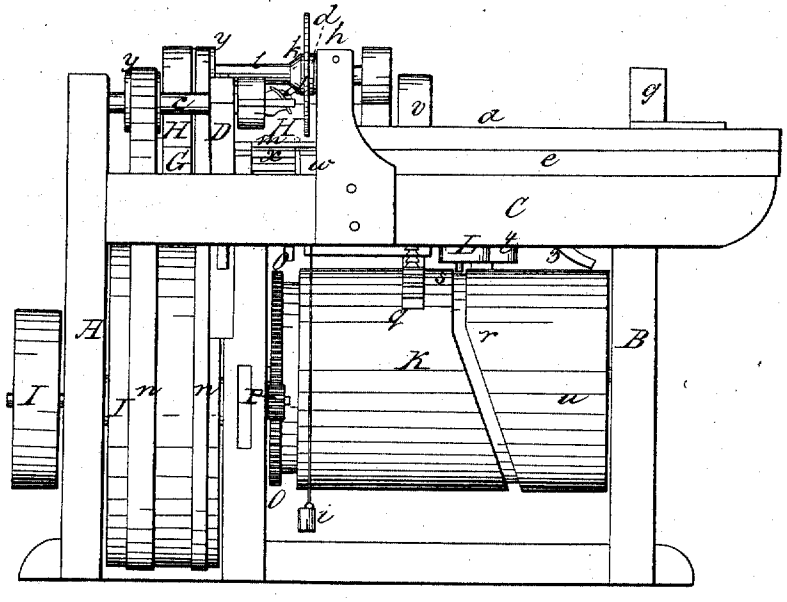
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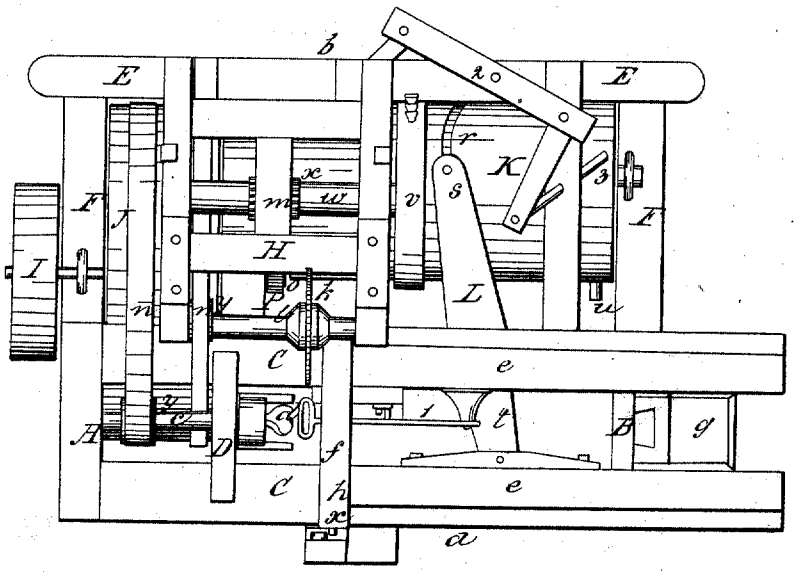
6997X

H. Holland,

Making Wooden Boxes.

Patented Apr. 13, 1832.





A.M. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

6997X

April 13, 1832

Harrison Holland

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 Harrison Holland himself of his improvement in the Machine for manufacturing Boxes of Wood.

This machine consists of two parts,— 1st the frame supporting the machinery & 2d the machine itself on the gearing I. of the frame. this is made strong, of firm and solid materials as in the model, occupying a space of about four by six feet square; and may be conveniently placed in a common shop room.

The frame may be better described, by considering it as consisting of a front and back part, the former supporting the auger and timber carriage. the latter the saw, and its frame & most of the machinery. — There are two distinct operations to be performed viz- cutting or boring out the box and sawing it off. and the frame is calculated to favour both of these operations.

