Aug. 1, 1944. H. A. TREITEL 2,354,941

SERVING TABLE

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Fig. 2

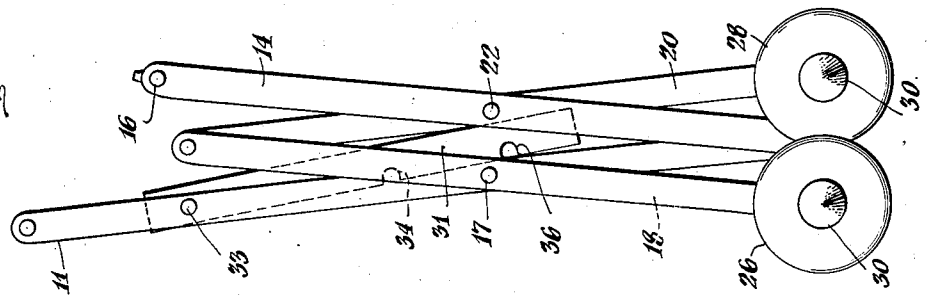
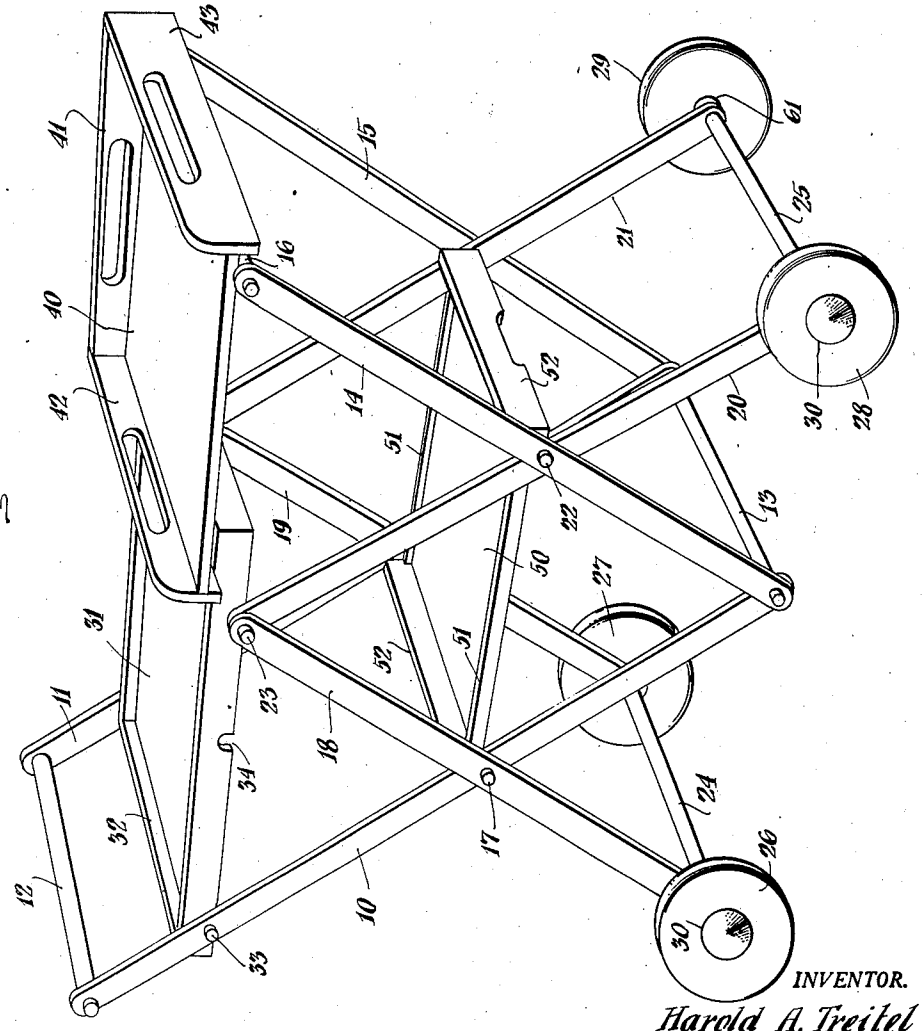


