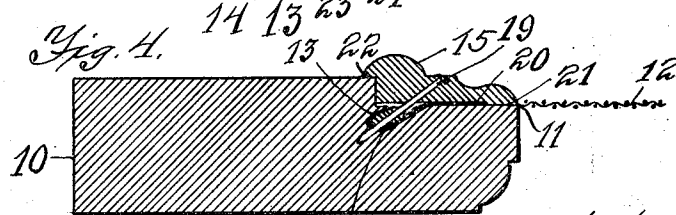
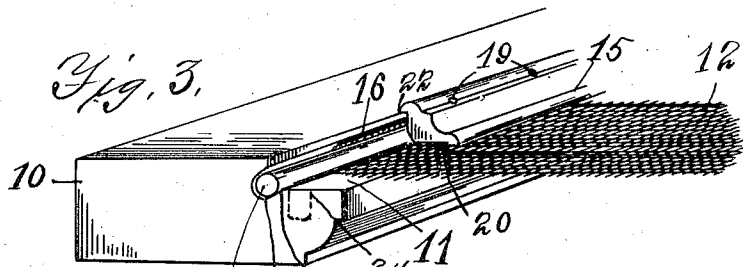
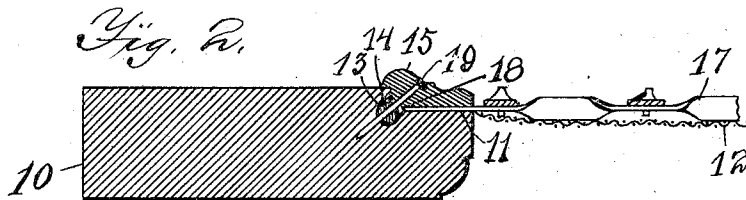
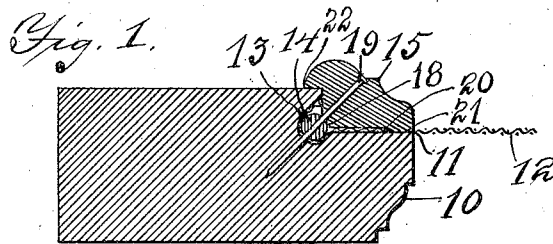


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SCREEN.
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956,240.

Patented Apr. 26, 1910.



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UNITED STATES PATENT OFFICE.

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SCREEN.

956,240.

Specification of Letters Patent. Patented Apr. 26, 1910.

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To all whom it may concern:

Be it known that we, HENRY W. WATSON and WILLIAM W. WATSON, citizens of the United States, and residents of Jamestown, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Screens, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description:

The invention relates to improvements in screen doors, window screens, etc., and the object of our improvement is to provide a more perfect means for attaching the screen fabric on to the supporting frame.

The attachment of the screen wire or fabric to the frame by means of a locking strip and groove has been well known for years. The difficulty in so attaching the screen fabric has been the liability to split the frame side through the attaching groove on account of the wedging strain of the locking strip and the pull of the screen fabric. Our invention entirely overcomes this difficulty by giving increased strength to the frame side and a sufficiently strong attachment for the fabric thereto to hold each strand yet so adjusts the strain of the attachment of the screen fabric to the strength of the frame side that the fabric will give way at said point of attachment before rupturing either the frame side or the screen fabric. The screen fabric can then be re-attached, but when the supporting frame is ruptured the entire screen is ruined.

In the drawings, Figure 1 is a sectional view of a screen frame showing the screen fabric attached to the frame in our improved manner with the outwardly extending groove in the rear wall of the recess. Fig. 2 is a sectional view of the screen frame showing the fabric attached to the frame with the attaching groove partly in each of the rear and bottom walls of the recess, and also our method of holding a grille alongside of the fabric. Fig. 3 is a perspective view of the screen frame showing the groove and the lock strip therein holding the screen fabric in place and the molding covering the same broken away so as to show the arrangement of the parts. Fig. 4 is a sectional view of a screen frame showing our improved construction in which the outwardly extending groove is entirely in the bottom wall of the recess.

Similar numerals refer to corresponding parts in the several views.

The numeral 10 indicates the screen frame which is preferably made of wood and has the lengthwise corner groove or rabbeted recess 11 on its inner edge for the attachment of the fabric or screen wire 12 therein. Corner groove 11 is preferably made with a flat or unbroken surface on its lower wall.

