July 20, 1954 F. A. GUTH ET AL 2,684,275

FOLDING WORKBENCH HAVING HINGED LEG STABILIZER

Filed April 7, 1949 2 Sheets-Sheet 1

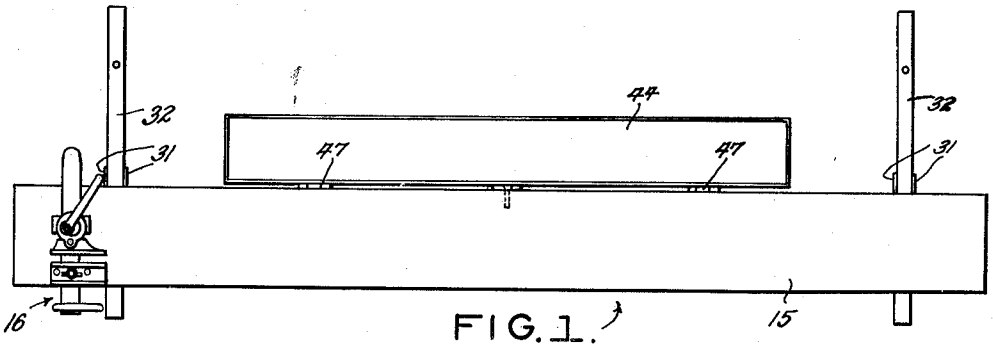

FIG. 1.

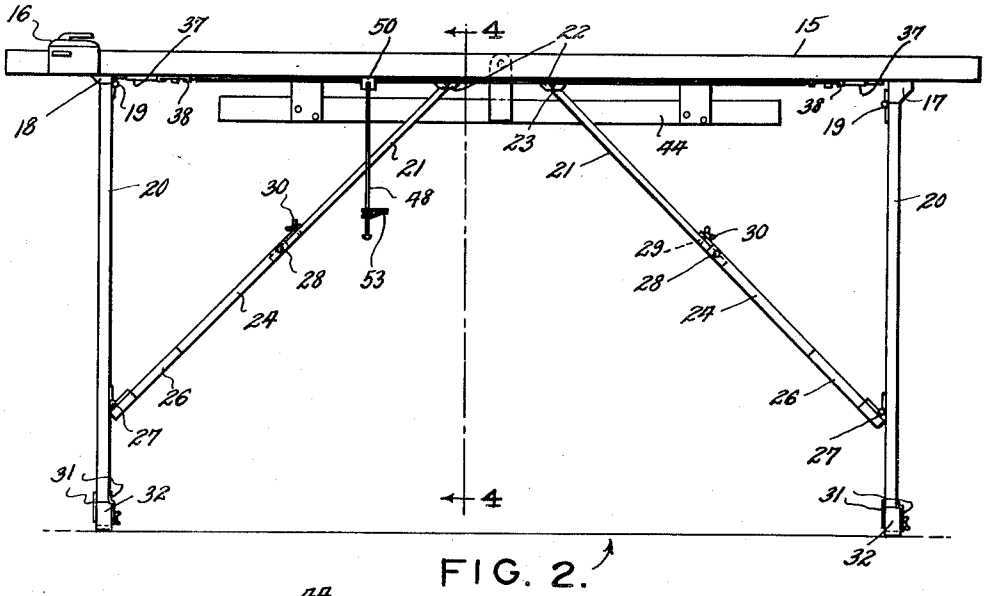

FIG. 2.

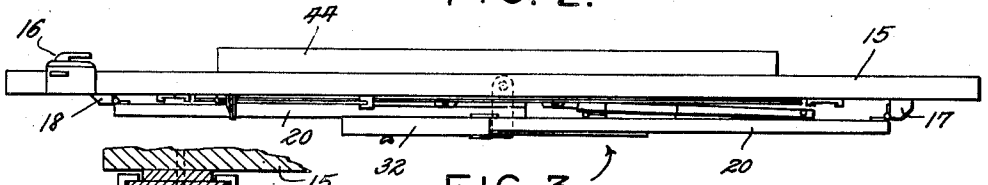

FIG. 3.

