May 13. 1930. M. L. GREENSTREET 1,757,960

CONVERTIBLE BENCH

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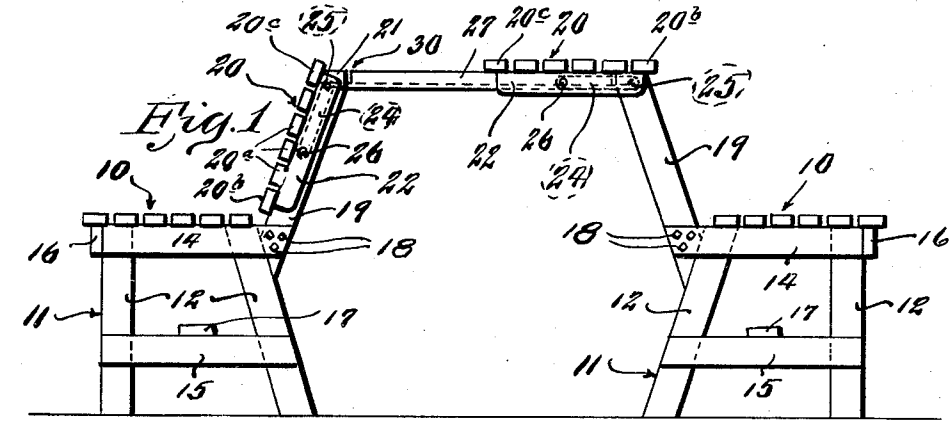


