July 6, 1954 E. MILLER 2,682,899

SLOTTED TOP WORKBENCH

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FIG. I

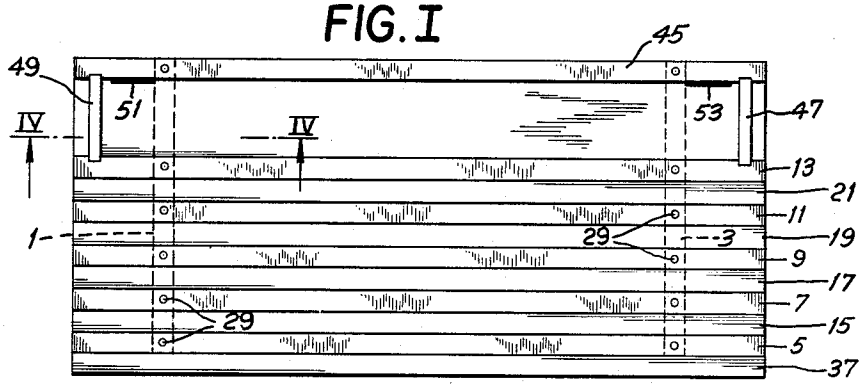


FIG. II

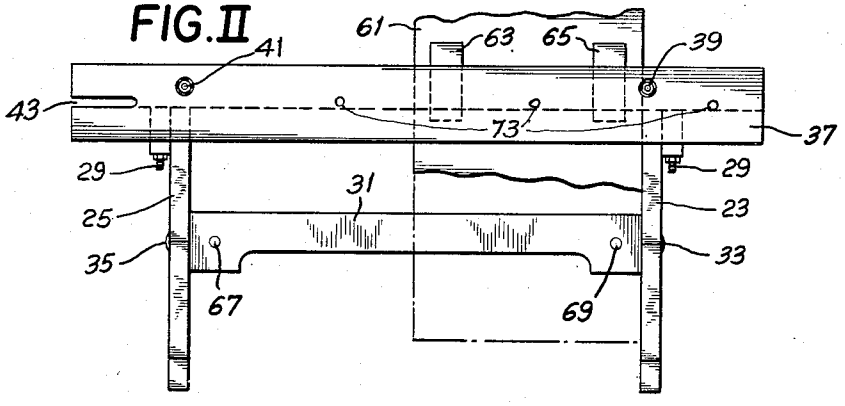


FIG. IV

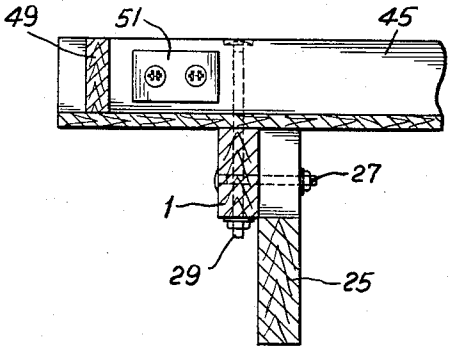
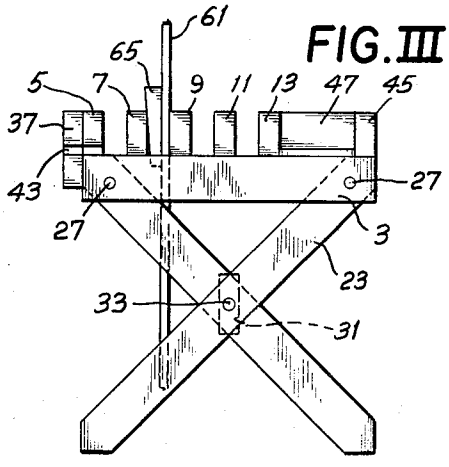


