June 27, 1933. A. E. SHULL 1,916,022

ADJUSTABLE FRAME

Filed Feb. 23, 1932

Fig. 1.

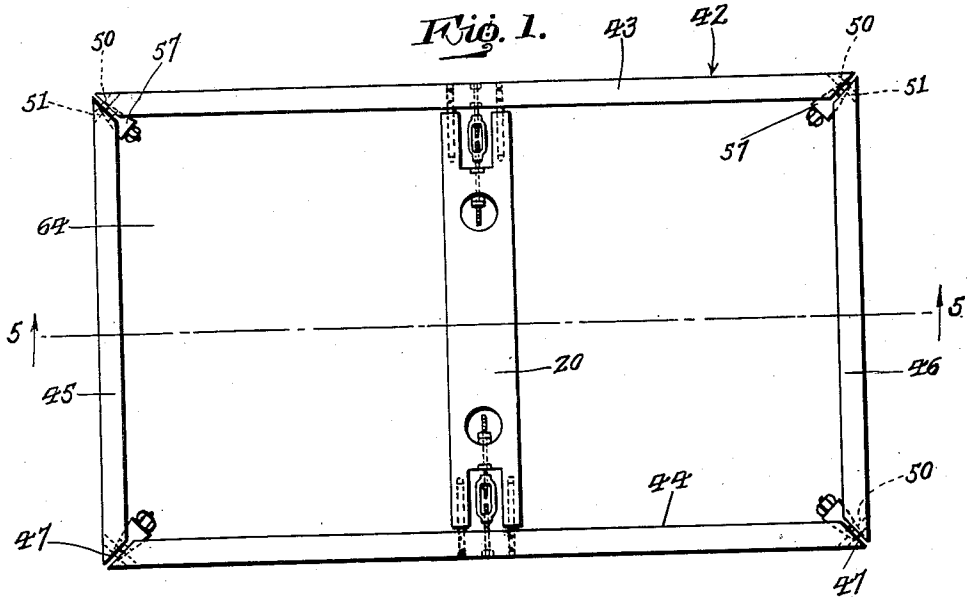


Fig. 2.

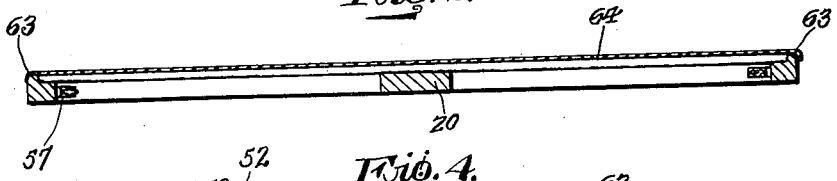


Fig. 4.

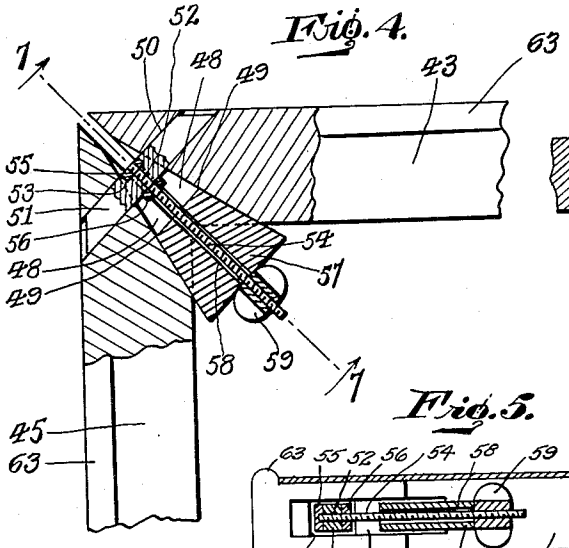


Fig. 3.

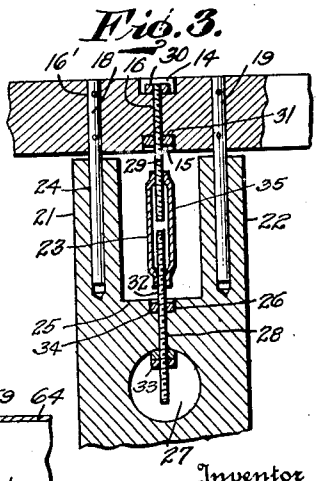
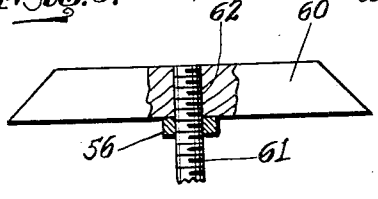


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE

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ADJUSTABLE FRAME

Application filed February 23, 1932. Serial No. 594,719.

