Oct. 5, 1937. P. T. MEIER 2,094,805

WORKBENCH

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Fig. 1

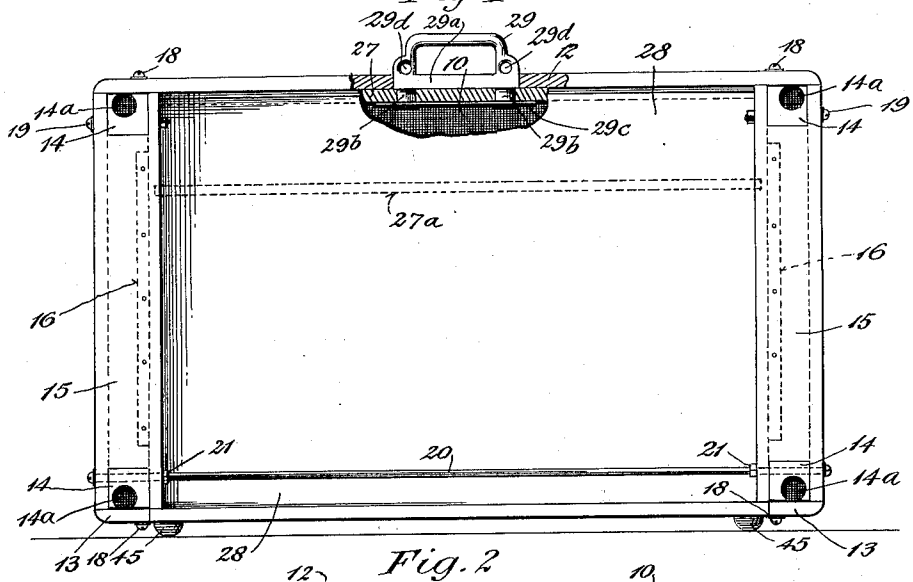


Fig. 2

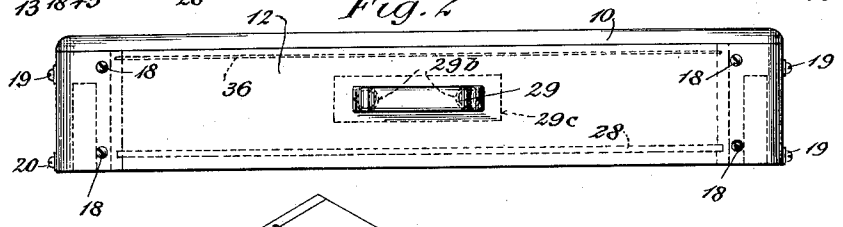
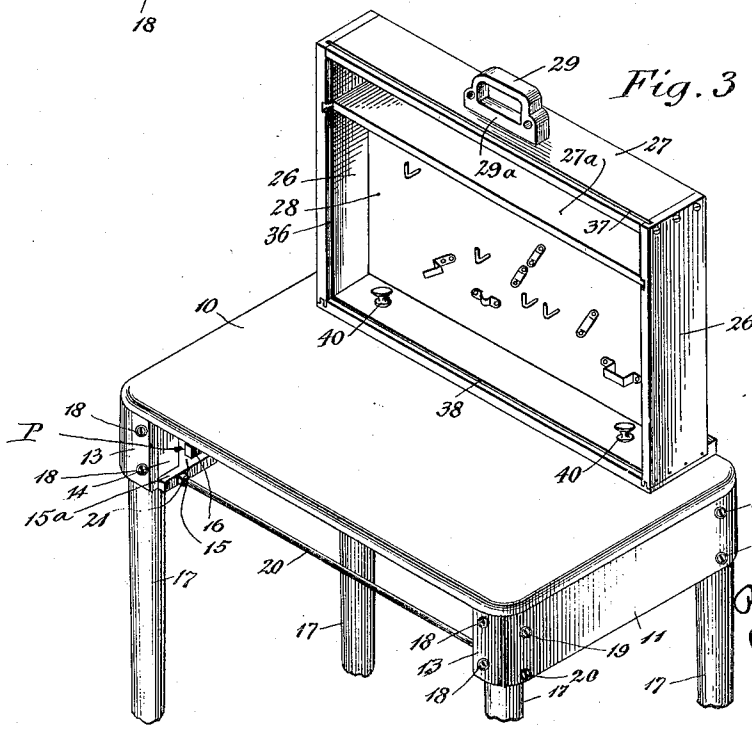