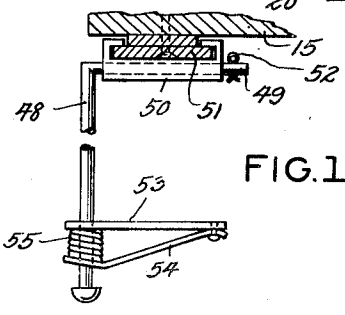

FIG. 11.

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FOLDING WORKBENCH HAVING HINGED LEG STABILIZER

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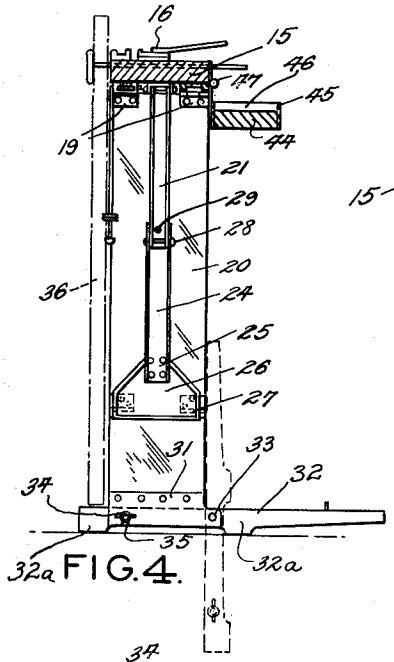

FIG. 4.

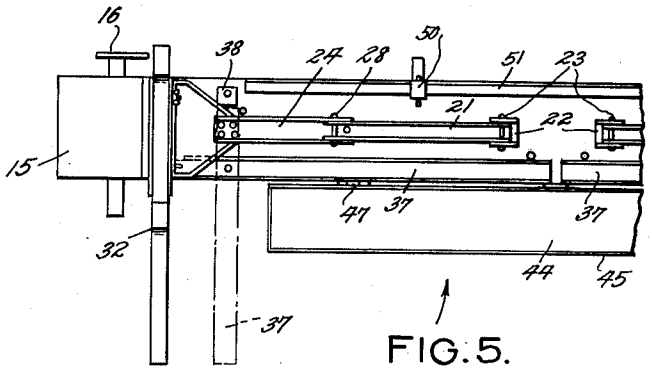

FIG. 5.

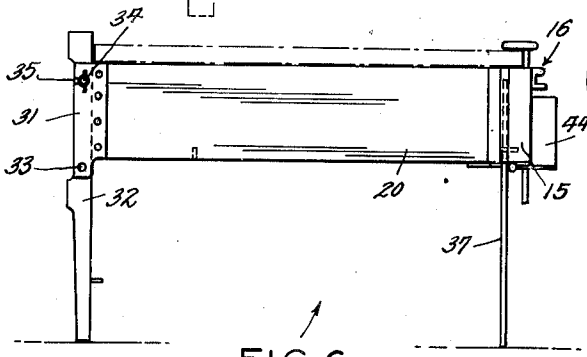

FIG. 6.

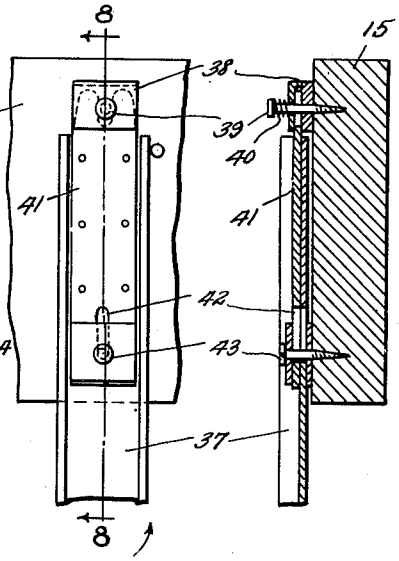

FIG. 7.

