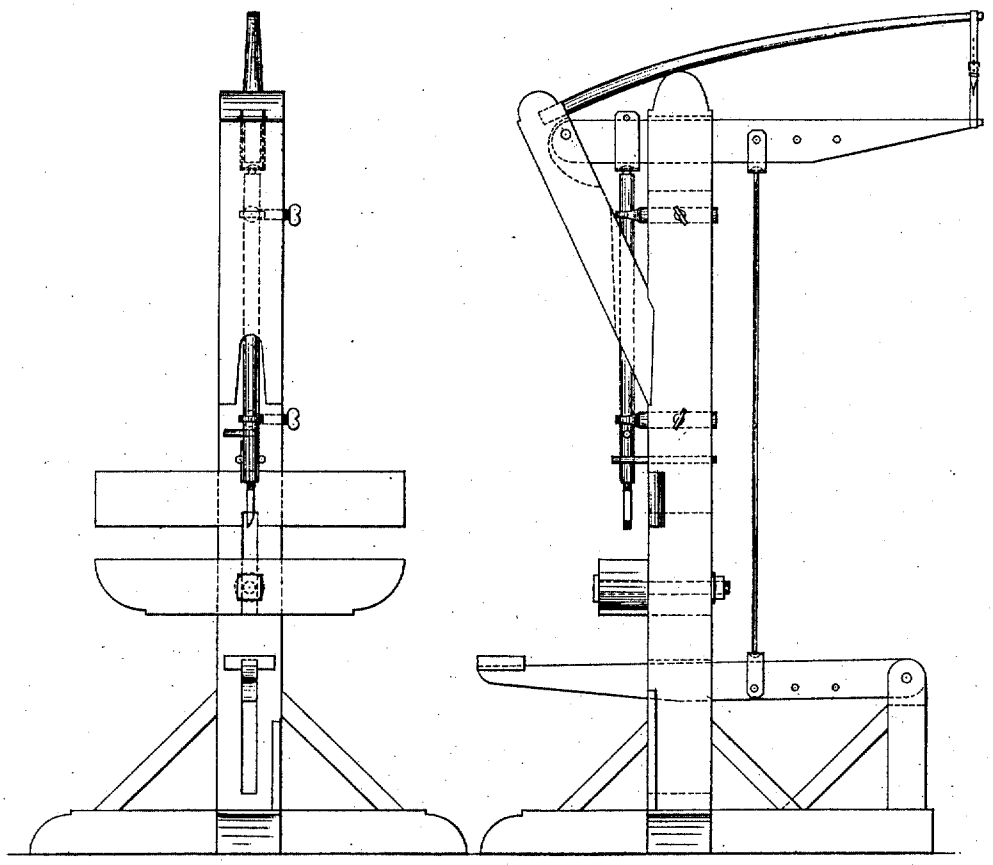
7484X

(New Drawing made from Model Mar. 5. 1870.)

George Page.

Mortising Machine.

Patd Mar. 13. 1833.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

7484X

March 13, 1833

301

George Page of Keene New Hampshire

Letters Patent

The schedule referred to in these Letters Patent and making part of the same containing a description of the words of the said George Page himself of his improvement in the machine for tenoning wood.

To all persons to whom these presents shall come. Be it known that I George Page of Keene in the County of Cheshire and State of New Hampshire have invented and made a new and useful improvement in the method of mortising by a machine. which machine is described as follows viz

The bottom consists of two pieces of slit work four inches wide three inches thick. one piece three feet long. the other piece three feet and four inches. These are locked together crossing each other at right angles. the place of intersection in the shortest piece being at equal distances from each end, and in the longest piece about two feet from one end, the short end is at the front of the machine. At the place of intersection a mortise is made, into which by a tenon is fixed an upright post four inches square and seven feet high from the bottom of the sills. This post is kept fast and supported by four braces from the sills. Beginning at three inches from the top of the sills a mortise is made in the longest sill through this post one inch wide and eleven inches long. Into the longest end of the long sills is fixed by a mortise and tenon, an upright post four inches wide two inches thick and seventeen inches high from the bottom of the sills. On the top of this post one end of a lever is inserted a pivot passing through the post and end of the lever. which lever is three feet long one inch thick and three inches wide. and passes through the mortise in the post and has upon the other end a piece of timber four inches square and one inch thick upon which to place the feet six inches above the mortise in the post another mortise is made through it in the same direction. four eighths of an inch wide and fifteen inches long. Through this mortise passes an iron mortising bolt eight inches long,

