

A. GANZEL.
SCREEN.

APPLICATION FILED JAN. 4, 1907.

910,281.

Patented Jan. 19, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

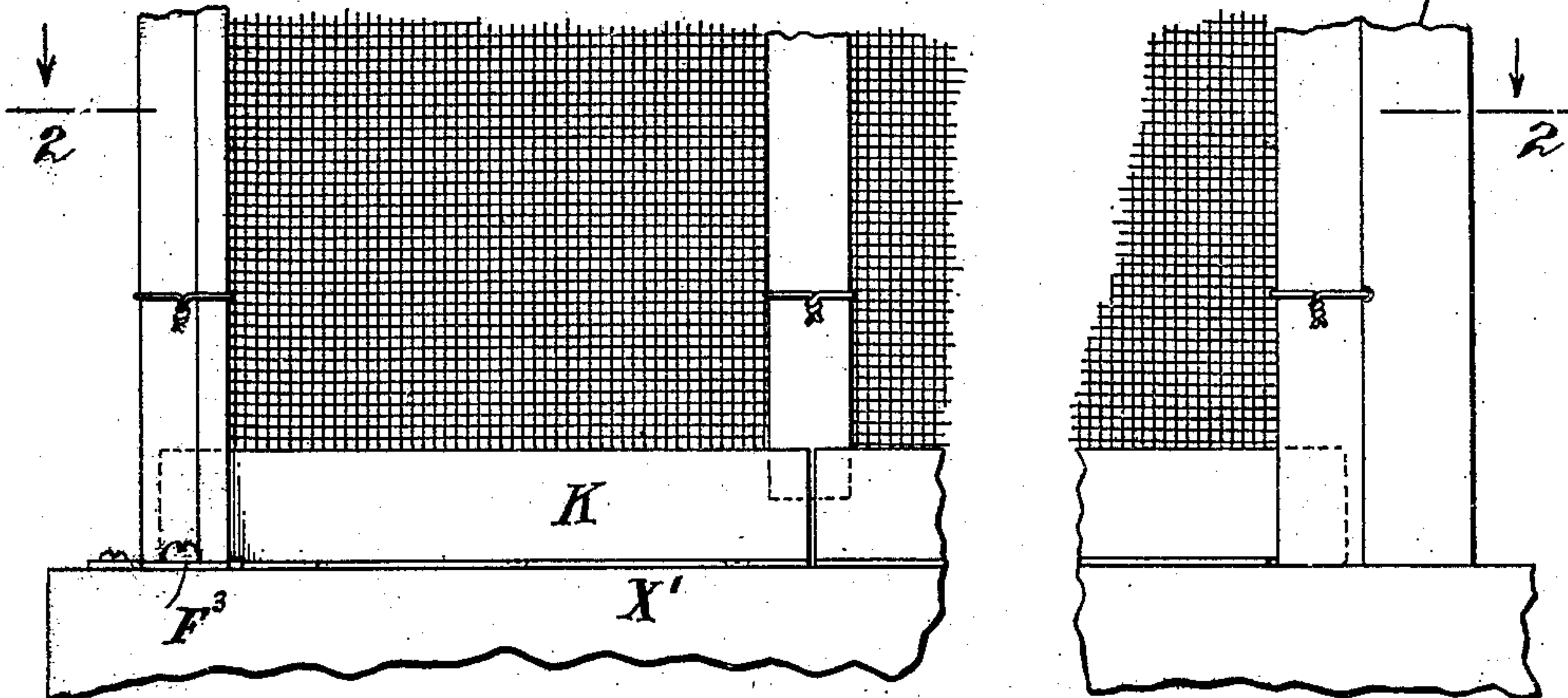
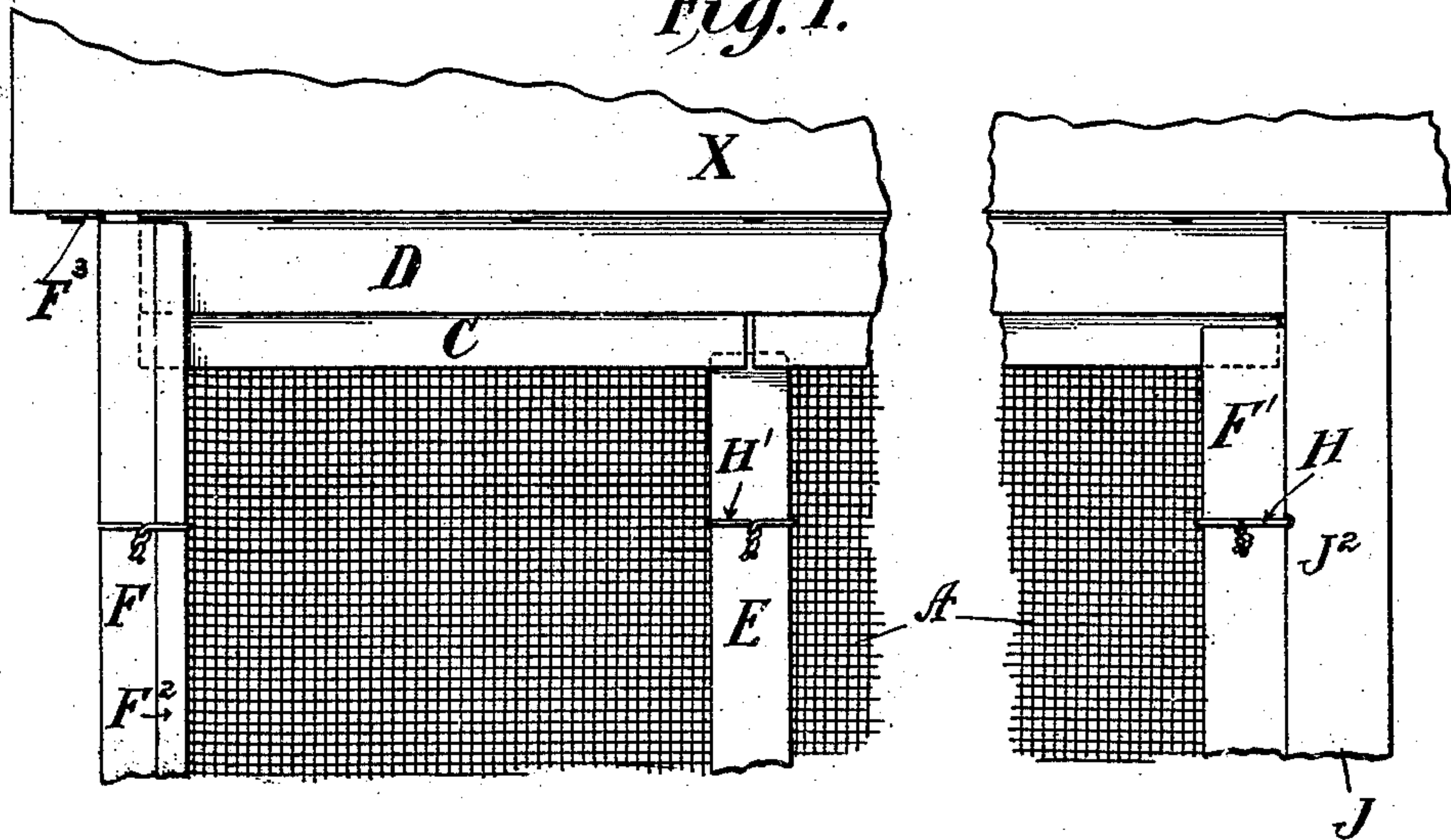
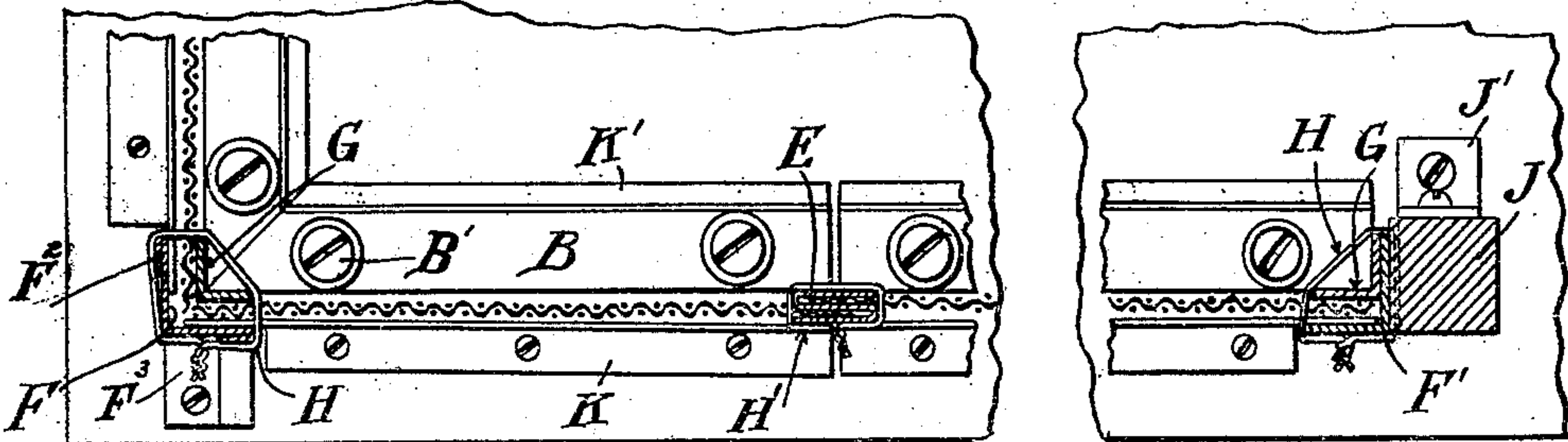