Fig. 1

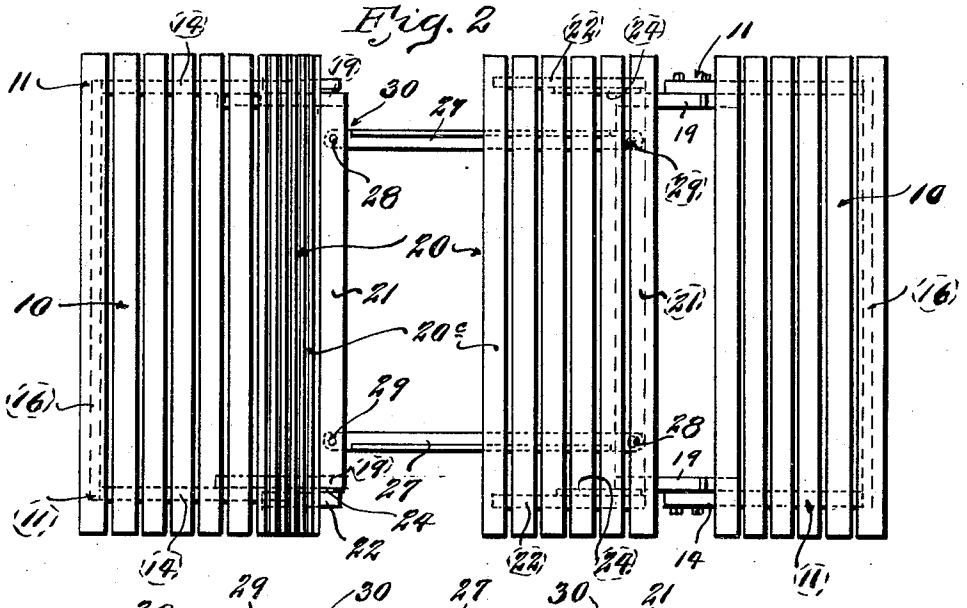


Fig. 2

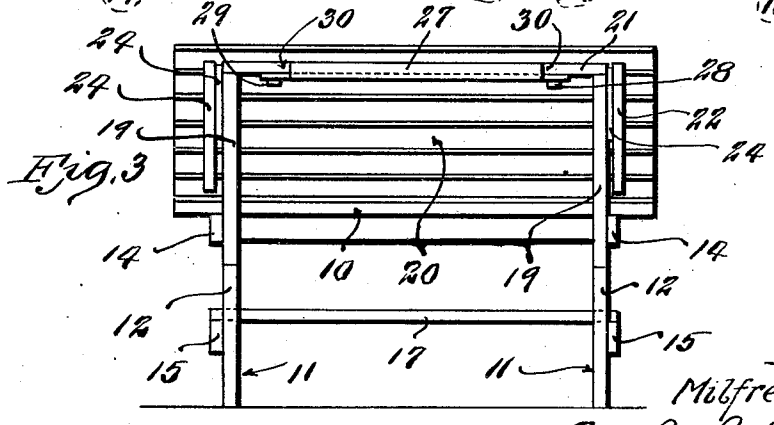


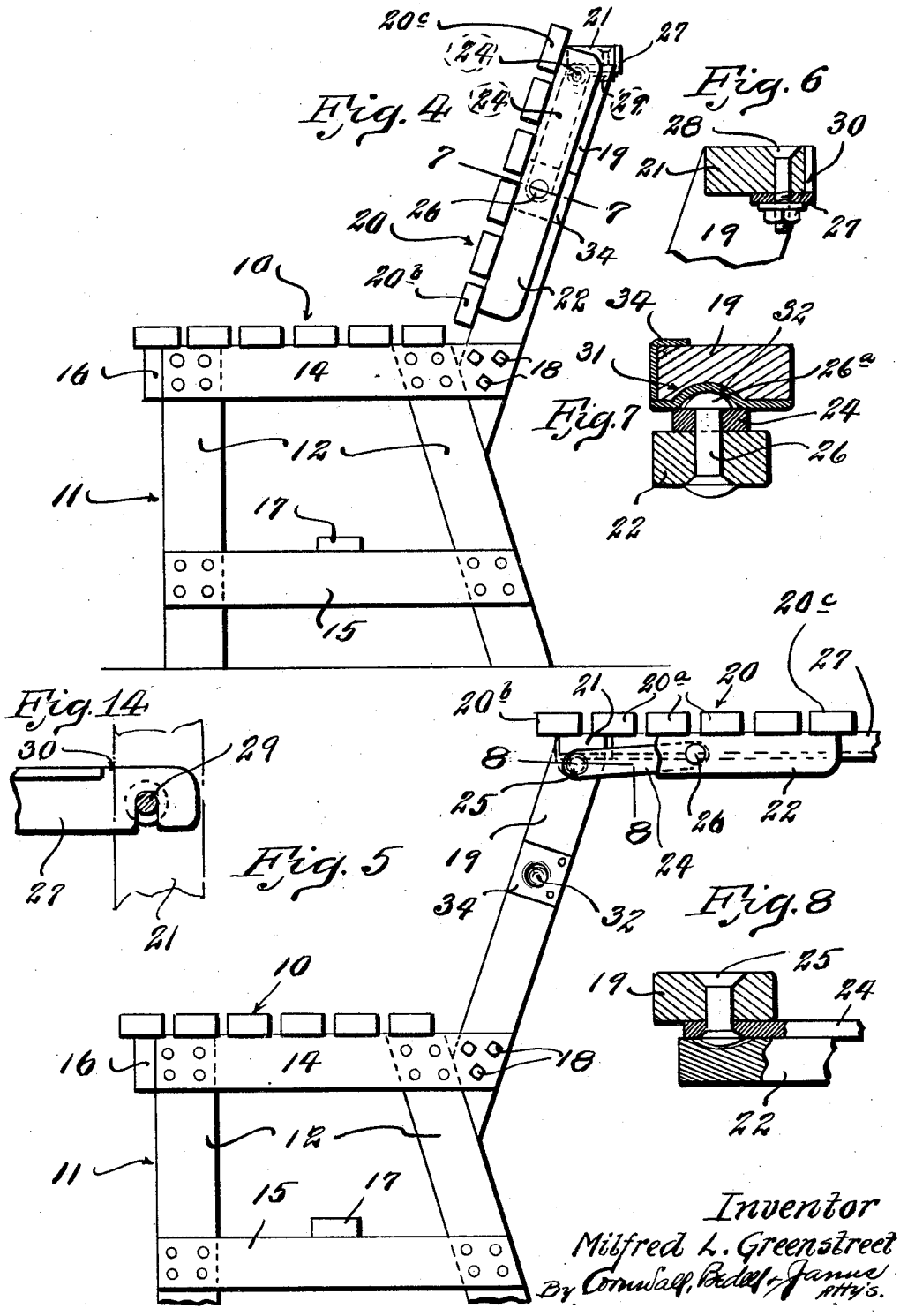
Fig. 3

Inventor
Milfred L. Greenstreet
By Cornwall, Bedell & James
Attys.

