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(54) **MORTISING TIMBER**

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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 in the words of the said George Page himself of his improvement in the machine for mortising Large Timber

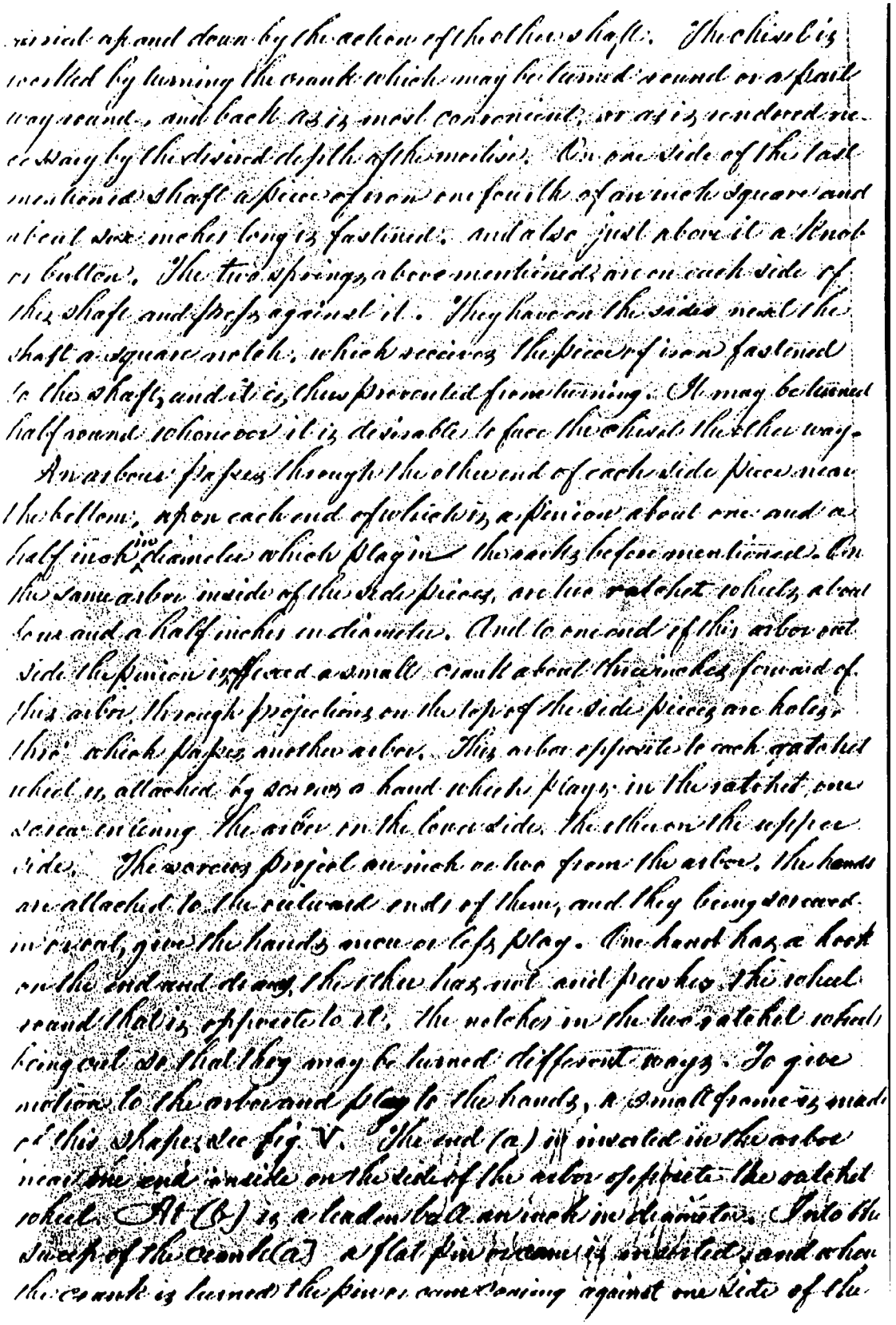
Be it known that I George Page of Keene in the County of Cheshire and State of New Hampshire have invented a new and useful machine for making mortises in large timber, and that the following is a full and exact description of the construction and operation of said machine as invented by me. The exterior part of the machine is a cast iron Box open at top and bottom, about two feet long and seven inches wide. The sides and ends are cast separately and fastened together by screws passing through the ends into cars on the inside of the side pieces. Ears also project two from each side quite at the end and bottom of the box on the outside through which is cut a female screw. Underneath each end of the box and under the cars last described is placed a bar of iron about eleven inches long one and a half inch wide and one inch thick through each end of which a hole is drilled to receive a round tenon on the end of the screw which passes through the ears above. These holes are countersunk on the lower side and the end of the tenons headed. The bars rest upon the timber to be mortised and by turning the screws the box can be raised or lowered and thus the depth of the mortise may be regulated, and by turning one or more of the screws of the machine may be levelled or adjusted with the plumb shots. At the bottom of the end pieces inside at or near the center, cars project thro' which a hole is made and a hole is also made thro' the cars above mentioned, in and through which is inserted an iron pin which is made fast to the box; the sharpened end of which enters the timber and keeps the machine in its place. The sides of the box are about three eighths of an inch thick but at the lower edge on the inside is a rib to give the sides greater strength

