

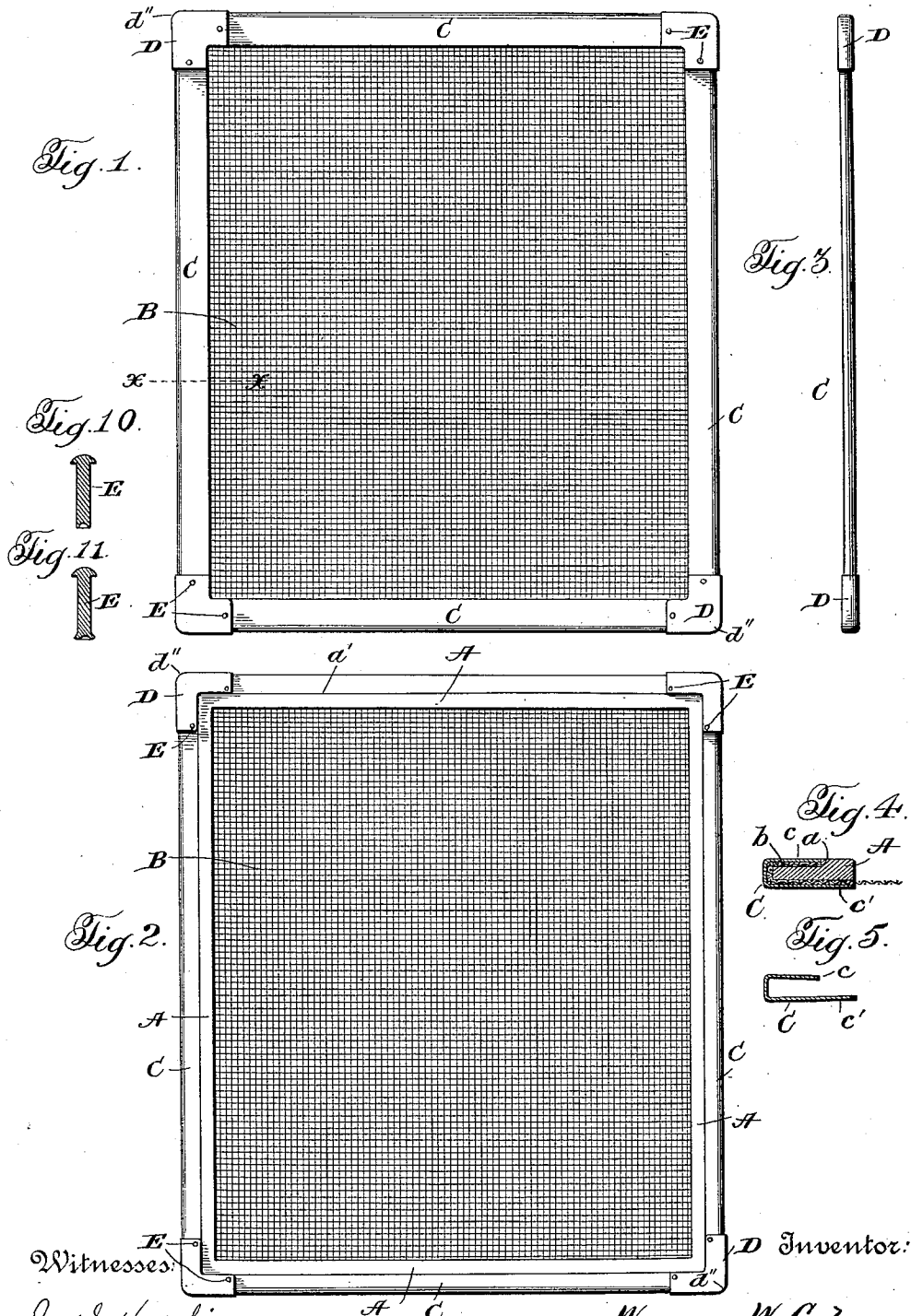
W. W. COLE.
METAL FLY SCREEN.

APPLICATION FILED JAN. 10, 1910.

1,017,958.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.



James Hutchinson:
Chas. J. Thomas.