This invention relates to a frame for use in connection with an artist's or scenery canvas, but it is to be understood that a frame, in accordance with this invention may be employed for any purpose for which it is found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth, a frame so constructed and arranged to enable the convenient stretching, to a taut condition a canvas secured thereon and for holding the latter in its stretched condition.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a frame of the type and for the purpose referred to which is simple in its construction and arrangement, strong, durable, thoroughly efficient in its use, readily adjustable, quickly assembled and comparatively inexpensive to manufacture.

To the above ends essentially, and others which may hereinafter appear, the invention consists of such parts and such combination of parts which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is a rear elevation of a canvas holding frame in accordance with this invention.

Figure 2 is a section on line 5—5 Figure 1 looking in the direction of the arrow.

Figure 3 is a fragmentary view in sectional plan of the frame.

Figure 4 is a fragmentary view in sectional plan upon an enlarged scale of the frame shown.

Figure 5 is a section on line 7—7 Figure 4 looking in the direction of the arrows.

Figure 6 is a side elevation partly in section illustrating a modified form of a combined coupling and guide element employed at the corners of the frame.

The frame is indicated generally at 42 and includes a pair of side bars 43, 44 and a pair of end bars 45, 46.

The inner and outer side edges of each bar 43, 44 at the transverse median thereof is provided with pockets 14, 15. Each bar 43, 44 is formed with a transverse opening 16 which communicates with the pockets 14, 15 centrally of the bottoms of the latter. The pockets 14, 15 of each bar 43, 44 are arranged between and spaced from a pair of transverse openings 16′, 17 in which are secured dowels 18, 19 extended from the inner side edge of each bar 43, 44.

Arranged between the bars 43, 44 as well as being slidably coupled therewith is a flat combined frame stretcher and brace member 20 having its ends of like form, but oppositely disposed. The member 20 also provides a support for the canvas. Each end of member 20 is bifurcated to provide a pair of spaced, parallel arms 21, 22 separated by the furcation 23. Each arm is formed with a lengthwise socket 24 opening at the free end of the arm. The arms 21, 22 by means of the sockets 24 are slidably mounted upon a pair of dowels 18, 19. The inner wall 25 of the furcation 23 is provided centrally with a pocket 26. Adjacent the wall 25, member 20 is formed with an enlarged circular opening 27 and leading from the latter to pocket 26 is a passage 28.

The member 20 is coupled to the bars 43, 44 by a pair of oppositely disposed adjusting or shifting devices for the bars 43, 44. Each device includes a stationary threaded rod 29 which extends from pocket 14, through opening 16, pocket 15 and into furcation 23. A holding nut 30 is mounted on the outer end of rod 29 and is arranged in pocket 14. A clamping nut 31 is mounted on rod 29, intermediate its ends and arranged in pocket 15. Carried by member 20 is a stationary threaded rod 32 which extends from opening 27, through passage 28, pocket 26 and into furcation 23. Mounted on rod 32 within opening 27 and abutting the wall of the latter are clamping nuts 33. Carried by rod 32 and seated in pocket 26 is a holding nut 34. The rods are arranged in endwise opposed arrangement and are oppositely threaded. Threadedly engaging with rods 29, 32 is a rotatable combined coupling and adjusting element 35 for the member 20. Such element is of tubular form and has reversely arranged internal threads which engage with the threaded rods. The elements 35, in connection with the threaded rods provide for the

shifting of the bars 43, 44 relative to the ends of member 20. The dowels 18, 19 provide combined guides and supports. They act as guides for bars 43, 44, means for supporting the latter from member 20 and means for supporting the later relative to such bars.

