May 16, 1944. H. W. THOMAS 2,349,226

ROLLABLE WINDOW SCREEN

Filed March 16, 1940 2 Sheets-Sheet 1

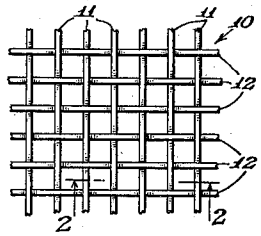


FIG. 1

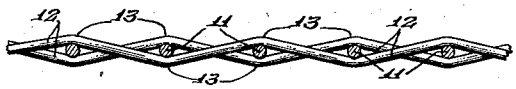


FIG. 2

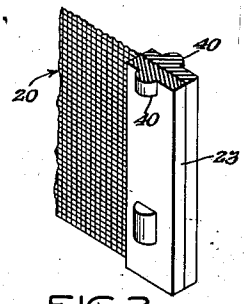


FIG. 3

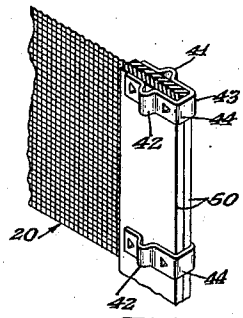


FIG. 4

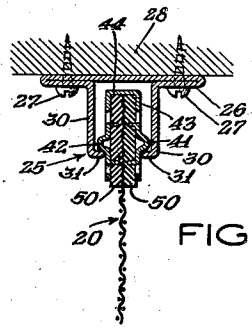


FIG. 6

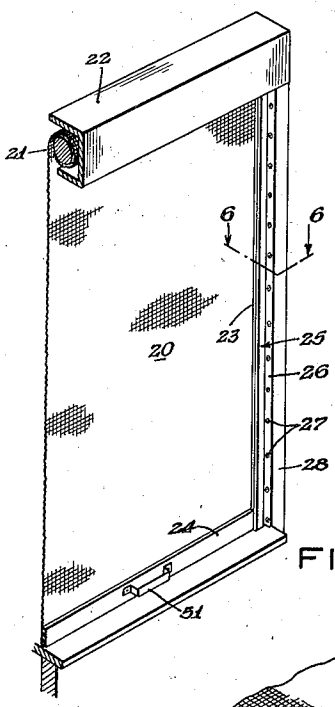


FIG. 5

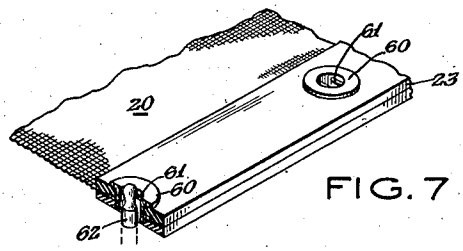


FIG. 7

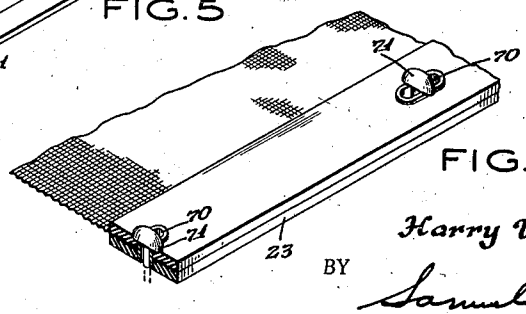


FIG. 8

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ROLLABLE WINDOW SCREEN

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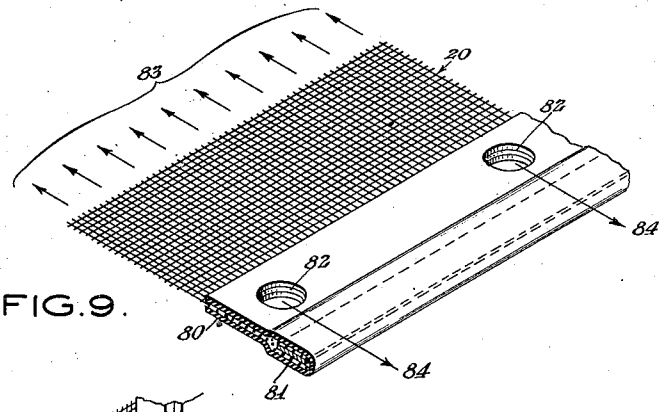


FIG.9.