The attachment of the fabric is accomplished in the following manner: At or near the inner angle of the recess 11 a lengthwise groove 13 is provided which extends from said recess at an outward angle in comparison with the bottom and rear walls of said recess or away from the inner edge of the frame side. When partly in each of these walls and extending out from the corner, as shown in Fig. 2, the sides of the groove 13 will be at an obtuse angle from the adjacent recess wall. The purpose of this outward angle is to leave the frame side 10 as strong as possible and also particularly in narrow recesses to remove it as far as possible from the inner edge of the screen frame, in order to render the frame side as strong as possible against splitting strain. The inner edge 16 of the fabric 12 is attached to the frame sides by means of a lock strip 14 which fits tightly within groove 13, being driven into the groove and thereby meshing on to the fabric and pressing the same into the sides of the groove so as to hold each strand of the fabric firmly in place. The recess 11 is filled by a cover strip or molding 15 which is principally for ornamentation but may aid to some extent in holding the fabric. The fabric would be held firmly in place by the lock strip 14 without the aid of cover strip 15. The inner corner 18 of the cover strip 15 preferably presses against the lock strip 14, as shown in Fig. 1 though it may be entirely separated from said lock strip, as shown in Figs. 2 and 4. The outward or obtuse angle and placing of the groove 13 and lock strip 14 allow of the holding nails 19 for cover strip 15, being driven at an outward angle through the lock strip and into the main outer portion of the frame side thereby allowing of the use of a much longer nail. The passage of the nail through the lock strip 14 also absolutely prevents its turning in the groove from the pull of the fabric. It is apparent that this outward angle of the groove 13

gives a large increase in the amount of the frame side beneath the same or between said groove and the opposite side of the frame, even in the thin stock used for light screens, as shown in Fig. 2. It is also at such a distance from the inner edge of the screen side as to make it practically impossible to split the frame side by either the wedging action of the lock strip 14 into the groove 13, or the pull of the fabric on the frame, or the driving of the nails into the frame. This attaching groove has heretofore been made in the bottom of the recess with perpendicular sides, as shown at 24 in dotted line in Fig. 3, and it is apparent that such a construction greatly weakens the frame side, rendering it liable to split from the wedging strain of the lock strip or the pull of the wire. It is apparent also that it would be practically impossible to drive the nails through the lock strip in this former position without endangering the splitting of the frame side. The outward angle of the attaching groove entirely overcomes all these faults and allows the nails to be driven through the lock strip and into the main portion of the frame side.

Heretofore the method of attachment of the screen fabric, which is usually made of wire, was much stronger than the frame side itself or the fabric. Our purpose is to so balance the method of attachment of the screen fabric to the frame side that an extra strain upon the fabric will be more liable to detach the fabric from the frame than to split or break the frame or tear the fabric. Should the fabric be detached it can be reattached but when the frame side is split the screen is ruined. This increased liability of detachment for the screen fabric is attained in our improved construction by means of the obtuse angle 23 over which the screen fabric 12 bends as it passes down into groove 13 and around strip 14, as compared with the right angle 24 of the old style perpendicular groove, as shown in Fig. 3. It is obvious that the old style perpendicular groove with its right angle sides held the screen fabric absolutely so that in case of strain the frame side itself had to give way or rupture the fabric. The obtuse angular side 23 of groove 13 holds the screen fabric 12 sufficiently strong for all practical screen

purposes and it is apparent that a heavy blow upon the screen cloth will cause the screen fabric to pull over the obtuse angle and detach the edge of the screen fabric from the frame side 10. This detached edge of the screen fabric can afterward be easily reattached without great detriment to the screen.

The lower side of the strip 15 is preferably cut away as shown at 20, except a short distance from the inner edge thereof wherein the cover strip 15 is in perfect contact with the screen wire and frame side thereby holding the screen fabric firmly in place. The cutting of the rear portion 20 of the lower side of the cover strip also insures the perfect fitting of the cover strip within the recess 11, since the contact is only made against the frame side at the point 21 and at the rear angle 22. Thus warped or unevenly cut cover strips may be drawn perfectly into contact, insuring the perfect holding of the screen wire.

When it is desired to insert a grille 17 the lower side of the tie strip 15 is preferably cut away instead of the frame side since it is desirable not to weaken the frame side even by the necessary amount for inserting the grille.

We claim as new:—

A screen for doors, windows and the like, comprising a frame having a lengthwise rabbet with its walls at right angles on its inner edge, said frame being further formed with a lengthwise groove at the corner of the rabbet, which groove has its sides extending at an outward angle to the rabbeted recess, screen fabric disposed to lie in said rabbeted recess and said lengthwise groove, a lock strip engaging the screen fabric and received in said lengthwise groove, and a cover strip conformably received in said rabbeted recess and having its inner corner shaped to engage said lock strip to hold same in said lengthwise groove.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HENRY W. WATSON.
WILLIAM W. WATSON.

Witnesses:

I. A. ELLSWORTH,
A. W. KETTLE.