FIG. 8.

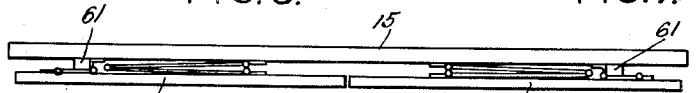

FIG. 9.

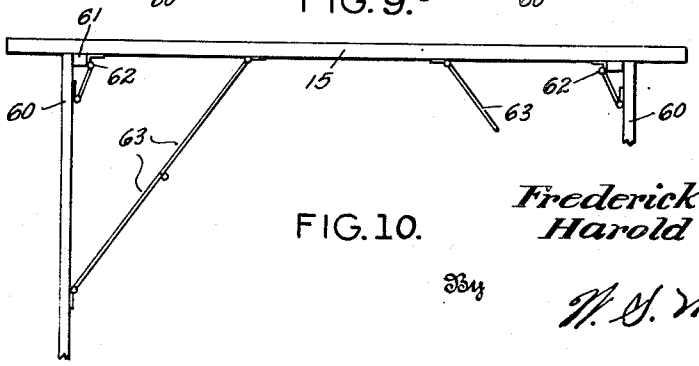

FIG. 10.

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FOLDING WORKBENCH HAVING HINGED LEG STABILIZER

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2 Claims. (Cl. 311—3)

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This invention relates to an improved folding work bench, having particular reference to benches, trestles or supports adapted for use by carpenters and other artisans for the performance of various manually executed tasks. Most work benches are formed to embody rigid constructions which are not readily portable and can only be moved from one location to another with expenditure of considerable labor and energy. Again, when such benches are not in use, the same are incapable of being folded in order that they may be stored in a compact and out of the way manner. Frequently, artisans are required to move their working facilities from one location to another, and it is common for them to use automobiles or like trucks for this purpose. The usual heavy work bench of conventional construction does not lend itself to transportation by ordinary motor vehicles, since the same are too heavy, cumbersome and bulky to admit of their ready introduction into or removal from a passenger-type automobile. As a result, carpenters and other workmen frequently, at a building site, construct special work benches, sawhorses and trestles which are discarded when work at a particular site is completed.

To alleviate and improve these conditions, it is an object of the invention to provide a portable, strongly constructed, lightweight and collapsible work bench which may be readily handled by one or more artisans, knocked down when not in use, conveniently set up for use, and sufficiently strong to withstand the strains and stresses to which devices of this type are subjected when in use.

It is another object of the invention to provide a lightweight portable work bench which may be compactly folded to occupy a comparatively small space when not in use, in order to make it easy to carry, load and unload from an automobile and without interfering with the passenger-carrying capacity of a motor vehicle in which it is being transported.

A further object of the present invention is to provide a lightweight, easily moved work bench having a main bench top formed with depending hinged and braced legs, the legs carrying swinging feet which may be so adjusted as to enable the bench to be used both in vertical and horizontal positions, depending upon the work to be performed thereon.

For a further understanding of the invention, reference is to be had to the following description and the accompanying drawings, wherein:

Fig. 1 is a top plan view of my improved folding bench;

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Fig. 2 is a front elevational view thereof, showing the bench in its extended and active position;

Fig. 3 is a similar view disclosing the bench in its inactive or folded position;

Fig. 4 is a vertical transverse sectional view taken through the bench on the line 4—4 of Fig. 2;

Fig. 5 is a fragmentary bottom plan view of the bench and its associated leg, brace and shelf members in the positions which said members assume when the bench is actively positioned;

Fig. 6 is an end elevational view disclosing the bench in another of its active positions in which the same is arranged generally horizontally;

Fig. 7 is a detail elevational view of the detachable leg-holding mechanism;

Fig. 8 is a transverse sectional view on the plane indicated by the line 8—8 of Fig. 7;

Fig. 9 is a front elevational view disclosing a modified form of my improved bench, the same being shown in its collapsed or folded position;

Fig. 10 is a front elevational view of the bench of Fig. 9 when in its extended or active position;

Fig. 11 is a detail transverse sectional view disclosing the longitudinally and vertically adjustable tool-supporting attachment for the bench.