The ends of each frame bar inclines outwardly from its inner to its outer edge, as at 47 or in other words each end of each bar is mitered at an angle. The inclined ends of each bar are oppositely disposed. Each end edge of each bar is formed with a groove 48 of less length than that of the end edge. Each groove has its inner end opening at the inner edge of a bar and its outer end terminating adjacent the outer side edge of the bar. Each groove gradually decreases in depth from its inner to its outer end thereby providing an inclined inner wall 49 which is disposed at a greater inclination with respect to that inclined end edge of the bar in which the groove is arranged. The grooves at the ends of each bar are oppositely disposed. The grooves in the side bars are oppositely disposed with respect to the grooves in the end bars. Each bar is formed with a pair of oppositely inclined openings 50 of polygonal contour. Each opening 50 extends from the outer side edge of a bar to the inner wall of a groove 48 in proximity to the outer end of the latter. The grooves 48 of the side bars are arranged in lengthwise alignment with respect to the grooves of the end bars. Mounted in each pair of aligning openings 50 and bridging the joint between an end and a side bar is a combined coupling and guide element 51 formed with a central transverse opening 52 and a centrally disposed pocket 53 in its outer edge with which communicates the opening 52. Associated with the element 51 is a threaded rod 54 which extends through opening 52 carrying a holding nut 55 seated in pocket 53. A clamping nut 56 is mounted on rod 54 and which abuts element 51. Slidably mounted in each pair of opposed grooves 48 is an adjusting wedge 57 for shifting the opposed ends of a pair of bars away from each other at the corners of the frame. The wedge has a central lengthwise extending passage 58 through which passes rod 54, the latter projecting beyond the inner edge of the wedge. Mounted on the inner end of rod 54 is an adjusting nut 59 for the wedge. On screwing the nuts 59 outwardly on rods 54 the wedges will be carried therewith to force the opposed ends of the bars apart at the corners of the frame. The bars sliding on element 51.

The modified form of combined coupling and guide element 60 shown in Figure 6 is the same as that shown in Figure 4, with this exception, the pocket 53 is omitted and the threaded adjusting nut carrying rod 61 threadedly engages with the threaded wall of a central transverse opening 62. The nut 55 is omitted, but the nut 56 employed.

Each of the frame bars has its outer face provided with a lengthwise extending rounded head 63 flush at one side with the outer side edge of the bar. The canvas 64 is tacked to the outer faces of the beads and any adjustment required for the canvas can be readily had.

The frame includes means so constructed and arranged to make it possible to be drawn in and make a real tight frame, as well as opening up to stretch the canvas. The frame is held together square, firm and does not give the usual trouble of any one corner slipping.

What I claim is:—

1. A frame for the purpose set forth comprising, a set of spaced adjustable bars, the ends of one bar opposing one end of each bar of a pair of adjacent bars, each bar having its end edges oppositely inclined, each end edge of a bar being formed with a groove gradually decreasing in depth from its inner to its outer end, a combined support, stretcher and brace member interposed between a pair of opposed bars, a combined guide and supporting means carried by each bar of said pair of opposed bars for an end of said member, adjusting means for said pair of opposed bars secured to the latter and to said member, combined coupling and guide elements mounted in said bars in proximity to the ends of the latter and bridging the joints between the opposed ends of the bars, and adjusting means for the opposed ends of the bars secured to said combined coupling and guide elements and slidably mounted in said grooves, said bars being slidably mounted about said elements.

2. In a frame for the purpose set forth, a pair of opposed side and a pair of opposed end bars, the ends of a side bar opposing an end of each end bar, each bar being formed with oppositely disposed inclined ends, a groove in each end edge of less length than the latter and gradually decreasing in depth from the inner side edge of the bar and a pair of oppositely inclined passages extending from the outer side edge of the bar to the inner wall of a groove in proximity to the outer end of the latter, the passages in a side bar arranged in lengthwise alignment with a passage in each end bar, the grooves in a side bar opposing a groove in each end bar, a combined coupling and guide element mounted in each pair of aligning passages, and an adjusting means for the opposed ends of a pair of bars, each adjusting means being mounted in a pair of opposed grooves and anchored to a combined coupling and guide element.

3. A frame for the purpose set forth comprising, a set of spaced adjustable bars, the ends of one bar opposing one end of each bar

of a pair of adjacent bars, each bar having its end edges oppositely inclined, each end edge of a bar being formed with a groove gradually decreasing in depth from its inner to its outer end, a combined support, stretcher and brace member interposed between a pair of opposed bars, a combined guide and supporting means carried by each bar of said pair of opposed bars for an end of said member, adjusting means for said pair of opposed bars secured to the latter and to said member, combined coupling and guide elements mounted in said bars in proximity to the ends of the latter and bridging the joints between the opposed ends of the bars, adjusting means for the opposed ends of the bars secured to said combined coupling and guide elements and slidably mounted in said groove, said bars being slidably mounted about said elements, and the outer end of each of said grooves being arranged at a point removed from the outer end of that end edge in which the groove is formed and the grooves having its inner end at the inner end of such end edge.

In testimony whereof, I affix my signature hereto.

ALVIN E. SHULL.