Fig. 3



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Fig. 5

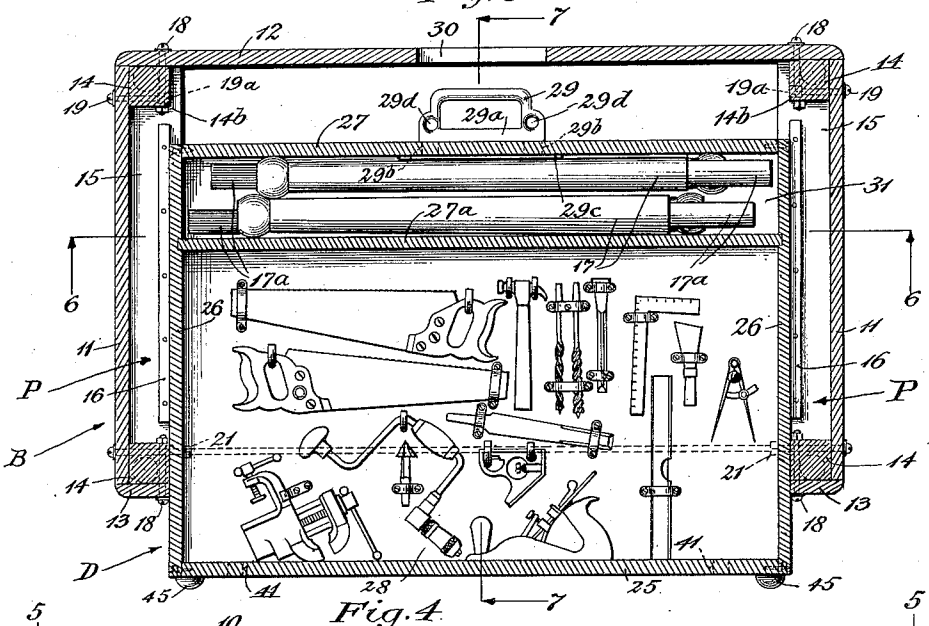


Fig. 4

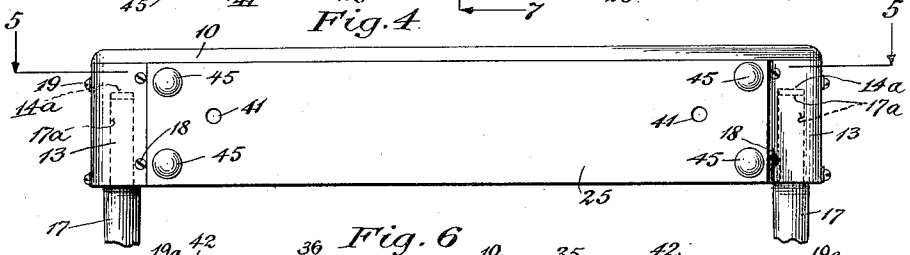


Fig. 6

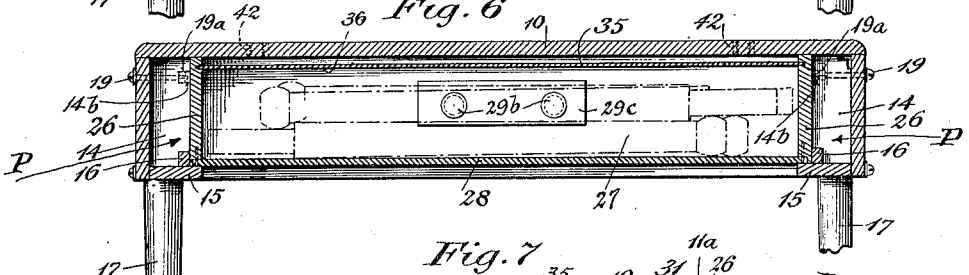


Fig. 7

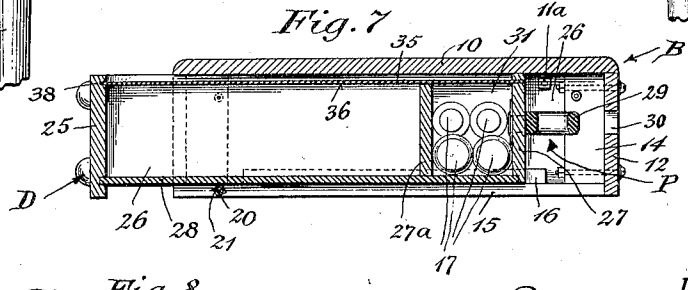
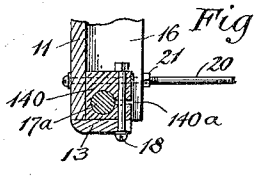


Fig. 8



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2,094,805

WORKBENCH

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Application April 17, 1935, Serial No. 16,742

3 Claims. (Cl. 144—285)

This invention relates to work benches and tool chests, and more particularly to those suitable for use in the home and easily carried from place to place.

