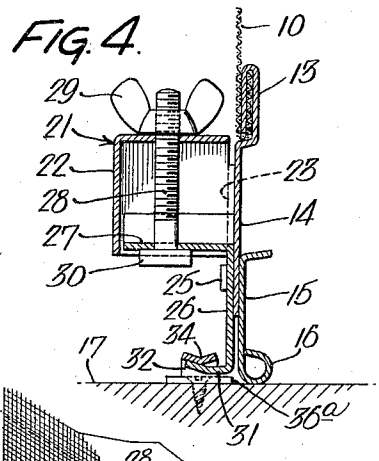
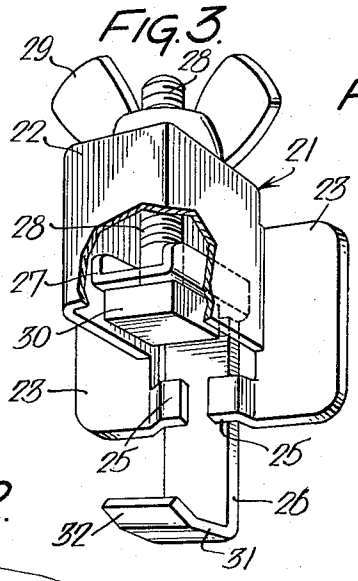
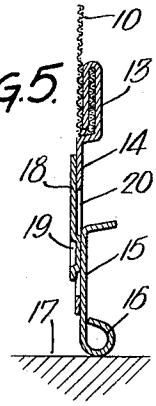
April 3, 1951 H. J. BLASER 2,547,302

