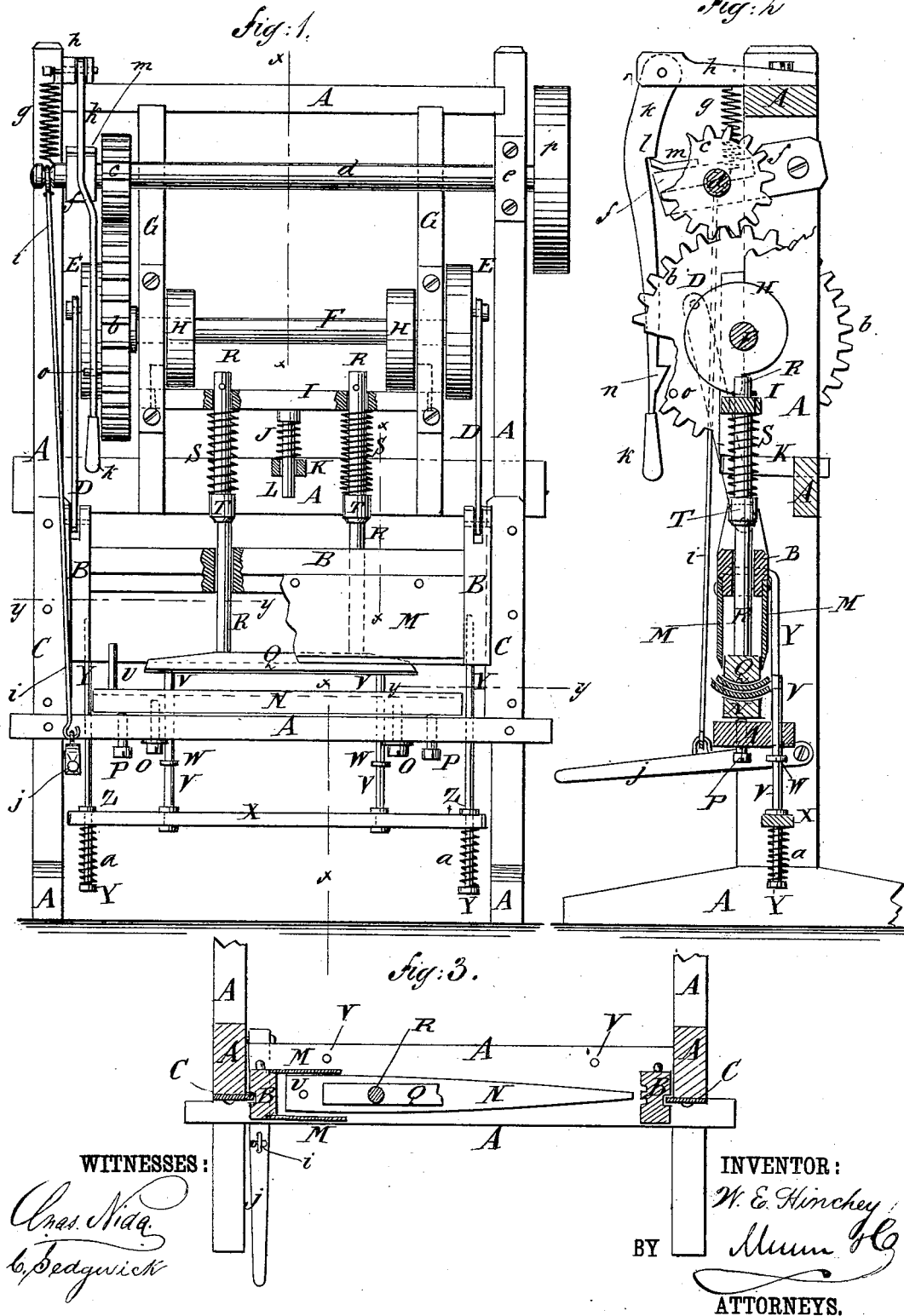


(No Model.)

W. E. HINCHEY.
BASKET STAVE JOINTER.

No. 262,770.

Patented Aug. 15, 1882.



UNITED STATES PATENT OFFICE.

WARREN E. HINCHEY, OF EVANSWOOD, WISCONSIN.

BASKET-STAVE JOINTER.

SPECIFICATION forming part of Letters Patent No. 262,770, dated August 15, 1882.

Application filed April 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, WARREN E. HINCHEY, of Evanswood, in the county of Waupaca and State of Wisconsin, have invented certain new and useful Improvements in Basket-Stave Joints, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my improvement, parts being broken away. Fig. 2 is a sectional side elevation of the same, taken through the broken line *x x x x x*, Fig. 1. Fig. 3 is a sectional plan view of the same, taken through the broken line *y y y y*, Fig. 1.

The object of this invention is to facilitate the jointing of basket and other staves of gradually-tapered form, and while dressing both edges of the staves at a single operation to also suitably bevel the edges of the staves under from one side or face to fit them to be built up edge to edge into close-jointed baskets or receptacles of any desired curved outline.