Fig. 1



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Fig. 4

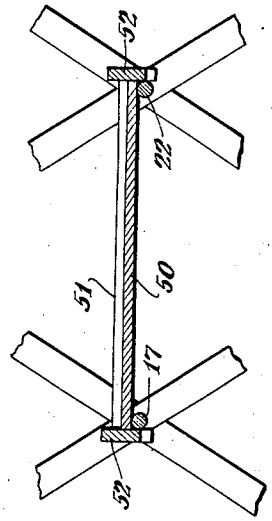


Fig. 5

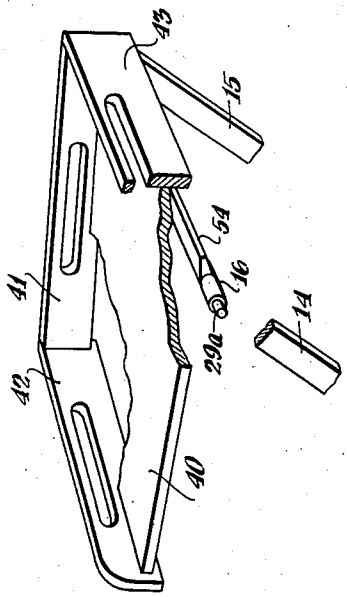
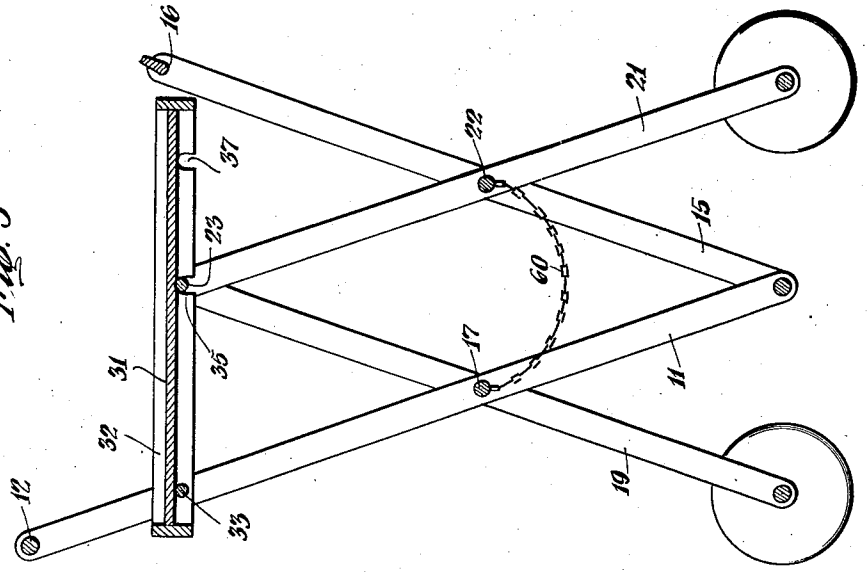


Fig. 3



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UNITED STATES PATENT OFFICE

2,354,941

SERVING TABLE

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Application May 5, 1943, Serial No. 485,714

5 Claims. (Cl. 280—36)

This invention relates to serving tables and more particularly to devices of the character of mobile service tables or wagons, trays and tray carriers, such as are adapted for occasional or other use in serving and dispensing refreshments, buffet meals, and so forth. Important objects of the invention are to provide a new, simplified and sturdy construction for furniture of the stated character, and especially to provide a new and improved device which is not only mobile, but which is adapted to be collapsed into a conveniently compact form when not in use.