Fig. 2.



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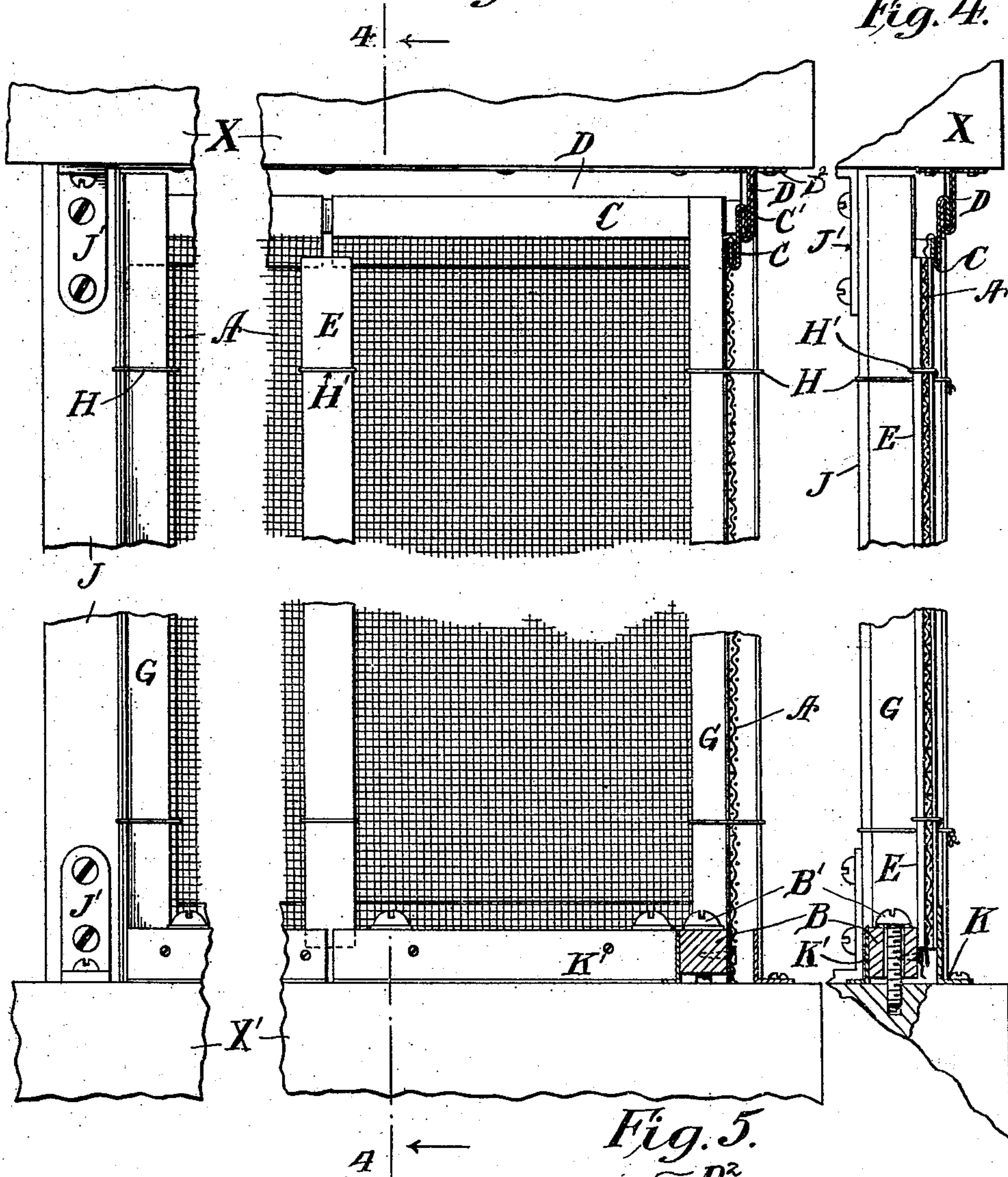
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2 SHEETS—SHEET 2.

Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

ADOLPH GANZEL, OF WESTFIELD, NEW JERSEY.

SCREEN.

No. 910,281.

Specification of Letters Patent.

Patented Jan. 19, 1909.

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To all whom it may concern:

Be it known that I, ADOLPH GANZEL, a citizen of the United States, and a resident of Westfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Screens, of which the following is a specification.

This invention relates to improvements in screens for verandas and the like, and its objects are, among others, to provide a simple, strong and durable construction which may be manufactured at a small cost, quickly assembled and placed in position and detached and packed for storage or shipment.

It consists of the construction, combination and arrangement of parts hereinafter described and claimed and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is an outside view of a screen and detachable frame embodying the improvements; Fig. 2, is a horizontal section of the same on the line 2—2 of Fig. 1; Fig. 3 is an inside view of the same; Fig. 4 is a vertical section on the line 4—4 of Fig. 3; Fig. 5 is a vertical section showing a modified form of certain parts.

It will be understood that the height and width of the screen is not shown in the drawings for the reason that same is unimportant, and it will also be understood that in the actual construction the proportion of the screen area to the size of the frame is usually much greater than is indicated by the drawings.

The wire netting A forming the screen proper is secured at its lower edge to a rail B. in any desired manner and the rail in turn is adjustably secured to the floor X' by means of suitable screw bolts B' passing therethrough and threaded in holes in said floor. The upper edge of the screen A is secured to the strip or hook C by being held in the folded lower portion thereof. In Figs. 3 and 4 the lower edge of the strip is turned up or folded once only and the upper edge of the screen is held between the turned up portion and the shank or body of the strip, while in Fig. 5 a better method of securing the screen is shown. This is done by folding the screen and lower part C² of the strip substantially as shown in Figs. 3 and 4 and then turning or folding the screen and strip edges again to form a double fold. The upper edge of the strip C is turned over on the opposite side of the shank or body

portion C² to form a hook C' which extends along its upper edge and is adapted to engage the hook D' formed by turning up the lower edge of the hanger strip D. This hanger strip D is formed of a sheet or strip of metal folded or doubled and having its upper edges turned outwardly to form flanges D² by which it is secured to the ceiling X or other adjacent portion of the building. In Fig. 5 I have shown a modified form of the hanger in which the thicknesses of the metal sheet are spread apart so as to leave a V-shaped space between them and give the hanger additional strength to resist lateral strain.