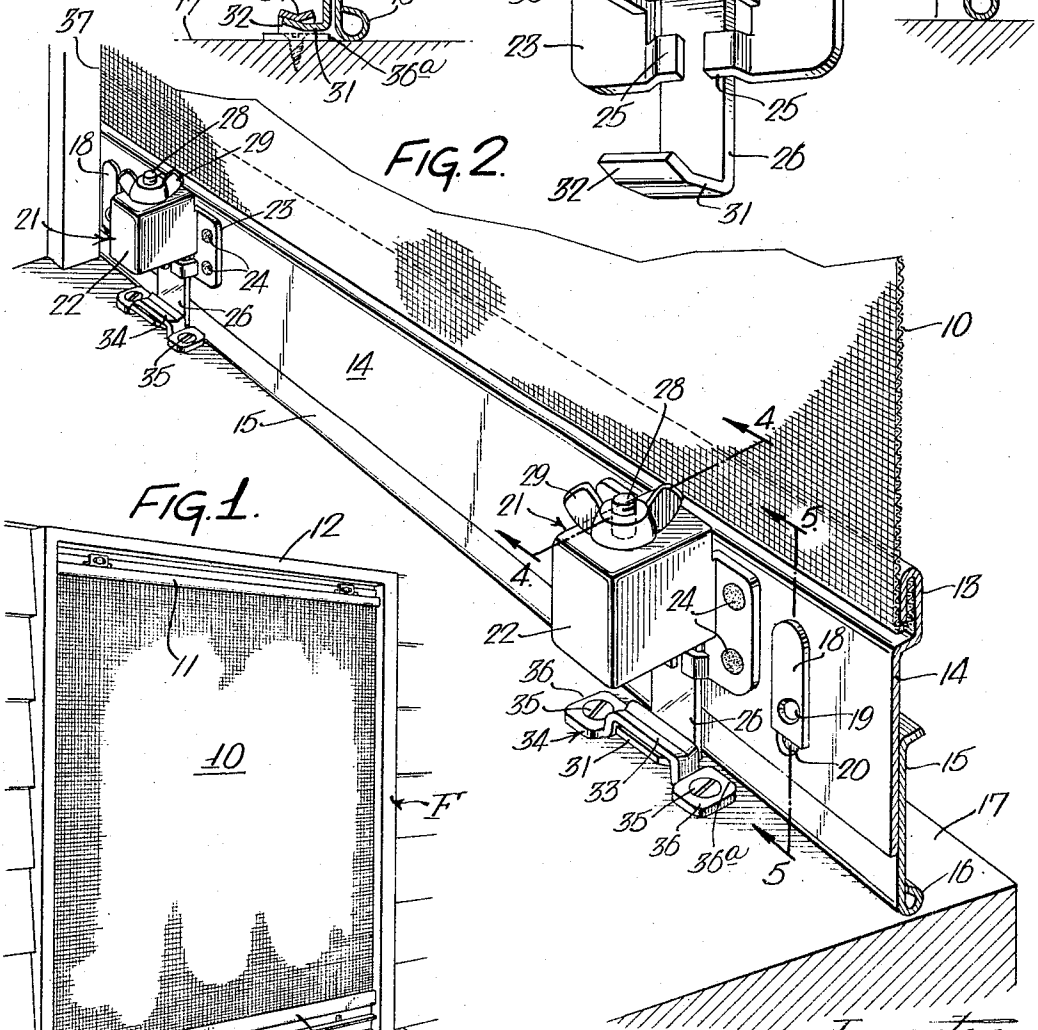
FRAMELESS SCREEN TENSION

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FRAMELESS SCREEN TENSION

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2 Claims. (Cl. 160—328)

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This invention relates to new and useful improvements in window screens, and more particularly to improvements in so-called frameless window screens.

The principal object of the present invention is to provide novel tensioning and securing means for frameless window screens which is operable to place the screen under the desired degree of tension and at the same time secure it tightly against the surface of the window frame.

Another object of the invention is to provide a novel tension and securing means for frameless screens which embodies a construction that may be used effectively in conjunction with both wood and metal window structures.

Another object of the invention is to provide a novel tension and securing means for frameless screens which embodies features of construction that make the initial installation and subsequent removal and replacement thereof comparatively easy and capable of being carried out by any person at all handy with the usual household tools.

A further object of the invention is to provide a novel tension and securing device having the features and advantages set forth which is of comparatively simplified and inexpensive construction, and is entirely foolproof and efficient in operation and use.

These and other objects of the invention and the various features and details of the construction and operation thereof are hereinafter fully set forth and described with reference to the accompanying drawing, in which:

Fig. 1 is a perspective view of a window frame showing a frameless screen embodying the present invention properly positioned and secured therein;

Fig. 2 is an enlarged fragmentary view in perspective, partially in section, showing the construction and arrangement of the improved tensioning and securing device of the present invention;

Fig. 3 is a detached enlarged perspective view of one of the tensioning devices with a portion of the housing portion thereof broken away to better illustrate certain details of the construction and arrangement of parts;

Fig. 4 is a view in section taken on line 4—4, Fig. 2; and

Fig. 5 is a sectional view taken on line 5—5, Fig. 2.

Referring now more particularly to the drawing, reference numeral 10 designates the usual wire screen mesh which may be secured to an upper rail or bar 11 that in turn may be detachably mounted adjacent the upper portion 12 of a window frame F.

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At its lower end edge the screen mesh 10 is connected to a bottom rail or bar 13 which has a vertically depending flange portion 14 of substantial height. Slidably associated with the flange 14 at the front or exterior side thereof is a sill strip 15 the lower end of which is rounded or otherwise suitably formed as indicated at 16 for contact with the surface of the sill 17 of the window frame.

The strip 15 is slidably associated with the flange 14 by means of plates 18 disposed at the inner side of the flange 14 and having forwardly pressed portions 19 which extend through vertical slots 20 formed in the strip 14 and are secured, for example, by welding, to the rearward face of the sill strip 15 as more clearly shown in Fig. 5 of the drawing. By this construction the strip 15 is retained parallel to the flange 14 and is prevented from rocking with respect thereto while at the same time being relatively and easily slidable in a vertical direction over the outer face of the flange 14 to the extent required to effect sealing engagement of the rolled edge 16 of said strip 15 with the surface of the sill 17.

The improved tension and securing means for the frameless screen structure are mounted in horizontally spaced relation at the inner side of the frame 14 of the lower screen rail or bar 13. In accordance with the present invention, each tensioning and securing device comprises a bracket structure generally designated by reference numeral 21. The brackets 21 each include a box-like portion 22 open at the bottom and having at its forward edges oppositely directed lateral flange portions 23 by means of which the bracket structure 21 is permanently secured to the inner face of the flange 14, for example, by spot welding or the like 24.

Below the housing portion 22 the flange portions 23 of the bracket are provided with ears or lugs 25 which are inwardly offset with respect to the surface of the flange 14 to provide a guide way in which a tension member 26 is adapted to slide in a vertical direction. Extending laterally inward from the upper end of the tension member 26 and normally disposed within the housing portion 22 is a horizontal arm portion 27 having an opening therein upwardly through which is passed a bolt 28 that extends also through a suitable opening in the top of the housing portion 22. A wing nut or the like 29 is threaded on the portion of the bolt 28 which

projects above the housing portion 22 and said bolt 28 is provided with a square or other polygonal-shaped head 30 below the tension arm portion 27. The relative dimensions of the bolt head 30 with respect to the distance between the side walls of the housing portion 22 are such that the housing side walls prevent rotation of the bolt and its head 30 within said housing portion.

