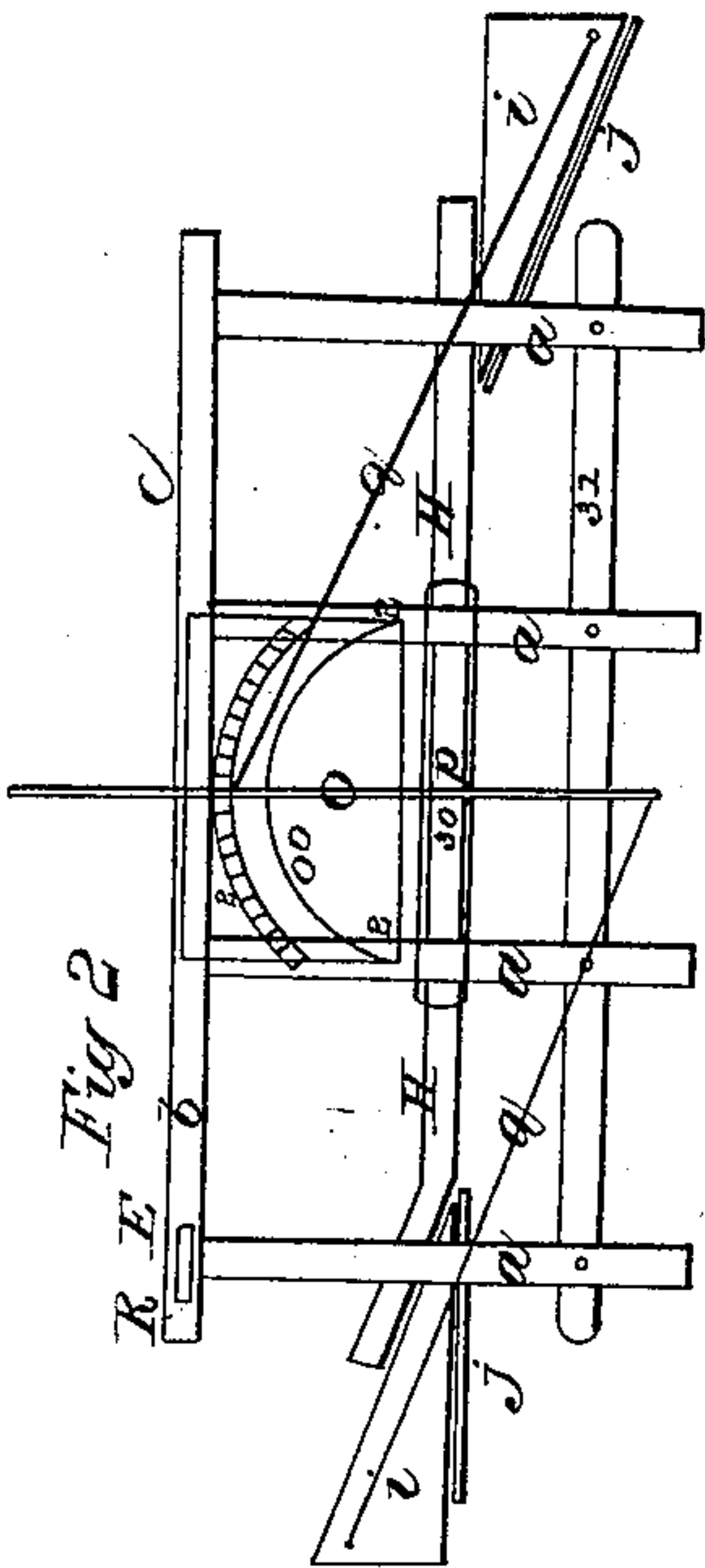


*J. W. Mahan,*

*Work Bench,*

*No. 14,511,*

*Patented Mar. 25, 1856.*



*Fig 3*