A further object is to provide a folding, mobile table of novel, pleasing and durable design, embodying an economy of parts, each of which is of simple and relatively inexpensive form, and the whole being remarkably economical to manufacture and assemble. Another further object is to provide a new structure serving a plurality of functions heretofore achieved only separately, i. e. by a variety of different devices of the table and tray-carrying type, such, for instance, as tea wagons, butlers' tables, tray stands, serving tables and other serving furniture.

Particularly important features of a table made in accordance with the invention, are that it may be easily folded into a particularly advantageous arrangement for storage during periods of non-use; yet at the same time the apparatus, unlike many structures of folding character, is adapted for economical manufacture in an attractive form and design.

A further valuable feature is that the device is adapted to a variety of purposes and may be set up to form a plurality of different sizes or styles of mobile serving tables to suit the requirements of the particular occasion. In addition, the device embodies removable parts which may advantageously serve as trays and yet when removed, neither disturb the mechanical structure of the device, nor require complicated detachment; the detached trays are essentially simple, and need not be encumbered by folding elements or other weighty or awkward parts unrelated to the simple function of a tray.

Other objects and advantages include such as are hereinafter stated or rendered apparent, or are otherwise incidental to the use of structures embodying the invention, which may be conveniently explained by reference to a specific illustrative example set forth in the drawings and hereinbelow described.

Referring to the drawings, which thus show, by way of example, one presently preferred embodiment of the invention:

Fig. 1 is a perspective view of the complete table, set up for use;

Fig. 2 is a side elevation of the structure in collapsed or folded form, as for storage;

Fig. 3 is a vertical section in a longitudinal direction, showing the structure set up in an alternative manner;

Fig. 4 is a fragmentary vertical section, in a longitudinal direction, of a central tray device shown in Fig. 1; and

Fig. 5 is a fragmentary perspective view showing an upper tray of Fig. 1, with certain portions cut away to reveal underlying structure.

Referring to the drawings, the device comprises a collapsible framework of the cross-legged or lazy-tongs type, embodying spaced sets of parallel legs pivoted to each other. More specifically, the presently preferred embodiment shown includes a pair of handle-supporting legs 10, 11, spaced at their upper extremities by a handle-forming dowel or rod 12 and at their lower extremities by another rod 13. Pivoted to the legs 10, 11, by means of the rod 13, are a further pair of legs 14, 15, arranged to be opened out from the legs 10, 11 as shown in Fig. 1 and spaced at their upper extremity by a rod or arm 16. Pivoted by means of a dowel or rod 17 disposed centrally of the legs 10 and 11, are a further pair of legs 18, 19 and a like pair of legs 20, 21 are similarly pivoted about a rod 22 which extends centrally between the legs 14, 15. The upper ends of the legs 18, 19, and 20, 21 are pivoted together about a transverse dowel 23, thus completing the double lazy-tongs structure. The lower or outer ends of the rods 18, 19, and 20, 21 are respectively connected by rods 24, 25, which may also serve as axle members, for supporting wheels 26, 27 outside the legs 18, 19 and wheels 28, 29 outside the legs 20, 21.

Although the structure described may be made of any suitable material, it may very advantageously and attractively be constructed of wood, and since the several legs may have the same cross-sectional dimensions, economy of manufacture from a few standard sizes of uncut material is afforded. Similarly, the rods 13, 17, 22, 23, 24 and 25 may be of identical cross-section, and likewise in some cases members 12 and 16, although the former of those is conveniently of somewhat larger cross-sectional area, to provide a better handle, and the latter may have a special shape for better supporting purposes, as hereinafter explained. It will also be understood

that for accurate spacing of the legs in each pair, the extremities of the several dowels or rods may be turned down or include appropriate reduced portions (as at 29a in Fig. 5) and that suitable means (not shown) may be provided to prevent displacement of the legs axially outward of the rods. Although the wheels 26 to 29, inclusive, may similarly be made in a variety of shapes and materials, a convenient, economical and attractive construction constitutes the thick, relatively large wooden disks illustrated, having decorative hubs 30, as shown; the hubs serving, if desired, to maintain the wheels in suitable rotative relation on the shafts 24, 25.