with a strong collar and nut on one end, the other end playing through a piece of timber called the rest. This rest is two feet three inches long and four inches square. Through a part of which which is five eighths of an inch in diameter plays through the middle of the rest and is made fast by a square head. On the back side of this rest are firmly secured two pieces of board four inches apart, the interval being in the middle of the rest. By means of the said bolt, screw and nut the rest may be made fast at any desirable height, and the two pieces of board, one on each side of the post, assist in keeping it steady. A board three and a half inches wide of the same length as the rest is let into the post even with the face of it, coming at the upper edge two inches above the top of the mortice, the lower edge of course one and a half inch below, the board being cut away where it covers the mortice. One inch above the top of the board on one side of the post a cleat one inch square and about three inches long is screwed firmly to the post to prevent the timber to be moved from riding by the operation of the machine. Four feet three inches from the bottom of the sill a brace of the size of the post and three feet long is inserted into the post inclining forward at an angle of sixty two degrees from a horizontal line. This brace is fastened to the post by a short girt four inches square seventeen inches from the toe of the brace to the top of the girt. Through the brace and the girt mortices are made next to the post three inches long mortising horizontally. Beginning four feet nine inches from the bottom of the sill, one inch above the top of the girt, another mortice is made through the post in the same direction as the others one inch wide and eight inches long. Through this mortice passes a lever about two feet one inches long three inches wide and one inch thick, it is inserted in the brace and fastened by a pin or pivot. From this brace to the lower post described passes a rod with a clevis on each end, by which clevis the two ends of the rod are attached to the two levers, several holes are made through each lever. The hole nearest the post being one and a half inch from the post and the others being one and a half inch from each other. These holes are to receive the pins passing through

holes in the ends of the levers and by attaching the ends of the rods to different places on the levers, different quickness and motions may be obtained. Three inches and a half below the top of the brace a mortise is made through it at right angles one and a half inch square into which a square tenon is inserted a spring made of hickory, ash or other elastic timber three feet long from the brace. The end of this spring and the end of the upright brace is connected by a leather strap having a buckle by which it may be tightened or loosened at pleasure. About three feet four inches above the top of the sills or about four inches above the board placed across the post as above described on the right hand side of the post is made a groove about one and a half inch wide and half an inch deep from the middle of this groove another is made into the front side of the post half an inch wide and one inch deep, and extending to within one inch of the other left side of the post. The groove receives a cast iron box thus described. The side which is placed in the right side, is about one and a half inch wide, and five and a half inches long, and the thickness of the side is about half an inch. This side fits into the groove on the side of the post. From one end the front end of this iron proceeds a piece half an inch thick, and two and a half inches square which is inserted in the groove on the front side of the post. Through the centre of this square is a round hole about one inch in diameter, the whole of which when the box is placed, appears in sight. Back of this square through the side afore described, in the middle thereof is a mortise two inches long and three eighths of an inch wide. Through this mortise and through the post passes a bolt having a head on one end and a screw cut upon the other, by means of which the cast iron box may be secured, and moved backwards or forwards a little at pleasure. Two feet above this box another similar one is placed in the same manner. The part of the machine next to be described is a round iron slide about two feet one inch long and one inch in diameter. On one end of this slide, the upper end a staff of iron in the form of a cross is attached by means of a