Near the upper side, inside, are square grooves from end to end formed by projecting ribs. The ends of the box do not rise as high as the sides, by about one inch and one fourth. On the upper edge of the side pieces on the back end extending about half the length of the box is fastened or cast an ark upon which play pivions hereafter mentioned. Through the sides of the box about the centre in regard to length, and near the bottom, are holes about one inch and one fourth in diameter, through which passes a round bar of iron for a windlass from fifteen to eighteen inches long. To this bar near one end and close to the box is attached a ratchet wheel about seven inches in diameter and to the box is fastened a hand which plays into the ratchet. On one end of this bar or windlass a chain is fastened which passes under the timber and is hooked on to the other end. The windlass is then turned by a wrench and the chain drawn around it, the hand in the ratchet holding it fast, by which means the machine is held firmly to the timber. Near the forward end and near the bottom, two iron eyes each side five or six inches long are attached to the box the ends of which may be driven into the timber to aid in holding the machine fast. On each end and side one or more perpendicular levers are drawn as guides for placing the machine without reference to the chisel. The other part of the machine may be called the carriage. It consists of a bottom piece of this shape. See fig. I. of two side pieces of this shape, See fig. II. And of an upright or end piece of this shape See fig. III. The edges of the bottom piece are filled to move in the grooves above mentioned in the inside of the box. The side pieces are fastened by the pivots or lower edges of the bottom piece being just far enough apart to move within the box. The upright or end piece is placed at the forward end, and between the two side pieces, resting on the bottom piece at the edge of the half circle. The width of the bottom is just sufficient to fill the interval between the side pieces say five and a quarter inches. Its height is eighteen inches. It tapers to taper at the top and a quarter inch from the bottom ends, about it

and a half inches wide at base. At the edges on the back side are two ribs which at the bottom are seven inches upwards project about one inch and one fourth, and these ribs and the part of the base that projects are to be diagonally pierced. The side pieces are fastened to the end pieces by screws which pass through the former at the places marked by dots and through the projecting ribs. At the base and bottom of the upright piece is an ear projecting on the fore side and perforated by a hole one inch in diameter. At about seven and a half inches above the bottom of the upright piece on the back side are two projections, bored with each other about one inch and a quarter apart and a half inch long. There form the eye one inch in diameter circular a small hole passing through each longitudinally and through the upright piece in which are inserted springs which are held fast by screws inserted in the sides of the circular projections.

The bottom pieces of fifteen or sixteen inches long form point, the side pieces about twelve inches long, and at the widest end six inches, and at the centre three and a half inches wide. About three and a half inches back of the fore end of the side pieces are holes about one inch in diameter through which passes a crank. These holes have projections outwards resembling a hub about three inches long to keep the crank steady and prevent it from bending.