The main or front part of the frame, is constructed and consists of the following viz:— 1st a head plank three inches in thickness by seven in width and four feet and three inches in height marked A. 2d a foot plank of the same dimensions and corresponding with the head plank excepting as to length or height this being but three feet long marked B. — 3d two beams, five inches thick and six inches deep placed on opposite sides of the above mentioned planks, tenoned into the head plank, & receiving tenons on the upper end of the foot plank, in the model six feet long; they may be longer if necessary, both are marked C. —

4th a head block. this may be a two inch hard plank, ten inches long six high resting on the beams, ten inches from the head plank, having a tongue extending down through, and below the beams, & confined at bottom by a key or wedge, this may be moved further

from or nearer to the head plank, if necessary. It is the main support of the auger the mandrel of the auger passing through it marked D, this is in two parts; the top part being removable & receive and screwed on to confine the mandrel of the Auger. — 3d, an ear, this is a solid piece of wood, two inches thick five inches wide at bottom & two at top. confined to the outer side of the front beam nineteen inches from the front head plank, running up nine inches above the beam, On the beam the timber carriage so called to distinguish it[s] use and many. This in the model is five feet long but may be any given length to accomodate the length of the timber.

This is made of solid wood, two inches deep and five inches wide corresponding with the tops of the beams in, each are the side pieces — these are tenoned into the head block and confined by ties, or rather connected by ties —

On each of these is fastened a cleat so as to form a groove on each side, in which a foot block is placed. The timber to be wrought is confined; the forward end in the head block for this purpose the timber should be square corresponding with a square cut out of the head block, the hind end is confined in the foot block and the foot block moves forward, as the timber is shortened drawn by a weight and pulley, — 4th section is taken from the upper part of the head block, so as to form a square, this is hung by a joint at one end, and is made to press on the upper part of the timber, so as to confine it having teeth running into the timber. This has been called for distinction a vice, it acts on the principle of a lever, and the power applied is a weight suspended from the other end, — All the part of this carriage as well as of the whole machine will be understood by inspecting the model.

The back part of the frame is firmly united with the other part.

The back side consists of what may be called a rib, plate and three posts. The posts are tenoned at each end. The outer posts correspond with the head and foot planks in the front frame the middle post is one foot from the front post. The size of

the timber, three inches apart. The ties marked C. The ties is bound to the front part of the frame by ties entering each post by a tenon and into the head and foot blanks, and an inner post, standing under and supporting the inner beam and parallel with the middle post. These ties are three inches thick and six inches deep viz, the lower ties marked F. made substancial in order to support part of the machinery. — There are also three ties near the top. the first six inches from the head plank, the second eighteen inches and the third eighteen inches further still, united to the inner beams by tenons. the upper part projecting and rising as high as the timber carriage: all three ties two feet in length between joints and the upper ties marked G, on the two front upper ties is placed the saw carriage two feet three inches long and nineteen inches wide the timber two inches wide and two and one half inches deep firmly united together by ties near each end. — Between the last mentioned ties parallel with the sides of the frame is a cogg tie of the same size having a row of cogs underside uniting with the wheel which carries the saw frame or carriage

On the fore part of this carriage are placed blocks or stepped heads in which the ogle of the saw runs. the saw carriage marked H..... II of the machinery or gearing. this consists of the following parts viz - The driving pully marked I fifteen inches in diameter projecting at the head of the machine

2. the first drum three feet in diameter one foot in length running between the first and second lower ties connecting the two lower parts of the frame, and on the same ogle with the driving pully marked J. this carries the band propelling both the auger and saw, and also the second drum.

3. the second Drum three feet long two feet in diameter marked K on the head end is a cog wheel twenty inches in diameter with one hundred and forty cogs, dipping into a small wheel, one inch and an half in diameter, with ten cogs, and on the ogle of the driving pully between the two drums

this small wheel communicating motion to the second drum

On the barrel of this drum near the head, is a row of cogs one thirdsmo viz (3) of sufficient length to carry the saw carriage as far forward as necessary also a groove near the centre three quarters of an inch deep described in form of the ecliptic in which plays a cog near the end of the lever hereafter described in such a manner that the revolution of the Drum move forward and back the timber carriage as desired There is also near the lower end of this drum one cog whose office is to assist in drawing back the saw carriage 4. a semi cog wheel fourteen inches in diameter and two inch thick, running on an axle, whose pivots are fixed in the two front upper ties, on whose axle also is a small cog wheel under the saw carriage communicating with and running in the cogs on the under side of the saw carriage above named, these latter cogs move up the saw carriage, the semi cog wheel receives its motion from the cogs on the second drum