7484 X

screw the head of which is within the chisel and the screw enters the end of the slide passing through a hole in the bend of the clevis. The hole in the clevis is made so large that the rod may be turned. This clevis passes up on each side of the lever near the post, and is secured by a cotter pin. About four inches from the other end the lower end of the slide a thumb piece is attached to it by which the slide may be turned. Half an inch above the thumb piece, a hole is made through the slide of the size of a large wire; four inches above this hole another, and into these holes are inserted a wire bent at right angles. So that the wire lays along the side of the slide. into the lower end of the slide is made a socket two inches deep to receive the shank of a chisel. At the extremity of the socket or top of the chisel when inserted a hole is made through the slide for the purpose of driving out the chisel. This slide passes through the round hole in the upper cast iron box, through the mortise in the girt above described, through the mortise in the brace and through the hole in the lower cast iron box. On each side of the slide to play about two inches below the brace two small steel springs are inserted in holes made through the post. These springs project in front and on the inner side of each are small fluted grooves made to receive the wire attached to the slide. by means of the thumb piece the slide may be turned half round, and the wire falling into the groove of one or the other secures it. The socket in the lower end of the slide to be round to receive the shank of the chisel. The chisel to be of the best cast steel form after the fashion of those used for mortising, and be from one inch to one and a quarter inches in length exclusive of the shank. By turning the chisel in the socket the cutting edge or face to the front to be used for cutting dovetail mortises, and side ways to the front in cutting mortises for elbow sash, cabinet work window blinds &c. The chisel to be secured in the socket by taking out the chisel after cutting the mortise and with a screw driver with a round shank is to be inserted to drive or force the chips out of the mortise. The chisel to be made of the same length of the chisel

about as thick as the chisel is wide; and about half an inch in width to be flat upon the loom end.

Operation of the machine. The mortaiseress is first adjusted to the dimension of the timber or wood to be mortised which is easily done, the boards on each side of the post keeping it at right angles with the post. The reed is made fast by the screw and nut at the proper distance to admit the timber or wood to be mortised between the upper side of the reed and the lower end of the steel upon the post. To make the common mortise the wood to be mortised is, placed upon the reed and the chisel set to cut either right or left head of the mortise, the screw upon the side of the slide in the groove of one of the steel springs guiding the slide in the operation of the machine. The foot is applied to the lower lever and pressed down, the lower lever and upper lever being connected by the rod and cleeves, as the lower lever is pressed down it brings down the upper lever to which the slide and chisel are attached; and drives the chisel into the wood in proportion to the force applied by the foot of the operator. As the weight of the foot is withdrawn the spring at the top of the machine which is attached to the upper lever by the leather strap recovers, by its elasticity and withdraws the chisel from the wood. The wood or timber is then moved by the hand of the operator and the foot applied as before and so on till one head of the mortise is finished. By means of the thumb piece the slide is then turned half round and the screw upon the slide set in the groove in the other steel spring and the other head of the mortise made by a similar operation.

To make the dovetail mortise the chisel is turned in the socket so that it is flat wise or face to the front, and the timber or board having the dovetail first sawed is presented endwise to the machine and the power is applied, and the operation carried on as before until the mortise is cut out, the slide not requiring to be turned in cutting this kind of mortise. To use the driver the chisel is taken from the socket and the driver inserted, the

7484X

and is let down and a block placed upon thereat with a hole mortised in the block to let the chips fall through. The dovetail is forced through the mortise in the same manner as the chisel is forced into the wood. My improvement consists in the novel manner of the slide, the two guides, the springs, and gravity

Also in the cleaving and fixing upon the two ends of the wood in the slides in the two covers, by means of which the power and motion of the machine may be increased or diminished at the pleasure of the operator. Also in the round socket in the slide, and round shank of the chisel by which the dovetail mortise is cut. And also by fixing to the machine a shield, by which the chips are cleared from the mortise.

In testimony that the foregoing is a true specification of my said improvement, as described I have hereunto set my hand this twenty seventh day of February in the year of our Lord one Thousand Eight hundred and thirty three.

Witnesses
James Nelson Jr.
Charles McNeal

George Page

(250 words)

(Sealed March 13. 1833)

Examined
1836.