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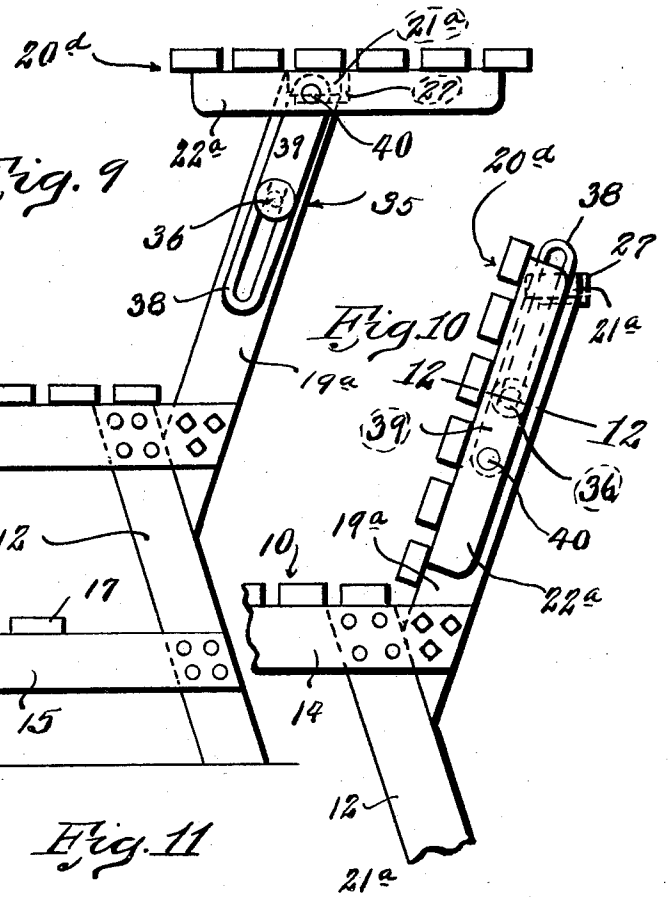


Fig. 9

Fig. 10

Fig. 11

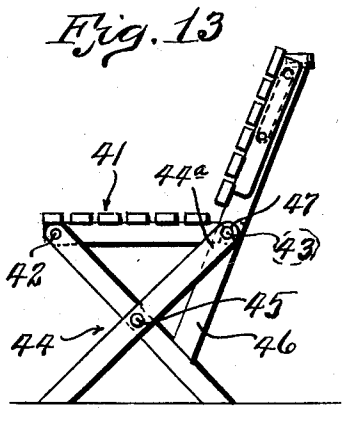


Fig. 13

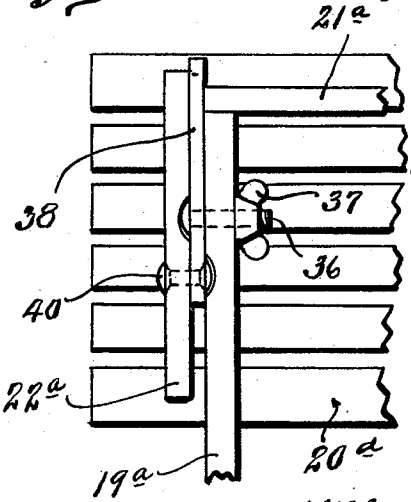
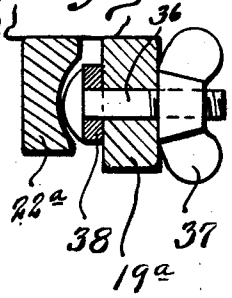


Fig. 12



Inventor
Milfred L. Greenstreet
By Cornwall, Bridello & James
Attys.

Patented May 13, 1930 1,757,960

UNITED STATES PATENT OFFICE

MILFRED L. GREENSTREET, OF ST. LOUIS, MISSOURI

CONVERTIBLE BENCH

Application filed July 28, 1927. Serial No. 208,951.

This invention relates to new and useful improvements in convertible benches, the object of the invention being the provision of a bench provided with a back adjustable into a horizontal position for use as a table.

Other objects of the invention are to provide a bench of wooden construction for outdoor use and provided with means for adjustably supporting the back of the bench whereby said back may be moved into a horizontal position in a predetermined relation with said bench, said supporting means being normally hidden from view so as not to mar the general appearance of the bench.

Still other objects of the invention are to provide suitable supporting means or connections for mounting the back of the bench to the uprights thereof whereby said back may be readily swung into either an angular position with respect to said bench to serve as a back or into a horizontal position to be used as a table, said supporting means or connections forming a part of said bench so that no extraneous securing or supporting means are necessary.

Further objects of the invention are to so construct a convertible bench as to permit two benches to be placed in spaced relation with each other whereby the backs thereof can be combined to form a table of required dimensions, each such bench being provided with a suitable member normally foldable thereagainst and adapted to be placed transversely between said benches to form horizontal supporting rails for the combined table portions.

