J. W. Mahan,

Work Bench.

No. 15,739. Patented Sep. 16, 1856.

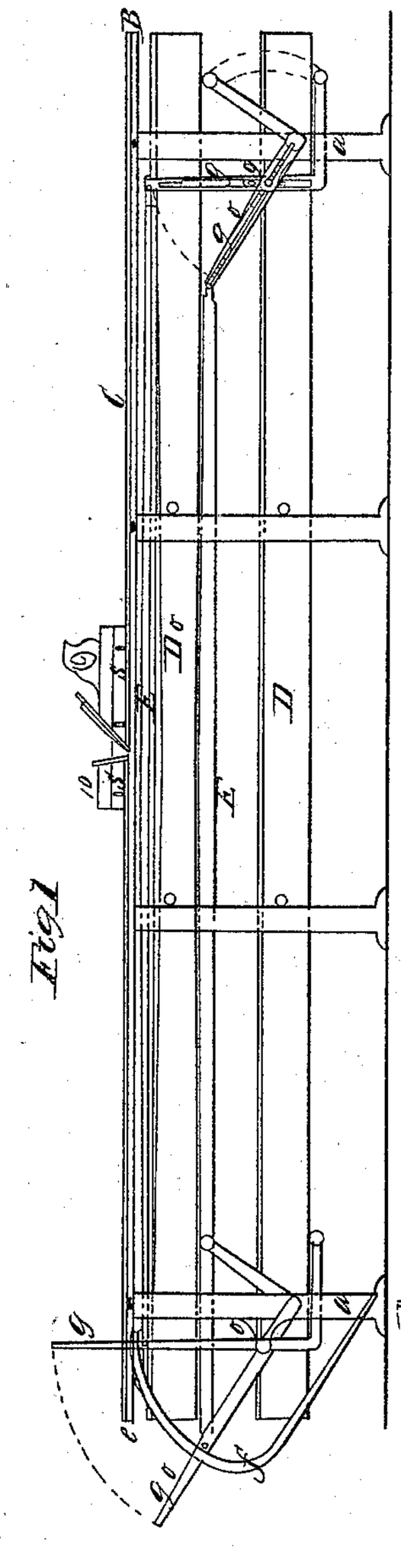

Fig 1

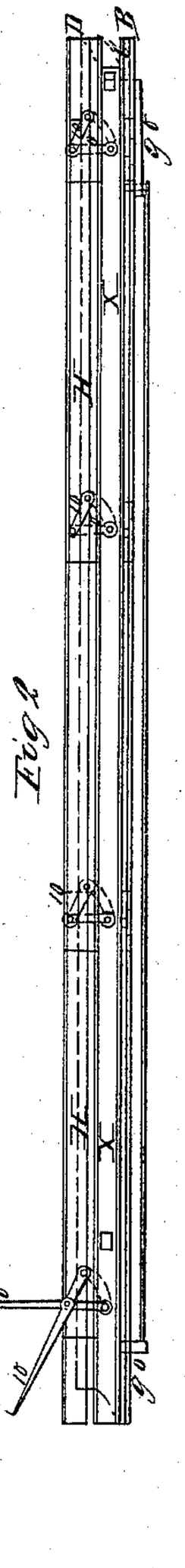

Fig 2

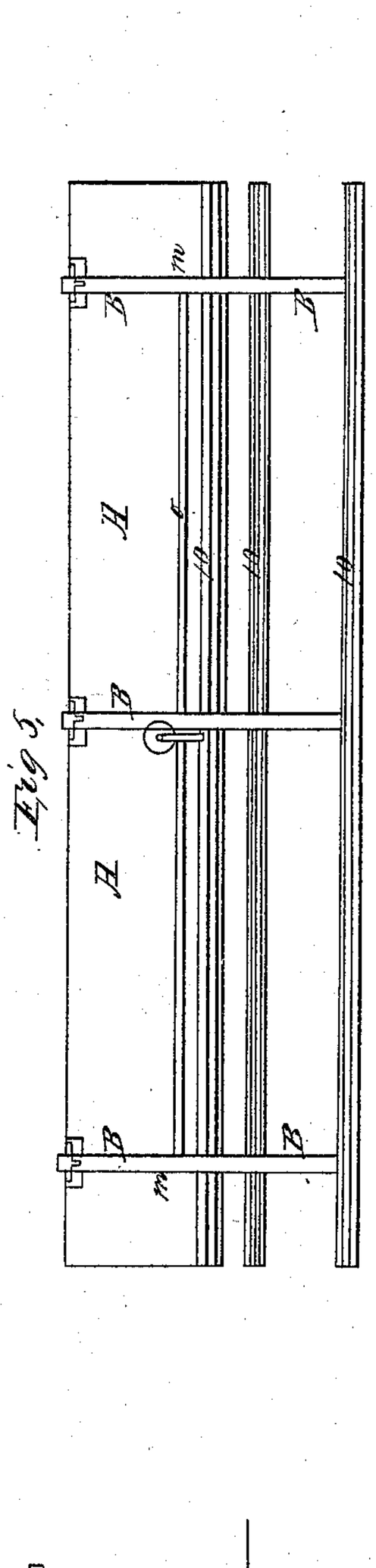

Fig 3

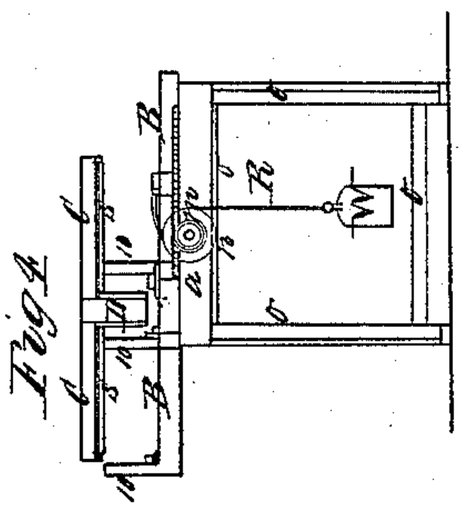

Fig 4

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UNITED STATES PATENT OFFICE.

J. W. MAHAN, OF LEXINGTON, ILLINOIS.

CARPENTER'S BENCH.

Specification of Letters Patent No. 15,739, dated September 16, 1856.

To all whom it may concern:

Be it known that I, J. W. MAHAN, of Lexington, in the county of McLean and State of Illinois, have invented a certain new and useful Improvement in a Carpenter's Bench which was patented by me in the United States of America March 25, A. D. 1856; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, they making part of this specification, in which—

Figure 1 is an upright front or side view showing the interior and exterior of the jointing box from the lower edge of the clamp jaw to the foundation on which the bench stands. Fig. 2 represents an elevated top view of said box showing the situation and manner of operating the clamp jaws, also raising apparatus, &c. Fig. 3 shows an upright end view of said box with its interior works and outer attachments. Fig. 4 represents an end view of the facing box with all of its works, &c., and plane for facing. Fig. 5 shows an elevated top view of the same.

In Fig. 1 *a*, *a*, *a*, *a* are the outside posts forming bents of the jointing box. B B is the front plate; C the plain barring. D D° the raising bottom; E E connecting rods; *g g* the raising levers in upright position, the bottom D down; *g*° *g*° the levers drawn down to the left, the bottom D° being up. Said levers attach to the end posts *a a* on the ogee flanges *o o o o*. *f* is the circle iron through or over which the slotted lever *g*° works. On said circle there is a scale. Laged of this scale determines the width of the stuff, in jointing the lever to be held on the circle by a thumb screw passing through the lever on to it.