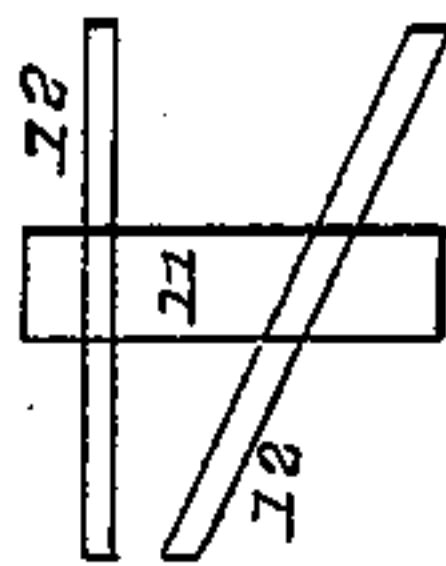
*Fig 4*



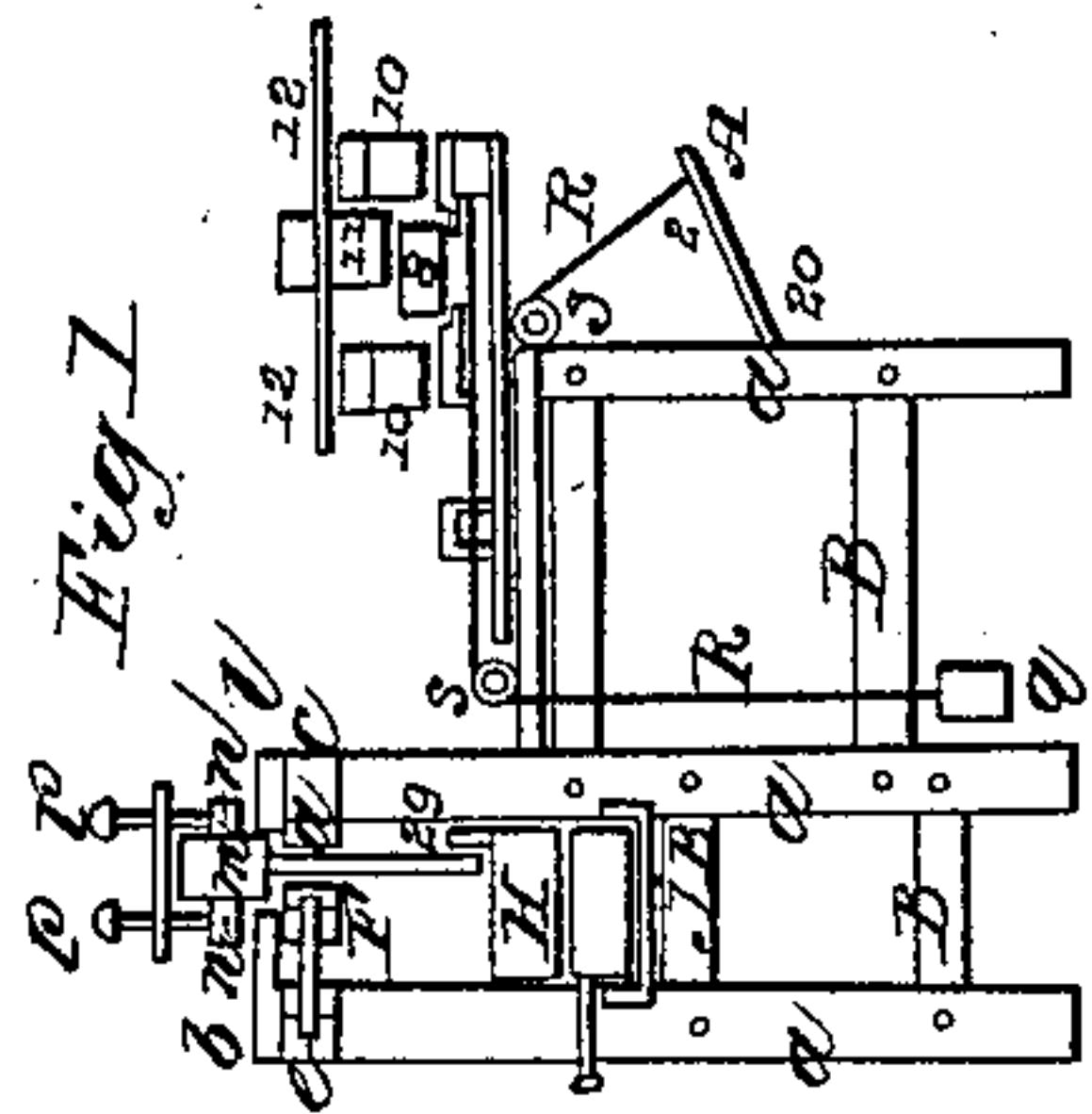
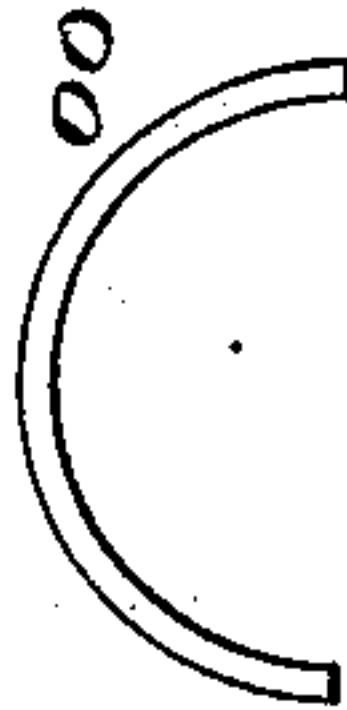
*Fig 9*



