United States Patent

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[31] **488/68**

[54] **MEANS FOR SUSPENDING, FOR STORAGE PURPOSES, LARGE SHEETLIKE ARTICLES SUCH AS DRAWINGS AND THE LIKE IN CLOSE, ADJACENT RELATIONSHIP**
6 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **211/46**
[51] **Int. Cl.** **A47f 7/16**
[50] **Field of Search** 211/46, 45, 47, 113, 124, 162

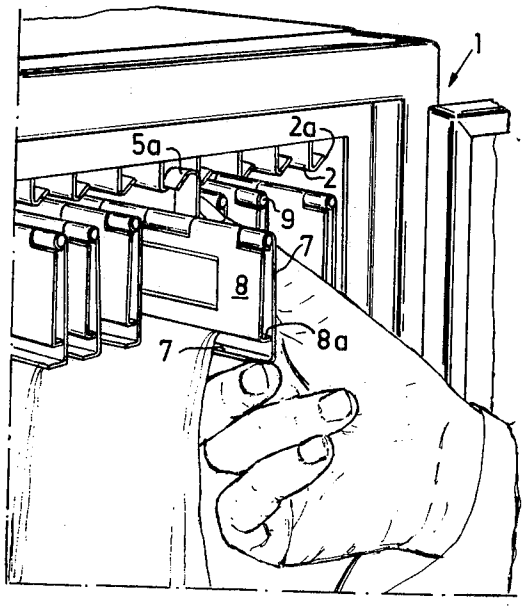
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ABSTRACT: A means for suspending, for storage purposes, large sheetlike articles such as drawings, maps or the like in adjacent relationship includes a number of parallel suspension rails having angular guide portions. Each such rail cooperates with two suspension means at least one being movable between a retracted position and a raised position, the suspension means being guided by a stirrup member on one of two clamp bars which together form a holder for the article. The holder can readily be brought to its correct storage position by the use of one hand only, the thumb of the said hand manipulating the suspension means to its raised position when displacing the holder on the corresponding rail.