FIG. III



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SLOTTED TOP WORKBENCH

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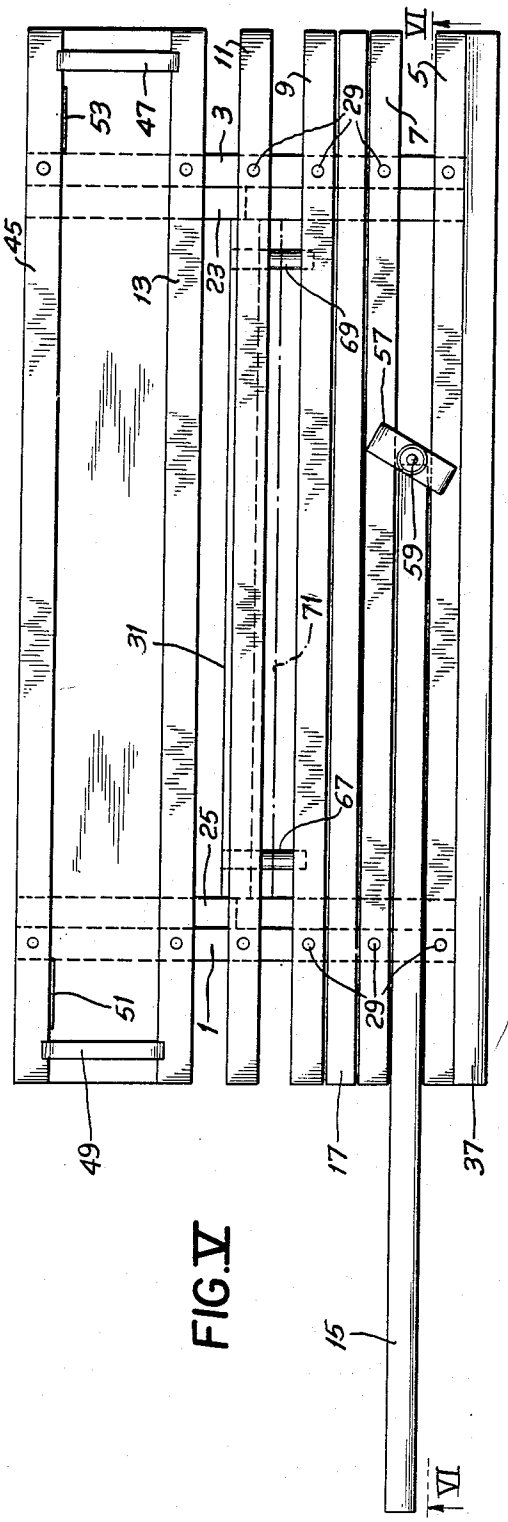


FIG. V

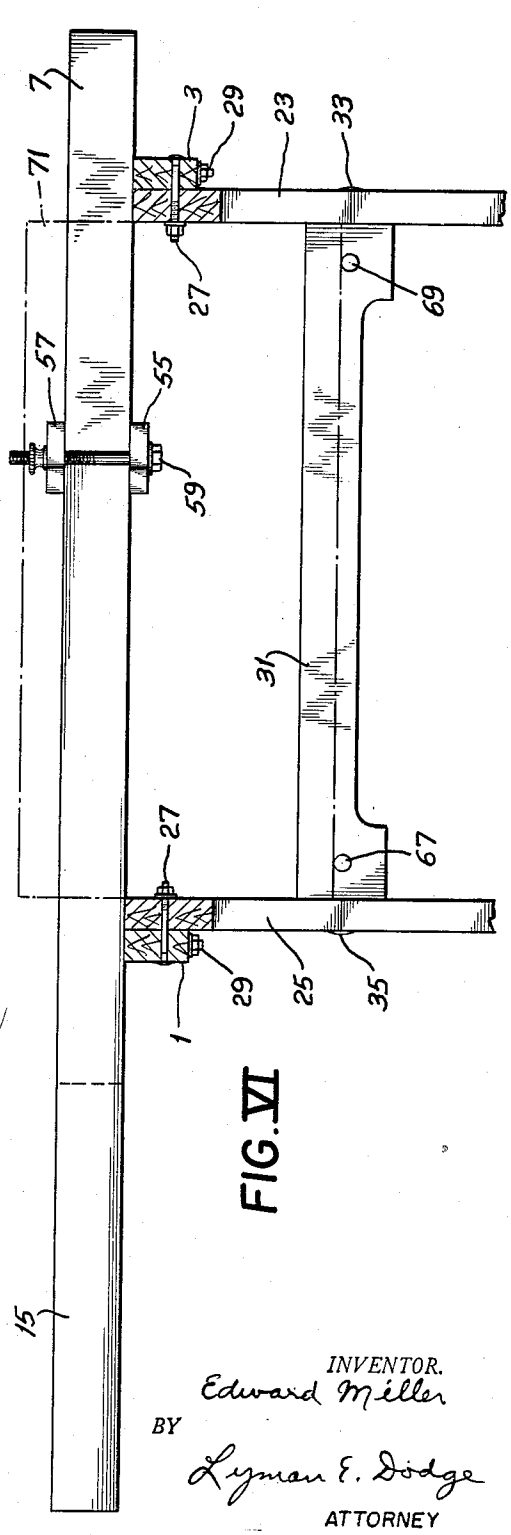


FIG. VI

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SLOTTED TOP WORKBENCH

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1 Claim. (Cl. 144—286)

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This invention relates to a bench, particularly a carpenter's work bench and more especially a carpenter's work bench of general utility.

A principal object of this invention is to devise a work bench which may be constructed of standard size lumber with a minimum of cutting, sawing and planing and a minimum of waste.

A further object of the invention is to devise a bench of the type specified which will be of such construction that a saw blade may pass through the plane of the bench top or surface.

