

May 10, 1932.

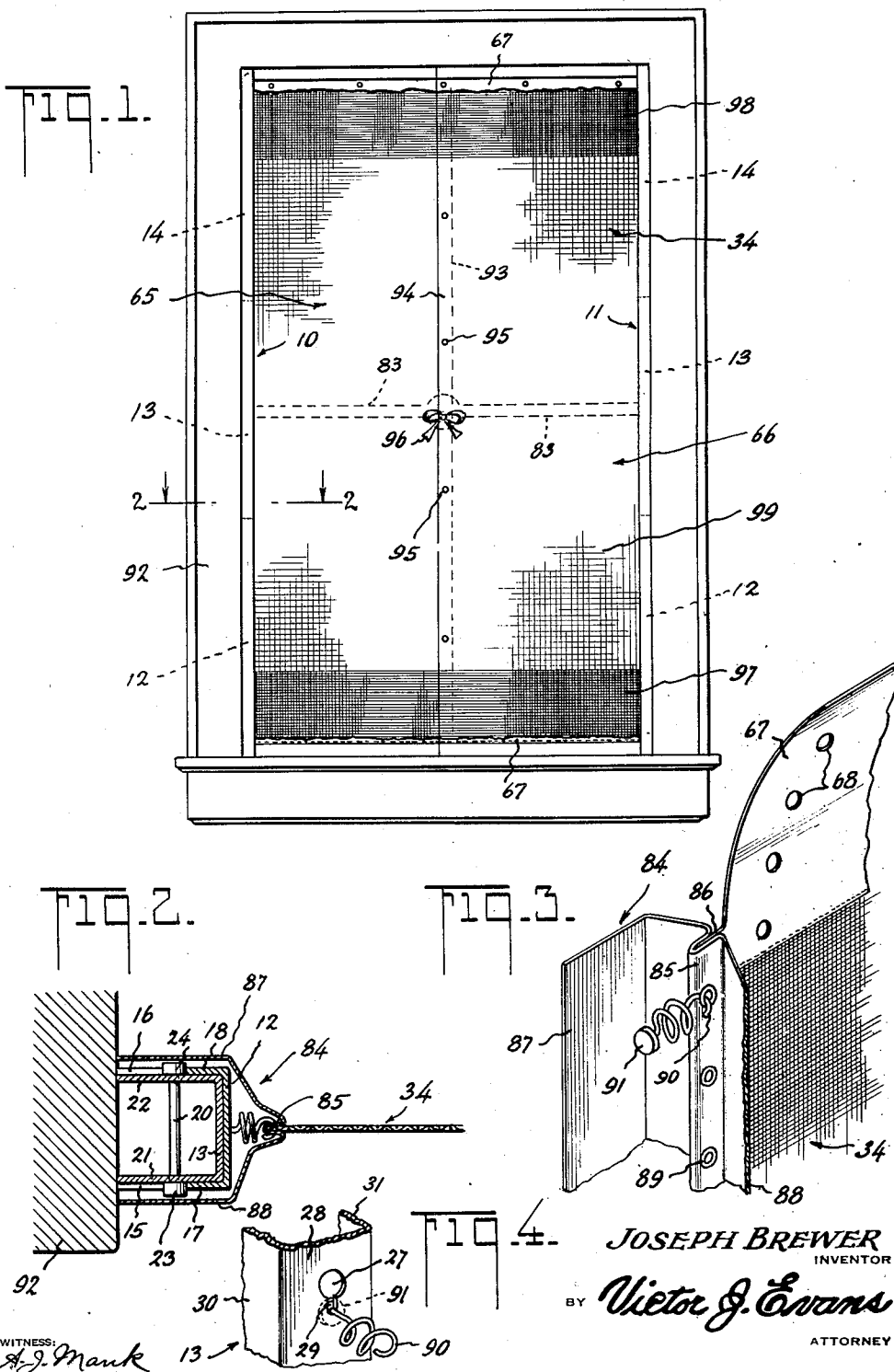
J. BREWER

1,857,425

SCREEN

Filed Dec. 15, 1930

4 Sheets-Sheet 1



May 10, 1932.