A table top structure 31, conveniently of tray-like configuration, and having a low wall or barrier 32 about its upper surface, is pivoted by means of the rod or dowel 33, to swing between the legs 10, 11 from a point near the upper extremities thereof, and about an axis parallel to and near one end of the table top 31. The lower portions of the sides of the structure 31 carry two pairs of notches 34, 35, and 36, 37, selectively adapted, in pairs, to fit over the rod 23.

The complete structure further includes a tray device generally designated 40, which may assume a variety of forms, but is advantageously and attractively embodied, in the illustrated example, as a serving tray having a rear barrier or wall 41 and generally similarly side portions 42, 43, the side portions conveniently depending from the table or horizontal part of the tray, as shown more particularly in Fig. 5. Another part, likewise conveniently susceptible of embodiment in removable form (e. g., as shown), is a tray or tray-like device 50 which may have slightly raised front and rear walls 51, and raised side walls 52 which also depend sufficiently from the central or table portion of the tray so as to overhang and abut the rods 17, 22, when the tray 50 is mounted in the position shown in Fig. 1.

It may now be explained that with the tray devices 40, 50 removed, the structure may be readily collapsed or folded into the form shown in Fig. 2, the table top portion 31 being folded down between the leg assemblies 10, 14, 18, 20, and 11, 15, 19, 21, and also extending vertically down between the cross rods 17, 22—whereby the table-top element 31 is securely held in place and does not swing, or flop around, when the structure is moved. When it is desired to use the table, the legs are opened up, at first somewhat slightly further than as shown in Fig. 1, so that the outer end of the table element 31 may be swung up to the left of the rod 23. Thereupon the legs are slightly collapsed to the arrangement shown in Fig. 1 and the notches 36, 37 of the top portion 31 are fitted over the rod 23. The tray member 50 may then be fitted in place between the sets of legs and so as to lock, so to speak, over the rods 17, 22 (Fig. 4). In this way the structure is easily and rapidly set up in its most expanded form and yet by virtue of the arrangement of the top element 31, and preferably also with the cooperation of the tray device 50, the structure is mechanically very rigid and sturdy. Thereafter, the tray device 40 may be seated in place, with the lower edge of its wall 42 resting on the upper surfaces of the barrier 32 of the top 31, and with the inside corner formed by the downwardly projecting wall 43 seated over the rod 16. Conveniently the rod 16 may have an extended mid portion or flange 54, for better seating of the tray device 40 on it.

It will now be seen that the complete assembly shown in Fig. 1 provides a serving table of generous proportions, whereon a considerable quantity of refreshments or other articles may be placed. The surfaces of the top 31, tray 40 and tray devices 50 are all available to that end, and the arrangement is such that all of them are readily accessible. The structure may be readily moved from place to place, as by pushing it with the handle 12, and either when at rest or during travel, and despite the fact that any or all of its surfaces may be relatively heavily loaded, the entire table is remarkably rigid and well balanced against vibration, upsetting or other insecurity heretofore usually associated with mobile or folding service tables of various sorts. These mechanical advantages result, as will now be seen, from the relatively simple yet effectively interconnected assembly of crossed legs and cooperating elements, and also particularly from the arrangement of the fundamental supporting extremities of the legs 18, 19, 20, and 21, with their substantially large wheels disposed at least about as far from the vertical center line of the structure as the upper periphery of the latter. Ordinarily, moreover, the central tray 50 may be expected to be loaded with relatively heavier objects than the upper portions, such as reserve supplies, or the like, thus further intensifying the center of gravity of the structure at a relatively low point and well inside the area defined by the supporting elements 26 to 29. In other words, the center of gravity of the structure and its general arrangement are such as to provide a remarkably stable device, proof against wobbling or tipping, to a very desirable degree.

