No. 807,891. PATENTED DEC. 19, 1905.

M. A. WEATHERS.

FRAME FOR HOLDING AND STRETCHING FABRICS.

APPLICATION FILED JUNE 20, 1905.

Fig. 1.

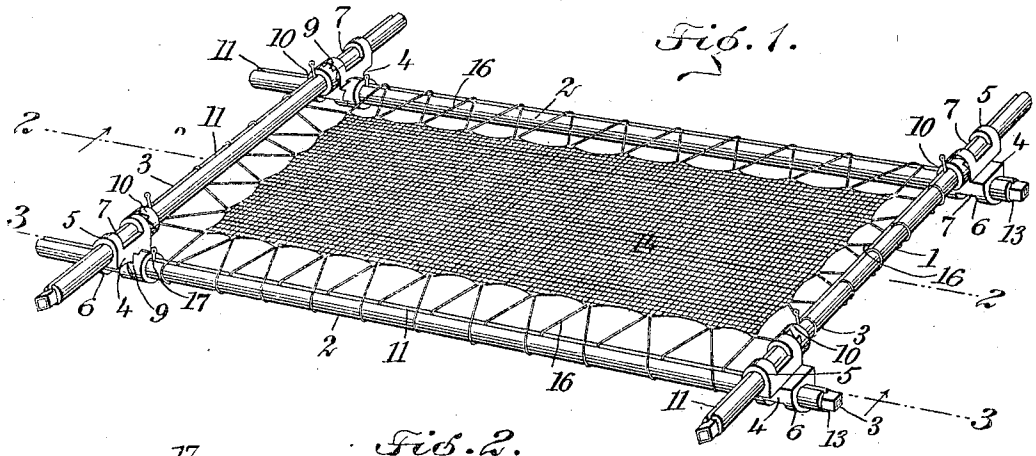


Fig. 2.

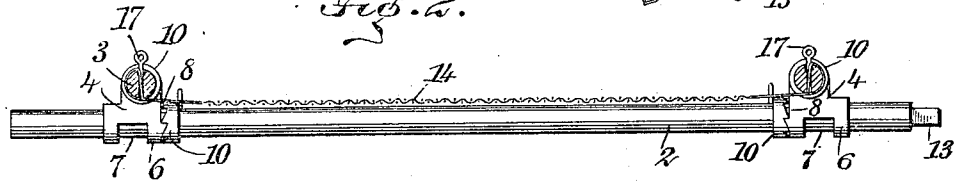


Fig. 3.

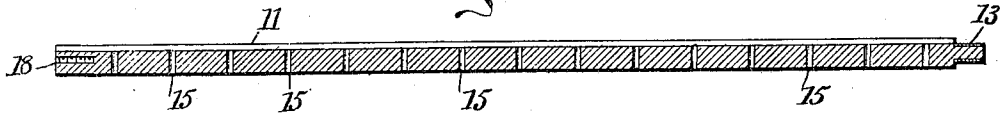


Fig. 4.

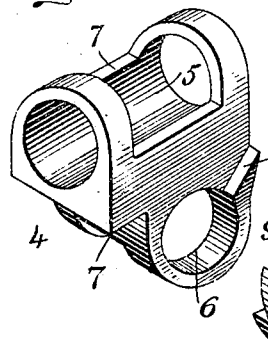


Fig. 5.

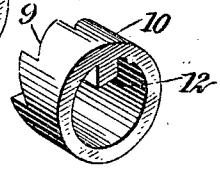


Fig. 6.

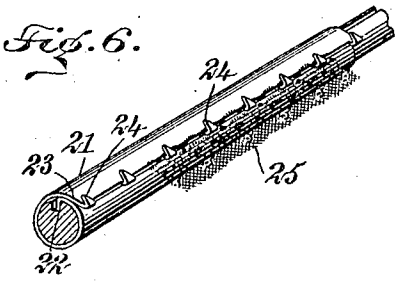


Fig. 7.

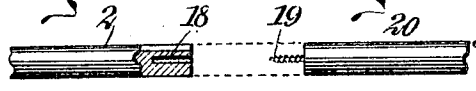


Fig. 8.

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UNITED STATES PATENT OFFICE.

MURDOCK ALEXANDER WEATHERS, OF MANCHESTER, NEW HAMPSHIRE.

FRAME FOR HOLDING AND STRETCHING FABRICS.

No. 807,891. Specification of Letters Patent. Patented Dec. 19, 1905.

Application filed June 20, 1905. Serial No. 266,119.

To all whom it may concern:

Be it known that I, MURDOCK ALEXANDER WEATHERS, a citizen of the United States, and a resident of Manchester, in the county of Hillsboro and State of New Hampshire, have invented a new and Improved Frame for Holding and Stretching Fabrics, of which the following is a full, clear, and exact description.