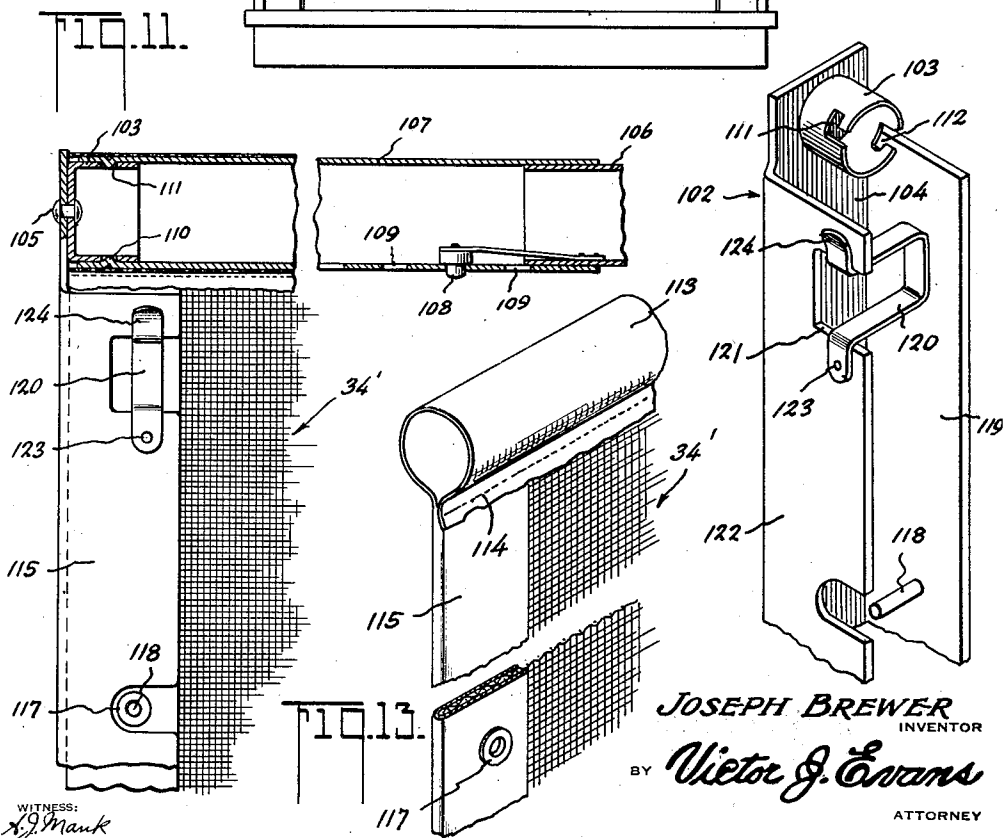
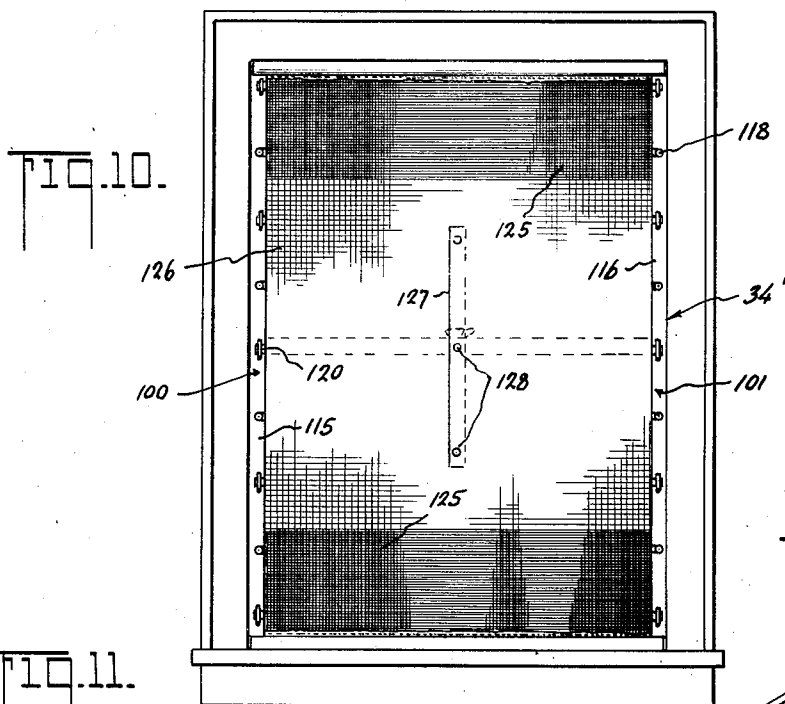
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4 Sheets-Sheet 3