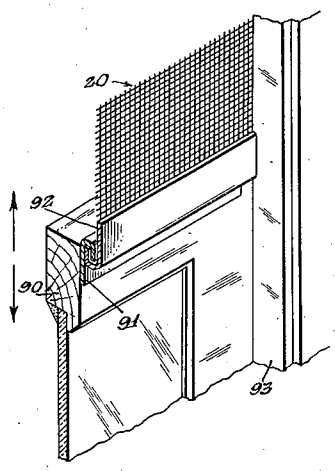


FIG.10.

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UNITED STATES PATENT OFFICE

2,349,226

ROLLABLE WINDOW SCREEN

Harry W. Thomas, Miami Beach, Fla.

Application March 16, 1940, Serial No. 324,395

5 Claims. (Cl. 160—273)

This invention relates to window screens formed of reticular material composed primarily of single filament strands of thermo-setting or thermo-plastic synthetic resins and, more specifically, the present invention relates to open mesh flexible and elastic screen cloth composed of permanently crimped nylon warp and weft strands, the perimeter of which screen cloth is bound and fixed in desired permanent position by novel binding means associated with and peculiarly adapted to the novel screen structure, such novel binding means being sufficiently flexible and rollable to permit the winding or rolling of the screen, particularly when it is used as a rolling window screen. The actual screen structure itself is more particularly described in my above-mentioned copending application, Serial No. 265,114, filed March 31, 1939, and also in my copending application for Screen material and method of making same, Serial No. 324,393, filed simultaneously herewith.

Various types of binding means and various methods of affixing the various binding means are more specifically described in my copending application for Screen frames, Serial No. 324,394, filed simultaneously herewith, now Patent No. 2,297,729, issued October 6, 1942.

The novel screen material which is to be bound and arranged as a rollable window screen in accordance with the present invention is formed in accordance with the three applications above mentioned and comprises essentially an open mesh reticular screen structure made from thermo-setting or thermo-plastic, non-metallic, non-vegetable, non-animal fibers or strands, preferably single filament strands for reasons set forth in the above-mentioned applications.

The material of which these strands are made is moisture-resistant, not affected by common acids or alkalis, non-oxidizable, weather resistant, and may be opaque, translucent, transparent or may be colored in any desired manner. The strands thereof may be composed wholly of synthetic polymerization products including vinyl resins, nylon, Vynyon, aldehyde condensation products, cellulose derivatives, Alsifilm and other similar thermo-plastic or thermo-setting synthetic materials.

In the manufacture of the screens, the said materials, preferably in the form of single filament strands, are either first woven into the form of a screen and then firmly crimped so that complementary crimps in intersecting strands engage each other to resiliently maintain the strands in predetermined meshing relation; or they are first crimped and then woven into flexible rollable screen cloth with complementary crimps in intersecting strands registering with each other and then, if desired, given a thermal set so that complementary crimps are brought into tight frictional although resilient engagement with each other.

The material is flexible and elastic so that upon the application of tension, the crimps may straighten out, permitting a deformation of the screen in accordance with the pressure or tension created and upon relaxation of said deforming action, the crimps will be restored to their original position and the strands returned to their predetermined meshing relation.

Where the screen is to be placed in use for the specialized purpose of constituting a rolling window screen for dust and insect excluding purposes, it becomes important that a means be utilized for preventing the unravelling of the screen material while at the same time preserving the resilient construction thereof.

In my said application for Screen frames, Serial No. 324,394, filed simultaneously herewith, I have disclosed a number of different ways in which such a frame may be mounted upon the screen while at the same time retaining all of the resilient, flexible, rollable, elastic qualities thereof.

Such frames as disclosed in the said copending application may be made of rubber either cementitiously applied to the perimeter of the screen or vulcanized thereon either after the formation of the screen or during the thermal setting of the resilient or crimped construction of the screen material or said frame may consist of any other plastic or moldable material which may be applied either cementitiously or by preforming upon the edges of the screen, the binding thus formed being, nevertheless, rollable and flexible with the screen and preferably being at least as resilient and elastic as the screen itself so as not to interfere with the resilient, flexible, rollable and elastic qualities of the screen.

Heretofore in the construction of rolling window screens, it has been necessary to utilize various types of woven metal screens which, for purposes of flexibility were bound at the edges, when they were bound at all, with flexible metal bands. These flexible metal bands at best were scarcely as flexible or resilient as even the best of the screen material and was neither elastic nor readily rollable with the screen so that after the screen had remained rolled for any period of

time, the binding might acquire a semi-permanent set which would bind the screen when drawn in its guides.