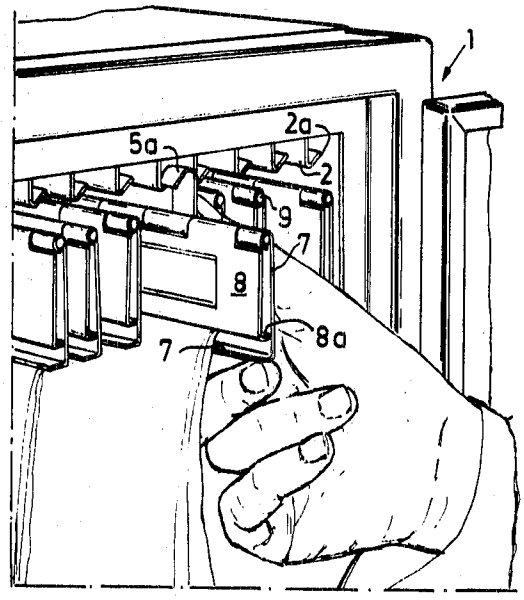


FIG. 1

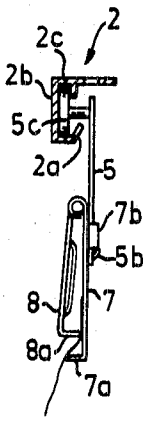


FIG. 3

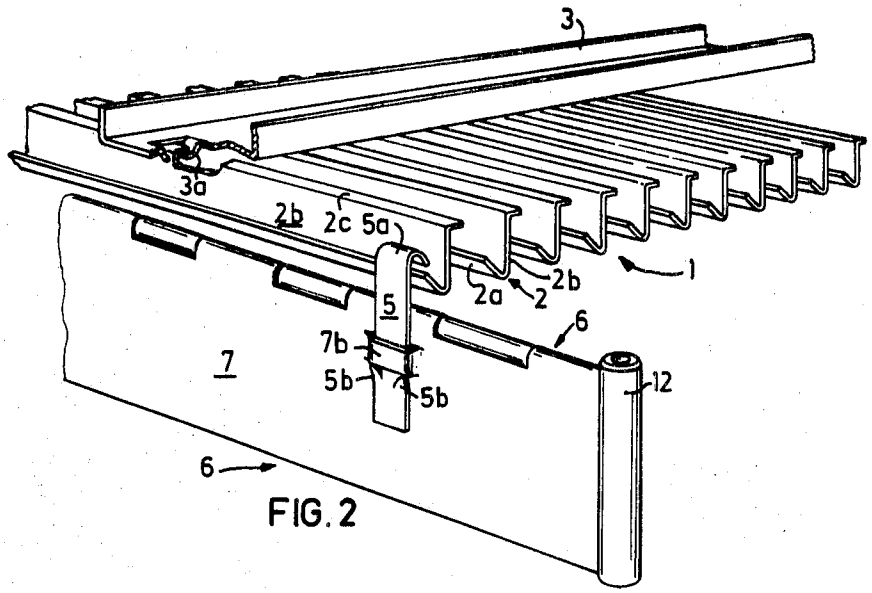


FIG. 2

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MEANS FOR SUSPENDING, FOR STORAGE PURPOSES, LARGE SHEETLIKE ARTICLES SUCH AS DRAWINGS AND THE LIKE IN CLOSE, ADJACENT RELATIONSHIP

The present invention is concerned with a means for suspending, for storage purposes, large sheetlike articles such as drawings, maps and the like in close, adjacent relationship; the means including a number of parallel suspension rails which are provided with angular guide portions and which each cooperate with at least two suspension means of a sheet holder means which consists of two movably connected clamp bars of which one is urged against the other to clamp one or more sheets between the clamp bars.

Storage means of this type known to the art are either unnecessarily space consuming or it is impossible to suspend a holder means containing one or more of said sheetlike articles and move said holder into its storage position between adjacent corresponding sheet-containing holder means in one continuous operation. Thus, in certain instances, the task of inserting the article or articles into position requires considerable manipulation necessitating the use of both hands by the person inserting the file.

The object of the present invention is to avoid this disadvantage, and provides a new and improved storage means of the aforementioned type. This object is realized by the present invention which is mainly characterized in that at least one of the suspension means is arranged on a clamp bar and is movable between a retracted position and a raised position in which the suspension means can be readily hooked onto the suspension rail when the sheet holder resting on the other suspension means is fully or partially inserted into its storage position between two adjacent sheet-containing holder means.

A sheet-containing holder means according to the invention can be quite easily brought to its correct storage position solely by using one hand by moving the suspension means to its raised position with one finger—e.g. the thumb of the hand which moves the holder means—so that when the holder arrives at the suspension rail it can be hooked thereon without difficulty, whereafter the holder can be moved to the intended storage position.

In a preferred embodiment of the invention hooking of the holder means onto the rail is accomplished by means of a bent portion of the suspension means, said portion in the inserted position surrounding the side edge portions of the clamp bars, the said edge portions of which are joined together via a hinge pin. When the holder means is removed from its storage position there are no undesirable outwardly projecting parts which might otherwise render manipulation difficult, whilst at the same time the movability of the suspension means permits the clamp bars to be moved in relation to each other if desired, for instance when changing drawings etc.

The movable suspension means is suitably guided by a stirruplike member punched out of one of the clamp bars, and provided with a stop member which limits the movement to the using station.

The invention will now be described with reference to the accompanying drawing, additional characteristic features and advantages being disclosed in conjunction therewith. In the drawing;

FIG. 1 is a perspective view of a storage means according to the invention showing a holder from which sheetlike articles are suspended about to be pushed into its storage position;

FIG. 2 shows a modified storage means in which the holder means, viewed from the other side in relation to the embodiment of FIG. 1, are also provided with alternative suspension means; and

FIG. 3 shows a section through part of a modified embodiment in which the suspension means of the holder means are provided with rollers, facilitating movement thereof.

FIG. 1 shows a portion of a means for suspending, for storage purposes, large sheetlike articles such as drawings, maps and the like in close, adjacent relationship. The storage means may, for instance, be incorporated in a cupboard, movable framework or some other suitable structure

identified in the drawing by the reference numeral 1. The storage means includes a number of parallel suspension rails 2 which are arranged in parallel, close relationship and which are each provided with a bent guide portion 2*a*. The suspension rails are preferably mounted in support members fixed to the top of the storage structure, e.g. the roof thereof; the support members in the exemplary embodiments of FIGS. 1 and 2 being in the form of U-shaped rails 3 extending perpendicular to the long direction of the rails 2 and provided with downwardly extending support members 3*a* which cooperate in pairs and which are punched out in the U-shaped rail 3. The suspension rails 2 are provided with substantially vertically extending web portions 2*b* and upper substantially horizontal support portions 2*c*. The web portion 2*b* of the suspension rail is located between two cooperating support members 3*a*, and the substantially horizontally extending support portions 2*c* are retained between the bottom of the rail and one support member 3*a*. The suspension rails can be mounted onto the U-shaped rails 3 by simply inserting the suspension rails in their longitudinal direction between the support members 3*a*.