The invention consists in a basket-stave jointer constructed with a frame having connected with it a vertically-moving sash provided with knives for jointing the staves while supported by a form attached to the frame, and upon which the staves are held by a spring-pressed cam-operated holder. The knife-sash and holder are driven from gear-wheels which are provided with mechanism for throwing them into and out of gear.

The invention also consists in the combination, with a sliding sash provided with two knives for dressing both edges of the staves at once, of form and holder blocks having clamping-faces of curved form, between which blocks one or more staves are compressed and held to the desired curvature to cause the descending knives to suitably bevel both edges of the staves under from one face or side.

The invention further consists in the combination, with the knife-sash and gage-pins, of rods, springs, and a cross-bar for projecting and withdrawing the said gage-pins by the movements of the knife-sash; and in further constructions, arrangements, and combinations of parts of the machine, all as hereinafter more fully described.

A represents the frame of the machine, which is formed of two standards connected by three cross-bars, and provided with base-bars of sufficient length to give a firm support to the machine.

B is the knife-sash, the end bars of which are grooved vertically to receive the edges of the plates or ways C, attached to or formed upon the standards of the frame A.

To the upper corners of the knife-sash B are hinged the lower ends of the connecting-rods D, the upper ends of which are pivoted to cranks or crank-wheels E, attached to the ends of a shaft, F. The shaft F revolves in bearings attached to the uprights G, the ends of which are attached respectively to the upper and middle cross-bars of the frame A.

To the shaft F, at the inner sides of the uprights G, are attached two cams, H, which rest against the upper sides of the end parts of the cross-bar I. The ends of the cross-bar I slide in guide-slots in the uprights G, or in bars or keepers attached to the said uprights. The cross-bar I is held up against the cams H by a spiral or other spring, J, interposed between the center of the said cross-bar I and the arm K, rigidly attached to the center of the central cross-bar of the frame A. The spring J is coiled around and kept in place by a rod, L, attached to the cross-bar I, and which passes through a guide-hole in the arm K. The opposite sides of the knife-sash B are rabbeted to form seats for the knives M, which are in this instance curved inward toward one end, so that the space between the knives will have the exact form and size of the required staves. The knives M are secured to the sash B by screws or bolts.

Upon the lower cross-bar of the frame A is placed a block, N, of the exact form and size of the required staves, and which is secured in place coincident with the opening between knives M by screws O, passing through the said cross-bar and into the form or block N, so as to clamp the said block to the said cross-bar. The block N is adjusted higher or lower, as the thickness of the staves to be jointed may require, by set-screws P, which pass through the cross-bar of the frame A and rest against the lower side of the block N.

The staves are held in place upon the block N while being jointed by the holding-block Q,

which is made of the same shape edgewise as the block N, but smaller, and which is attached to the lower ends of two rods, R, to work freely between the knives M. The upper ends of the rods R pass through holes in the cross-bar I, and are kept from dropping out of the said holes by cross-pins passed through them, or by other suitable fastenings. The holding-block Q is held down by the spiral springs S, placed upon the upper part of the rods R, with their upper ends resting against the cross-bar I and their lower ends resting against shoulders or collars T, formed upon or attached to the said rods R.

With this construction the staves to be jointed are placed upon the form N, and as the knife-sash B descends the holder Q first comes in contact with the said staves and holds them in place while being jointed, the springs S allowing the knife-sash to continue its downward movement after the holder Q has been stopped. The face of the form N is concaved and the face of the holder Q is convexed, so that the staves clamped between the said faces will be bent laterally to cause the knives M to joint the edges of said staves upon a bevel, the amount of bevel being regulated by the curvature of the faces of the form and holder. If desired, the face of the form N may be convexed and the face of the holder Q concaved, which will produce the same effect.

To the form N, near one end, is attached a pin, U, to serve as a stop or gage in adjusting the staves in place longitudinally. The staves are stopped in the right position laterally by two pins, V, placed at the rear side of the form N, and passing up through guide-holes in the lowest cross-bar of the frame A. The upward movement of the pins V is limited by collars W, formed upon or attached to them, and which strike against the lower side of the cross-bar of the frame A. The lower ends of the gage-pins V are attached to a cross-bar, X, through the ends of which pass two rods, Y. The rods Y pass up through guide-holes in the lowest cross-bar of the frame A, and their upper ends are attached to the end bars of the knife-sash B.

Upon the lower parts of the rods Y are formed, or to them are attached, shoulders or collars Z, which rest upon the upper side of the cross-bar X, so that the downward movement of the knife-sash B will force the gage-pins V downward and allow the scraps cut from the rear edges of the staves to drop out of the machine.

Upon the lower parts of the rods Y are placed spiral springs a, the upper ends of which rest against the lower side of the ends of the cross-bar X, and their lower ends rest against heads or nuts formed upon or attached to the lower ends of the rods Y. The spiral springs a serve to project the pins V into gaging position, and accommodate any possible unequal distance of movement of the gage-pins and sash B.