An important feature of this invention is the provision of a tool receptacle or chest, which is adapted to be placed in the top of a bench similar to a drawer or set up on top of the bench top, to provide a vertical rack and permit free and easy access to the various tools which are preferably located and held in certain positions in the chest, both when the latter is in its horizontal drawer-like position within the bench top and when it stands vertically thereon.

Another feature of this invention is the provision of a combined work bench and tool chest in which the tool chest may be used as a common drawer when located within the work bench, or may be used as a portable tool chest when removed from the work bench to take the tools and other contents of the tool chest to a place remote from the bench.

A further feature of this invention is the provision of means whereby when the tool chest is supported in the table top and the legs of the table are removed, the tool chest and bench may be picked up as a unit to be carried from place to place, and may be stored in an out-of-the-way position when not in use; and a further and related feature is the provision of means in the bench top and the tool-chest-drawer for storing the legs removed from the bench top so that they may be carried along with the tool chest and bench top.

In the form of the invention herein disclosed, the tool chest and bench top are carried as one through the medium of the tool chest, and for this purpose the tool chest is provided with a carrying handle which projects through the back board of the bench top so that when the handle is grasped the tool chest is lifted directly, but the bench top is lifted indirectly, resting, as it does, on the back board of the drawer which is in carrying position in the top of the tool chest.

A still further feature of the present invention is the provision of means for securing the tool chest as a vertical rack adjacent the back edge of the bench-top.

Another feature is the provision of means for permitting the easy removal of the legs for the work bench and yet permit them to be securely and firmly held in the table top against wobbling or casually dropping out.

And a still further feature of the invention is the provision of a tool chest having essentially one open side but being provided with means for covering or closing this open side, when desired, to hold the contents thereof, which is not otherwise secured in place, against falling out when the tool chest above is being carried from place to place.

Other features and advantages of the invention will hereinafter appear.

One form of the invention has been illustrated in the drawings, in which—

Figure 1 illustrates the side view of my improved device complete when the latter is up-ended and rests upon the ground, ready for transportation.

Fig. 2 is a top view thereof.

Fig. 3 shows the bench and tool drawer set up for use.

Fig. 4 is a front view of the bench showing the tool drawer in its normal place in the bench.

Fig. 5 represents a horizontal section on line 5—5 of Fig. 4.

Fig. 6 is a vertical section on line 6—6 of Fig. 5.

Fig. 7 is a vertical section on line 7—7 of Fig. 5.

Fig. 8 shows a modification of the corner construction of the bench structure.

As mentioned above, the device comprises two main elements, viz., the work bench and the tool box or drawer, either of which may be used independently of the other, or, when the drawer is in its normal horizontal position in the bench, or stands vertically on the bench top, the bench will support the drawer, and the weight thus carried by the bench will naturally give considerable stability to it, or, when the device, as a unit, is ready for transportation, the up-ended drawer will support the bench so that the latter will then be merely a housing enclosing the drawer but without carrying any weight except its own. Therefore, it is evident that this bench or housing can be made of comparatively light material provided the legs are sufficiently stiff and sturdy to give the necessary stability.

Referring to Figs. 5, 6, and 7 of the drawings, the work bench B comprises a top plate 10, a pair of side boards 11, to which said top-plate is secured, preferably by angle-brackets 11*a* (see Fig. 7), a back board 12, and a pair of front plates 13 spaced between their opposite vertical edges to provide an entrance opening for the tool drawer to be hereinafter referred to.

Secured in the inner corners formed by the adjacent ends of the several bench boards, are a series of squared corner-blocks 14 extending from the underside of the top plate 10 downward and through a pair of runners 15 whose respec-

tive ends are rigidly secured to the bench boards and which serve as running supports for the sides of the tool drawer, while guide bars 16 secured to the tops of runners 15 will serve to guide the drawer in its fore-and-aft movements in the bench.

Inasmuch as the runners 15 extend from the bench-sides 11 inwardly far enough to have their inner edge-portions support the sides of the drawer, the runners will serve as bottom plates for side-pockets P which become closed all around when the drawer is shut so that tools, such as screw drivers, files, etc. may be placed therein and be conveniently accessible when the drawer is pulled out.