WITNESS:
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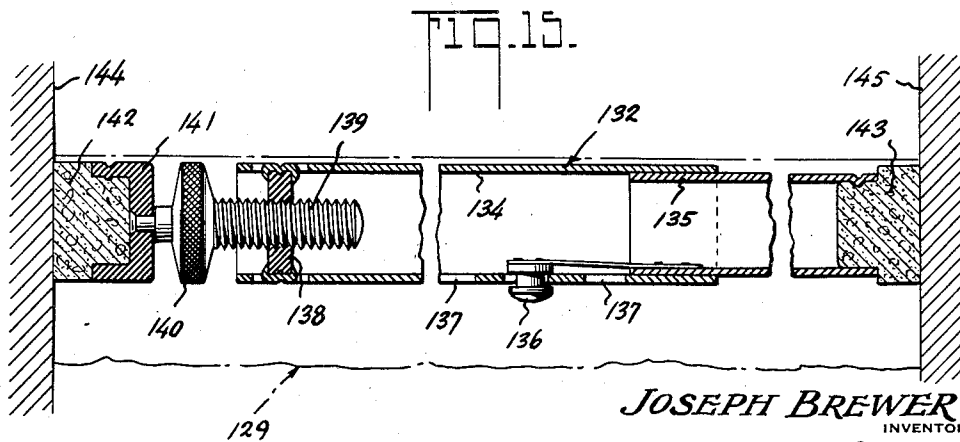
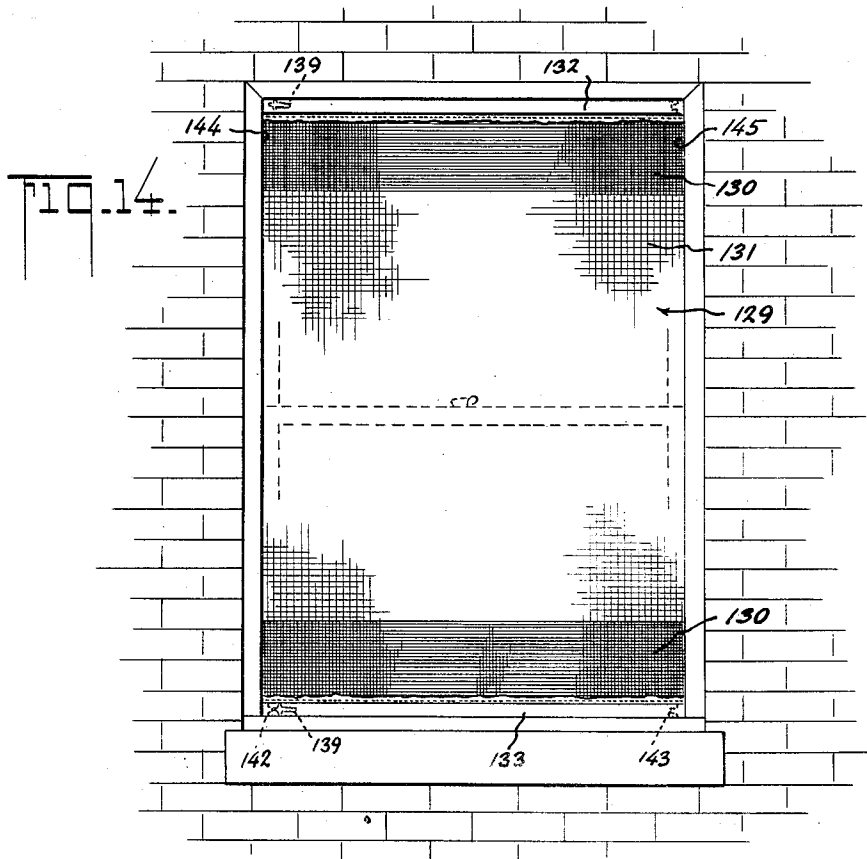
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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

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SCREEN

Application filed December 15, 1930. Serial No. 502,545.

This invention relates to window screens, and aims particularly to provide an efficient adjustable window screen which may be attached to the frame of practically any window opening without the necessity of using any tools or equipping the window frame with any special fastening devices.

A prime object of the present invention resides in the provision of a window screen which will not only be adjustable to fit different size window openings, but which will also be interchangeable, so that the screen material may be readily removed for cleaning or replacement.

Another object of the invention is the provision of a combination air and insect screen, attachable at the inside of the window, and including a closely woven portion at the top, and/or the bottom, for purposes of ventilation, and a more openly woven central portion which acts as an insect screen while also admitting light to the room, the screen including means whereby access is afforded through the screen to the window sash frames, preferably at the meeting rails of the latter, so that the window may be opened at top and/or bottom without removing the screen from the window.

Yet another object is to enable the window screen to be adjustable as to both length and width, according to the size of the window opening, the screen frame including means to positively secure the screen in place and to attach the screen frame to the opposite parallel sides of the window frame regardless of the construction of the window frame, whether of stone, wood or metal, and independently of the window sash channels or other parts thereof.

Still another object of the invention is to enable the screen frame to be adjustable as to both length and width, for different size window openings, the side frame members and the top and bottom members as well, including means for both rough adjustment and fine adjustment, whereby the screen frame is adapted to fit tightly within the window opening.

A further object of the invention is to construct a window screen so that the same will

be strong and durable, as well as attractive, and which can be economically manufactured.

Other objects and advantages of the invention will be hereinafter specifically pointed out, or will become apparent, as the specification proceeds.