The tray 40 may be removed at any time for service purposes, without appreciably affecting the mechanical firmness of the assembly, and the tray device 50 may likewise, if desired, be removed from time to time without great impairment of the structural rigidity.

As indicated hereinabove the device is also such that it may be employed in other ways, and Fig. 3 illustrates an alternative manner in which the main table and frame structure may be set up. Thus, for instance, where less extensive serving operations are required, the collapsible framework need only be opened to the intermediate extent shown in Fig. 3 and the top 31 dropped down so that the notches 34, 35 (which are substantially nearer to the pivoted rod 33) lock over the dowel 23. With this arrangement the tray members 40, 50 may ordinarily be dispensed with as parts of the assembled structure—although, of course, even without the supporting instrumentalities, they may be separately used as serving trays. It will be seen that in the modified, less extended arrangement of Fig. 3, fully adequate structural rigidity is afforded, and the device provides a compact, single-tray wagon admirably adapted for serving purposes and equally susceptible of being wheeled about, as desired.

In order to prevent accidental collapse of the lazy-tongs framework downwardly, e. g. into a horizontal position, when the device is being closed to or opened from its folded form of Fig. 2, a cord or other flexible connection, indicated by the dot and dash lines 60 in Fig. 3, may extend between and depend below the rods 17, 22. Advantageously the cord 60 should be sufficiently long (but not longer than necessary) to permit the initial opening of the legs somewhat further than as shown in Fig. 1 and so as to allow the

outer end of the top device 31 to pass to the left of the rod 23.

Attention is particularly directed to the fact that in the preferred embodiment shown, the top device 31 and likewise the tray structure 50 (and also if desired the tray 40) are dimensioned and constructed to lie wholly within the side framework formed by the crossed legs. In this manner, rigidity of the structure is promoted, the balance of the device is improved and the center of gravity better located, while at the same time, folding of the device to a compact vertical form, as shown in Fig. 2, is facilitated. That is to say, the top element 31 is folded down wholly within the collapsed framework and is actually held between the rods 17 and 22; thus neither the top structure nor any other part is such that it must overlie the collapsible leg elements or is such that it may extend or swing free at awkward angles from the folded assembly.

Somewhat similar advantages are attained by the preferred arrangement of the wheels 26 to 29, inclusive, at the outer sides of the framework. Thus the wheels 28, 29 of the members 20, 21 are preferably spaced from their supporting legs 20, 21, by washers or bushings, such as shown at 61 in Fig. 1, so that when collapsed the wheels readily overlie the adjacent legs 14, 15; and the wheels 26, 27 are similarly outwardly spaced to overlie the wheels 28, 29, as illustrated in Fig. 2. It will also be noted that parallel elements of the leg assembly at each side are arranged in the same plane, e. g., the legs 14, 18 are disposed outside the legs 10, 20, thus enhancing the compactness to which the device may be folded, as shown in Fig. 2.

A further and important characteristic of the structure, especially as embodied in the form shown, is that its folded or collapsed form is of a vertical nature. That is to say, instead of being folded down (or upwardly, as in raising the legs of a card table) into a horizontal position, from which it would have to be swung up into the vertical position more handy for storage, the structure is simply folded sidewise and it immediately assumes the most convenient storage position while at the same time the wheels 26 to 29 all remain at the lower end of the device, thus continuing to serve their function of mobility, and making it unnecessary to rest any polished or other decoratively finished surface of the structure on the floor. Other types of folding tables and trays commonly have to be turned up on their side or other normally upper portions for folding and storage, with the prompt result of unsightly dirt, scratches or other marred condition at their edges, sides or corners; but all of that is entirely obviated in the illustrated device of the present invention.

The complete structure thus provides a particularly handy and convenient piece of furniture, serving a multiplicity of uses and adaptable for a wide variety of occasions yet at the same time embodying the desirable features of mobility, collapsibility for storage, and complete sturdiness and rigidity in its expanded or opened form. Moreover, the apparatus may be made of relatively inexpensive materials, e. g. wood, and with few or no operations requiring any extended machine work or special skill.