The material of which prior rolling window screens had previously been made was usually also metallic wire mesh which readily acquired a permanent set when rolled up so as also to assist in binding the screen within its guides when it is drawn, and likewise after the screen had been lowered for a period of time, the rolling up of the screen was made exceedingly difficult by reason of the fact that the screen, having acquired a semi-permanent linear set resisted any rolling.

By the use of nylon or other materials crimped and formed in the manner hereinafter described and in the manner described in my copending applications above mentioned, it is possible to obtain a resilient, elastic, readily rollable and unrollable, flexible screen material which will not acquire a permanent set, whatever the position in which it may remain for any period of time.

Accordingly, an important object of the present invention is to provide in connection with a rollable window screen, a screen mesh and cloth made of crimped single filament strands of a synthetic resin, such as nylon or any other similar synthetic flexible, elastic, organic or inorganic, non-metallic material.

In my said application for screen frames, Serial No. 324,394, filed simultaneously herewith, above mentioned, I have described various types of bindings which do not interfere with the flexibility and rollability of the screen and for the purposes of forming a rollable window screen I have found that the application, particularly to the longitudinal edges of the screen which are to ride within guides, of a flexible elastic binding which is at least as resilient, rollable, and flexible as the screen material above described, facilitates the operation of the screen, protects the screen itself, furnishes additional weather-proofing at the perimeter of the screen and generally enhances the value of the screen.

Accordingly, an important object of the present invention is to provide in connection with a rollable window screen of the type described, a flexible resilient longitudinal binding strip which will not interfere in any way with the rollability of the screen.

The particular windable flexible strips used for this purpose may be guided in any suitable manner, but it is an object of this invention to so form the binding tapes or strips that they will inherently provide cooperating means for coacting with the guides in the window frame.

It is further an object of this invention to provide means in connection with the binding tapes or strips which will cooperate with elements on either the window guide or the window frame for securing the rollable screen in predetermined fixed position.

The fact that by the use of the specific screen material herein described a transparent or translucent screen may be made or a screen may be made having any desired color or tint, adds to the utility of a rollable window screen made with this material.

A rollable window screen of the type of my invention may also be utilized in connection with a sliding window sash and may be attached thereto in any suitable manner.

Many other objects and uses of this invention will in part be apparent and in part pointed out in the following description and drawings in which,

Figure 1 is a plan view of screen material formed in accordance with my invention;

Figure 2 is a cross-sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a fragmentary edge view in perspective of a screen of the type of Figure 1 combined with a flexible binding means suitable for cooperation with window guides;

Figure 4 is a view corresponding to that of Figure 3 showing a modified form of cooperating element for cooperating with window guides;

Figure 5 is a partial view in perspective showing a rollable window screen mounted in a window;

Figure 6 is a cross-sectional view on line 6—6 of Figure 5;

Figures 7 and 8 are fragmentary views in perspective showing various forms of fastening means which may be incorporated with the rollable binding tape;

Figure 9 is a fragmentary perspective showing one form of edge binding of the rollable window screen;

Figure 10 is a fragmentary perspective showing the use of the rollable window screen of my invention in connection with a sliding window sash.

Referring now to Figures 1 and 2, I have here shown a flexible, rollable, resilient screen material made in accordance with my patent applications Serial No. 265,114 filed March 31, 1939, and my application for Screen material and method of making same, Serial No. 324,393, filed simultaneously herewith.

The screen material, as therein pointed out, may be made of any thermo-plastic or thermo-setting or otherwise thermally sensitive synthetic resin or any other synthetic non-metallic, inorganic or organic, elastic and flexible material. The material may be transparent. It may be translucent, opaque or it may be colored in any suitable manner to conform with any decorative scheme into which it may be incorporated.

Preferably in order to obtain the full benefits of the inherent resilience of the substance, such as nylon which is used for this purpose, the screen material is woven from single filament rods or strands of sufficient thickness to form individual warp or weft strands of the screen and also of sufficient thickness to retain all of the resilient and structural characteristics of the nylon material itself.

The single filament strands are preferred for this reason and as opposed to multi-filament strands where the material may be woven from a series of very thin flexible strands woven and twisted together. Such multi-filament strands possess too much flexibility and an uneven distribution of elasticity for screening purposes of the type herein described.