Referring more particularly to the drawings, the numeral 15 designates the top member of my improved portable and collapsible bench. The member 15 generally is of rectangular construction, possessing suitable length, width and thickness dimensions, the same being formed from any suitable material or materials. Preferably, there is mounted on the member 15, adjacent to one end thereof, a work-clamping vise 16 of any suitable type.

In order to support the top member 15 in its active position, as indicated in Fig. 2, there is secured to its under side at longitudinally spaced intervals a pair of fixed hinge blocks. These blocks extend transversely of the top member across its under surface and contiguous to the ends thereof. One of the blocks, indicated at 17, possesses a greater thickness than the other companion block disclosed at 18. Secured to these blocks by means of ordinary leaf hinges of the type indicated at 19, are the upper ends of a pair of foldable leg members 20. Preferably, these leg members possess a width which is approximately the same as that of the top member 15, as shown in Fig. 4, and a pair of hinges 19 is used to unite the upper end of each leg member with the underside of the top board member 15.

To hold the leg members in their extended positions, as shown in Figs. 2, 4 and 5, use is made

of folding braces. These braces comprise, in a preferred adaptation, upper metallic sections 21 which may be substantially channel-shaped in their transverse cross-sectional configuration. The upper ends of the brace sections 21 are, by means of stationary brackets 22, pivotally connected as at 23 with the under side of the top member 15. Cooperative with the upper metallic sections are lower metallic sections 24 which constitute straight continuations of the upper sections, as shown in Fig. 2, when the bench is actively positioned. The lower ends of the brace sections 24 are joined as at 25 with substantially triangular plates 26, the latter being hinged as at 27 to the leg members 20. The adjoining ends of each of the brace sections 21 and 24 are pivotally connected by the cross pins 28, and the pivotal joints afforded by these pins may be made rigid when the braces are extended by providing the lower portions of the brace sections 21 with studs 29 for the reception of removable wing nuts 30, which, when applied, clamp the brace sections against relative displacement. By removing the wing nuts 30 and the studs 29 from their applied positions in the brace sections, the latter may readily swing around the axes provided by the cross pins 28. This admits of the rigidifying of the brace sections when in their active positions and their articulation and folding when in inactive positions, as will be clearly understood.

The lower ends of the leg members 20 are formed with spaced metallic plates 31 between which are received pivotally movable foot pieces or members 32. To each leg member, one of these foot members is pivoted for turning movement as at 33, as indicated in Fig. 4. To prevent such turning movement, the said foot members may carry studs 34 provided with wing nuts, which engage with slots 35 formed in the plates 31. By loosening the wing nuts on the studs 34, the union between the foot members and the plates 31 may be interrupted, so that said foot members may turn about the axes afforded by the pivots 33. Normally, when the bench is in its upright extended position, the foot members are disposed in the horizontal planes shown in Fig. 4. When so positioned, for example, a house door may be disposed so that one edge thereof contacts with the forward portions of the foot members 32, the door, indicated by broken lines at 36, being arranged at the front of the bench, and held against movement by the operation of the vise 16. Each foot member or piece 32 is formed with floor-engaging surfaces 32*a* so spaced as to provide for increased stability of the bench when the latter is in its active position.