With the above indicated objects in view, the invention resides in certain novel constructions and combinations and arrangement of parts, clearly described in the following specification and fully illustrated in the accompanying drawings, which latter show embodiments of the invention as at present preferred.

In the drawings:

Fig. 1 is a front elevation showing the screen secured in place at the inside of a window frame;

Fig. 2 is a transverse sectional view through the side of the screen frame, taken on the line 2—2 of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a detail perspective view, partly broken away, of one of the upper corners of the screen;

Fig. 4 is a fragmentary perspective view illustrating the means for attachment of the screen to the screen frame;

Fig. 5 is a vertical sectional view through one of the screen supporting arbors;

Fig. 6 is a view similar to Fig. 5, showing the centre bar for bracing and rigidifying the screen frame;

Fig. 7 is a partial front elevation showing the adjustable means for attaching the arbors, in this instance the lower arbor, to the screen frame side members;

Fig. 8 is a partial perspective view illustrating the interlocking telescopic relation between the upper and intermediate screen frame members for obtaining fine adjustment of the height of the screen frame;

Fig. 9 is a view similar to Fig. 8, showing the means provided on the intermediate and lower screen side frame members for obtaining a rough adjustment of the height of the screen frame;

Fig. 10 is a view similar to Fig. 1, showing a modification of the invention;

Fig. 11 is a partial vertical sectional view, partly in elevation, showing the screen attaching and supporting means provided for the modification of the invention shown in Fig. 10;

Fig. 12 is a detail perspective view of the upper part of one of the side frame members shown in Figs. 10 and 11;

Fig. 13 is a partial perspective view of one end of the screen removed from the supporting means shown in Fig. 12;

Fig. 14 is a front elevation of still another modification of the screen construction, applied at the outer side of a window frame; and

Fig. 15 is a vertical sectional view through one of the screen supporting arbors as used with the modification illustrated in Fig. 14.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring first to Figs. 1 to 9, inclusive, the device in this instance includes a pair of side frame members adapted to be disposed within the opening of a window frame or the like. These side frame members are identical in construction, so that a description of one will suffice for the other. Each side frame member 10 and 11 is formed of three telescopic sections, including a lower section 12, an intermediate section 13 and an upper section 14. Each of these sections 12, 13 and 14, consists of a U-shaped hollow body, formed preferably of relatively thin metal, the intermediate and upper sections being of progressively lesser diameter than the internal diameter of the section 12.

Means are provided to adjust the side frame members 10 and 11 to different heights according to the height of the window at which the screen is to be fitted; and in this instance I construct the adjusting means so that the side frame members may have rough or preliminary adjustment as well as a fine adjustment. For this purpose the lower member 12 is in this instance provided with horizontally slotted portions 15 and 16 at the opposite sides 17 and 18 of the member 12, these slots each having a downward extension 19. A pin 20 extends through the sides 21 and 22 of the intermediate section 13, this pin 20 having headed portions 23 and 24 at its opposite outer ends. These headed portions 23 and 24 are adapted to enter the slots 15 and 16 and come to rest in the lower extensions 19 of these slots. Preferably a plurality of slots like the slot 15 are provided as indicated at 15' in Fig. 9. Thus the intermediate member 13 may be positioned at different heights above the lower member 12.

To finely adjust the height of the side frame members after the intermediate member has been roughly adjusted as just described, the upper section 14 is in this instance provided, at its lower part, with an internally

mounted spring clip 25 having a pin 26 which is adapted to enter one of a plurality of holes 27 provided in the central portion 28 of the section 13. These holes 27 each have a downward extension 29 in which the pin 26 may come to rest, these holes 27 performing other functions as well, which will be hereinafter set forth. The sides 30 and 31 of the intermediate member 13 are preferably turned inwardly to provide tongue or lip portions 32 and 33 whereby the channeled section 14 will be retained in place within the section 13.

The side frame members of the screen are adapted to support the screen material 34, which latter may desirably be fabric, but which may also be made of wire or other materials. For this purpose I provide at the upper part of the sections 14 and at the lower part of the sections 12, a pair of upper and lower arbors 35, both of which are identical in construction. At the upper part of each of the upper sections 14 I mount a relatively short hub 36, this hub being preferably rigidly secured as by a screw or rivet 37.