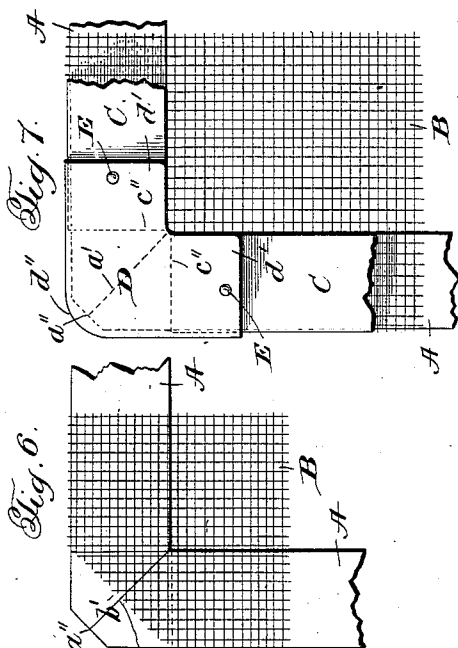
Warren W. Cole,
By *Thos. W. McCord* Attorneys:

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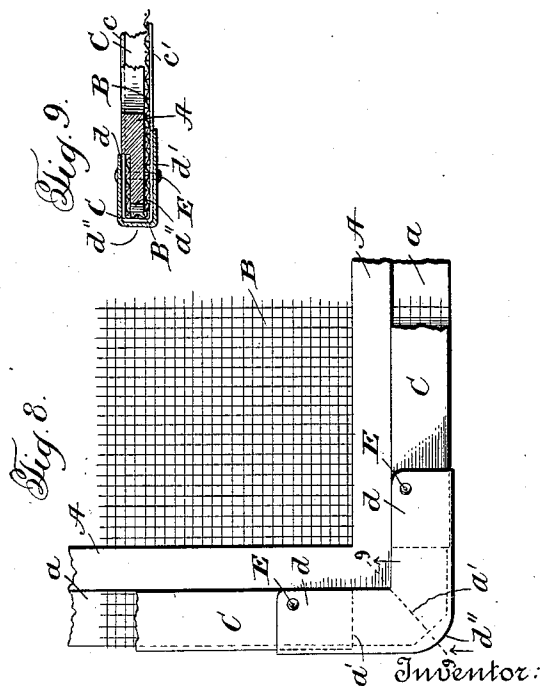
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2 SHEETS—SHEET 2.



Witnesses:

Jas. Hutchinson.
Chas. Thomas.



Inventor:

Warren W. Cole,
By Macmillan & Co. Attorneys.

UNITED STATES PATENT OFFICE.

WARREN W. COLE, OF PORTLAND, MAINE, ASSIGNOR TO THE E. T. BURROWES COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

METAL FLY-SCREEN.

1,017,958.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed January 10, 1910. Serial No. 537,355.

To all whom it may concern:

Be it known that I, WARREN W. COLE, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Metal Fly-Screens, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to fly screens and has for its primary object the provision of a screen of said type of substantially all-metal construction, and one which will be comparatively inexpensive while at the same time rigid and durable.

A characteristic feature of the invention is the employment of instrumentalities enabling the screen fabric to be removed or replaced at will, thus preserving the frame and securing means cooperating therewith for repeated use.

Another feature of merit residing in the present improvements consists of the formation of the screen in a thin compact manner without objectionable protuberances or parts, with practically no raw or sharp edges, with a minimum number of parts and these rigidly associated, and with the entire device presenting a neat, finished and refined appearance.

It has heretofore been attempted to provide an all-metal screen, but the same has been found objectionable, in view of the fact that an excessive number of parts rendered the supporting frame flexible or frail, subjecting the same to warping or twisting action when the screen fabric was stretched thereover; or the screen fabric has been soldered with its raw edges exposed on the face of a metallic frame; or the detachable features of the screen have been partially of wooden construction, or so complicated as to make the manufacture of the screen somewhat expensive, and the detachment and renewal of the screen fabric difficult. By my present improvements, all of the foregoing objections have been satisfactorily overcome.

An incidental advantage of my screen provided with continuous flat surfaces on its opposite faces enables the same to be removed from the window casing and conveniently stored in flat condition and correspondingly small space. Such construction also enables the use of the screen in con-

nection with simple U-shaped metallic guide members attached to a window frame.

All of the foregoing features of the invention, together with other details in the construction and arrangement of parts will be apparent from the specific description hereinafter contained, when read in connection with the accompanying drawings forming part hereof and wherein a convenient embodiment of the invention is illustrated.