In Fig. 2 B B is the front plate; C, the front jaw; D, the back plate; X X and H H, the back jaw opened and closed by these several levers marked *o o o o* 10 10 10 10 by moving the long lever 10 to the right, it and its other levers passing through the several dotted circles. In this figure shown the jaw H H also in opening passes to the right and also under the cap of the plate in Fig. 3 marked (*o*). *g*° *g*°, the raising levers; E, the connecting-rod.

In Fig. 3 *a a* represents one bent of the jointing box; D, the raising bottom; *p*, the jointing plane; *s s*, the plane slides; 10, the clamp jaw lever; *g*, the raising lever; 12, a ruler on the end of the lever *g* under the raising bottom.

In Fig. 4 *o o o o* is the or one bent of the 3 on which the top of the facing bench *a* rests. D is the plane stalk; *c c* the plane arm; *s s*, the plane rulers; 10 10, the sides of the facing box with these rabbets shown at these lower edges. B B is the sliding arm attached to the outside piece of the said box. In the drawing this is shown nearly closed and fully open. The dots on the lower side of this arm represent cogs into which the cog wheel *m* works. *n* is a drum around which the cord R is wound, to which the weight W is hung.

In Fig. 5 *a a* is the top of the bench; *o o*, the cog wheel and drum shaft; *m*, *m*, the cog wheels; *n*, the drum; B B B B B B, the sliding arms; 10 10 10, the front and back sides of the facing box.

Now in order to enable others skilled in the art to make and use my invention I will proceed to describe the construction and operation of the same. However, inasmuch as my improvements relate solely to a previously patented machine and cannot be used only in connection with said machine; therefore I will confine myself only to the description of the manner of constructing and operating said improvements, excepting as it relates to the general size or dimensions of said bench or machine and to state what parts should be made of iron, &c.

Beginning with the jointing box I would state that it is to be made of cast iron—that is, the bents of it—said bents to be cast solid or in two pieces, each post to be cast in the shape of a T, to be flanged, the flange on the outside. To these flanges the plates, side boards, and plain barrings are to be fastened by wood screws, the screws passing through the flanges into the same. The bents are to be bolted together when cast in two pieces for carpenters' use. It should be 16 ft. long and 2 ft. 8 inches high, the clamp jaw to be placed on the back side, the long and short levers to be made of iron, to work on iron pins in iron mortises, to be made in iron blocks, to be made and let into the plate and jaws of the jointing box, the clamp jaw to be $1\frac{1}{4}$ inches thick, of width and gather to suit the amount in the thickness of stuff that is desired to be jointed at a time, the plain barring on the clamp jaw side to be $1\frac{1}{4}$ inches thick and of width in

all cases to correspond with the same object, the front plain barring to be 1¼ inches thick and 2 inches wide. The bottom of the jointing box is to be made in the form of a square column out of 4 pieces of inch plank, said column to have heads placed in it 18 inches apart in the inside, in order to prevent it from springing, the size of this column to be in all cases according to the width or space between the back and front posts. In each bent there is to be a clamp jaw placed on this bottom, constructed by placing iron flanges on the side of this bottom, to which the outer end of the operating levers are to be attached, this jaw to have a long lever to be operated precisely the same as the stationary upper clamp jaw. Now comes the raising apparatus. Instead of wedges constructed in the manner described in my former specification, I use 2 iron levers made in right angle shape, the point used in raising the jaw box bottom to be the shortest, these levers to be attached to the outside end legs of the joint box to work on an iron journal screwed into said legs. See Fig. 1. The front lever through which the iron scale circle passes is attached to the back levers by the connecting rod E, the lever and raising end of these levers bend around these respective posts so as to fetch these extreme points on a line with the side of the raising bottom of the jointing box. To this point there is an axle. Attached from this axle there is a ruler passing immediately under the raising bottom. Now by taking hold of the slotted lever *g* seen in the drawing and drawing it down to the left the connecting rod E by its working joint attachments on its levers causes the bottom D to rise. Then secure the lever by the thumb screw binding on the scale circle. As these levers work precisely on the same principle of a wheel. The axle on which the lever works represents axle of the wheel, the moving points of this lever the rim of the wheel. In order to adjust these levers so that each end of the raising bottom will gage in rising equally where the connecting rod E attaches to the short lever there is to be a slipping plate. Also over the axle of or on which said lever works there is to be a movable hub, the main lever being slotted by loosening the screw heads that hold this hub and moving plate to which said connecting rod attaches. By slipping the lever it can be adjusted so that in passing through its circle it will describe a circle exactly corresponding with the slotted lever shown at the head of the bench.