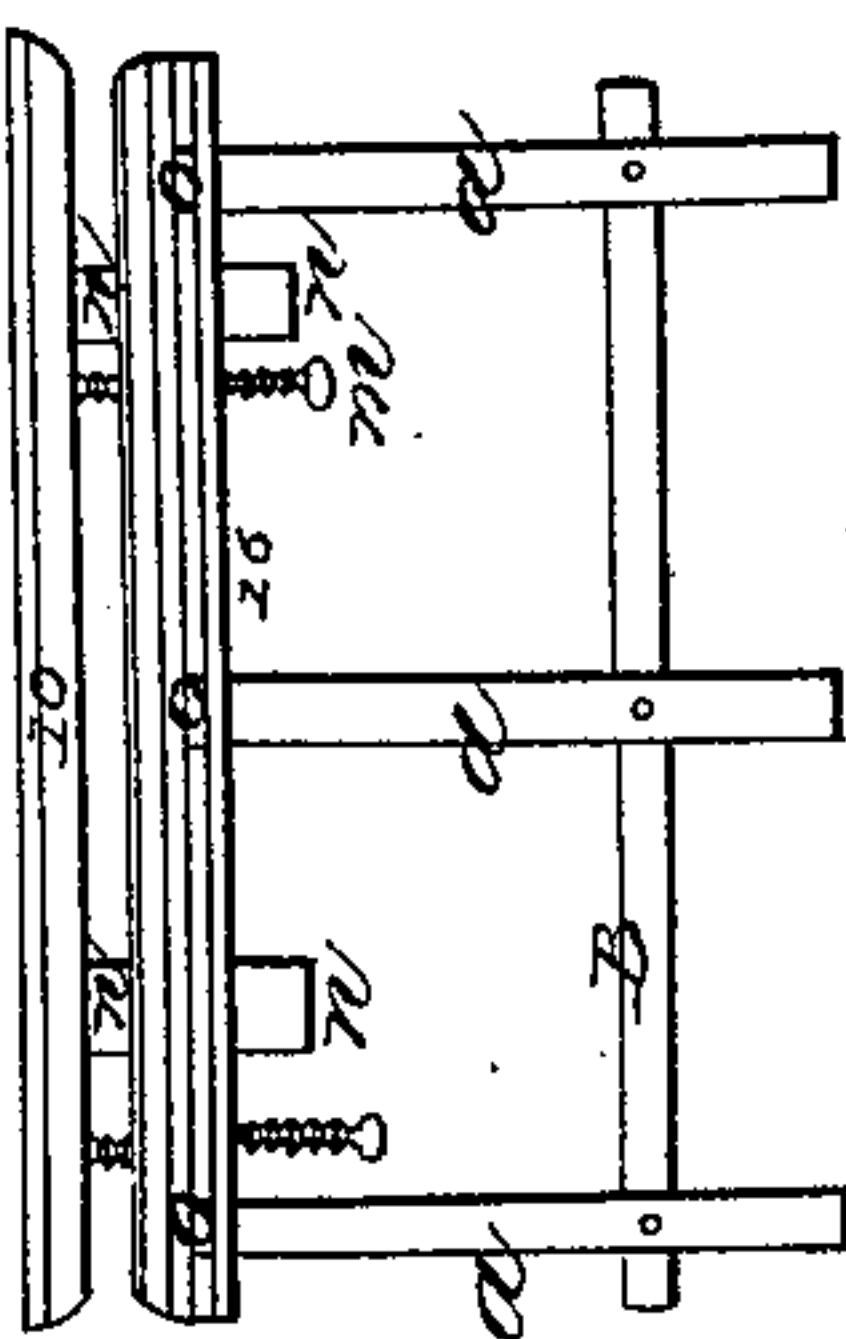
*Fig 10*



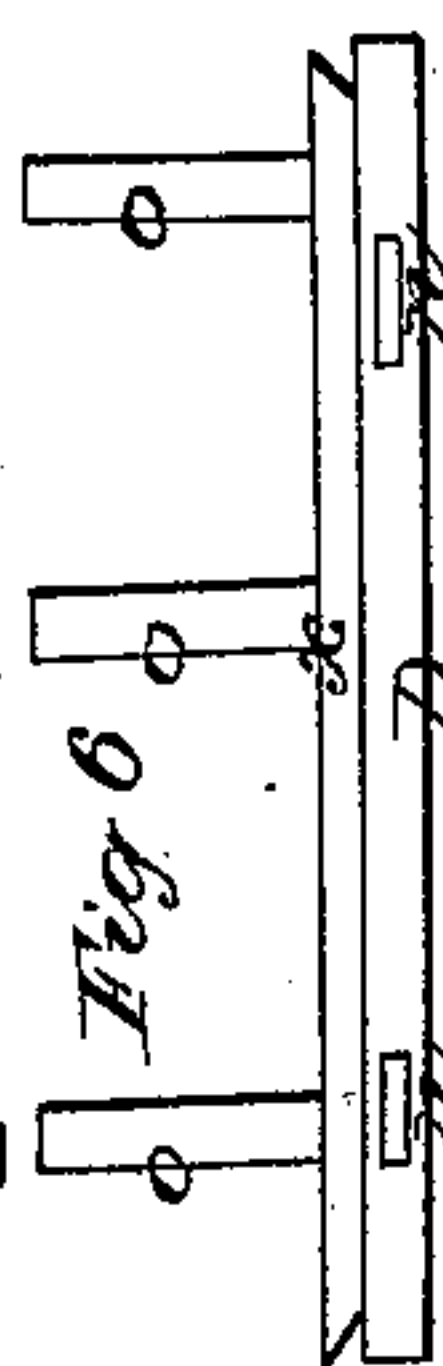
*Fig 8*



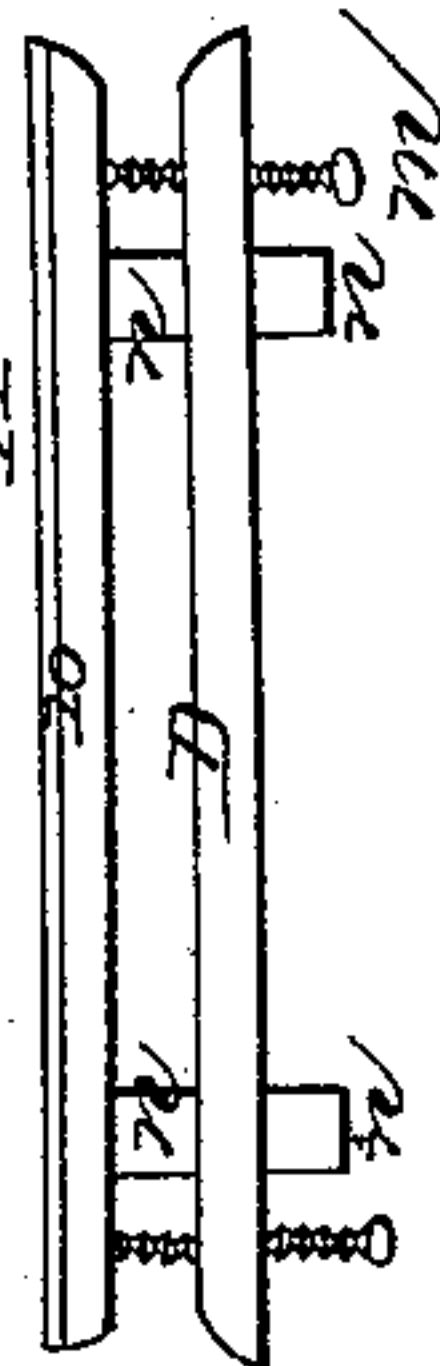
*Fig 5*



*Fig 6*



*Fig 7*



*Witnesses:*

*Wm. C. Tuttle*  
*Deputy Clerk*

*Inventor:*

*J. W. Mahan*



# UNITED STATES PATENT OFFICE.

J. W. MAHAN, OF LEXINGTON, ILLINOIS.

## CARPENTER'S BENCH.

Specification of Letters Patent No. 14,511, dated March 25, 1856.