The hooks C' and D' may be quickly engaged and disengaged when the screen is slack, but are inseparable when the screen is taut. The screen may be slacked or drawn taut by means of the screw bolts B' and they must be manipulated in order to permit the upper edge of the screen to be detached from the hanger. In placing the screen in position the screen proper is first hung upon the hanger D and then secured at its lower edge to the floor or other adjacent part of the building by means of the screw bolts. In order to allow sufficient margin for taking up the slack of the screen the rail B' should not be in contact with the floor when the screen is first hung so that the screen may be stretched by pressing the same down toward the floor. In order to close the space between the rail B and the floor I have provided angle strips K and K', the former preferably secured to the floor on the outside of the strip and the latter to the strip on the inside. When the angle strip K' is used it is secured to the rail after the stretching operation but the strip K may be secured in position before the screen is mounted and may remain in position after the screen is taken down. As this strip K is not secured to the rail, it permits the rail to move up and down and closes the gap between the rail and the floor in all positions necessary for the proper stretching of the screen.

The vertical edges of the sheets of wire netting forming the screen proper are secured by means of strips E formed of sheet metal folded or doubled so as to have a flattened S-shaped cross-section and adapted to receive and detachably hold the said vertical edges of the netting. Where it is necessary to have a corner or angle in the screen the

vertical edges of the netting are secured by means of angle irons F and G, one of which is located on the outside and the other on the inside of the same so that the screen proper is held between them. The outer angle iron F has top and base flanges F³ by which it is secured to the floor and ceiling, and in order to give it additional strength its outer edges F² are upset or turned over.

Where it is necessary to provide a door or other opening in the screen a post J, secured to the floor and ceiling by brackets J', is provided, and to this post is attached in any suitable manner an angle iron F' which receives the abutting vertical edge of the netting and with the assistance of the inner angle iron G holds it in position.

The separation of the netting and selvage strips E is prevented by a clip preferably consisting of a piece of wire H' passed around the strip and through the netting while a similar clip H holds the netting and angle irons at corners and posts. This is the preferred means employed for the purpose of preventing separation of the netting and strips but any other suitable means may be employed, and in some instances this wire may be dispensed with. It has its advantages, however, in being easily applied and quickly removed and serves the purposes designed in a satisfactory manner.

The bottom web of the angle strip K terminates at the end and corner irons F and F' and the upper web extends in between the angle irons to give additional strength and close the space below the rail B at the corners. The vertical strips E terminate near the upper and lower edges of the netting so as not to interfere with the connection between the said netting and the parts to which its horizontal edges are secured and are preferably applied to the screen during the operation of hanging the same. Where the angle iron F' is secured to a post it is not necessary to provide it with flanges for securing it to the floor or ceiling, and the post in this case supports the inner angle iron G as well as the outer one by means of the clip H.

It will be seen that the strips and corner pieces for holding the vertical edges of the screen permit of a certain degree of vertical movement of the screen after the clips H have been applied, and that before the application of said clips the screen may be moved vertically to any desired extent while being held in position at its vertical edges by these parts. It will also be seen that the screen may be quickly assembled and disassembled, the latter operation being merely a matter of a few moments, when the clips have been cut or loosened and the rail B detached from the floor. After this has been done the entire structure may be rolled up and packed or stored in a small space. The structure

also enables the builder to use light materials which effects an economy in manufacture and transportation and greatly improves the appearance of the structure.

What I claim is:

1. The combination of a screen proper composed of a plurality of sheets some of which are disposed in different planes, means for securing the horizontal edges to a building and for stretching the same vertically comprising a movable connection and a detachable connection between different horizontal edges and fixed parts of the building both connections normally holding all parts of the screen positively against vertical movement, whereby the same may be attached and detached only while the said screen is not under vertical tension, the connections of the horizontal edges of sheets disposed in different planes being disposed at angles to each other and a rigid connecting piece secured to the vertical edges of the plurality of sheets disposed in different planes.

