May 23, 1933. A. J. HOLM 1,910,993

BLUE PRINT RACK

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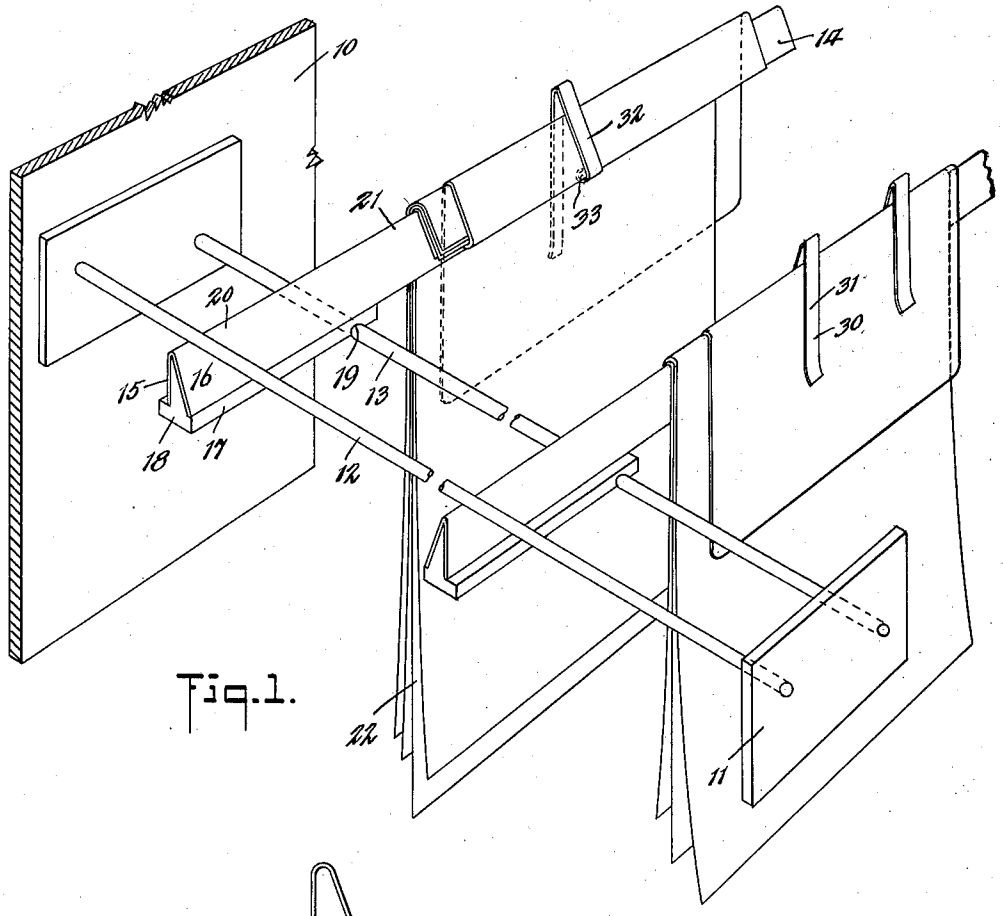


Fig. 1.

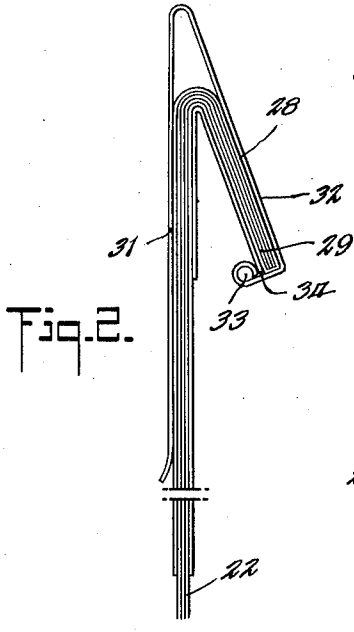
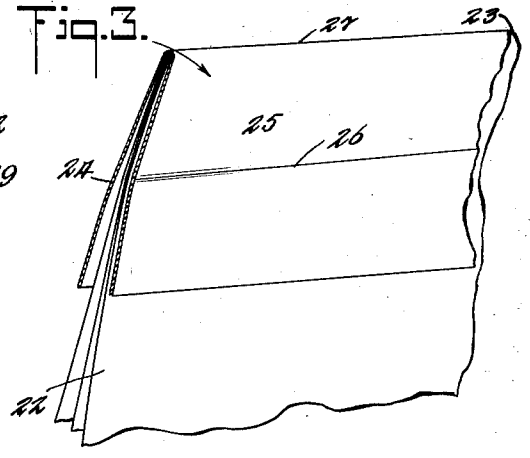


Fig. 2.