*To all whom it may concern:*

Be it known that I, J. W. MAHAN, of the town of Lexington and county of McLean and State of Illinois, have invented  
5 a new and useful Improvement in what is commonly known as "House-Joiners' and Cabinet-Makers' Work-Benches;" and I do hereby declare that the following is a clear, full, and exact description of the construction and operation of the same, reference  
10 being had to the annexed drawings, they being a part of this specification, in which—

Figure 1 is an end view of the bench, Fig. 2 a front view of that side of the bench  
15 which I call the jointing box, Fig. 3 is a top view of the same, Fig. 4 is a top view of the table upon and to which the facing and gaging box is attached, Fig. 5 is a front view of said table and a front view of the  
20 back part of said box, Fig. 6 is a top view of the bottom work of the front part of said box, Fig. 7 is a front view of said box that is of the front part.

In Fig. 1 *a a a* are the posts, *B B B B* are  
25 the crossties, (*e*) the back plate, (*d*) the back stationary jaw, (*e*) the board to be jointed, (*y*) the movable jaw, (*g*) the front plate, (*H*) the movable bottom of the jointing and gaging box, (*i*) the raising wedge,  
30 (*J*) the table board, (*l*) the pivot on which the eye of the connecting rods work, (*l l*) the plane bearings, (*m*) the end of the jointing plane, (*n n*) the plane slides, (*o*) an iron plate across the end of the plane to which  
35 the slides (*n n*) are attached by the temper screws (*p p*), (*q*) is an iron weight, (*R*) is a cord, (*s*) a pulley, (*t*) a lever to which the cords (*R*) are attached at (2) said lever works on a joint at (20) (*g*) the end of the  
40 table board, (*v*) is an arm which is fastened to the outside sill of the facing and gaging box and on top of which is securely fastened the jaw (*x*) this arm passes immediately under the inside jaw (*x*) and  
45 through a mortise in the side or back sill of the said box the inside jaw (*x*) is securely fastened to the inside sills (*y*) (8) is the board placed in the right position to be faced (9—9) are the screws to raise the plates  
50 (10—10) (these screws seen in Fig. 5 and marked *m m*) on these plates the plane bearings are fastened, (11) is the plane, (12) is the arm which passes through the plane.

In Fig. 2 *a a a a* are the posts, (*G*) the  
55 front plate, (*H*) the movable bottom (*i i*) the raising wedges (*J J*) the table boards

(*l*) the plane bearing (30) a cross bar (31) a cross bar (*O*) a lever (*p*) a pivot on which said lever works (*q—q*) the connecting rods, (*r*) a mortise, *H* a lever seen in Fig. 3, (*o o*)  
60 a circle iron made fast by duck feet at (2—2) on the scale board (2—2).

In Fig. 3, (*e*) the back plate, *d* the back jaw, (*F*) the movable jaw, (*H H H H*) the levers (*g*) the front plate in Fig. 4, (*a*) is  
65 the top of the table (*b—b*) cord holes, (*c—c*) mortises.

In Fig. 5 (*a, a, a*) the lags, (*b*) the cross bar, (*c*) the edge of the table, *d* the sill, (*o o o*) the mortises, (*e, e*) cord holes, (*x*)  
70 the jaw, (*n n*) are arms or tenons which fasten into the plate (10) and work in the mortises (*c c*), (*m m*) are the raising screws and pass up through the table sill as seen in Fig. 5.

In Fig. 6, (*D*) is the sill, (*x*) the jaw, (*o o o*) arms, (*n n*) the mortises.

In Fig. 7, (*D*) is the sill, (*n n*) the tenons, (*m m*) the screws (10) the plate, (11) the  
80 plane bearing.