Means are provided to adjustably mount the arbors 35 upon the hubs 36 and between the opposite side frame members of the screen. In this instance each arbor is formed of a plurality of telescopically arranged sections 38, 39 and 40. Within the outer end of the section 38 I provide a nut 41, which is rigidly secured in place in any suitable fashion, as for instance by pressing the metal of the section 38 inwards at spaced points as seen at 42, to grip the inner and outer sides of the nut 41. A head 43, having a screw threaded stem 44 is threaded in the screw threaded aperture 45 of the nut 41. This head 43 preferably includes an inwardly extending sleeve portion 46 to surround the outer end of the member 38 and thus to preserve the continuity of the arbor 35. At the outer end of the head portion 43 I mount a hollow cap 47 as, for instance, by means of the screw or rivet 48. This cap 47 is provided with an internal flange 49 which is adapted to cooperate with a circumferential groove 50 provided on the hub 36. The cap 47 is preferably formed of springy material so that it may be readily pressed over the outer end 51 of the hub 36 until the internal flange 49 enters the groove 50 of the hub. At the opposite end of the arbor the section 40 is equipped with a cap 47' which, in its essential aspects, is constructed in a manner similar to the cap portion 47. This cap 47' is equipped with an internal flange or snap pressure ridge similar to the internal flange 49 of the cap 47, so that the cap 47' may be secured in place upon the hub portion provided at the top of its adjacent side portion 14. The cap 47' is secured within the member 40 in any suitable manner, as, for instance, by wedging the same in place therein, the end of the arbor section 40 in this instance being

indented as seen at 52 to limit the entrance of the neck portion 53 of the cap 47'.

I provide, in the case of each arbor, means to roughly and also to finely adjust the length of the arbor so that this length will conform with the distance between the side frame members 14. To this end I provide at the lower part of the wall of each of the members 38 and 39, a series of holes or apertures 54 and 55, respectively, these holes 54 and 55 being adapted to be aligned with each other, and means being provided to enter the aligned apertures to secure the sections 38 and 39 in the desired adjusted position. Near one end of the member 39 I provide a locking button 56, having a smaller diameter portion 57 adapted to rest in the aligned holes 54 and 55. This locking button 56 is supported upon a pin 58 secured to the inner wall of the member 39. Resilient means in the form of a coiled spring 59 are provided around the pin 58 to normally urge the lock button 56 toward its locking position, the button 56 having a recess 60 to receive the lower end of the spring 59.

The member 40 is also provided with a locking button 61 which is adapted to function in substantially the same manner as the button 56. However, this locking button 61 is constructed so that it will tend to force the section 40 outwardly from the section 39. For this purpose one, or a plurality, of coiled expansion springs 62 are secured to the locking button 61 as indicated at 63, the opposite end or ends of the spring or springs being held in place by means of a pin 64 which extends through the body or bodies of the springs and has its ends secured to the wall of the section 40.

The length of the arbor 35 is thus adapted to be roughly adjusted by positioning the locking buttons 57 and 61 in different aligned locking holes 54 and 55. In some cases only one of these buttons 57 or 61 will be employed instead of the two as shown in Fig. 5, preferably the button 61. An alignment of the holes 54 and 55 to permit the use of both locking buttons 57 and 61 will however impart more rigidity to the arbor.

To finely adjust the length of the arbor so that the same will be tightly secured between the side frame members 14 at opposite sides of the window frame, the head 43 is rotated to thread its stem portion 44 part way out of the nut 41, thus wedging the arbor tightly against the hubs 36 at opposite sides of the screen frame sections 14.

The arbor 35' at the lower part of the window is adjusted by means of the screw head 43 and held in place by a compression spring like the spring 62 in Fig. 5.

The screen 34 is adapted to be supported at its upper and lower ends upon the arbors 35 and 35'. This screen 34 consists of a woven element, preferably of fabric, but not

exclusively so, the screen being formed either in one piece or in a plurality of sections as may be desired. In this instance (Fig. 1) I form the screen in two sections 65 and 66. Each of these screen sections 65 and 66 is provided at both upper and lower ends, with a tab portion 67 having a series of holes 68. To fit the screen to the window, the upper and lower tab portions 67 of the screen sections 65 and 66 are folded over the upper and lower arbors 35 and 35' and secured in place by any suitable means, as, for instance, by means of double headed buttons passed through the button holes 68, the tab portions 67 being folded over if necessary to shorten the effective length of the screen sections before the same are buttoned in place about each arbor.

To impart rigidity to the screen frame and to strengthen the entire construction, I provide in this instance a centre bar adapted to be positioned between the side frame members, this centre bar being designed, preferably, not only to brace the screen against occasional strong air pressure, but also for purposes of ornamentation. This centre bar 69 includes a pair of sleeve elements 70 and 71 which are adapted to be joined to each other by means of split or spread end elements 72 and 73, of relatively large area, which are secured to the respective members 70 and 71 by means of rivets or the like 74, and being adapted to interlock with each other as seen at 75. Each of the sleeve portions 70 and 71 of the centre bar is provided with a telescopic section 72 having a spring held locking pin 76 adapted to be brought to rest in one of a series of holes 77 provided in the sections 70 and 71, whereby the length of the bar may be extended or reduced to fit the window frame. The centre bar is mounted on the intermediate screen side frame sections 13 by means of a suitable hub 78 at each end of the centre bar, each of these hubs 78 having secured thereto a coiled compression spring 79 which is mounted within the telescopic centre bar portion 72 by means of a pin 80 extending across the section 72 and through the coils of the spring. Each of the hubs 78 is provided with a central pin 81 adapted to enter one of the holes 27, this pin having a lower extension 82, pressed out of the metal of the pin 81, or otherwise formed thereon, to enter the lower extension portion 29 of the hole 27.

