A. C. DAVIS.

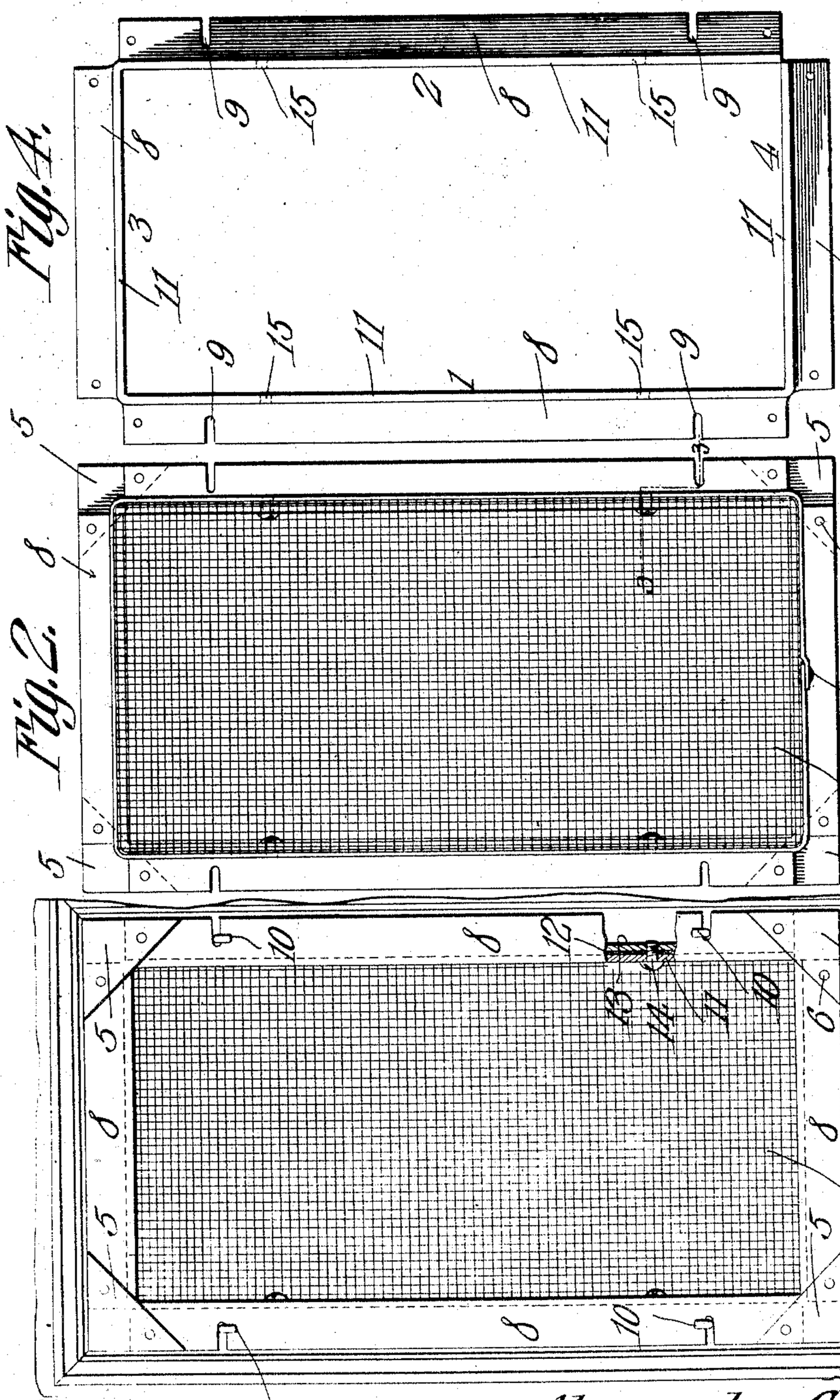
WINDOW AND DOOR SCREEN.

APPLICATION FILED OCT. 12, 1908.

928,366.

Patented July 20, 1909.