Now in order to enable any one skilled in the art to manufacture and use my invention I will proceed to describe the same.

You will bear in mind that the main features in the construction of this bench are  
85 these: In the first place one side is constructed into a framed box of convenient length  $3\frac{1}{2}$  ft. high 8 inches wide in the inside. The posts and crossties in the bents of said framed box are to be made out of  
90 pine wood and 4 inches square. There are to be 4 bents in the box. On the top of the posts in each bent there are to be tenons cut to receive the top plates of the box which have mortises to suit said tenons. To more  
95 fully understand this see Fig. 1 and Fig. 2, the left hand side of Fig. 1 and Fig. 2 represents the jointing box. In framing in the cross ties or girders they should be framed so that the jointing box will be 22 inches  
100 deep. There is also to be a bar put on each side of the jointing box as will be seen by referring to Fig. 2 in drawings letter, (31) represents the front bar (in the bottom of said box there is to be placed a movable  
105 bottom (*H*) see Fig. 2 in drawings, this bottom to be made of light and solid wood and so constructed that it will not be liable to spring on the back top side of this bottom. There is to be a board fastened 1 inch wide.  
110 The use of this will be seen by referring to drawings Fig. 1, (*d*) the back jaw. 29 rep-



resents this board on the bottom. This board on the movable bottom is to keep the board which is to be jointed which is marked in the drawings (E) square with the top of the box. The boards to be jointed are held fast to the back jaw 8 back top board of the bottom by the movable or clamp jaw (F) which opens and closes by the levers (H H H H) 3 of which are short levers framed into the clamp jaw (F) and front plate (g) the other lever is to be 2½ ft. long and is used in opening and clamping the jaw, see Fig. 3 in drawings. These levers work in wide mortises and are fastened by pins as seen in Fig. 3 to open the jaw, move the long lever to the left to clamp the jaw, move to the right when the jaw is open it will make a space of 3¼ inches wide when closed a space or opening of ¾ of an inch in jointing 3 boards 1 inch thick. Each of soft wood may be jointed at once the plane bearings are placed on top of the plates they are to be inch thick the back bearing to be 4 inches wide the front bearing 6½ in. wide to be made of hard wood and screwed on with wood screws to be counter sunk if necessary to cast iron dressed facings may be put on.

I will now describe the manner in which the bottom is raised see Fig. 2.

H H is the movable bottom, (I, I) are the table boards, (i i) are the raising wedges. The table boards are made 9 inches wide 1½ inches thick and set on the crossties as seen in Fig. 2. The wedges (h, h) are made of hard wood of length and taper to suit the height to be raised and to be 9 inches thick, to be held to these places by a board 1 inch wide put on each side of the table boards, or in other words the table boards are boxed, the side being 1 inch high the wedge moving back and forth in said boxes in raising and lowering the bottom of the jointing box. There is a box of proper size fastened on the middle posts, see Fig. 1 the bar (m), this bar to be on the outside as seen in the drawings. The lever (o) works on a point at (p). There is 2 connecting rods made of iron of proper size which attach the wedges to each end of said lever as represented in drawing Fig. 1. These rods have an eye in each end of them. The ends attached to the wedges work on points which fasten on to the ends of the wedges as seen in drawings. The connecting rods are marked (g g). They also work on the ends of the lever by pivots. Immediately back of the top of this lever, as seen in the figures in drawing, is fastened a board inch thick and proper width and length upon which a circle is struck (this scale board is marked 22 see drawings Fig. 2), on which a scale of feet and inches is laid off. This scale is got by raising the bottom (which is done by moving the lever to the left) one inch at a time or