5.th The timber carriage, this is carried forward and back as in course of the operation it becomes necessary in order to bring the timber to be wrought in contact with the auger and to withdraw it when also it is necessary, — This is done by means of a lever which may be a hard piece of timber two inches in thickness by four and four inches wide in the centre reduced about one half at each. This lever hangs and plays on a bolt, on the lower side of the inner beam, near its centre, one end is fastened to the front side of this carriage by means of a hoop of iron & bolt attached to the side of the carriage bending down as low as the lower side of the front beam, the other end has a cog in it playing in the ecliptical groove around the second drum this groove is so designed as to apply the power to that end of the lever, in carrying forward and back the carriage as above, the lever playing on the bolt first above mentioned at its fulcrum this lever marked L,

6.th The saw wheel is circular in common form ten inches

in diameter ofe of iron with a pully on the same of the proper size and proportion. ——— 5th The auger, this is a screw auger without a center. This is claimed as a new invention and may be usefully applied to other uses, the length and size will be determined by the size of the machine & the box ——

The mandrel of the auger must be at least one half inch greater in diameter, than the auger in order to receive two cutters one opposite to the other, these are dovetailed into the head of the mandrel & brought to an edge so as to cut and smooth the outside of the box, there is a pully on the mandrel 8. The bands which may be of leather or chains running on coy

III The operation

The power is applied to the driving pully, this puts the whole in operation, this communicates motion to the first drum F, also to the second drum, the first drum gives motion to the auger and saw, the second to both the carriages, it moves them up and back. The timber carriage is moved by means of the lever described above & the timber in the carriage is moved in this way viz, when the auger has done its work, and the carriage begins to draw back a pin in the end of the rod called for distinction the dice in the head block of the timber carriage rises and confining the timber presses over a slide like the latch of a door hung in the inner side of the car which raises the same and leaving the timber free, the hind block of the carriage, drawn by the pully and weight described above then drives the timber forward till the cap or dice drops and holds it from again, but least the timber should be pressed too far forward to the lower side of the carriage, is fixed an arm of iron, at the end of which near the auger and at the right angle is fixed a piece of wood thin and like a beam playing up and down in mortises of iron projecting forward of the head block, so as to rise forward of the timber and prevent its going too far, this is raised up by a dice on the arm passing at the right time over a slide similar to the

above fastened to a block projecting in the inner side of the timber frame. — The elliptical circle or groove in the board drawn in which the cog plays, on the end of this lever rests as the power to move the timber carriage forward and back as required, the saw carriage is moved forward by the small wheel on the axle of the small cog wheel. The second drum communicates motion to the small cog wheel & this by means of the cogs under the middle piece of the carriage and the small wheel just mentioned the carriage is pushed forward bringing the saw to the timber after it has performed its work and the box sawed off. the carriage is pulled back again to make way for the cutting operation by the auger by means of a lever turning on a pivot at its centre as a fulcrum resting on the platt one end attached to the timber part of the carriage the other to a reach, & the reach hung on a crank passing through the third upper tier down to the second drum & then turned by means of the cog on the same the is graduated and proportioned so as to have this drum the saw and carriage back just in time

Remarks. 1st The dimensions and proportions above mentioned are assumed as proper and may be varied if necessary, — — 2. boxes of different sizes may be made by this machine, 3. the lids may be made in the same way, the augur however may be proportioned by shorter and the lids moved proportionally nearer the head of the carriage, — 4. boxes may be prepared for the lids by clamping them to the mandrel of a common turning lathe and gauging the cutting tool or turning chisel having the same in end shape as described. 5. the power may be applied by water or steam or any adequate means. — 6.

The timber to be worked should be sawn square of the size of the box, and may be as long as the carriage will admit. Green timber is equally good as that which is seasoned.

Witness Samuel J Dickinson
Frederick Dickinson

Harrison Millard

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