Additional objects of the invention are to provide simple and efficient means for mounting the back of a convertible bench on the framework thereof whereby said back may be moved into either one of its two positions, said means being adapted to be automatically locked in position when the back occupies its normal position so as to prevent accidental displacement of said back and said means being inconspicuous so as not to detract from the appearance of the bench, and inexpensive to manufacture whereby such convertible bench can be manufactured economically. With these and other objects in view my invention consists in certain new and useful improvements and arrangements of parts hereinafter more fully described, claimed and illustrated in which—

Figure 1 is an end elevational view of a pair of benches arranged in cooperative relation, one bench being disposed in normal position and the back of the other bench being extended into horizontal table position.

Figure 2 is a top plan view of same.

Figure 3 is a rear elevational view of my convertible bench with the back thereof occupying normal position.

Figure 4 is an enlarged end elevational view of the bench with the back arranged in normal position.

Figure 5 is a similar view but showing the back in a horizontal position.

Figure 6 is an enlarged vertical cross section taken on line 6—6 of Figure 3.

Figure 7 is an enlarged horizontal cross section taken on line 7—7 of Figure 4.

Figure 8 is an enlarged horizontal cross section taken on line 8—8 of Figure 5.

Figure 9 is an end elevational view of a modified form of a convertible bench and showing the back in a horizontal position.

Figure 10 is a fragmental view of said bench and showing the back in normal position.

Figure 11 is a fragmental rear view of the back shown in Figure 10.

Figure 12 is a horizontal cross section taken on line 12—12 of Figure 10.

Figure 13 shows my invention applied to a collapsible bench.

Figure 14 is a horizontal detail view showing the means interconnecting the free ends of the transverse members to the opposite bench.

Referring by numerals to the accompanying drawings 10 indicates a seat of the bench. 11 indicates end frames for supporting said seat, said end frames comprising legs 12 and horizontal top rails 14 which are arranged immediately below seat 10 and horizontal intermediate rails 15. The end frames are connected together by a front rail 16 which is disposed in substantially horizontal plane with rails 14 and is secured thereto, and a

horizontal rail 17 which is secured at its end to intermediate rails 15.

The rear ends of rails 14 extend beyond rear legs 12 and have detachably secured thereto by means of fastening devices 18 the lower ends of uprights 19 which preferably bear against the edges of rear legs 12 and extend upwardly therefrom, being inclined rearwardly to provide the proper inclination for the back 20 which is mounted thereon. The upper ends of uprights 19 are preferably connected together by a horizontally disposed member 21.

The back 20, which in the present instance, consists of a series of spaced longitudinally disposed slats 20^a is secured to a pair of transverse bars 22 each of which is arranged adjacent to the outer side of uprights 19. Back 20 is movably mounted with respect to uprights 19 by means of a pair of links 24 each of which is interposed between the respective bars 22 and upright 19 and is pivotally connected at its upper end by means of a bolt or rivet 25 to the upper end of upright 19 and is pivotally connected at its lower end by means of a bolt or rivet 26 to bar 22 at a point spaced a suitable distance from the ends of said bar. The width of link 24 is slightly less than the width of bar 22 so that said link is hidden from view at all times.

A horizontally disposed angle iron 27 is pivotally connected at one end as indicated at 28 to horizontally disposed member 21 and said angle iron normally is folded against said member as shown in Figures 3 and 4, the horizontally disposed flange of said angle iron being presented against the underside of member 21 while the vertically disposed flange thereof is placed against the rear edges of said member 21. The free end of said angle iron is formed with a horizontally disposed bayonet slot which is adapted to detachably engage a headed pin 29 whereby said angle iron is held in proper position. The ends of the vertically and upwardly presented flange of angle iron 27 are cut away, as indicated at 30, to allow the folding of said angle iron against member 21 and permit said angle iron to be swung horizontally at right angles to member 21 into engagement with the opposite bench as shown in Figure 2.

When the back 20 is placed in its normal position against uprights 19, link 24 is disposed between the contiguous sides of the corresponding upright 19 and bar 22 with the pivotal connection 26 disposed below the fixed pivot 25. To bring said back into a horizontal position said back is first swung upwardly about fixed pivot 25 and then moved rearwardly and downwardly, back 20 being swung on pivots 26 whereby the lowermost edge 20^b is brought against member 21, while the uppermost edge 20^c is positioned at a point remote from said member 21 as shown in Figures 1 and 5.