Fig. 3.



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BLUE PRINT RACK

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The invention relates to a rack for supporting sheets of flexible material and the invention particularly relates to means for supporting large sheets such as blue prints suspended in unfolded position convenient for ready access.

The primary object of the invention is to provide a simplified form of flexible sheet mounting which will provide for a quick mounting and demounting of separate sheets in a file of such sheets; which will insure the securing of the sheets in position in the files against accidental derangement and at the same time which will permit of easily manipulated means for adding or removing a sheet from the file and which will permit of a convenient orderly arrangement not only of the flexible sheets themselves but also of multiples of such files.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawing and in part will be more fully set forth in the following particular description of one form of mechanism embodying the invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

In the accompanying drawing:

Fig. 1 is a view in perspective of part of a complete blue print storing equipment and illustrating a preferred embodiment of the invention;

Fig. 2 is an enlarged, transverse sectional view of one of the carrying bars shown in Fig. 1 demounted from its support and disposed in position with a jacket and its contained flexible sheet; and

Fig. 3 is a perspective explanatory figure of a jacket with the flexible sheets in position and the jacket about to be folded into the position shown in Fig. 2.

In the drawing and referring first to Fig. 1, there is disclosed opposite sides 10 and 11 of a closed casing or cabinet which is of a size to contain a plurality of the carrying bars and associated files illustrated, but it is obviously within the scope of the disclosure to otherwise mount the sheets outside of a containing casing and it is herein suggested that the carrying bars may constitute demountable arms extending from a tree or centrally positioned support. In the form illustrated in Fig. 1, a pair of parallel supporting rods 12 and 13 have their opposite ends secured to the supports 10 and 11 and are positioned both horizontally and vertically offset from each other. With this disposition of supporting rods, a plurality of carrying bars 14 may be positioned to extend laterally from the supporting rods. As these carrying bars are of similar construction, the detailed description of one will suffice for the other. Referring to any one of the bars, it is noted that they are formed of a length of material bent back upon itself to form the bar of inverted V cross-section and are preferably formed with a vertically extending flange 15 and a downwardly and outwardly inclined flange 16. At one end of the carrying bar is secured a bracing block 17 which preferably extends between the flanges 15 and 16 to brace the same and is provided with a broad spreading reinforcing bottom ledge 18. The ledge 18 is provided in spaced relation to its free end with a groove 19 designed to overlap and engage the forward lower supporting rod 13 while the upper edge or angle 20 of the bar underlaps and engages the rear upper supporting bar 12. The major portion 21 of the bar extends forwardly, that is, towards the front side of the casing, assumed to be at the upper portion of the showing in Fig. 1. This arrangement permits of a ready mounting or demounting of the carrying bar between the suporting bars and causes the part 21 to project therefrom in the form of a cantilever extension. The sheets of flexible material 22 adapted to be mounted on the carrying bar are positioned with one edge 23 disposed between the flaps 24 and 25 of a jacket formed of flexible material and preferably formed of a somewhat stiff but bendable card board. With the sheets 22 in position the flaps are folded clockwise as indicated in Fig. 3 and about a crease 26 extending parallel to their common hinge edge 27 to form a V-shaped binder 28 shown in Fig. 2 which thus holds the upper edge portion of the sheets 22 be-

tween the jacket flaps. The V-shaped binder with its flexible sheets depending therefrom is disposed in position overlapping and fitting the V-shaped carrying bar so that the paper assembly is hung in an inverted J-shaped arrangement over the carrying bar. Preferably, the assembly is so hung that the sheets 22 of flexible material hang vertically down alongside of the vertically extending flange 15 with the short bent-over edge 29 and portions of the binder enclosing the same engaging along the inclined flange 16 of the carrying bar.

The construction thus disclosed is temporarily secured in place on the carrying bar against accidental displacement by means of an inverted J-shaped spring clamp 30 having a relatively long leg 31 engaging the vertically extending portion of the binder 28 and having a relatively short portion 32 which extends downwardly above the portion of the binder which is on the inclined flange 16 and terminates in a bead 33 which underlaps the lower edge 34 of flange 16 and extends upwardly into the angle formed by the flanges 15 and 16.