½ inch then mark the board in order to hold this lever to its place so as to prevent the bottom from settling. There is a mortise cut through the lever which is over an iron circle which stands out a half inch from the scale board and fastened at each end to said board by duck feet, a thumb screw passes immediately in to said mortise on to said iron circle. I will now describe the jointing plane. Said plane is made like unto an ordinary plane with a butt to cut 3 inches. On each side of said plane there is a slide 1½ inches square set up ¾ above the face see Fig. 1 in drawings (slides n n). Across each end of the plane on the top 2 inches back from the end there is a cast iron plate which projects over each side (said plate marked o in Fig. 1) of the stock 2 inches. There is a nut cut through each end through which a thumb screw passes and to the lower ends of which the slides fasten, see the drawing Fig. 1. The design in fastening the slides thus is to set the plane to joint the edge of a board beveling and also to square it with the jointing box. It will now be seen that when the board in the jointing box is planed off until the plane slides come down to the casings that it must be straight and square with the face of the same, the box being square. The second main feature in the construction of said bench is to attach a peculiarly constructed self adjusting box onto the table of the bench, this table, an end view of which is seen in Fig. 1 and is marked in drawing Fig. 1 (u) and in Fig. 4 which is a top view the table is marked (a). This box I call the facing and thickening box and is constructed in the following manner: The parts of the table on which or to which this box is attached are made with these cross ties and end plates 4 inches square, the top 1½ inches thick. On the front edge of this table, see drawing Fig. 1, is placed a sill 6 inches back and parallel with it is placed another sill, these sills to be 4 inches square. There is to be 3 mortises cut into said sills 2 inches wide and 4 inches long. To understand this see drawing Fig. 5. The mortises in the front sill are marked (o o o). The mortises in the back sill are immediately back of those in the front one. The outside sills which forms the outside of the box is to be 4 inches square and to have 3 arms fastened into it and of a size to fit said mortises. The understand this see the sill arms in drawing Fig. 6, also the sills and arm in drawing, end view Fig. 1. It will now be seen that the board to be faced is securely held to its place in the rabbet of the jaws x x of the jointing box by the weights one of which is represented in end view drawing Fig. 1, drawing the box together by means of the cords which pass up through the table board and pass over pulleys to the right, pass on over said board



(a) through holes in the inside sills and under the jaws (x), and fasten to the front sill y. Jaws are to be of hard wood  $\frac{3}{4}$  of an inch square and securely fastened to the outside sill immediately on top of the arms, as seen in drawing Fig. 1, the inside or the back jaw to the front back sill, as seen in said figure, there is also a lever under the box working in a mortise in a piece of lumber which is fastened to the table, from the outer end of said lever there is 2 cords, the one passing to the right, the other to the left, up over a pulley each as seen in end view Fig. 1 and back over the weight pulley and fastens to the weights. By setting the left foot on this lever and bearing down the weights are raised so that the jaws may be opened. These weights to be of iron, to weigh 40 lbs. each. On top of these sills of the jointing box the plates are placed upon which the plane bearings are fastened. These plates to be of proper size to be raised and lowered to suit the thickness of stuff by screws or wedges similarly constructed to those used in raising and lowering the bottom of the jointing box, these plates to be held on to the sills by tenon arms as shown in drawing Figs. 5 and 7. The raising screws are also shown in said figures. I will now describe the plane. The plane is an ordinary one with 2 arms of wood passing through it by means of mortise, these arms to be of a length to suit the width of box, said arms to be 2 inches wide and  $1\frac{1}{2}$  inches thick, to be made of hard wood, the back arm to pass through to the plane in the manner represented in additional drawings Fig. 10. In facing lumber the plane is moved by the operators back and forth over the lumber until the arms come down to the bearings. When it is out of winder and

straight along the face the object in putting the back arm through the plane as represented in additional drawing Fig. 1 is to keep it from hitting the side of the operator, as in planing it is well known that the plane is drawn back just fast enough for the handle to be on a line with the center of the body. On the right hand connecting rod near the top where it attaches to the lever there is to be placed a swivel nut Fig. 2 marked g, which is to regulate the bottom of the jointing box that is to make it rise so that each end of the box will be of equal depth. Say you raise the bottom to make it of a given depth but the wedges being out of order one end or the other is too high or too low. This is remedied by turning this nut back or forth so as to lengthen or shorten said rod.

Now the advantage that I claim that my bench possesses over any other is this—that any man can dress out the most perfect lumber without gage or by square and at the same time in a few months practice do the work of 2 men who are skilled in the ordinary way of doing the same. This bench can be used by cabinet maker or house joiners, to be made of sizes and lengths to suit convenience.

I do not claim the principle of running a plane with slides on it in a box or the slides on the edges of a box, but

I claim as my invention—the construction of a work bench substantially as shown by my model drawings and specification together with the peculiar construction of the planes for jointing and facing.

J. W. MAHAN.

Witnesses:

WM. C. CALLET,  
I. ALLISON HAND.