At the rear of the screen 34 I provide a pocket 83 to receive the centre bar 69. The centre bar is first separated at the points indicated at 75, the opposite end portions being slipped into the pocket 83, or the respective sections thereof, in cases where two screen sections are employed, the portions 72 and 73 being then brought together and interlocked, whereupon the centre bar will be securely held in place by the compressive

action of the coil springs 79 upon the hubs 78 which are mounted in the screen side frame sections.

Novel means are provided to secure the side edges of the screen in place upon the side members of the screen frame. In this instance a strip of material 84 is folded mid-way of its length as indicated at 85, and positioned over the edge 86 at the side of the screen. The folded portion is preferably stitched to the side edge of the screen, and this strip 84 is of such length that it may be folded back to provide side portions 87 and 88, to cover the outer sides of the side frame members and thus enable the same to present a neat appearance.

To secure the screen to the side frame members I preferably equip the side edges of the screen with a series of eyelet holes 89 which extend through the triple thickness of the material as indicated at 85. A plurality of extensible hooks 90 are inserted in the eyelet holes 89, these extensible hooks 90 having head portions 91 adapted to be positioned in the holes 27 of the side sections of the screen, as seen clearly in Figs. 2, 3 and 4. The sections of the screen are thus held tautly in position.

As stated above, I show in Fig. 1 a screen 34 made up of a pair of sections 65 and 66. This screen 34 is desirably positioned at the inner or room side of the window frame 92, and when put in place in the manner already described, is adapted to remain in such position. An important feature of the invention, however, resides in the fact that it is not necessary to remove the screen in order to raise or lower the window sashes. For this purpose the inner edges 93 and 94 of the screen sections overlap each other, suitable buttons and button holes, indicated at 95, being provided to secure the sections to each other at the overlapped portions thereof. This arrangement readily enables the passing of a hand through the screen to raise or lower the window sashes. To assist in holding the overlapped strip portions of the screen sections together, as well as for purposes of ornamentation, I provide a pair of tapes or ribbons 96, which may be tied together and formed into a suitable ornamental bow knot.

The screen 34 may be provided in a specified width to fit a standard window opening, and whenever the screen happens to be wider than the window opening, the screen may be arranged in neat, curtain-like folds.

Another important feature of the present invention is the fact that the screen 34 is adapted to function as both a ventilator and an insect screen. For this purpose I preferably form the upper and lower portions of the screen sections of closely woven or close mesh as indicated at 97 and 98, and the intermediate portion of wider mesh as seen at 99.

Thus, the lower window sash may be raised to the height of the lower close mesh portion 97, or the upper sash may be lowered to the bottom of the close mesh section 98, to provide ventilation. The wide mesh portion between the closely woven portions is adapted to function as an insect screen at all times, when one or the other of the sashes is opened to a greater distance, while, also, the intermediate screen section also admits outside illumination to a greater extent than the closely woven ventilating portions thereof.

In Figs. 10 to 13 inclusive I illustrate a modification of the invention, which, in its essential aspects is similar to that already described. However, in this instance the invention is particularly applicable for windows of a specified size. In this instance the screen frame 34' includes side members 100 and 101, each of which consists of a U or channel shaped member 102 having hub portions 103 mounted at the upper and lower ends of the interior or channel portion 104, these hub portions 103, in this instance being secured in place by rivets 105. To support the screen 34' I provide upper and lower arbors, as in the modification already referred to, these arbors including a plurality of telescopic sections 106 and 107, the section 106 being adapted to slide within the section 107, and having a spring held stop pin 108 adapted to come to rest in apertures 109 provided in the wall of the outer sleeve portion 107, to adjust the arbor to the proper width to fit the window frame. The outer end of the section 107 is preferably equipped with opposite indented or inturned portions 110 adapted to cooperate with bayonet slots 111 and 112. The arbor sections in this instance are held in place by compression springs as shown at 62 in Fig. 5.