This invention relates to frames; and it consists substantially in the details of construction and combinations of parts hereinafter more particularly described, and pointed out in the claims.

The invention has reference more especially to frames for holding fabrics employed in the making of mats, rugs, quilts, and similar articles and for stretching such fabrics and others—as, for instance, lace curtains, women's face-veils, and the like—for drying the same after cleaning.

One of the principal objects of my invention is to provide a frame of this kind which is readily adjustable to fabrics of different sizes or dimensions and which is simple in construction, easy of manipulation, and comparatively inexpensive to manufacture.

A further object of the invention is to provide a frame of this character of an embodiment to overcome numerous disadvantages and objections frequently encountered in the use of many other contrivances hitherto devised for similar purposes.

A still further object of the invention is to provide a fabric-holding stretching-frame which is light in weight, and strong and durable, besides being capable of readily being taken apart and again put together, and possessing the capacity for long and repeated service.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, forming a part of this specification, in which similar reference characters designate similar parts in all the views, and in which—

Figure 1 is a perspective view of a fabric-holding frame embodying my improvements, the same illustrating the manner in which the piece of fabric is held and stretched between the members of the frame for the purpose of having any suitable design embroidered or otherwise worked thereon. Fig. 2 is an enlarged longitudinal sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged longitudinal sectional view of one of the side members of the frame, taken on the line 3 3 of Fig. 1. Fig. 4 is an enlarged view in perspective of one of the double bearing-blocks employed at each intersection of one of the side members of the frame with one of the end members thereof. Fig. 5 is a similar enlarged view of a locking device employed with each of the members of which the frame is composed for coöperation with a part of one of the bearing-blocks to secure the side and end members of the frame in adjusted relation to each other. Fig. 6 is an enlarged view in perspective of a portion of one of the members of the frame, showing the application thereto of a section of the devices employed for the stretching between the members of articles of different kinds; and Figs. 7 and 8 are views in detail illustrating the manner in which adjacent ends of sections of each of the members may be joined to each other for the purpose of increasing the dimensions of the frame.

Before proceeding with a more detailed description it may be stated that in the form of my improvements herein shown I employ a fabric-holding frame comprising parallel side members and parallel end members crossing the same, all being alike in construction, and associated with each intersection of said side members with said end members is a specially-constructed device by which the two sets of members are adjustably held together. The members of the frame are each of special form for the attachment thereto of the edges of the fabric to be held in place while being worked upon, and I also employ in connection with the members specially-constructed devices having special means for the attachment thereto of the edges of such articles as lace curtains, women's face-veils, or the like whenever it is desired to stretch them for the purpose of drying after cleaning. Each of the members of the frame is adapted to be rotated within the bearings therefor, by which the desired tautness of the fabric may be effectively regulated.

Reference being had to the drawings by the designating characters thereon, 1 represents my improved fabric-holding frame in entirety, the same comprising parallel side members 2 and parallel end members 3, crossing said side members, as shown, while located at each intersection of each member of one set thereof with a member of the other set is a block 4, constructed with, preferably, circular bearings 5 and 6, disposed at right

angles to each other, one of said bearings receiving a portion of one of the side members 2 of the frame and the other receiving a corresponding portion of one of the end members 3 thereof, each of said bearing-blocks being preferably constructed of metal and each of the said bearings 5 and 6 being preferably cut out at 7 for the purpose of reducing the weight thereof and economizing in the amount of material used in the construction of the block. Each block is provided on each of the inner faces thereof with an inclined projection or shoulder 8, with which engages one or the other of the teeth 9, projecting from the adjacent end of a sleeve 10, fitting upon each adjacent side member 2 and each adjacent end member 3 of the frame, it being here mentioned that each of said members 2 and 3 referred to is formed longitudinally with a groove 11, in which is received an inwardly-projecting rib 12, formed on each of the said sleeves 10 with which the member is fitted or supplied. Preferably each of the said frame members 2 and 3 is squared at one end, as at 13, for the application thereto of an ordinary wrench for rotating the member to stretch or tighten a fabric 14 within the frame, as and for the purpose presently explained. Each member is also formed at intervals thereof between the ends with transversely-extending holes or openings 15, extending from the base of the longitudinal groove 11 therein to the outer surface of the member, said holes or openings being for the purpose of receiving lacing-cords 16, which are threaded in and out of the same, as in the manner of stitching, for instance, and attached to the adjacent edge of the fabric 14. (See Fig. 1.) In this way a piece of fabric may be drawn taut within the frame by which to be embroidered or otherwise worked in any suitable design placed thereon. From the construction shown and described it will be seen that should it be desired to tighten the fabric at any time the same may be done by simply rotating either of the members 2 or 3 of the frame therefor in an obvious manner. One of the teeth 9 on each sleeve 10 adjacent to each of the inner faces of each of the bearing-blocks 4 is made to engage with the opposite shoulder 8 of said bearing-block, according to any particular position to which the side and end members of the frame may be turned, by means of a pin 17, fitted in that one of each of the openings 15 in each member best suited to such adjustment, and in this way will all the said sleeves be prevented from movement longitudinally either of the members 2 or the members 3 of the frame. Whenever it is desired to make a different adjustment, these pins are removed and the members 2 and 3 of the frame moved accordingly in the bearings therefor, as will be readily understood. The squared portion 13 of each member of the frame is preferably covered with metal in order to prevent rupturing or bruising thereof by the jaws of a wrench which may be applied thereto, it being understood that the main body of each member of which the frame is composed is preferably made of wood or metal material.