The adjacently arranged suspension rails 2 are intended to support separate holder means 6 for the sheetlike articles via suspension means which will be described in more detail below and which cooperate with the guide portions 2*a*. Each of the holder means 6 consists of two clamp bars 7 and 8 which are pivotally united by a hinge 9 and forced together by a spring (not shown) or some other suitable means. The bars 7 and 8 are provided with bent side edge portions 7*a* and 8*a* which facilitate the removal and retention of the suspended article or articles. The vertical length of one clamp bar, 7, is somewhat greater than the vertical length of the other, 8.

Stirruplike members 7*b* are formed in one clamp bar at some short distance from the ends thereof and serve as guides for finger-movable suspension means 5 provided with upper, curved portions 5*a* which cooperate with the guide portion 2*a* of the suspension rail 2. The suspension means can be moved from a retracted position in which the curved portion 5*a* surrounds the curved upper edges of the clamp bars when these are united by the hinge 9 to a raised or exposed position in which stop members formed in the suspension member limits the movement in relation to the holder means 6.

As will be seen from FIG. 1 the suspension means can be moved from its retracted position to the raised position by means of the thumb of the hand holding the sheet-containing holder means 6. Thus the holder means can be hooked onto the suspension rail and moved to storage position by using only one hand, in one single, practically continuous operation.

Optionally, one suspension member may be fixedly attached to the clamp bar 7 while the other is capable of being moved in the described manner.

The holder means 6 shown in FIG. 2 is also provided, in addition to the suspension means of the aforedescribed type, at one end with a further suspension means in the form of a tube 12 which cooperates with a vertical pin or corresponding element. The holder means may also be provided with additional different types of suspension means such as hooks or the like (not shown) so that when using the holder means, i.e. when removing it from the storage structure, it can be hung up in the desired manner.

In the embodiment shown in FIG. 3 the suspension member is provided with a roller 5*c* to facilitate movement in the suspension rail 2. In the embodiment of FIG. 3 the guide portion of the suspension rail has been identified with the reference 2*d* and is shaped to conform to the contours of roller 5*c*.

The holder means in the illustrated embodiments lacks outwardly projecting portions which might otherwise impede manipulation thereof when removed from the storage structure. Furthermore, the movability of suspension means enables the relative movement between the clamp bars 7 and 8 to be rendered without difficulty when changing a map or drawing, for instance. In addition to the aforementioned advantages obtained with regard to storing large, sheetlike arti-

cles as described, the holder means is also simple to manufacture. It is also relatively simple to provide holder means already fitted with suspension means with extra suspension means of the aforementioned type. The holder means of the invention are preferably used for large sized sheets and suitably have a length of 70—80 cms. or more.

I claim:

1. Means for suspending, for storage purposes, large sheet-like articles such as drawings, maps or the like in adjacent relationship, the means including a number of parallel suspension rails which are provided with angular guide portions and each of which cooperates with at least two suspension means of a sheet-holding means which consists of two movably connected clamp bars suspension member is fully or partly inserted to its storage position between two adjacent sheet-containing holder means, and U-shaped support rails in which said suspension rails are mounted, said U-shaped support rails extending perpendicular to the length of said suspension rails and having downwardly extending support members pressed out of the U-shaped support rails and cooperating pairwise with an upper support portion of the suspension rails.

2. The means of claim 1, wherein the suspension member presents a curved portion which when inserted surrounds the side edge portions of the clamp bars and in which said side edge portions are joined together by a hinge pin.

3. The means of claim 1, wherein the stop member is a member pressed out in the suspension member.

4. Means for suspending, for storage purposes, large sheet-like articles such as drawings, maps or the like in adjacent relationship, the means including a number of parallel suspension rails which are provided with angular guide portions and each of which cooperates with at least two suspension means of a sheet-holding means which consists of two movably connected clamp bars of which one is urged against the other to clamp one or more sheets therebetween, wherein at least one of the suspension means is arranged on one clamp bar movable between a retracted position and a raised position in which the suspension means can be readily hooked onto the suspension rail when the holder means resting on the other of which one is urged against the other to clamp one or more sheets therebetween, wherein at least one of the suspension means is arranged on one clamp bar movable between a retracted position and a raised position in which the suspension means can be readily hooked onto the suspension rail when the holder means resting on the other suspension member is fully or partly inserted to its storage position between two adjacent sheet-containing holder means, and a stirrup member guiding the suspension member and arranged on one clamp bar and having a stop member which limits the movement of said suspension member to the raised position.

5. The means of claim 4, wherein the suspension rails are movable in the direction of their longitudinal axis to a point of attachment between the pairwise cooperating support members of the U-shaped rails.

6. The means of claim 4, wherein the suspension member presents a curved portion which when inserted surrounds the side edge portions of the clamp bars and in which said side edge portions are joined together by a hinge pin.