The screen 34' in this instance, as already mentioned, is particularly designed for windows of a specified size, particularly small windows such as are provided in cellars, bath rooms, attics and the like. To secure the screen 34' in place upon the upper and lower arbors, the screen is preferably provided with a sleeve portion 113 formed by stitching the end of the screen upon the body as indicated at 114. The screen being secured to the upper and lower arbors, the sides 115 are adapted to be secured within the channeled portion 104, so that the screen will be held taut around all sides. For this purpose the side edges 115 and 116, which edges may be suitably reinforced, as by the use of a binding as shown, are provided with a plurality of eyelets 117 which are adapted to be positioned upon pins 118 secured to the rear wall 119 of the side frame members 101. To retain the screen in place against flapping, I provide clip devices 120 which are adapted to press the edge 115 of the screen against the portion 119 and maintain the screen in such po-

sition. These clip devices 120 consist of U-shaped spring members adapted to extend rearwardly through slots 121 formed in the front side portion 122 of the channeled side frame members 100 and 101. The ends of the U-shaped clip members 120 are turned outwardly as seen in Fig. 12, one end being pivotally mounted on the portion 122 as indicated at 123 and the opposite end 124 being adapted to act as a finger piece with which to manipulate the clip devices. Thus, by drawing upon the finger piece 124 the clip device may be moved outwardly sufficiently to admit the edge of the screen therebehind; or, the clip device may be swung around the pivotal mounting 123 so that the finger piece 124 leaves the aperture or slot 121, thereby loosening the clip and enabling the screen to be readily passed thereunder.

This form of the invention (Figs. 10 to 13) is also provided with closely woven portions and a more openly woven portion 125 and 126 respectively to act as ventilators, and as an insect screen as in the modification heretofore described in detail. To afford access to the window sashes, the screen 34' is provided with an open portion 127 arranged vertically at the center of the screen, with overlapping edges normally secured together by means of suitable buttons 128.

In Figs. 14 and 15 I illustrate still another form of the invention having certain advantages of the two forms already described. In this instance the screen is however particularly adapted to be secured to the outer side of the window opening, and the construction is such that this may be accomplished without the use of any tools or special fastenings and without regard to the construction or nature of the material of the window opening. In this instance the window screen 129 is provided with closely woven and openly woven portions 130 and 131; and is secured in place by means of supporting arbors 132 and 133 provided at the top and bottom of the window frame. The screen 129 is in this instance of a specified length, including upper and lower sleeve portions to receive the arbors 132 and 133. The arbors 132 and 133 in this instance are adapted to be roughly adjusted to about the proper width, and are then finely adjusted to wedge the same firmly between the sides of the window opening. These arbors 132 and 133 each include an outer sleeve portion 134 which is telescopically engaged by an inner sleeve portion 135, this inner telescopic portion 135 having a spring held button or catch 136 to engage the side walls of holes 137 provided in the sleeve portion 132 whereby to alter the effective length of the arbor portions 134 and 135. The outer end of the sleeve portion 132 is provided with a nut 138 and a manually operable screw device 139 which operates in substantially the same manner as the screw threaded

head portion 43 shown in Fig. 5. However, in this instance, the knurled head 140 of the screw device 139 is loosely connected to a hollow cap 141 which carries a tip 142 of resilient material, such as cork, rubber or the like. At the opposite end, the outer portion of the inner arbor member 135 is provided with a similar tip 143. These resilient tips 142 and 143 are adapted to engage the sides 144 and 145 of the window opening and to be securely wedged in place by operation of the screw device 139. Thus the screen will be securely held in position in practically permanent fashion.

Considerable particularities of description, as to materials, part details, dimensions, capacities and utilities may have been herein indulged in, but it will be understood that these statements, made with particular reference to the embodiments of the invention illustrated in the drawings, are not in any way to be taken as definitive or limitative of the invention. Inasmuch as many changes could be made in the above constructions, and many apparently widely different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language contained in the following claims is intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

In other words, the scope of protection contemplated is to be taken solely from the appended claims, interpreted as broadly as is consistent with the prior art.

What I claim is:

1. An adjustable window screen and the like including a pair of vertically adjustable side frame members adapted to be disposed against a building wall at the sides of a window opening, upper and lower arbors to support a screen between said side frame members, each of said arbors including means for length adjustment, hubs secured to said opposite side frame sections, said hubs adapted to support said arbors, a screen mounted on said upper and lower arbors, and fastening devices to secure the sides of said screen to said side frame members.

2. An adjustable window screen for window sashes and the like including a pair of vertically adjustable side frame members adapted to be disposed against a building wall at the sides of a window opening and in front of a window sash, each of said side frame members including telescopic upper, intermediate and lower sections, each of said sections being of substantially hollow U-

shape in cross section, with the open portions disposed against said wall, said frame sections having means for coarse and fine adjustment, upper and lower arbors to support a screen between said side frame members, each of said arbors including means for coarse and fine length adjustment, hubs secured to said opposite side frame sections to support said arbors, a plurality of screen sections mounted on said upper and lower arbors, means to secure the outer sides of said screen sections to said side frame members, said screen sections including means affording access to the window sashes behind said screen.