In the drawings, Figure 1 is an elevation of a screen made in keeping with the present improvements, Fig. 2 is an elevation of the reverse side of the same screen, Fig. 3 is an edge view, Fig. 4 is a cross section on the line $x-x$ of Fig. 1, Fig. 5 is a similar view of the molding removed, Fig. 6 is a detail of one of the corners of the frame of Fig. 1 showing the manner of applying the screen fabric thereto, Fig. 7 is a similar view showing the molding members and the corner piece applied, Fig. 8 is a rear view of the last mentioned figure, Fig. 9 is a sectional view through one of the corners of the completed screen, Figs. 10 and 11 are details of one of the fastening rivets before and after application of the same in place.

Referring more specifically to the drawings, wherein like reference characters designate corresponding parts in the several views, A represents the main frame members formed of rigid metal bars in general respects rectangular in cross section each of said bars being provided with a rabbeted inner edge a for a purpose as will hereinafter appear. The meeting edges of the frame members A are mitered as at a' and electrically welded together to constitute a strong practically unyielding, rigid metallic body. The extreme corners of this frame body are cut away as at a'' to facilitate the application of corner pieces to be later referred to.

B designates the wire screen fabric which is stretched over the continuously flat surface of the frame A and around the outer edge of the same, so that the marginal portions b of said fabric will be seated in the rabbeted portions a of the frame. The screen fabric B is also cut away at points adjoining the corners of the frame, as indicated at b' to obviate any overlapping or undue folding of the screen fabric at said corners which would otherwise be required

in bending the edges of the fabric around the frame.

To fasten the bent over marginal portions of the screen fabric B to the frame members A, I provide spring molding members C, the same being formed conveniently of brass or steel, preferably corresponding to the metallic construction of the frame members A. The molding members are of a length slightly shorter than the width of the frame to which it is applied and the members are separately formed and secured independently of each other to obviate overlapping at the corners of the frame. The formation and operation of the molding is shown quite clearly in Figs. 4 and 5. An inspection of the latter figure shows the molding as formed of the spring metal bent upon itself to provide a narrow flange *c* and a wide flange *c'*, the same converging toward each other to constitute a clamp when applied to the frame member A, as shown in the first mentioned figure. The neat and finished appearance incident to the application of the molding to the frame member is apparent, it being noted that the relatively wide flange *c'* of the molding is of approximately the same width as the frame member A, while the relatively narrow flange *c* is of a width and size, in conjunction with the folded over margin of the screen fabric B, to fill the rabbeted portion *a* of the frame member. Thus the molding imparts a neat finished appearance to the screen, makes both surfaces of the frame members flat and flush throughout, and securely clamps the screen fabric to the frame. The moldings, being somewhat shorter than the length of the frame members, leave open spaces between the ends *c''* thereof, through which the corners of the frame A project.

To secure the parts in fixed relation, against accidental displacement when in ordinary use, angular corner pieces D are provided, the same being of approximately right angle formation with a narrow flange *d* and wide flange *d'* converging toward each other to constitute a spring metal clamp similar to the molding C. The arms of the corner pieces are sufficient in length to overlie the ends *c''* of the moldings and when applied as clearly seen in the drawings, the parts are fastened in place through the medium of rivets E passing through the flanges of the corner pieces, the flanges of the moldings therewithin, the folded over edges of the screen fabric, and the side members A. The cut away corners *a''* of the frame or body enable the provision of the corner pieces D with rounded outer edges, as indicated at *d''*.

From the foregoing, it will be appreciated that applicant's screen is of a strong durable character, possesses a minimum number of parts, the fastening devices are extremely

simple comprising only the rivets E, and the completed article in its flat neat condition, devoid of protuberances and raw edges, presents a pleasing and refined appearance. When it is desired to renew the screen fabric B, it is simply necessary to insert a cutting implement beneath the flange of the corner piece D, when the rivet may be severed and easily removed.

While I have herein disclosed one specific embodiment of the present invention, it will be apparent to those skilled in the art that the invention is capable of many other embodiments without departing from the spirit thereof, for example, in lieu of the rivets E, a possibly less permanent retaining device might be employed, as, for instance, a screw; again, while it is preferable to employ steel frames, in other instances where it is desired to utilize brass or bronze, the edges of which cannot be electrically welded, the corners may be otherwise secured as found practical and expedient, the remaining structure in general respects remaining the same as hereinbefore suggested.

A feature which I regard of considerable merit in my construction of screen is the fact that after the original formation of the parts of the construction, no further fashioning or bending of the parts is required, the assembling and securing together of the members being consequent to the said initial formation and in keeping with my preconceived plan that they shall interfit, and so with great facility or the exercise of but ordinary skill on the part of the person assembling the same. This characteristic is also inherent in the re-screening of the frame excepting, of course, the cutting away of the rivets, all other parts remaining in their original condition and form.