The axles of the crank project about ten inches on each side of the machine, and the arms are to be fifteen or eighteen inches long. Within the machine it has the form of a common brace. Mill crank the same diameter of the rest being about three inches, the shape of the crank being as in this sheet fig IV. From the sweep inside (a) rises a shaft twenty inches long and one inch diameter, at the top it is bent forming almost a right angle and passing over the top of the upright piece and through the end of it a hole about half an inch in diameter. Through this hole and the holes in the bars on the upright piece descends another shaft about one inch in diameter and three feet long and to the lower end of which is fastened a wheel. This perpendicular shaft is to be headed at the top so as



...vial up and down by the action of the other shaft. The chain is
...rolled by turning the crank which may be turned round or a part
...way round, and back as is most convenient, or as is rendered ne-
...cessary by the desired depth of the melter. On one side of the last
...mentioned shaft a piece of iron one fourth of an inch square and
...about six inches long is fastened, and also just above it a stud
...or bullet. The two springs above mentioned are on each side of
...the shaft and press against it. They have on the sides next the
...shaft a square notch, which receiving the piece of iron fastened
...to the shaft, and the stud preventing it from turning. It may be turned
...half round whenever it is desirable to face the wheels the other way.
...An arbor passes through the other end of each side piece near
...the bellows, upon each end of which is a pinion about one and a
...half inch in diameter which plays in the cranks before mentioned. On
...the same arbor inside of the side pieces, are two ratchet wheels about
...four and a half inches in diameter. And to one end of this arbor on
...side the pinion is fixed a small crank about three inches forward of
...this arbor through projecting on the top of the side pieces one half
...inch which plays another arbor. This arbor is fixed to each ratchet
...wheel as attached by screws a hand which plays in the ratchet one
...fourth an inch long. The arbor on the lower side the wheel on the upper
...side. The wheels project about one inch and a half from the arbor. The hands
...are attached to the outward ends of them, and they being screwed
...in round, give the hands more or less play. One hand has a hook
...on the end and plays into the other hand which has a slit and pin in it. The wheel
...round shall is fixed to it. The notches in the two ratchet wheels
...being cut so that they may be turned different ways. To give
...motion to the arbor and play the hands, a small frame is made
...of this shape see fig. V. The end (a) is inserted in the arbor
...near the end inside on the side of the arbor opposite the ratchet
...wheel. At (b) is a leaden ball an inch in diameter. Into the
...end of the crank (a) a flat piece is inserted, and when
...the crank is turned the piece comes against one side of the

Varieties The frame which immediately falls and by the motion thus
gives to the pinions The carriages moved forward or backward
as one or the other of the handles is depressed to play in its socket
wheel. The position and shape of the V should be such that when
the power came is raising it by passing on one side, the shaft
to which the shield is attached shall stand exactly as much as
when it passes on the other side. While one hand is moving the
other should be removed, being either put or confined in some
convenient way. A socket one and a half inches deep is made
in the lower end of the perpendicular shafts, to receive the handle
attached. At the upper end of this socket a hole is made
transversely through the shaft to drive out the shield.

The shield is about seven and a quarter inches long inclu-
ding the shank. It is formed like other framing chisels except
that the cutting ends on each edge (not speaking here of the cut-
ting edge of the end) on the bevelled side, inside of the
face, two side pieces or wings project, which are sixteenth of an
inch thick next the main part of the chisel, three eighths of an
inch wide and extending up the chisel from the cutting edge about
two inches. The lower terminations of these side pieces or wings are
sharp and are made sharp by bevelling the portion next the main
part of the chisel on the inside and the other portion on the out
side. By this mode of sharpening the side pieces or wings there is when
the chisel is driving the wood an equal pressure on the outside and
inside by which they are supported and are not liable to break as
when sharpened in any other way.

Operation. Stone may be advantageously be worked where the mortice
is to be. The machine is then placed on the timber the proper
place being regulated by a line on the timber and the perpendicular
lines on the ends of the machines. It is then made fast by means of
the hand lever and chain, and of the dogs if necessary. The crank
is then turned with the gudgeon and pinion wheel around and back.
If the mortice is to be a shallow one, it should be turned only a

part way round and back. Gearing the rack drives the chisel into the timber and also moves the carriage forward or backward, according as may be the handle is used.

I claim as being mentioned the combination of the parts as above described constituting a machine for mortising large timber. The application and use of the several parts in a machine intended for that purpose and the mode of shaping the side pieces or wings of the chisel

George Page

Witness
H. G. Schieb Day
Asaph Harrington

Spec 2.25

(2210 words)

(Granted Apl. 21. 1886)