The single filament strands after having been woven into approximately the form shown in Figure 1 are then subjected to heat treatment in accordance with the processes set forth in my applications above-mentioned, said heat treatment setting the intersecting strands in crimped formation as shown in Figure 3.

Thus after the screen 10 (Figure 1) is woven so that the warp strands 11 and the weft strands 12 intersect and are interwoven with each other, the material is then subjected to heat which

imparts a permanent set to the interwoven strands as shown in Figure 2. Thus each strand is crimped by the heat treatment about the intersecting strands so that a series of obtuse crimps 13, 13 are formed in the strands.

Owing to the fact that the nylon or other material used is resilient and elastic, the strands may, under the influence of tension of sufficient force, be restored to their original uncrimped position or upon relaxation of such tension, the strands will return to their original crimped position shown in Figure 2, and owing to the fact that complementary crimps in intersecting strands naturally seek to return to trough relation with each other, the strands are returned after the relaxation of the distorting and deforming force to their original mesh defining relationship in the manner described in my above-mentioned applications.

The screens thus formed may be combined or formed in the manner described in my said application for Screen frames, Serial No. 324,394, filed simultaneously herewith.

Thus a rubber or plastic flexible, resilient and/or longitudinally extensible or elastic binding strip may be combined along each of the edges of the finished screen in special sizes to be desired. Such binding strip where it is rubber may be vulcanized in place by the same heat process which sets the crimps in the screen material.

For rolling window screen purposes, such as that shown in Figure 5, it is essential that the binding strip or tape be of sufficient structural strength to cooperate with the guiding structure on the window jambs and to resist the wear and tear inherent in continuous operation and further to resist weathering conditions to which it is obviously to be subjected.

As shown in Figure 5, a rollable window screen 20 may in accordance with my invention be mounted on a rotatable shaft 21 which may, in turn, be removably or fixedly mounted in the screen roller box 22 which may be fastened above the window frame or which may form the top lintel of the window frame. The shaft or roller 21 may be driven in any suitable manner for raising and/or lowering the screen 20. Thus it may be spring actuated toward raising position with suitable means provided on the screen for resisting the tension of the roller which tends to roll it up or it may be spring actuated and provided with appropriate ratchets and pawls for resisting the tension of the spring until a predetermined operation is performed or it may be spring actuated toward rolling position with the spring exerting sufficient tension to roll up the roller 21 with the spring thereon but not exerting sufficient tension to overcome the friction between the binding tapes or frame and the guide so that the raising of the bottom of the screen manually which thereby overcomes the force of such friction will permit the winding up of the roller and hence of the screen. Or the screen roller may be driven in any other suitable manner now known in the window screen roller art.

As seen in Figure 5, the screen 20, preferably formed in accordance with the construction shown and described in Figures 1 and 2 is secured in any suitable manner to the windable roller 21 and is bound at the longitudinal edges by a flexible tape or binding strip 23 preferably made of weather-resistant and weather-proofing material of any suitable nature, which, however, should be at least as flexible and resilient as the screen 20 itself.

The bottom free end of the screen 20 may be finished off in any suitable manner, as, for instance, by the stiffening strip 24 provided with the handle or manual grasping portion 51; the stiffening strip 24 ensuring that the screen and bound edges 23 thereof will register in the guides 25 which may be flanged as at 26 and secured by any suitable fastening means, as by the screws 27, to the jamb or stud 28 (see also Figure 6).

The screen 20 of Figure 5 may be brought down to any desired position within the window opening and may register either with the entire window opening or may be brought into registry only with a vented portion of the window opening or such portion thereof as may be vented. The rollable window screen need not necessarily be mounted in the manner shown in Figure 5. It may be mounted so that the rollers are at the bottom of the window and the screen may be lifted up or so that the roller is at the side of the window and the screen drawn across. Or it may be mounted in any other suitable manner in connection with not merely a window opening but with any other portion of the complete structure as, for instance, a porch in connection with which a screen is useful or desirable.

One form which the guide 25 may take is shown in Figure 6, wherein it is seen that the guide consists preferably of a metallic channel shaped member 25 having flanges 26 which may be secured by screws or any other suitable means 27 to the jamb or stud 28. The guiding portions of the members 28 may constitute preferably two parallel metallic members 30 which may have inturned flanges 31. Where the screen 20 itself has sufficient inherent lateral stiffness to ensure that the flexible binding strip 23 will at all times register with the walls 30—30 of the guide 25, then the inturned flange portions 31—31 on the walls may be needed. Where the screen may, however, itself be resilient or where it is desired to use as much as possible of the full window opening so that the guide 25 is to be small and so that the guide 25 will not reach too far into the window opening, then the inturned flanges 31—31 on the walls 30—30 of the guide 25 may be provided to prevent the escape of the binding of the screen.