3 SHEETS—SHEET 1.



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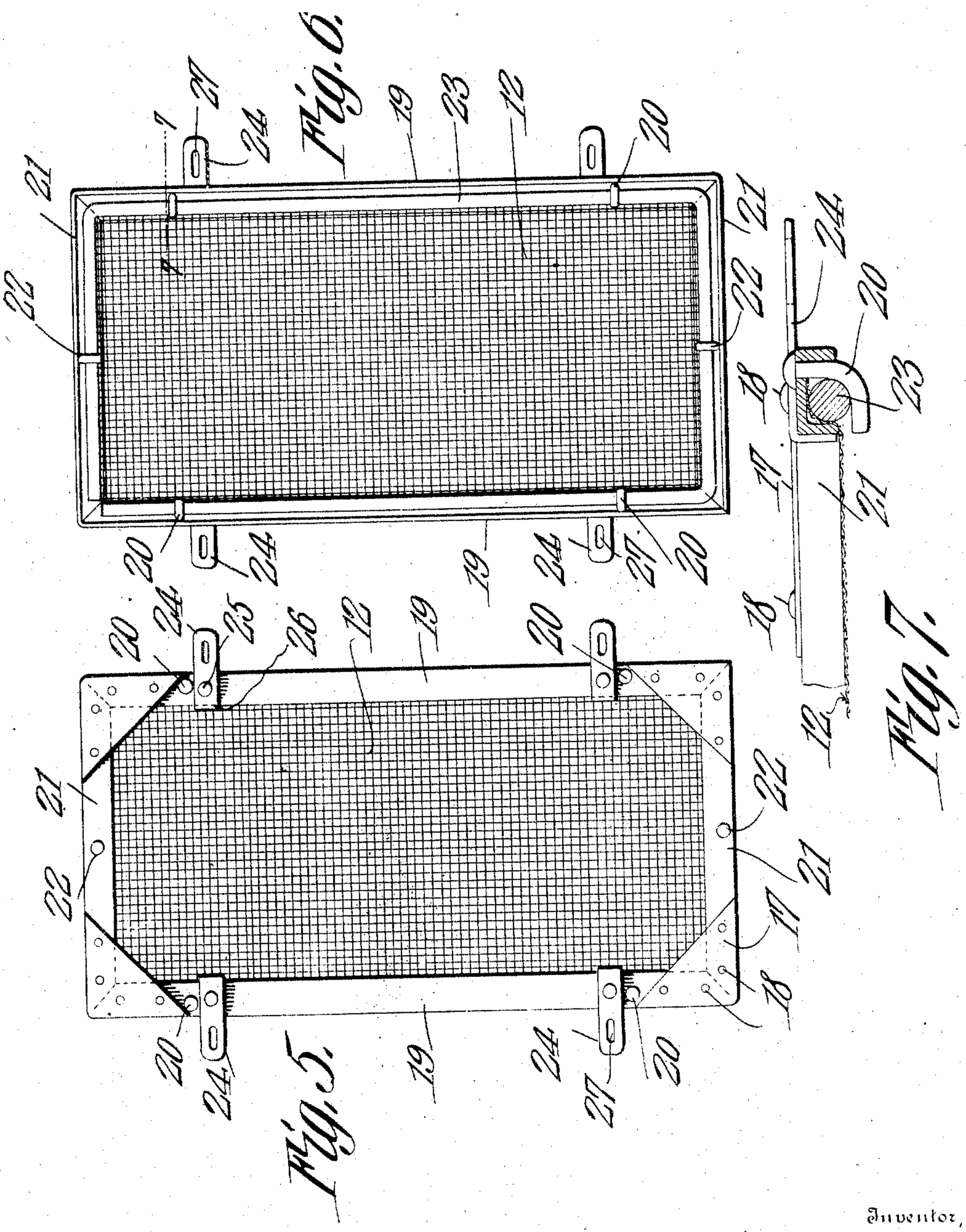