A further object of the invention is to devise a work bench of the type specified which normally is of a length that is not inconvenient for a small work shop, but which may, with ease, be adjusted so as to support very elongated articles.

Other objects and advantages will appear as the description of the particular physical embodiment selected to illustrate the invention progresses and the novel features will be particularly pointed out in the appended claim.

In describing the invention in detail and the particular physical embodiment selected to illustrate the invention, reference will be had to the accompanying drawings and the several views thereon, in which like characters of reference designate like parts throughout the several views, and in which:

Figure I is a top plan view of a work bench embodying my invention;

Fig. II is a front elevational view of the device as shown by Fig. I with a piece of work in place thereon;

Fig. III is an elevational end view of the device as shown by Fig. I, viewed from the right hand end as shown in Fig. I;

Fig. IV is a cross sectional view of the device of Fig. I on the plane indicated by the line IV—IV viewed in the direction of the arrows at the ends of the line;

Fig. V is a top plan view of a work bench embodying my invention illustrating the lengthening of the work surface thereof;

Fig. VI is a cross sectional view of the device as shown by Fig. V on the plane indicated by the line VI—VI.

Handymen and amateur mechanics are well aware of the difficulties in securing a suitable, convenient, and inexpensive bench for use in working upon such carpentry projects as they desire. Very substantial but expensive and small benches may be secured which are suitable for positioning in the usual small space which is commonly available to the amateur. It has been found, however, that the average amateur does

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not relish paying the large amount of money necessary to secure one of such benches, and further, after such a bench is secured, it is soon found that the top surface is nowhere near as extensive as is required for the kind of operations which the amateurs seek to perform.

The handyman and amateur also require a bench which is capable of serving not only the ordinary purposes of a carpenter's bench but also the purposes of a drill bench, a grinder bench, a plumber's bench and tinsmith's bench. These purposes are not served by the ordinary and usual commercial work bench.

My purpose is to produce a bench in such a manner that the cost will be practically the lowest possible and will be so constructed that normally it will be of a short length so as to readily fit in the usual small space available to a handyman or amateur. I have provided, however, in my design, means by which the effective top surface of the bench may be greatly extended so that the convenience of a long bench is afforded together with the convenience of a short bench.

In the drawings, in which I have illustrated one particular preferred form embodying the principles of my design, I have exhibited my bench as formed, almost entirely, of standard sized lumber so that no preliminary cutting, sawing, or planing is necessary thereby obviating a considerable expense.

In my preferred form, I show two cross pieces 1 and 3. These cross pieces may be of standard size lumber and of a length such that several may be obtained from a given standard length of lumber without waste. Upon the cross bars 1 and 3, I place a plurality of rails as 5, 7, 9, 11 and 13. These rails are preferably made of standard size and standard length dressed lumber so that no sawing, cutting, or planing is required.

I place the rails 5, 7, 9, 11 and 13 in parallel relation upon the cross pieces 1 and 3 and I separate or space each pair of rails a distance equal to the width of each rail. This is my preferred construction, but I do not mean to exclude a separation less or greater than the width of a rail, or a separation of some pairs of rails greater than the separation of other pairs of rails. Whatever the separation between the rails, it is desirable that the space thereby produced will accommodate standard size dressed lumber slidingly therebetween.

Although my preferred form contemplates a plurality of spaces between a plurality of rails, I

do not mean to exclude the use of two pieces only to form the top surface, that is, one member placed parallel and spaced from another member.

In order to maintain the positioning of the rails, such as 5, they may be attached in any suitable or appropriate manner to the cross pieces 1 and 3. I prefer to attach them by means of countersunk bolts, as 29. I use one of these bolts adjacent each end of each rail and pass the bolts through both the rails and the supporting cross pieces 1 and 3.

Any suitable or appropriate support for the work bench top, hereinbefore described, may be provided. I have shown a support comprising two legs as 23 and 25. These legs are each of the ordinary cross or saw-buck pattern and may be attached to the cross pieces as 1 and 3 in any suitable or appropriate manner as by bolts, such as 27.

In order to lend greater rigidity to the structure, I may use a strut, such as 31, extending between the legs 23 and 25 and attach the strut to the legs by means of bolts, such as 33 and 35.

In my preferred form of bench, I prefer to position an apron 37 on the front of the bench attached to the front rail 5. This apron 37 may be attached in any suitable or appropriate manner as by countersunk bolts, as 39 and 41. The apron may have holes, as 73, for the reception of the ordinary and well known supporting pins.

I have shown a slot 43 in one end of the apron 37; a convenient means for attaching a vise to the bench when an unobstructed top surface is not required.