Suitable cooperating members may be provided on the binding 23 of the screen in order to cooperate with the inturned flanges 31—31 and hence prevent escape of the bound edges of the screen from the guides.

When the binding strip is to consist of rubber or any other moldable material or any synthetic moldable material of any kind whatsoever which may be secured to the screen in any suitable manner as, for instance, in the manner described in my application for Screen frames, Serial No. 324,394 filed simultaneously herewith, then the cooperating elements 40 on the binding 23 may be molded integrally therewith as is seen in Figure 3.

The said cooperating elements 40 may then cooperate with the inturned flanges 31 of the walls 30 of the screen guide 25 to prevent escape of the bound edge 23 of the screen from the guide.

Where in a suitable case it may not be convenient to make the cooperating elements 40 integral with the material of the binding tape or edge 23, then any suitable cooperating element

may be attached to the bound edge as is seen in Figure 4.

In Figure 4 the screen 20 has a longitudinally flexible, preferably resilient, binding 23 carrying slides 41, 41, 42, 42 secured thereto in any suitable manner, the slides 41 and 42 cooperating, as is seen specifically in Figure 6, with the walls 30, 30 of the guide 25 and particularly with the inturned flanges 31, 31 of the walls 30 to prevent escape of the bound edge 23 from the guides. The slides 41, 42 may, as is seen in Figures 4 and 6, be formed from an integral band 43 of any suitable material, preferably a metallic material which is bent as is seen in Figures 4 and 6 so that the slides 41, 42 will lie opposed to each other and on opposite sides of the tape 23. The U-shaped band 43 may be secured to the flexible longitudinal binding strip 23 in any suitable manner as, for instance, by integral lugs 44 struck up from the material of the metal 43 and forced into the material of the binding 23.

Where any cooperating elements of the type of element 40 of Figure 3 or of the type of elements 41, 42 of Figure 4 are used, it is essential that these elements be sufficiently narrow in a longitudinal direction with respect to the binding 23 as not to interfere with the rollability thereof and, furthermore, the cooperating elements, as is seen, for instance, in Figure 6, should extend outwardly from the sides of the bound edge 23 only a sufficient distance to cooperate with the retaining portions of the guide 25 and any greater projection from the sides of the tape 23 should be avoided so as not to interfere with the rollability of the screen material itself.

In a suitable case the binding 23 may be of sufficient thickness or strength or the guide may be made in such a manner as to cooperate with the inner edges 50, 50, Figure 6, of the binding strip 23 for the purpose of preventing the binding strip 23 from being disengaged with the guide itself.

While I have here shown two generic forms of cooperating elements for the binding strip in connection with the guide, it will, of course, be clear that the binding strip may otherwise be formed in any suitable manner to cooperate with a guide. Thus, for instance, in a suitable case, the binding strip may be longitudinally grooved to cooperate with reentrant portions of the guide, or the binding strip may carry a continuous bead for such purposes or it may carry any other cooperating element which will not interfere with the rollability of the binding strip itself.

Where in a suitable case it is desirable or necessary to secure the screen at any particular partially raised or completely lowered position, various cooperating means may be provided in connection with the binding strip 23 of the screen. Thus, as is seen in Figure 7, the binding strip 23 of the screen 20 may be grommeted as at 60 at suitable spaced intervals, each of the grommets being provided with spring type fasteners 61 for the purpose of cooperating with a balled stud 62. When the balled stud 62 is forced into the grommet, then the spring fastening member 61 resiliently engages the neck portion thereof to prevent longitudinal movement of the binding strip 23 while only resiliently resisting withdrawal of the stud.

For suitable purposes the stud 62 may be stationarily mounted upon the jamb or a side frame of the window or other member with which the edge 23 of the screen cooperates, and the fastening portions 61 in the crimps 60 be pressed therethrough when desired. Or the stud may be removably mounted in the guide 25 of the structure of Figure 5 or it may be spring held in registry with an opening in the guide 25 of the structure of Figure 5, the spring preventing the stud 62 from entering within the guide.