2. The combination of a screen proper composed of a plurality of sheets some of which are disposed in different planes, means for stretching the same vertically while in position and connected to the building, comprising a fixed and a movable connection between different edges of the screen and immovable parts of the building both connections normally holding all parts of the screen positively against vertical movement and means for detachably holding the edges of the said screen proper parallel with the line of stretching, said means permitting limited vertical movement, the connections of the horizontal edges of sheets disposed in different planes being disposed at angles to each other.

3. The combination of a plurality of sheets of netting some of which are disposed in different planes, having their vertical edges movably and detachably connected and means for securing the said sheets to the building comprising a fixed detachable connection between one horizontal edge and an immovable part of the building, an adjustable connection for the other horizontal edge both connections normally holding all parts of the screen positively against vertical movement, the construction and arrangement being such that the fixed detachable connection can be attached or detached when the adjustable connection is, in one position and cannot when it is in another, the connections of the horizontal edges of sheets disposed in different planes being disposed at angles to each other.

4. The combination of a plurality of sheets of netting some of which are disposed in different planes having their vertical edges movably and detachably connected and means for securing the same to the building

comprising a fixed detachable connection for one horizontal edge, an adjustable connection for the other horizontal edge both connections normally holding all parts of the screen positively against vertical movement, the construction and arrangement being such that the fixed detachable connection can be attached or detached when the adjustable connection is in one position and cannot when it is in another, and strips connected with the vertical edges of the netting movable with reference to the means for attaching the horizontal edges and disconnected therefrom, the connections of the horizontal edges of sheets disposed in different planes being disposed at angles to each.

5. In a device of the character described, in combination with netting, means for securing the horizontal edges of the same comprising a connection secured to a fixed part of the building, a hook engaging said connection and a portion of said hook folded with the edge of the netting and a movable connection between the other edge of the netting and a fixed part of the building.

6. In a device of the character described, in combination with netting, means for securing the horizontal edges of the same comprising a connection secured to the building consisting of a sheet of metal folded, having the edges of the two thicknesses turned at an angle to the body portion and the said thicknesses at the body portion spread apart leaving a V-shaped space between them, a hook engaging said connection and a portion of said hook folded with the edge of the netting.

7. In a screen composed of a plurality of sheets of netting disposed at an angle to each other, means for connecting said sheets comprising a metal strip bent longitudinally to form two flanges parallel with the said sheets and adapted to be placed on the outside of their adjacent edges, a similar strip adapted to be placed on the inside, and means passing around the two strips and through each sheet for securing the strips and sheets together, in combination with a strip of metal secured to the horizontal edges of the sheets of netting, extending over a portion of the netting adjacent to said horizontal edges and overlapping the said flange strips and having another portion extending beyond the netting and flange strips, a hanger secured to the building and adapted to be engaged by the extending portion of the said last named strip.

8. The combination of a screen composed of a plurality of sheets of netting disposed in a plane and other sheets disposed at an angle thereto, a strip of metal folded to form recesses to receive the adjacent edges of the sheets in a plane, a strip secured to the horizontal edge of the netting and overlapping a portion of the said connecting

strip, a hook formed of a portion of the said edge strip, a hanger secured to the building provided with a complementary hook adapted to engage with the hook of the strip, corner pieces composed of angle irons one on each side of the screen, a single means for securing the said angle irons and screen together, an adjustable fastening for the lower edge of the screen, the construction and arrangement being such that the parts above enumerated may be assembled and secured together and the bottom fastening adjusted while the parts are so secured, whereby the screen is stretched.

9. In combination with a plurality of sheets of netting, means for securing the horizontal edges of said sheets while disposed at an angle to each other and means disconnected therefrom for detachably and movably holding the adjacent vertical edges comprising an angular strip on one side thereof having flanges parallel with the adjacent sheets secured to the building and a similar strip on the inside thereof secured to the outer strip by a strand of wire passing around both strips and through the netting.

10. The combination of a plurality of sheets composing the screen proper, a fastening for the adjacent edges of said sheets consisting of a strip of sheet metal having its longitudinal edges folded in opposite directions leaving a narrow space between each folded over portion and the central portion to receive the edge of a sheet and parallel therewith.