As shown in Fig. I, I have extended cross pieces 1 and 3 to such length that I may attach a rail 45 to the far ends. Pieces 47 and 49 between this rail 45 and the rail 13 produces a well known and convenient tool shelf or trough. I may also place electrical outlets as 51 and 53 in the rail 45 to provide for connection of such electrical appliances as I may use on the bench.

I contemplate that the work bench top shall be of comparatively small dimensions as compared to the ordinary expert carpenter's work bench. The spaces between rails 5, 7, 9, 11 and 13 supply the means by which a user of the bench may, in effect, increase its length. When a user of my bench desires to support a very long piece of work, all he has to do is place one or more filler pieces as 15, 17, 19 and 21 between the rails. As best shown in Fig. V, one may then slide one or more of the filler pieces, lengthwise of the bench and then prevent that filler piece from pivoting on a cross piece, such as 1 by clamping it to the adjacent rail by any suitable or well known form of clamp. In Figs. V and VI, I have shown a single filler piece 15 extended and a clamp suitable for preventing tilting which comprises: a lower plate 55 bearing on rails 5 and 7; an upper plate 57 bearing on the same rails; and a bolt 59 passing through both the plates 55 and 57 to clamp them and the rail and filler piece firmly together.

Not only may one filler piece be extended in the manner hereinbefore described, but all of the filler pieces or any number thereof may likewise be extended and the filler pieces may each be extended to their fullest extent consistent with being properly clamped.

I prefer that the filler pieces 15, 17, 19 and 21 shall be of substantially the same length and depth as the rails, such as 5. I prefer to support the filler pieces, such as 15, on the cross pieces 1 and 3, but I do not intend to exclude any further convenient support or any other convenient length. In any event, a filler piece, such as 15, regardless of by what it is supported, must be of such a size that it will fit slidingly between rails.

From the hereinbefore given description it will be readily understood that one may place a plane board on the top of the work bench and may saw that board parallel to a rail very conveniently by allowing the saw blade to pass down between two adjacent rails and one may readily rip saw a very long piece supported partly by rails and partly by an extended filler piece, and at all times have a space within which the saw may be reciprocated or rotated.

As an illustration of the convenience of my work bench, I have illustrated the method of holding a length of board which one may desire to plane on one end or one edge. In Figs. II and III, I have shown a board 61 passing down between rails and held firmly in position by wedges 63 and 65 forced between the board 61 and the rail 7. This method of holding a board which is to be worked upon is extremely convenient because the board may be adjusted to any heighth very readily so that it may be brought into the most convenient position for working upon, furthermore, the spring of the rails, as 7 and 9, aids greatly in holding the work in place.

If one desires to through nail a piece of work, it may be placed flat upon the bench top and through nailed, allowing the points of the nails to penetrate into the unfilled spaces between the rails. Such a facility is not afforded by the ordinary carpenter's bench.

Not only may a piece of work be supported as is the board 61, but it may be supported flat on the bench and clamped firmly to the bench by any convenient form of clamp passing down through the spaces between the rails, as in the case of the clamp as shown in Figs. V and VI.

The spacing of the rails also enables one to place a clamp at any particular position desired and then abut a piece of work against the clamp.

It will also be readily seen that if one has a small sensitive drill, or a grinding head or the like, that it may be securely fastened to the bench without boring holes and, furthermore, the rigidity of such a device may be easily increased by attaching small pieces to the bottom thereof which may be received in the spaces between rails, thereby preventing skewing of the device while being operated upon.

If one desires an absolutely flat top bench surface without any cracks or crevices therein, the flat board 71 shown in Fig. VI may be removed from its position as shown and placed flat upon the bench top. When it is not in use it may be supported by the pins 67 and 69 in the strut 31.

From the hereinbefore given description it will be readily understood that I have provided a small, compact bench which is capable of longitudinal expansion to provide for large work pieces and which is of such construction that it is readily adaptable to the various requirements of an amateur who requires it as a support for various motor-driven tools, and that the bench can be constructed, almost entirely of standard sized dressed lumber without waste and without cutting and sawing.

Although I have particularly described one particular physical embodiment of invention and explained the construction and principle thereof, nevertheless, I desire to have it understood that

the form selected is merely illustrative, but does not exhaust the possible physical embodiments of the idea of means underlying my invention.

What I claim as new and desire to secure by Letters Patent is:

A work bench comprising an elongated work top and supporting means therefor, said supporting means comprising legs adjacent each end of said work top, cross pieces secured to said legs adjacent their upper ends, said work top comprising a plurality of laterally and horizontally spaced parallel rails, each rail being secured to and supported by each of said cross pieces, independent filler pieces slidably receivable between any two adjacent rails, each filler piece restable on one cross piece only and means engaging a filler piece and the adjacent rails for preventing pivoting of said filler piece on a cross piece.

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