In the showing in Fig. 1, the heavy paper binder 28 is shown shifted to the right from its normal position in order to show the exposed edges of the stored sheets 22 but it is to be understood that in practice the binder has a length measured along the edge 27 greater than the width of the sheets similarly measured so that the binder will overlap and extend beyond the edges of the sheets 22 to protect these edges.

In the showing in the several figures, only a few sheets 22 are illustrated in position but the structure illustrated is capable of receiving many more sheets. Additional sheets would tend to spring apart the arms 31 and 32 of the clamp and with extreme distention the arms would tend to become distorted and belly out from their normal position shown in Fig. 2 and tend to contact with the sheets on opposite sides thereof along a line or point and not along the extensive area of engagement illustrated.

It is obviously within the scope of the disclosure to provide supports for opposite ends of bar 14 and this may be conveniently attained by utilizing two spaced-apart rods corresponding to the rods 13 and in this case grooves corresponding to grooves 19 will be positioned adjacent opposite ends of the rods, or differently expressed, the construction shown in Fig. 1 may be duplicated at the opposite or free end of the cantilever form of bar herein disclosed.

In operation and assuming that the parts are mounted in position shown in Figs. 1 and 2 and that it is desired to demount the carrying rod and its supporting parts it is simply necessary to elevate the free end of the carrying rod so as to release the groove 19 from its engagement with the rod 13 and thereafter the rod 14 can be moved away from the rods 12 and 13 and the parts thus demounted can be carried to a drawing board or other support. With the assembly so removed lying on a table, drawing board or other support, the blue prints or other sheets 22 can be inspected without remounting them from jacket. Should it be desired to remove one of these prints or to add another print to the file, the spring clamp or clamps are removed by slipping the same longitudinally off the end of the rod. This permits the binder to be reopened and the parts thereof moved back into the position shown in Fig. 3 in which position any one or all of the contained sheets 22 may be withdrawn from the jacket. To remount the file it is simply necessary to fold the jacket into the V-binder form by again folding the same with its contained sheets along the creased line 26. The folder jacket with its contained sheet is replaced on the carrying bar, the assembly thus formed is clamped in position by restoring the clamps and the carrying bar remounted in the position shown in Fig. 1.

By means of a device of this character, it is possible to secure large sheets of flexible material, such as blue prints, maps, charts, pictures and the like superposed one on the other, in an orderly arrangement and without creasing or folding them except for the small bend along the edge which is hooked over the supporting rod.

The angle formed between the flanges 15—16 is small, in actual practice about 20–25°, which has been found to provide a sharpness of edge to the upper ridge of the support to give the necessary frictional resistance in order to restrain accidental slipping or shifting of the blue prints and papers off the supporting rod. The spring clamps act not so much as a means for securing the jacket and contents to the supporting bar as it acts to prevent the unfolding or opening of the jacket from its small-angled position shown in Fig. 2. Primarily, the sheets are held suspended in position because their upper edges are turned back upon themselves to form a sharp-angled hook engaging over the supporting bar. Further, as the sheets are held frictionally between the flaps of the binder, there is thus provided a resistance to any accidental slipping of the sheet out of place and this resistance to accidental slipping is of course increased due to the fact that the binder itself is bent back upon itself along the crease line 26. It would be extremely difficult even to pull the sheets 22 out of place due to the resistance offered to any attempt to draw them over the sharp angle at the ridge of the supporting bar.

I claim:

1. A rack for supporting a file of sheets of flexible material comprising a pair of par-

allel supporting rods disposed in vertically and horizontally offset position, a carrying bar demountably positioned between the rods and projecting therefrom to form a cantilever extension, said bar being inverted V-shape in cross-section, a protecting jacket of flexible material folded back upon itself to form a pair of flaps to receive therebetween the edge of a sheet of flexible material, said flaps being adapted to be again bent back upon themselves with the contained sheet to cause the jacket to form a V-binder for securing the flexible sheet to the jacket and adapted to fit upon and overlap said bar and a spring clamp for temporarily securing to the carrying bar both the binder and the flexible sheet secured to the same.

2. A rack for supporting a file of sheets of flexible material comprising a pair of parallel supporting rods, a carrying bar demountably positioned on the rods, said bar being inverted V-shape in cross-section, a protecting jacket of flexible material folded back upon itself to form a pair of flaps to receive therebetween the edges of a sheet of flexible material, said flaps being adapted to be again bent back upon themselves with the contained sheet to cause the jacket to form a V-binder for securing the flexible sheet to the jacket and adapted to fit upon and overlap said bar and a clamp for temporarily securing to the carrying bar both the binder and the flexible sheet secured to the same.