11. The combination of a plurality of sheets composing the screen proper, a fastening for the adjacent edges of said sheets consisting of a strip of metal having its longitudinal edges folded in opposite directions leaving a narrow space between each folded over portion and the central portion to receive the edge of a sheet, the said folded over portions being substantially coextensive with each other and disposed parallel with the sheets.

12. The combination of a plurality of sheets composing the screen proper, a fastening for the adjacent edges of said sheets consisting of a strip of sheet metal having its longitudinal edges folded in opposite directions parallel with the sheets leaving a narrow space between each folded over portion and the central portion to receive the edge of a sheet, and a strand or wire passed around the said folded metal strip and having its ends fastened.

13. The combination of a plurality of sheets of netting comprising the screen proper, a strip of metal folded so as to form spaces parallel with the sheets for receiving the edges of a plurality of said sheets and a wire passed around said folded metal strip and through the sheets and having its ends secured, so that said sheets composing the

screen proper may have movement only longitudinally of the strip and simultaneously.

14. The combination of a plurality of sheets composing the screen proper, a fastening for the adjacent edges of said sheets consisting of a strip of sheet metal having its longitudinal edges folded in opposite directions leaving a narrow space between each folded over portion and the central portion to receive the edge of a sheet, and a strand or wire passed around the said folded metal strip and having its ends fastened, and means for securing the edges of the screen proper at an angle to the edges secured to the said folded strip comprising a sheet of metal extending over a portion of the screen near the said edges and secured thereto and also overlapping the end of the folded securing strip.

15. In a screen composed of a plurality of sheets of netting disposed at an angle to each other, means for connecting said sheets comprising a metal strip bent longitudinally to form two straight flanges parallel with the said sheets and adapted to be placed on the outside of their adjacent edges, a similar strip adapted to be placed on the inside, and means passing around the two strips and through each sheet for securing the strips and sheets together.

16. In a screen composed of a plurality of sheets of netting disposed at an angle to each other, means for connecting said sheets comprising a metal strip bent longitudinally to form two flanges parallel with the said sheets and adapted to be placed on the outside of their adjacent edges, a similar strip disconnected from the first named strip adapted to be placed on the inside, and means passing around the two strips and through each sheet for securing the strips and sheets together, in combination with a post parallel with one of the strips, a connection between the said strip and post and said post having an opening to permit the fastening means to pass between the strip and post.

17. A screen for verandas and the like comprising a plurality of separate sheets of netting some of which are disposed at an angle to others, a movable connection between one horizontal edge of the said sheets and a fixed part of the building and a detachable stationary connection between the

other horizontal edge and the building, both connections normally holding the screen positively against movement by vertical tension and means for securing the vertical edges of said sheets comprising strips having apertures parallel with the adjacent sheets adapted to receive and loosely hold the same against movement in a vertical plane and means passing through the sheets and embracing the strips for preventing horizontal movement and limiting independent vertical movement of the same.

18. A screen for verandas and the like comprising a plurality of separate sheets of netting some of which are disposed at an angle to others, a movable connection between one horizontal edge of the said sheets and a fixed part of the building and a stationary connection between the other horizontal edge and the building both connections normally holding the screen positively against movement by vertical tension and means for securing the vertical edges of said sheets comprising strips having apertures parallel with the adjacent sheets adapted to receive and loosely hold the same against movement in a vertical plane and means passing through the sheets and embracing the strips for preventing horizontal movement and limiting independent vertical movement of the same.

19. A screen for verandas and the like comprising a plurality of sheets, metal strips having recesses for receiving the vertical edges of the sheets, hooks permanently secured to the upper horizontal edges of the sheets and a hanger secured to an immovable part of the building receiving the hooks of a plurality of sheets, other hooks and hangers disposed at an angle thereto, angle irons covering the vertical edges of the sheets which are disposed at an angle to each other from top to bottom on both sides and disconnected from the hooks and hangers and means for securing the said angle irons to the sheets.

Witness my hand this 3rd day of January 1907, at the city of New York, in the county and State of New York.

ADOLPH GANZEL.

Witnesses:

WILLIAM R. BAIRD,
ALAN McDONNELL.