Each corner-block 14 has a socket 14*a* bored vertically to receive the upper cylindrical stem 17*a* of a bench leg 17, so arranged that each leg may be adjusted vertically in its socket, thus insuring a full support for all four legs and also permitting the bench top to assume an inclined position, when desired. In order to hold the several leg stems rigidly in their adjusted positions in their respective sockets, I preferably employ the means shown at all four corners of the bench illustrated in Figs. 1 and 5, where the blocks 14 are cut away at one side, allowing the outer periphery of the stem to be contacted with the adjacent inner face of the bench board, so that, when bolts 18 are tightened, each stem will be pinched between the bench-board and the opposite inner face of the socket. In addition to the bolts, I also employ bolts 19 for holding the two rear blocks in fixed position, while the two front blocks 14 are connected by a spacer-rod or tube 20 which may be provided with collars or nuts 21 for indirectly gaging the distance between the two front blocks to insure an easy running side-fit for the tool drawer on the runners 15, and to stiffen the otherwise free or loose ends of the sides 11.

The tool drawer D which constitutes the second essential combination element of my present invention comprises a front board 25, the two side boards 26 extending rearwardly therefrom, the back board 27 and a bottom plate 28, all united at their meeting corners to form a substantial structure.

Inasmuch as the tool-drawer may be handled within its place in the table or bench, or entirely removed from this place like an independent unit, which may be carried, or transported in any position, there are provided a number of clips or holders on the inner face of one or more walls of the tool chest (see Fig. 5), these clips serving as tool-supporting means for holding the several tools in displayed and readily-accessible positions when the tool chest is in either horizontal or vertical positions.

In Figs. 5 and 7, I have illustrated the drawer as being partly pulled out, to emphasize the fact that in the present invention the carry-handle 29 for transporting the complete unit in the condition shown in Fig. 1, is attached to the rear board 27 of the drawer, instead of the usual method of attaching it to the outer casing. It will be noted that the carry-handle 29 is preferably shown as a casting, the base portion 29*a* of which has a pair of cylindrical lugs 29*b* which pass through corresponding holes in the rear drawer-board 27 and also through a washer plate 29*c*, at the outside of which they may be riveted over or otherwise fixed in any convenient manner.

Now, when the drawer is pushed in, to close it, the carry-handle 29 passes through an aperture 30 provided for it in the rear bench-board 12, the organization being such that the adjacent faces of the rear boards 12 and 27 will contact when the drawer is fully closed, at which time one or more holes 29*d* will become accessible from the outside of the rear bench board 12 to permit the use of a padlock or other suitable device for holding the bench casing and the drawer therein together.

As above stated, the four legs 17, or more particularly, their stems 17*a*, may be withdrawn from their respective block sockets 14*a* and be packed into the drawer in which I preferably provide a separate compartment 31 (see Fig. 5) formed by a partition-board 27*a* for that purpose. The condition here shown is substantially that just preceding the full closing of the drawer, with the legs stored away for transportation; or, reversely, directly after partly opening the drawer to get the legs again, it being understood, of course, that the bench is in horizontal position.

Inasmuch as in Fig. 6 the legs are shown in place in their sockets, the legs are here illustrated in the positions they assume when packed away, by dot-and-dash lines.

There is another valuable feature directly connected with the tool box, viz., a closure plate for closing its normally open top by a metal plate 35 adapted to have its side margins move in grooves 36 formed in the side boards 26 of the drawer and guided in a slot 37 (see Fig. 3) provided for it in the rear drawer board 27. The front edge of the plate 35 will, when the latter is fully closed, seat itself in a stop-groove 38 provided for it in the front drawer board 26, and the plate 35 will therefore become supported and fixed on all of its four edges. There are several advantages in providing a device of this kind, viz., (1) The plate serves primarily for closing the open drawer top to protect the tools against accidental damage or against unauthorized handling, or even theft, especially when the drawer should be provided with a secret catch for holding the plate closed. (2) It prevents dust or dirt, or fumes from coming in contact with the tools, a feature which appeals to all mechanics who have fine precision instruments and tools which must be free from rust to be serviceable. (3) It serves, when the drawer is partly pulled out, as an additional space for writing, drawing, etc., without encroaching upon the surface of the bench. (4) It will not crack and cannot be damaged in the same manner or the same degree as the bench top, which latter is generally made of wood. (5) After the unit is being, or has been, transported to its place of destination, the bench (casing) may be lifted, leaving the box in its vertical position, but none of the contents can spill out because the plate stops that. (6) If desired, the plate may also be entirely pulled out of its normal place in the box, and laid down on the then open top, for temporary use for drawing, writing, etc. and thus obviating the necessity of keeping another board on hand for that purpose.