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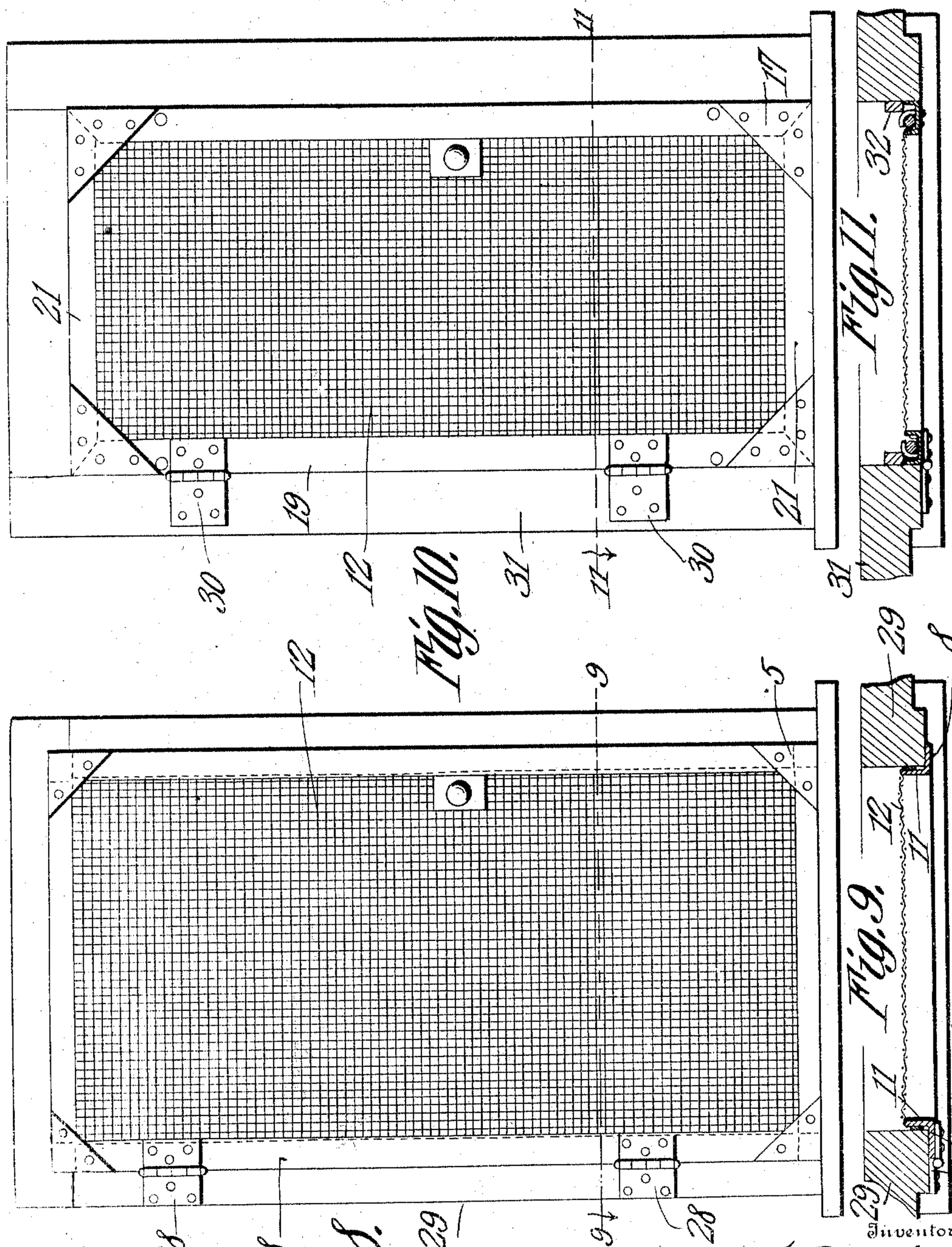

Fig. 7.

Fig. 9.

Fig. 8.

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UNITED STATES PATENT OFFICE.

ALEXANDER C. DAVIS, OF BATTLE GROUND, INDIANA.

WINDOW AND DOOR SCREEN.

No. 928,366. Specification of Letters Patent. Patented July 20, 1909.

Application filed October 12, 1908. Serial No. 457,362.

To all whom it may concern:

Be it known that I, ALEXANDER C. DAVIS, a citizen of the United States, residing at Battle Ground, in the county of Tippecanoe and State of Indiana, have invented a new and useful Window and Door Screen, of which the following is a specification.

This invention relates to window and door screens.