I will not herein specially claim the screen guides in view of the fact that the same more properly constitute subject matter for a divisional application.

I claim:

1. A screen of the character described, comprising a frame, screen fabric folded over said frame, and molding embracing the screen fabric and the frame to constitute flat opposite faces, the frame having a rabbeted edge in which the margin of the screen is seated and the molding having an outer flange fitting said rabbet over said margin and an opposite wide flange substantially co-extensive with the width of the frame.

2. A screen of the character described, comprising a frame, screen fabric folded over said frame, and molding embracing the screen fabric and the frame to constitute flat opposite faces, the frame having a rabbeted edge in which the margin of the screen is seated, the molding having a narrow outer flange fitting said rabbet over the margin and an opposite wide flange substantially co-

extensive with the width of the frame, and the molding being formed of spring metal bent upon itself with its opposite flanges converging to constitute a spring clamp to bind the wire fabric to the frame.

3. A screen of the character described comprising a frame having flat side members, screen fabric folded over said flat side members, a molding of metal bent upon itself to provide flat flanges adapted to engage the side members with the screen fabric therebetween, one surface of the side members being rabbeted to accommodate the margin of the screen fabric and one of the flanges of the molding being correspondingly narrow to fit said rabbeted portion.

4. A screen of the character described comprising a frame having flat side members, screen fabric folded over said flat side members, and a molding of metal bent upon itself to provide flat flanges adapted to engage the side members with the screen fabric therebetween, the molding being formed of spring metal with the flanges converging to constitute a spring clamp for the screen fabric, one surface of the side members being rabbeted to accommodate the margin of the screen fabric and one of the flanges of the molding being correspondingly narrow to fit said rabbeted portion.

5. A screen of the character described comprising a frame having flat side members, screen fabric folded over said flat side members, a molding of metal bent upon itself to provide flat flanges adapted to engage the side members with the screen fabric therebetween, one surface of the side members being rabbeted to accommodate the margin of the screen fabric and one of the flanges of the molding being correspondingly narrow to fit said rabbeted portion, the opposite flange being wide to be coextensive with the width of the side members.

6. A screen of the character described comprising a frame having flat side members, screen fabric folded over said flat side members, and a molding of metal bent upon itself to provide flat flanges adapted to engage the side members with the screen fabric therebetween, the molding being formed of spring metal with the flanges converging to constitute a spring clamp for the screen fabric, one surface of the side members being rabbeted to accommodate the margin of the screen fabric and one of the flanges of the molding being correspondingly narrow to fit said rabbeted portion, the opposite

flange being wide to be coextensive with the width of the side members.

7. A screen of the character described comprising a frame having a rabbeted surface, a wire fabric folded over said frame with its margin in said rabbet, moldings engaging the frame to embrace the folded portion of the screen fabric, said moldings having a relatively narrow flange fitting the rabbeted portion of the frame, and corner pieces embracing adjacent ends of the moldings and secured thereto.

8. A screen of the character described comprising a frame having a rabbeted surface, a wire fabric folded over said frame with its margin in said rabbet, moldings engaging the frame to embrace the folded portion of the screen fabric, said moldings having a relatively narrow flange fitting the rabbeted portion of the frame, and the opposite flange being substantially co-extensive in width with the width of the frame, and corner pieces embracing adjacent ends of the moldings and secured thereto.

9. A screen of the character described comprising a frame having a rabbeted surface, a wire fabric folded over said frame with its margin in said rabbet, means fitting within the rabbeted portion of the frame and overlying the portions of the screen fabric therein, said means being provided with a portion overlying the outer edges of the frame and the fabric folded thereover.

10. A screen of the character described comprising a frame, the side bars of which are reduced in thickness at their outer edges, a wire fabric having its edge portions folded about the reduced outer edges of the side bars of the frame, and molding embracing the folded edge portions of the screen and the side bars of the frame.

11. A screen of the character described comprising a frame, the side bars of which are reduced in thickness at their outer edges, a wire fabric having its edge portions folded about the reduced outer edges of the side bars of the frame, molding embracing the folded edge portions of the screen, and the side bars of the frame, and corner pieces overlying the molding and secured thereto.

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

WARREN W. COLE.

Witnesses:

LEONARD G. WEYMOUTH,
WM. H. ROOKE.