As shown in Fig. 3 of the drawing, the horizontal arm portion 27 of the tension member 26 is of channel cross-sectional shape, and with reference to Fig. 4 it will be observed that the length of the said arm portion 27 is such that its end edges cooperate with the adjacent surfaces of the flange 14 and housing 22 respectively, to prevent rocking of the arm portion 27 under the pull exerted by the bolt 28 and thereby ensure movement of the tension member 26 in the vertical direction at all times.

Projecting inwardly from the lower end of the tension member 26 is a tongue portion 31 having an inclined terminal end portion 32 which is constructed and arranged to engage under the raised portion 33 of a sill bracket generally designated 34 and secured to the sill 17 of the window frame, for example, by screw fasteners or the like 35 passing through the opposite end portions or feet 36 of said sill brackets 34. As shown for example in Fig. 4 of the drawing, the configuration of the portion 33 of the sill bracket 34 is of generally V-shape in cross-section with the angular disposition of the respective portions thereof conforming substantially to the angle of inclination of the terminal end portion 32 of the tension member 26.

The construction and arrangement of the opposite end portions or feet 36 of the sill brackets 34 is such that the sill brackets 34 are properly positioned on the sill 17 of the window frame F when the front or outer edges 36*a* of the sill bracket feet 36 reside in the same plane as the outer faces of the opposite side strips 37 of the frame against which the frameless screen is adapted to be secured.

From the foregoing description it will be observed that with the sill brackets 34 secured to the sill 17 in the position described and in properly spaced relation with respect to one another for engagement by the lower ends of the tension members 26, all that it is necessary to do to tension and secure the screen in place is to engage the tension members under the sill brackets in the relation shown and then tighten the wing nuts 29 on the bolts 28. Tightening of the nuts 29 causes the bolts to be drawn vertically upward relative to the housing portions 22 and to carry with them likewise in a vertically upward direction the tension members 26 thus causing the tongue portions 31 to engage the sill bracket portions 33 and tension the screen downwardly as the nuts 29 continue to be tightened to the desired degree. As the tension members 26 are drawn upwardly the inclination of the tongue terminal end portion 32 and the corresponding angular disposition of the sill bracket portion 33 function to cause the screen structure to be drawn inwardly against the outer faces of the side strips 37 of the window frame F.

From the foregoing description it will be observed that the present invention provides a novel tensioning and securing means for frameless window screens which embodies features of construction that make the initial installation and subsequent removal and replacement thereof comparatively easy and capable of being carried out by any person at all handy with the usual household tools. By virtue of the novel construction of the sill brackets which occupy a minimum of space, the present invention provides a novel tensioning and securing means for frameless screens which may be used effectively in conjunction with both wood and metal window structures. The invention also provides a novel tensioning and securing device having the aforesaid features and advantages which is of comparatively simplified and inexpensive construction and is entirely foolproof and efficient in operation and use.

While a particular embodiment of the present invention has been illustrated and described herein, it is not intended to limit the invention to such disclosure and changes and modifications may be made herein and thereto within the scope of the following claims.

I claim:

1. A tension device for a frameless window screen comprising a bracket adapted to be secured to the lower end of the screen and including offset lugs forming a vertical guide, a sill bracket adapted to be mounted on a window sill, a tension member slidable vertically in said guide and having an upper arm portion and a tongue portion at its lower end adapted to engage under said sill bracket, and means conecting the upper arm portion of the tension member and the bracket operable manually to draw the tension member vertically upward and engage the tongue thereof with said sill bracket to place the screen under tension.

2. A tension device for a frameless window screen comprising a bracket adapted to be secured to the lower end of the screen including a housing portion open at the bottom and offset portions below the housing forming a vertical guide, a sill bracket adapted to be mounted on a window sill, a tension member mounted for vertical sliding movement in said guide relative to said housing and having an upper horizontal arm portion normally therein and a tongue portion at its lower end adapted to engage under said sill bracket, and means connecting the upper arm portion of the tension member and said housing portion operable to draw the tension member upward and engage the tongue thereof with said sill bracket to place the screen under tension, said tension member arm portion being of channel cross-sectional shape having side portions the edges at one end of which slidably bear against the screen lower end and prevent bending of said arm portion under the upward pull exerted thereon.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
563,820	Tolf	July 14, 1896
757,856	Wilde	Apr. 19, 1904
885,673	Hall	Apr. 21, 1908
994,001	Hunt	May 30, 1911