Sometimes it is desirable that the door 36 should be disposed in a horizontal plane. To permit of such retention of the door, as shown in Fig. 6, the foot members are turned about their axes so that the body of the bench, which includes the top member 15 and the leg members 20, are disposed in a substantially horizontal plane. When so disposed, the foot members are vertically arranged, supporting the bench along one edge thereof. To support the opposite edge of the bench, we employ, as shown in Figs. 6 to 8, detachable foot or leg bars 37. These members are preferably of metal and possess a channel-shaped configuration. To hold the bars 37 in their operating positions, the under side of the top member 15 includes clamping pieces 38, which are held in position by means of headed pins 39 provided with coil springs 40 which maintain the pieces 38 in clamping order and enabling the same to receive between them the notched upper end of a tongue 41. The lower end of this tongue is slotted as at 42 in registration with a similar slot provided in the adjoining leg bar 37, said slots receiving a screw or other similar fastening element 43. By these means, the leg bars 37 are firmly secured in their vertical positions of Figs. 6 to 8 to support the bench in its horizontal position. However, when the bench is vertically positioned, the fastening means for the detachable leg bars 37 may be readily separated so that the leg bars 37 may be withdrawn or removed from the bench.

Another feature of the invention resides in the employment of a folding shelf 44 for the reception of tools or work pieces, whereby to keep the upper surface of the member 15 clear of operation-obstructing objects. The shelf 44, as indicated particularly in Fig. 4, includes side plates 45 which produce a depression 46 in the top of the shelf preventing small objects from falling off the shelf. Preferably, the shelf is supported by means of the hinges, indicated at 47, which, when the shelf is actively positioned as in Fig. 4, hold the shelf in a plane somewhat below the horizontal plane of the top member 15, thus maintaining the shelf in an out-of-the-way position.

A work or tool support has been illustrated in Fig. 11. This support comprises a standard 48 having a horizontally turned upper end 49 which is pivotally receivable in an elongated opening provided in a slide member 50, the latter being carried for longitudinal adjustment on a longitudinally extending rib 51 which is fixed to and disposed beneath the top member 15 immediately adjacent to its front edge. The horizontal portion 49 of the standard may be equipped with a removable cotter pin 52 so that the standard may be separated from the slide member 50. Movable vertically on the standard 48 is a work-supporting bracket 53, projecting laterally from the standard. The under side of the bracket carries a locking leaf 54 which is engaged by a coil spring 55, the purpose of which is to maintain the bracket automatically in desired positions of vertical adjustment on the standard 48, so that the bracket may be brought to assume different horizontal positions in a quick and convenient manner and automatically held in such adjusted positions for the support of work objects.

Figs. 9 and 10 illustrate a slightly modified form of the invention. In this form, the upper edges of the leg members shown at 60 engage directly the under surfaces of the top member 15 of the bench, instead of engaging the under surfaces of the hinge blocks 61 with which the leg members are hingedly connected as at 62. The braces 63 in this form of our invention are of flat construction so that when folded, the same may occupy the positions illustrated in Fig. 9, producing a more compactly folded arrangement than is possible with the structure of Figs. 1 and 2, as well as a stronger and sturdier design.

In view of the foregoing, it will be seen that we have provided a work bench which may be readily and easily folded into a small and compact article to facilitate the transportation of the same, and at the same time we have provided a bench having facilities providing for its convenient use when the same is set up for operation. Our constructions, as shown and described, are, of course, subject to certain modification with

out departing from the spirit and scope of the following claims.

We claim:

1. In a folding work bench of the type having a top member and a pair of leg members hinged to the under side of the top member, foot pieces pivotally secured to the outer ends of said leg members and extending transversely thereof, said foot pieces serving to impart added stability to said work bench against lateral tilting movement when the bench occupies an upright position of use, means for retaining said foot pieces in substantially perpendicular relation to said leg members when said bench occupies a position on its side with the leg members thereof disposed in a horizontal plane, and auxiliary leg bars movably connected with said top member and serving in conjunction with said foot pieces to support said bench when the latter is disposed on its side.

2. A folding work bench as specified in claim 1 and wherein said auxiliary leg bars have their

upper ends slidably and detachably secured in socket devices carried by the under side of the top member of said bench.

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