The object of the invention is to provide a screen of the above character in which the wire fabric or screening surface shall be assembled with the frame in such manner as, that when it becomes useless from rust or injury, it may readily be detached from the frame and substituted by a new screen surface, without in any way injuring or marring the frame. Furthermore, to provide a screen in which the frame shall be practically non-destructible, so that a house once fitted with the screens will never have to replace the frames, but merely supply new screen fabric as required.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a window or door screen, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts:— Figure 1 is a view in elevation, partly in section, showing a window screen positioned in a window frame. Fig. 2 is a similar view of the screen taken from the opposite side to that shown in Fig. 1. Fig. 3 is a horizontal sectional view, on an enlarged scale, taken on the line 3—3, Fig. 2. Fig. 4 is a view in rear elevation of the screen frame. Fig. 5 is a view in elevation of a slightly modified form of screen. Fig. 6 is a similar view taken from the opposite side of the screen to that shown in Fig. 5. Fig. 7 is a horizontal sectional view, on an enlarged scale, taken on the line 7—7, Fig. 6. Fig. 8 is a view in elevation displaying the form of screen exhibited in Fig. 1 applied to a door. Fig. 9 is a horizontal sectional view taken on the line 9—9, Fig. 8, and looking in the direction of the arrow thereon. Fig. 10 is a view similar to Fig. 8 showing the form of screen displayed in Fig. 5 applied to a door. Fig. 11 is a horizontal sectional view taken on the line 11—11, Fig. 10 and looking in the direction of the arrow thereon.

Referring to the drawings and to Figs. 1, 2, 3 and 4 thereof, the invention is shown as embodied in a window screen, and as its application to a door will be readily understood, detailed illustration thereof is omitted.

The screen embodies a frame comprising side members 1 and 2 and end members 3 and 4, the four members being constructed from a single piece of metal, approximately L-shaped in cross section, and incised at three points in its length to permit the strip of metal to be bent to rectangular form, as shown in Fig. 4. Preferably, there will be but three incisions, thus leaving one corner of the frame open while the other three corners are solid, but if preferred four incisions may be employed and this will throw the open ends of one of the frame members at any point intermediate of its length. In order to secure a continuous perimeter to the frame, and also to reinforce the same at the corners, triangular cleats 5 are employed, one being disposed at each corner of the frame and being secured to the members thereof by rivets 6. As will be seen by reference to Fig. 2, the outer edges of the cleats form continuations of the like parts of the frame members, so that the frame will have the appearance of an ordinary screen frame, such as are in common use.

The flanges 8 of the frame are designed to rest against the lintel stiles, and base rail of a window frame, and the two side flanges are provided with recesses 9, adjacent to their terminals, to receive turn buttons 10 carried by the stiles of the window frame, and by which the screen frame is held detachably assembled therewith.

The flanges 11 of the frame, which are designed to fit within the window frame, have secured to them the wire netting 12, which may be of any preferred character, and is held assembled with the flanges by a clamp or band 13, between which and the outer walls of the flanges 11 the netting is firmly clamped. The clamp or band is held assembled with the flanges 11 by screws or bolts 14, of which any desired number may be employed, two on each side in this instance being shown as serving to hold the clamp in position. The screws 14 pass through unthreaded openings 15 in the flanges 11 and engage threaded openings in the band. The band is constructed of a length of metal and is designed to fit tightly around the flanges 11, so that when forced

into position, as shown in Fig. 3, the netting will not only be firmly held positioned but will be stretched and be prevented from bagging. As will be obvious, screws may be passed through the upper and lower flanges 11, but ordinarily this will not be necessary. The band is endless, and the two ends thereof are shown in Fig. 2 as held assembled by rivets 16, but if preferred, the ends may be welded or brazed together without departing from the scope of the invention.

It will be observed by reference to Fig. 3, that the band is relatively thin and lies within the plane of the outer edges of the flanges 8, and will therefore offer no obstruction to the proper positioning of the frame within a window frame.