I now come to a description of the plane in drawing Fig. 1 marked 10. The plane in width must fill the jointing box, the back to have a slide on it made stationary, the front to have a slide adjustable by a set screw in order to joint the lumber square with the side or beveling.

I now come to the facing box, the frame work of this bench to consist in 3 bents to be 2 ft. high and 2 ft. wide, cast of iron, the top rail of each bent flanged and the top screwed to it from below, the jointing box to be made of any required depth to suit the thickness of the stuff to be dressed, the sides of the box to be solid and not in two pieces and raisable, as in my originally patented bench. On the lower sides of the end sliding arms of this box there is to be a cast iron cog plate to be fastened. There is to be a small cog wheel placed immediately under, so that the teeth of these wheels will work in the grooves of these plates. These wheels are fastened onto a parallel shaft. On the middle of this shaft is a drum, around which a cord passes in the manner shown in drawing Fig. 4. To this cord is attached a weight. Now it will be seen that by taking hold of the outside of this box and at any point whatever, the cog arms working the cog wheels, the box must of necessity open alike at each end and with ease and perfection, the shaft in the operation of rolling raising the weight on the weight drum. There is to be a ratchet wheel and hooks to hold the box from closing when not held by the operator. In closing the box loosen the ratchet hooks, &c.

I will now describe the planes.

I take a plane, glue a piece of wood on to the top side front of the throat, so as to make the front end of the stalk 5½ inches thick, square the end of the stalk, then fasten on a dovetail made of steel proper thickness, and figure it from the end next to the face of the plane, then make an arm of proper size and length to suit the width of the stuff on one side of this arm, fit onto it a dovetail mortise made of steel, iron, or brass, then connect the arm to said dovetail by means of the dovetail mortise which is on the middle of the arm. There is to be a thumb screw passing through said arm in an iron, but so that the arm can be held from slipping. Now the lumber can be gaged by moving this arm up and down on said dovetail, designating the width by the scale thereon. There may also be an arm with a dovetail on the end of it placed on the side of the plane opposite the operator. The actual use of my improvement proves, however, that where common care is used in planing the back end of the board by not suffering the heel of the plane to drop down so as to heel off the end of the board the use of the front slide is all that is necessary to do the most perfect work and, moveover, actual experiment proves that the former plan of constructing my facing planes with two arms on each side of the stalks will not do, on account of the back front slide or arm

being in the way of the operator, whereas actual experiment proves that my present plan of construction, as described, proves the great, and I may say, and justly, too, almost invaluable utility of my device throughout for facing and thickening lumber. It will be unnecessary to speak of the advantages that this bench, when taken together, possesses over the one previous by me patented, as to compare the two together the real advantages my improved machine or bench possesses over the original one are more fully seen than can by me be demonstrated except by actual exhibition of the two benches in working operation.

Now I do not claim the peculiarly constructed work or carpenter's bench entire that is shown by my model, drawings, and specification, as my invention (that is, as new) for part of it was patented by me March 25, A. D. 1856.

I claim—

The carpenter's and cabinet maker's assistant bench constructed in any manner substantially the same as set forth and described in my specification and drawings.

J. W. MAHAN.

Witnesses:

D. G. STEVENS,

ABEL COMSTOCK.