It is to be understood that the invention is not limited to the specific apparatus herein illustrated or described, but may be embodied in other forms, without departure from its spirit.

I claim:

1. A mobile folding table comprising a spaced pair of parallel lazy-tongs leg structures each including two crossed sets of legs, a top member pivoted at one end thereof to an upper part of said leg structures and having a width less than the space between the legs at opposite sides of the lazy-tongs structures so as to swing between them, supporting means extending between said leg structures at another upper part thereof, said top member including means engageable with said supporting means, whereby said top member may be swung into a supported position and hold the lazy-tongs devices in rigid condition, supporting members extending between the leg structures and respectively carried by legs of different sets at points intermediate the top and bottom of the said structures, a shelf member displaceably adapted to be carried by said supporting members and including means preventing mutual displacement of the shelf member and the leg structures, and wheels mounted at lower extremities of at least four of said leg structures, said leg structures being adapted to fold lengthwise to provide a compact, vertically extending, structure adapted for mobility on the wheels and having the top member folded to lie between the collapsed legs.

2. The table of claim 1 wherein the upper extremities of an outer pair of legs extend substantially beyond the location of the top member and which includes a member extending between said last-mentioned pair of legs at their upper ends, to provide a handle for moving the table on its wheels.

3. A mobile folding table comprising a supporting framework collapsible sidewise into vertically extending condition and including four pairs of spaced, parallel legs arranged in two sets of crossed pairs, and a plurality of transverse rods disposed between the legs of each pair at the extremities of the legs and at the points of crossing, each of the sets being pivoted on a corresponding one of said rods at the point of crossing and the sets being pivotally connected together to other of the rods, wheels at the lower part of the framework for mobile support thereof both in collapsed and open condition, a top member adapted to lie between the legs of the pairs and including means for displaceably engaging both one of the upper rods at one end of the framework and an upper one of the rods to which the sets of legs are pivotally connected together, the pairs of legs which carry the first-mentioned one of said upper rods, having portions extending above said top member and having a cross piece between said extended portions, a tray member removably adapted for support by said framework to extend over and between said second-mentioned upper rod and another upper rod at the opposite end of the framework, and a shelf member removably adapted to seat on the aforesaid rods at the points of crossing of the sets of legs and to engage said last-mentioned rods against sidewise mutual displacement of said engaged rods and shelf member.

4. A mobile table comprising crossed pairs of spaced, parallel legs collapsibly pivoted to each other and forming a lazy-tongs supporting structure; wheels at the lower ends of some of said legs; a top-supporting member extending between the upper ends of the legs of one pair; a top member pivoted to the upper ends of the legs of another pair and having a width less than the spacing between said pairs of legs and

so mounted and arranged as to swing between said pairs of legs, and having means for engaging said top-supporting member when the legs are in expanded position, to hold the legs in said position, said lazy-tongs supporting structure being adapted for collapse in a horizontal direction and when so collapsed to include said top member within its confines in a depending position, and with the lazy-tongs structure standing substantially vertically on its said wheels.

5. A mobile folding table comprising a supporting framework collapsible in a horizontal direction into a vertically extending condition and including four pairs of spaced, parallel legs arranged in two sets of crossed pairs; means pivotally connecting together said two sets of crossed pairs of legs; a plurality of transverse rods disposed between the members of each pair at the upper extremities thereof and at the points of crossing of the legs; a top member pivoted between a pair of parallel legs, proximate the upper extremities thereof and engaging one of said rods disposed between the upper extremities of another pair of said legs when in operative position, and having such length as to extend downwardly and between the transverse rods at the points of crossing of the legs when the framework is collapsed in a horizontal direction and into a vertically extending condition; and wheels at the lower part of the framework for mobile support thereof, both in collapsed and open position.

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