In order to enable the unit to be stood up vertically without doing any damage even to a polished rest surface, I preferably employ on the outer face of the front drawer board a plurality of rubber or leather feet 45, leaving the bench casing free to be removed without having to pay attention to any possible damage to the surface upon which the drawer stands, a feature which is especially advantageous if the unit,

whether including the bench element or not, should be used for a sample outfit, such as are required by salesmen. When set up in its complete form, the device appears as substantially shown in Fig. 3, in which, however, the metal cover plate has been omitted to show the empty drawer, while in Fig. 5 there is shown (diagrammatically) a set of tools generally useful to carpenters, woodworkers, etc.

If it should be desired to rigidly attach the drawer in its upright position to the bench top, any suitable device, such as screws 40 may be employed passing through holes 41 in the front board of the drawer and into screw-threaded bushings 42 fixed in the bench top 10. In Fig. 8 I have illustrated a modification of the construction of the corner blocks which receive the leg-stems, the tool box being omitted. The side board 11, front plate 13, runner 16 and the tie-rod 20 are substantially the same as those parts shown correspondingly in Fig. 3; while the corner-block 140 is, in this instance, cut vertically, as at 140*a*, at one side, so that, when the bolt 18 is tightened, the stem 17*a* will be clamped entirely within the confines of the block-bore and without contacting with the rear face of the front plate 13, the cut 140*a*, in reality, forming each block into a pair of yielding and contractible jaws between which the stem is clamped by the clamp-bolts 18.

Attention is called to the fact that the tie rod 20 is disposed substantially in parallelism with the front edge of the top-plate, but is set low and rearwardly enough to clear the underside of the tool-box, or, in other words: it does not have to perform the function of supporting the front portion of the box, because the ends 15*a* (see Fig. 3) project forward enough to support both drawer-sides to the limits, when closed. Furthermore, the ends of the tie rod pass through the solid portions of the respective corner-blocks (see Fig. 1) thus tying the forward end of the bench side 11, the corner block 14 and the runner firmly together, at each end of the rod 20, each upper tie bolt 19 only holding the bench side and corner block together, the latter being preferably counterbored, as at 14*b* to receive the bolt nut 19, thus leaving the inner faces of the blocks clear for the drawer when closing. In other words: In each corner-block, as illustrated, there are holder-bolts 19 for holding the blocks in their respective corners, and also clamp-bolts 18 disposed at substantially right-angles to the other, for pinching the leg-stems, respectively.

Furthermore, in the present instance, the location of the tie-rod 20 relative to the front of the bench top is such that ample room is provided to permit a bench-vise (such as illustrated in Fig. 5) to be clamped to the front edge of the bench top, when the drawer is at least partly open, the clamping screw of the vise clearing past the tie rod in any position along the bench-top edge between the runners 15.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

Having thus described the invention, what is claimed as new and for which it is desired to obtain Letters Patent, is:—

1. A work bench comprising a top-plate, a pair of side boards attached to the underside thereof, a back board, corner-blocks secured to both ends of each side-board and vertically-bored to receive the upper stems of legs, one side of each block being cut away but to open up only a minor part of the periphery of the block-bore to let the stem-surface project beyond the side of the block, and means for drawing said block and its adjacent board-end together to pinch the leg-stem within the block-bore.

2. In a portable work-kit, in combination, a carrying case incorporating a box-like table-top having near its rear edge a pair of fixed screw-threaded bushings, and having drawer-supporting means at its underside; a drawer slidable on said supporting means, having on its bottom tool-supporting devices, and including a front board having a pair of perforations disposed so as to become aligned with said bushings when the drawer is removed from its supporting means and is upended on the table top, and a pair of clamp-bolts cooperative with said bushings for holding said drawer in its upended position on the table so as to form a tool rack.

3. A portable tool-carrying kit convertible into a workbench, comprising the combination of a box-like table top having leg sockets; legs removably mounted in said sockets; drawer-supporting means having an entrance opening at one edge of the table top; a removable drawer for insertion into the table, having a compartment for receiving the legs when the latter are removed from the table; means for securing the drawer to the top of the table when said drawer is removed from within said top and upended thereon; tool-supporting devices carried by the drawer and disposed on the bottom thereof so that said drawer and devices form a tool rack when in position on the table top; and a handle carried by the drawer, projecting through the back-board of the table when the drawer is held therein, for carrying said table, drawer, and contents thereof in the manner of a suitcase.

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