3. In a device of the class described, comprising a carrying bar, V-shaped in cross-section, a protecting jacket of flexible material folded back upon itself to form a pair of flaps to receive therebetween the edge of a sheet of flexible material, said flaps being adapted to be again bent back upon themselves with the contained sheet to cause the jacket to form a V-binder for securing the flexible sheet to the jacket and adapted to fit upon and overlap said V-shaped carrying bar.

4. In a device of the class described, the combination of a supporting bar substantially of inverted V-shape in cross-section and including angularly disposed flanges with one flange extending substantially vertical, to receive a flexible sheet having a falling portion extending downwardly along said vertically extending flange and having an edge adapted to be bent over the top of the bar and extending along the other flange and clamping means for securing the sheet temporarily in position when so hung from the bar.

5. In a device of the class described, the combination of a supporting bar substantially of inverted V-shape in cross-section and including angularly disposed flanges with one flange extending substantially vertical to receive a flexible sheet having a falling portion extending downwardly along said vertically extending flange and having an edge bent over the top of the bar and extending along the other flange, a protecting member adapted to overlap and protect the edge of said sheet when so bent across the top of the bar and clamping means for securing the sheet temporarily in position.

6. In a device of the class described, the combination of a supporting rod having a sharp upper edge to receive a sheet of flexible material, having an edge portion lapped over said sharp edge and means for drawing the sheet into engagement with said sharp edge and thus to secure the sheet temporarily in place.

7. In a device of the class described, the combination of a supporting rod having a sharp upper edge to receive a sheet of flexible material having an edge portion lapped over said sharp edge to hang it from the rod, means for drawing the sheet into engagement with said sharp edge and thus to secure the sheet temporarily in place and a jacket for protecting the sheet.

8. A device for hanging blue prints and like large sheets of flexible materials, comprising a supporting bar, means at one end for temporarily mounting the bar in horizontal position exposing it for the major portion of its length, a file hung from the exposed portion of the bar, said file comprising a jacket folded along a medial line to form a pair of flaps to receive therebetween the edge portions of a plurality of sheets, said flaps adapted to be folded back upon themselves with the contained sheets to form a V-shaped binder adapted to fit upon and overlap the supporting bar and a pair of spring clamps securing the file in place on the bar.

9. In a device of the class described, the combination of a jacket folded along a medial line to form a pair of flaps to receive therebetween the edge of a sheet, said flaps being adapted to be again folded back upon themselves with the contained sheet to form a structure V-shaped in cross-section and means for suspending the structure in such V-shaped position.

10. In a device of the class described, the combination of a supporting member providing a sharp upper ridge adapted to receive a sheet having an edge portion overlapping the ridge to hang it from said member and clamping means for securing said edge portion of the sheet to the member.

11. In a device of the class described, the combination of a supporting member adapted to receive a sheet of flexible material disposed in an inverted V-shape form and hooked over the supporting member, means tending to maintain the flexible sheet in frictional holding engagement with the member.

12. In a device for hanging blue prints and like sheets of flexible material, the combination of a suspending support adapted to

have the sheets hooked in inverted V-shape form over the support and means for clamping to the support the part of the sheet hooked over the same while permitting the balance of the sheet to fall free.

13. In a device of the class described, the combination of a jacket comprising two flaps having a common hinge edge and adapted to receive between the flaps an edge portion of a sheet of flexible material and each flap provided with a crease extending parallel to the edge and adapted to be folded along said crease and thus bend the edge portion of any sheet in position between the flaps.

14. In a device of the class described, the combination of a jacket comprising two flaps having a common hinge edge and adapted to receive between the flaps an edge portion of a sheet of flexible material and each flap provided with a crease extending parallel to the edge and adapted to be folded along said crease and thus bend the edge portion of any sheet in position between the flaps and spring clamps fitted to engage opposite sides of the jacket when so folded.

15. The combination of a supporting rod having an angled top edge to receive the edge of a sheet of the material to be filed bent at a sharp angle over the top of the rod, and said sharp angle disposition tending to prevent the opening of the angle with resulting unwrapping of the sheet and escape from the rod and clamping means adapted to engage the sheet and to act to prevent the same from changing its angular disposition.

16. The combination of a supporting means, means for protecting an edge of the file comprising a jacket sheet having one edge bent back upon itself, means within the bent-back edge to support the jacket and means for preventing the edge from uncurling off from the supporting means.

Signed at New York City in the county of New York and State of New York this 6th day of May, A. D. 1931.

ALFRED J. HOLM.