When the screen has then been drawn down to the desired position, then pressure upon the end of the stud 62 will, when the next grommet 60 comes into position below it, force the stud 62 into the grommet and into engagement with the spring member 61 which should exert sufficient force to hold the stud against withdrawal by its own spring until it is manually withdrawn, thus holding the screen in predetermined partially raised or completely lowered position.

For this purpose also the stud 62 need not necessarily be resiliently held by a spring of its own but may be a fairly tight frictional fit within an opening of the guide or it may even be completely removable and manually replaceable within the opening of the guide.

Other types of fastening means may be used as the particular purpose requires. Thus as seen in Figure 8 a series of oblong bound openings 70 may be made in the binding tape 23 with which a series of turn-studs 71 may register. The turn-studs are of such dimensions that when the edges thereof are longitudinally co-extensive with the opening 70, they may readily pass through the opening 70, while when turned at right angles thereto after having been passed therethrough, they will engage the material of the binding tape on either side of the opening 70 and thus serve to hold the screen in any desired partially raised or completely lowered position.

The stud 71 may, of course, be mounted upon any suitable stationary portion of the window frame or building structure with which the binding means 23 cooperates.

Other types of fastening means for fixing the screen in any suitable partially raised or completely lowered position may be utilized as the circumstances require.

By the use of the novel screening material described in my aforementioned applications, I have been able to provide a rollable window screen which is weather-resistant and resistant to alkalis and acids, even to a greater extent than is any metal material which heretofore has been used for rollable window screens. Since the nylon material which is preferred for this purpose has a tensile strength of 51,000 pounds per square inch, this material may well form a stronger screen than any ordinary metallic screens now on the market.

Furthermore, owing to the resilient mesh-defining construction and the construction of the strands and the crimping thereof for the purpose of ensuring a return of a temporarily deformed strand to its original mesh-defining relationship, the screen will have a permanence and utility not heretofore found in any metallic screen.

Furthermore, owing to the flexibility, resilience and elasticity of the preferred nylon material which is used in connection with this rollable window screen, the rollable window screen will not acquire any permanent set either in a linear condition owing to a long period of having been kept in lowered position (which would interfere with the rollability of the screen and any attempt to raise it) or in a curved condition owing to its having been kept for long period in rolled up condition (which would interfere with

the appearance of the screen when lowered and the slidability of the binding of the screen.

Owing to the fact that the screen may be made transparent or translucent, it need not interfere in any way with the transmissibility of light through the window and hence need not be raised or lowered as frequently as ordinary window screens.

Owing to the fact that the material may readily be permanently colored in any suitable manner, the screen may be made to harmonize with either the exterior trim of the building or the interior decoration thereof.

The flexible binding strip **23**, preferably of non-metallic material and preferably made of a longitudinally elastic and resilient material which is at least as flexible and rollable as the screen material itself, does not detract from the bendability and rollability of the screen and does not in any way interfere with the operation thereof.

Where desired, the edge of the rollable window screen may be so treated as to cause it to resist lateral tension exerted by the screen tending to pull the edge out of the guide, while at the same time preserving the bendability or rollability of the screen and of the edge thereof.

Thus, as seen in Figure 9, I have shown a complementary portion of a rollable window screen comprising the screening material **20** which in normal operation in the window frame may be subjected to lateral tension in the direction shown by the arrows **83**. This rollable window screen has a binding **80** secured thereto in the manner described in my said copending application for Screen frames, Serial No. 324,394, filed simultaneously herewith.

This binding **80** may have openings **82** therein in which grommets of the type **60** of Figure 7 may be inserted in order to aid in securing or which may be used for securing purposes in the condition in which they appear in Figure 9.

These openings **82**, when the screen **20** is subjected to the lateral tension indicated by the arrows **83**, are subjected to a tension at their edges in a direction indicated by the arrows **84** and accordingly the binding means **80** should be of sufficient strength to resist this tension.

However, the space between the arrows **84** is not necessarily subjected to counterbalancing tension and hence since the material **80** is preferably elastic and flexible, this material may yield to the tension indicated by the arrows **83** and may thus be pulled out of the guides or, at the very least, unsightly gaps may occur.

In order to provide lateral stability which will prevent this result while at the same time retaining the flexibility of the binding of the screen I have provided for the insertion within the binding **80** at the edge thereof of a flexible metal strip **81** which may be placed in the rolling position but which will be rigid with respect to transverse forces and thus will serve to maintain the lateral stability of the binding without interfering with the rollability of the screen. Since the metal strip **81** by reason of its cross-section will not yield when tensioning forces are produced thereon in the direction indicated by the arrows **83**, unsightly gaps or the possibility of escape of the screen from its guides are obviated.