3. An adjustable window screen and the like including a pair of vertically adjustable side frame members adapted to be disposed against a building wall at the sides of a window opening; each of said side frame members including telescopic upper, intermediate and lower sections, each of said sections being of substantially hollow U-shape in cross section, with the open portions disposed against said wall, said frame sections having means for coarse and fine adjustment, including a plurality of horizontal slots in said lower section, a pin extending through said intermediate section, said pin having portions disposable in said horizontal slots, said intermediate sections including a plurality of vertical slots, a spring clip on said upper section having a pin adapted to enter said vertical slots, upper and lower arbors to support a screen between said side frame members, each of said arbors including means for coarse and fine length adjustment, hubs secured to said opposite side frame sections to support said arbors, a screen mounted on said upper and lower arbors, the outer sides of said screen having a plurality of eyelet portions therein, and fastening devices to connect said eyelet portions with sections of said side frame members.

4. An adjustable window screen and the like including a pair of vertically adjustable side frame members adapted to be disposed against a building wall at the sides of a window opening, upper and lower arbors to support a screen between said side frame members, each of said arbors including an outer sleeve and intermediate and inner members, a nut within said outer sleeve, a headed screw threaded in said nut, a hollow cap secured to said headed screw, a second hollow cap secured to said inner arbor section, hubs secured to said upper side frame sections, said hubs each having an annular groove and each of said hollow caps having an internal flange to enter said groove, each of said arbor sections having a plurality of alignable apertures, a spring held pin on each of said intermediate and inner arbor sections adapted to enter said aligned slots to coarsely adjust the length of said arbor, said headed screw

being manipulable to perfect said arbor adjustment, a screen mounted on said upper and lower arbors, and fastening devices to secure the sides of said screen to said side frame members.

5. An adjustable window screen and the like including a pair of vertically adjustable side frame members adapted to be disposed against a building wall at the sides of a window opening, each of said side frame members including telescopic upper, intermediate and lower sections, each of said sections being of substantially hollow U-shape in cross section, with the open portions disposed against said wall, said frame sections having means for coarse and fine adjustment, upper and lower arbors to support a screen between said side frame members, each of said arbors including means for both coarse and fine length adjustment, means on said upper side frame sections to support said arbors, a screen mounted on said upper and lower arbors, means for securing the outer sides of said screen to said side frame members, a centre bar to brace said screen and side frame members, said screen including a pocket to receive said centre bar and said side frame members having means to support the ends of said centre bar.

6. An adjustable window screen and the like including a pair of vertically adjustable side frame members adapted to be disposed against a building wall at the sides of a window opening, each of said side frame members including telescopic upper, intermediate and lower sections, each of said sections being of substantially hollow U-shape in cross section, with the open portions disposed against said wall, said frame sections having means for coarse and fine adjustment, including a plurality of horizontal slots in said lower section, a pin extending through said intermediate section, said pin having portions disposable in said horizontal slots, said intermediate sections including a plurality of vertical slots, a spring clip on said upper section having a pin adapted to enter said vertical slots, upper and lower arbors to support a screen between said side frame members, each of said arbors including an outer sleeve and intermediate and inner members, a nut within said outer sleeve, a headed screw threaded in said nut, a hollow cap secured to said headed screw, a second hollow cap secured to said inner arbor section, hubs secured to said upper side frame sections, said hubs each having an annular groove and each of said hollow caps having an internal flange to enter said groove, each of said arbor sections having a plurality of alignable apertures, a spring held pin on each of said intermediate and inner arbor sections adapted to enter said aligned slots to adjust the length of said arbor, said headed screw being manipulable to perfect said arbor adjustment, a

plurality of sections mounted on said upper and lower arbors, the outer sides of said screen sections having a plurality of eyelet portions therein, fastening devices to connect said eyelet portions with sections of said side frame members, a centre bar to brace said screen sections and side frame members, said screen sections including a pocket to receive said centre bar and said side frame members having means to support the ends of said centre bar.

7. An adjustable window screen and the like, as set forth in claim 6, for use at a window having a movable window sash, in which the screen is detachably supported on said arbors and side frame members, for removal

sash, including a pair of vertically adjustable side frame members, upper and lower arbors adjustably mounted between said side frame members, a combined air and insect screen detachably supported on said arbors and side frame members, said screen comprising a multiple section screen element, including upper and lower closely woven ventilating portions and an intermediate more openly woven insect excluding and light admitting portion, and means on said screen affording access to said window sash, through the body of said screen, whereby to open and close said window sash without removing said screen, said screen being removable and interchangeable from said arbors for cleaning and re-

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