In the form of invention shown in Figs. 5, 6, and 7, the frame is constructed of channeled iron in one piece, and has metal removed at three points in its length on its inner edge to permit it to be bent to rectangular form as shown. The corners of the frame are reinforced by clips 17 that are held in position by rivets 18. Each of the side frame members 19 has connected with it for swinging movement a pair of approximately L-shaped turn buttons 20, while each end frame member 21 has connected with it a single turn button 22 constructed and operating in the same manner as those on the side frame members. These turn buttons are designed to hold a clamp 23 within the channel of the frame members, the clamp, in this instance, being shown as constructed from a round bar of metal and serves effectively to stretch the netting 12 and also to secure it in a positive manner to the frame members.

The frame is designed to fit within a window frame in the same manner as the form of the invention shown in Figs. 1–4, but being devoid of the flanges to bear against the window frame, keepers 24 are provided, two in this instance being shown as held assembled with each of the side frame members by rivets 25, the inner ends of each of the keepers being bent to lie against the inner face of the side frame members, as indicated at 26 in Fig. 5. Each of these keepers is provided with a longitudinal slot 27 to receive a screw, nail, or other equivalent form of attaching device for securing the screen frame to the window frame.

From the foregoing description, it will be seen that when the wire netting on either form of screen becomes worthless, it may readily be replaced, leaving the frame intact, and further, that the re-netting of a frame will require no special implement for the purpose, as it will only be necessary to remove the screws shown in Figs. 1, 2, and 3, or swing the turn buttons 20 shown in Figs. 5–7, in order to release the netting clamps 13 or 23.

As shown in Figs. 8 and 9, the screen shown in Fig. 1 can readily be applied to a door by riveting hinges 28 to one of the flanges 8, and screwing these hinges to one of the side posts 29 of a door frame. As will be seen by reference to Fig. 9, the flanges 8 will bear against the outer sides of the posts, while the flanges 11 will project into the door frame, the flange opposite that carrying the hinges operating as a stop to limit the inward closing of the door.

As shown in Fig. 10, the screen shown in Fig. 5 may be applied to a door by riveting hinges 30 to one of the side frame members 19, the hinges being secured by screws or the like to the door post 31. Owing to the construction of the frame in this last embodiment of invention, the screen frame will fit within the door frame, and in order to limit its inward movement, a stop 32 will be provided, which is secured in the usual manner to one of the door posts, and will thus secure the object sought.

I claim:—

1. An article of the class described comprising a frame constructed from a length of metal having angularly disposed portions, and having one of said portions incised up to the other portion and said other portion being bent to right angular form at the incisions, a netting disposed against the bent portion of the frame, means for clamping the netting thereagainst, and reinforcing strips secured to the incised portion at the corners of the frame.

2. An article of the class described comprising a frame constructed from a length of metal, L-shaped in cross section and having one of its flanges incised and its other flange bent to rectangular form at the incisions, reinforcing cleats secured to the incised flange at the corners of the frame, a netting disposed against the other flange, a clamp inclosing the latter flange and binding the screen thereagainst, and fastening means passing through the clamp, last named flange, and netting.

3. An article of the class described comprising a frame constructed from a length of metal, substantially L-shaped in cross section and having one of its flanges incised and its other flange bent to rectangular form, reinforcing cleats secured to the incised flange at the corners of the frame, a netting disposed against the other flange, a clamp inclosing the latter flange and binding the netting thereagainst and lying within the planes of the edges of the frame, and means for securing the clamp to the last named flange.

4. The combination with a casing, of a screen comprising a frame approximately L-shaped in cross section and having one flange disposed within and the other flange arranged against the casing, a netting, a clamp

inclosing the first named flange and binding the netting thereagainst, means for holding the clamp and flange assembled, and means for securing the frame to the casing.

5. The combination with a window casing, of a screen comprising a frame approximately L-shaped in cross section and having one flange disposed within and the other flange arranged against the casing, a netting, a clamp inclosing the first named flange and binding the netting thereagainst, means for holding the clamp and flange assembled, and means for detachably securing the frame to the window casing.

6. An article of the class described comprising a frame constructed from a length of metal having angularly disposed portions, and incised up to one of said portions, the latter portion being bent to right angular form at the incisions, a netting disposed against one of the portions of the frame, and means for clamping the netting thereagainst.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALEXANDER C. DAVIS.

Witnesses:

J. B. SHAW,

C. A. BURNETT.