In Figure 10 I have shown the combination of the rollable window screen **20** of my invention with a window which may, if desired, be a storm window, the window and screen being connected so that the raising or lowering of the window sash will result in the bringing of the screen **20** into or out of the window opening.

Both the screen **20** and the window sash **90** may operate in suitable guides in the jamb **93** of the window frame. The sash **90** and the screen **20** may be interconnected in any suitable manner. Thus, for instance, as seen in Figure 10, the top of the window sash may carry a rigid bar **91** having a channel or suitable groove therein and the bar of the screen **20** may carry a similar bar **92** formed and arranged to interengage with the bar **91**. These cooperating bars **91** and **92** may be of metal or plastic material or of any other suitable material.

These bars **91** and **92** may easily be disengaged to permit separate operation of the sash or the screen.

While the manner of engagement between the bars **91** and **92** shown in Figure 10 is preferred, any other suitable readily releasable engagement means may be utilized for this purpose.

I have here described but a few of the uses of my rollable window screen and only the preferred forms of construction in which the same may be embodied. Many other uses of the rollable window screen or of the rollable sheet hereinabove set forth will now be obvious to those skilled in the art.

Many other types of bindings falling within this invention will now be obvious from the foregoing description and many other types of screen materials and the combination therewith of bindings of various types which will not interfere with rollability will also be obvious and many other uses of such rollable screens will also be clear to those skilled in the art. I prefer therefore to be limited not by the specific disclosures hereinabove set forth but only by the appended claims.

I claim:

1. A rollable window screen comprising single filament resilient warp and weft strands of a synthetic resinous material; intersecting strands being complementarily crimped into resilient mesh-defining relationship, and a longitudinal flexible non-metallic binding for said screen, said binding being rollable with the screen, one end of said screen being secured to a roller, and rollable on said roller, said roller being mounted in a window frame, guides in said window frame, and means on said longitudinal binding for slidably engaging the edges of said screen with said guides, said last mentioned means comprising mounting elements secured to said longitudinal binding means and carrying the slidable engaging means.

2. A rollable window screen comprising single filament resilient warp and weft strands of a synthetic resinous material; intersecting strands being complementarily crimped into resilient mesh-defining relationship, and a longitudinal flexible, non-metallic binding for said screen, said binding being rollable with the screen, one end of said screen being secured to a roller, and rollable on said roller, said roller being mounted in a window frame, guides in said window frame, and means on said longitudinal binding for slidably engaging the edges of said screen with said guides, and additional locking means on said binding for releasably securing said screen in selected position.

3. A rollable window screen comprising single filament resilient warp and weft strands of a synthetic resinous material; intersecting strands

being complementarily crimped into resilient mesh-defining relationship, and a longitudinal flexible non-metallic binding for said screen, said binding being rollable with the screen, one end of said screen being secured to a roller and rollable on said roller, said roller being mounted in a window frame, guides in said window frame, and means on said longitudinal binding for slidably engaging the edges of said screen with said guides, said last mentioned means comprising spaced cooperating elements integrally formed from the binding and extending out of the plane thereof.

4. A rollable window screen comprising single filament resilient warp and weft strands of a synthetic resinous material; intersecting strands being complementarily crimped into resilient mesh-defining relationship, and a longitudinal flexible non-metallic binding for said screen, said binding being rollable with the screen, one end of said screen being secured to a roller and rollable on said roller, said roller being mounted in a window frame, guides in said window frame, and means on said longitudinal binding for slidably engaging the edges of said screen with said guides, said last mentioned means comprising spaced metallic clips secured over the binding and having cooperating elements extending therefrom out of the plane of the binding.

5. A rollable window screen comprising single filament resilient warp and weft strands of a synthetic resinous material; intersecting strands being complementarily crimped into resilient mesh-defining relationship, and a longitudinal flexible non-metallic binding for said screen, said binding being rollable with the screen, one end of said screen being secured to a roller, and rollable on said roller, said roller being mounted in a window frame, guides in said window frame, and means on said longitudinal binding for slidably engaging the edges of said screen with said guides, said last mentioned means comprising spaced cooperating elements secured to and extending from the binding out of the plane thereof.

HARRY W. THOMAS.