Where two benches are combined to form one table, said benches are placed with their backs toward each other a suitable distance apart and angle irons 27 are moved into positions at right angles to the respective members 21, the free end of each angle 27 being anchored to pin 29 of the opposite bench thereby tying said benches together and providing a rigid support for backs 20 when the latter are moved into horizontal positions. The lengths of angle irons 27 and the widths of backs 20 are arranged in predetermined relation with each other so that when said backs 20 occupy horizontal extended positions edges 20^c thereof are disposed adjacent to each other. The edges of the upwardly presented flanges of angle irons 27 are preferably arranged in the same horizontal plane with the upper faces of member 21 and serve to maintain backs 20 in the same horizontal plane with each other.

To prevent accidental displacement of back 20 when the latter is folded against uprights 19 I provide self-locking means 31 which serve to hold the back in position. This locking means comprises a recess or seat 32 formed in the face of upright 19 at a point coincidental with the position of pivotal connection 26 when said back occupies normal position and said pivotal connection 26 is formed with a convex protuberance or head 26^a, which is adapted to be seated in seat 32 so that a certain amount of force is necessary to displace said head from its seat before back 20 is free to move away from uprights 19. In order to prevent injury to the upright by the frequent unseating of head 26^a, I provide a metallic portion or lining 34 which is secured to said upright at the requisite point and seat 32 is preferably formed in said lining thereby preventing injury and tearing of uprights 19 which are made of wood.

In the form shown in Figures 9 to 12 the modified form of my invention is shown wherein one bench may be used alone. The construction of the bench is the same as in the previous form with the exception of adjusting means 35 which is designed to be clamped to hold the back 20^d securely in horizontal position thereby enabling the use of a single bench as a table. This means 35 consists of a bolt 36 passing through member 19^a and having its threaded end disposed inwardly thereof for receiving a wing nut 37 by means of which said bolt may be drawn tight to clamp the slotted end 38 of a link 39. The opposite end of said link is pivotally connected to bar 22^a as indicated at 40 and said link 39 serves to hold back 20^d in position on member 21^a. Figure 9 shows the back in extended horizontal position while in Figure 10 the back is shown occupying normal position. When in this latter position the slotted end of link 39 is presented upwardly, said link

being moved reversely with bolt 36 as the axis during the positioning of said back.

In Figure 13 is shown a folding bench having applied thereto the convertible back construction. This bench, which is of usual construction, is provided with a seat pivotally mounted at 42 and detachably engaged at 43. The supporting frame 44 is pivotally interengaged at 45 to allow the folding thereof and the back uprights 46 are pivotally mounted at 47 to the rearwardly projecting end 44a. The back 48 is supported on the uprights by means of links 49 in the manner disclosed in Figures 1 to 8.

My improved device may be constructed of metal when so desired, or the back and seat may be formed of canvas.

The form shown in Figures 9 to 12 may be also used in combination of two benches same as the preferred form.

While I have shown and described the preferred embodiments of my invention, it is obvious that various changes in the construction and arrangements of parts of devices can be made without departing from the spirit of my invention.

I claim:

1. A bench of the class described comprising in combination a supporting frame including a pair of fixed uprights extending upwardly and rearwardly therefrom, a seat on said frame, a back normally arranged against the forward edges of said uprights, a link on each side of said back and pivotally connected at one end to one end of said back and at the other end to the corresponding upright whereby when said back occupies normal position said links are arranged in juxtaposed parallel relation with said uprights, said links being swingable on the pivots on said uprights to move said back forwardly and upwardly, said back being swingable on the outer ends of said links to bring said back in a horizontal position resting on the upper ends of said uprights and extending rearwardly therefrom.

2. A bench of the class described comprising in combination a supporting frame including a pair of fixed uprights extending upwardly and rearwardly therefrom, a seat on said frame, a back normally arranged against the forward edges of said uprights, a link on each side of said back and pivotally connected at one end to one end of said back and at the other end to the corresponding upright whereby when said back occupies normal position said links are arranged in juxtaposed parallel relation with said uprights, said links being swingable on the pivots on said uprights to move said back forwardly and upwardly, said back being swingable on the outer ends of said links to bring said back in a horizontal position resting on the upper ends of said uprights and extending rearwardly therefrom, and means for locking the links in moved position on said uprights.

In testimony whereof I hereunto affix my signature this 20th day of July, 1927.

MILFRED L. GREENSTREET.