One end of each of the members 2 and 3 of the frame may be formed with an inwardly-extending threaded opening 18 to receive a corresponding screw 19 on the adjacent end of another or alining member 20, which may be added to the first for the purpose of increasing the dimensions of the frame, (see Figs. 7 and 8,) and it is thought that the construction and operation of my improvements will be fully understood from what has been stated.

As a means of stretching light or open-mesh fabrics—such as lace curtains, face-veils, and the like—I preferably employ in connection with each of the members 2 and 3 of the frame as many different sections of tubing 21 (see Fig. 6) as may be desired, each constructed at one longitudinal edge with a lip 22 for entering the groove 11 of the member on which the section is placed, the other longitudinal edge of the section overlapping, as is indicated at 23, and having the edge thereof formed at suitable intervals with outwardly-turned hooks 24, on which a fabric or article 25 may be suspended at the edges in a manner apparent. In the use of these sections in connection with the members 2 and 3 of the frame any strain imposed upon the fabric from any cause will be received upon the said hooks 24 and by them in turn communicated to the overlapping portion of the section 21 in such manner as to tend to tighten the parts of the section about the member, and thus will be prevented any slipping or displacement of the fabric which would tend to unequal stretching thereof when being dried in the ordinary manner after cleaning.

Instead of securing the fabric 14 (see Fig. 1) in the frame by means of the lacing cord or cords 16 it is apparent that I may dispense with such cord or cords and secure the edges of the fabric to the members of the frame by other pins, (not shown,) which may be inserted in such of the openings 15 of the said members as may be located between the openings in which are inserted the already-mentioned pins 17 for securing in locked engagement with the bearing-blocks 4 the hereinbefore-mentioned rings 10, sliding on the members.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A fabric holding and stretching frame, comprising rectangularly-disposed rotatable members, each having a longitudinal groove therein, and formed at intervals of its length

with openings leading to said groove, bearing-blocks at the intersections of the members, each having on each inner face thereof a projection, sleeves on the members, each having teeth for engaging with one of said projections, and each also having a rib working in the groove of the member with which the sleeve is associated, and pins adapted to said openings for holding the sleeves of each member in place.

2. A fabric holding and stretching frame, comprising rectangularly-disposed members, each having a longitudinal groove therein, bearing-blocks at the intersections of the members, each having bearings disposed at right angles to each other, and each of said bearings having at its inner end a shoulder, sleeves on the members, having ribs working in the grooves thereof, means on each sleeve for engaging with the shoulder adjacent thereto, means for holding each sleeve in place, and means whereby the edges of a fabric may be fastened to said members.

3. A fabric holding and stretching frame, comprising rectangularly-disposed members, each having a longitudinal groove therein, and one or more tubular sections fitting upon each member, having at one of the longitudinal edges thereof a lip extending within the groove of the member, its other longitudinal edge overlapping the first and formed with hooks.

4. A fabric holding and stretching frame, comprising rectangularly-disposed rotatable members, each having a longitudinal groove therein, and formed at intervals of its length with openings leading to said groove, bearing-blocks at the intersections of the members, each having on each inner face thereof a projection, sleeves on the members, each having teeth for engaging one of said projections, and each also having a rib working in the groove of the member with which the sleeve is associated, pins adapted to said openings for holding the sleeves of each member in place, and means for attaching a fabric to said members.

5. A fabric holding and stretching frame, comprising rectangularly-disposed members, each having a longitudinal groove therein, bearing-blocks at the intersections of the members, each having bearings disposed at right angles to each other, and each of said bearings having at its inner end a shoulder, sleeves on the members, having ribs working in the grooves thereof, means on each sleeve for engaging with the shoulder adjacent thereto, means for holding each sleeve in place, and lacings for fastening the edges of a fabric to said members.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MURDOCK ALEXANDER WEATHERS.

Witnesses:
FRED F. FISHER,
JONAS H. HARVEY.