To one end of the shaft F is attached a large

gear-wheel, b, into the teeth of which mesh the teeth of a small gear-wheel, c, attached to the shaft d. One journal of the shaft d revolves in a bearing, e, attached to a standard of the frame A, and its other journal revolves in a bearing in the forward end of an arm, f, the rear end of which is hinged to the other standard of the frame A, so that the gear-wheel c can be thrown into and out of gear with the gear-wheel b by lowering and raising the forward end of the arm f. The forward end of the arm f is held up, holding the gear-wheel c out of gear by a spiral spring, g, the lower end of which is attached to the said arm f, and its upper end is attached to the upper part of the frame A, or to an arm, h, attached to the said frame.

To the end of the shaft d, or to the forward part of the hinged arm f, is attached the upper end of a connecting-rod, i, the lower end of which is attached to the lever j. The rear end of the lever j is fulcrumed to the frame A, and its forward end projects into such a position that it can be readily reached and operated by an attendant to throw the gear-wheels c b into gear.

To the forward end of the arm h is hinged the upper end of a lever, k, which hangs across the forward end of the hinged arm f, and has a shoulder, l, formed in its edge to engage with a catch plate, m, attached to the upper side of the forward end of the said hinged arm f, and thus hold the gear wheels c b in gear.

Upon the inner edge of the lower part of the lever k is formed a projection or tooth, n, the lower side of which is inclined, as shown in Fig. 2, so that the said lever k will be pushed outward to withdraw the shoulder l from the catch-plate m and allow the gear-wheels c b to be thrown out of gear by the spring g by a pin, o, attached to the gear-wheel b, so that the gear-wheels will be thrown out of gear at each revolution of the gear-wheel b, and will remain out of gear until the gear-wheel c is drawn downward by operating the lever j.

To the end of the shaft d is attached a pulley, p, to receive a driving-belt from any convenient power.

In using the machine one or more staves are placed upon the form N against the gage-pins U V, and the machine is thrown into gear, causing the sash-frame B and its attachments to move downward. As the sash-frame B moves downward the holder Q first comes in contact with the staves and clamps them to the form N, bowing or curving them laterally until they have been bevel-jointed by the knives M. The sash-frame then moves upward, and as it reaches the highest point of its movement the gear-wheels b c will be thrown out of gear to allow the jointed staves to be removed and replaced by others to be jointed.

With this construction all the movements of the machine will be automatic except throwing it into gear, which is done by operating the lever j.

This machine is equally well adapted for

dressing staves which taper from the center toward both ends, so that close-jointed baskets or receptacles having a central bilge may be built up of the dressed staves, the form and arrangement of the knives in the sash and the shape of the form and holder blocks corresponding to the form of the desired product.

In jointing staves cut upon a barrel-stave-cutting machine, and which are always concave upon one side and convex upon the other, the clamping-blocks N Q are made with flat faces, so as to flatten the staves while being jointed, so that they will have beveled edges when they are released and regain their former shape.

I am aware that two reciprocating knives which cut gores in both sides of a veneer resting on a bed provided with throats have heretofore been employed; and I am also aware that a concave bed provided with knives and a convex presser-plate have heretofore been employed; and I therefore lay no claim to such constructions.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A stave-jointer constructed, substantially as herein shown and described, with a sliding sash carrying knives positioned to shape both edges of the staves at once, and with a stave-clamp composed of an upper block adapted to work between the knives and a lower block over which the knives pass, secured to the frame of the machine, as set forth.

2. In a stave-jointer, the sliding sash B, fitted with knives M, combined with the stave-clamp blocks Q N, having curved faces, substantially as and for the purpose set forth.

3. A basket-stave jointer constructed substantially as herein shown and described, and consisting of the frame A, the form N, the vertically-moving sash B, carrying the knives M, the spring-pressed cam-driven holder Q, the gear-wheels *b c*, and mechanism for throwing the gearing into and out of gear, as set forth.

4. In a basket-stave jointer, the combination, with the frame A and the driving-gearing *b c*, of the sash B, carrying the knives M, the form N, having concaved face, the holder Q, having

convexed face and provided with suspension-rods R, the cross-bar I, the cams H, and the springs J S, substantially as herein shown and described, whereby the staves are held and jointed, as set forth.

5. In a basket-stave jointer, the combination, with the frame A, the sash B, provided with knives M, the form N, and the gear-wheels *b c*, of the holder Q, having suspension-rods R, the cross-bar I, the cams H, and the springs J S, substantially as herein shown and described, whereby the staves will be securely held while being jointed, as set forth.

6. In a basket-stave jointer, the combination, with the sash B, provided with the knives M, the gear-wheels *b c*, and the driving-shaft *d*, of the rod and lever *i j* and the spring *g*, substantially as herein shown and described, whereby the said gear-wheels can be thrown into and out of gear, as set forth.

7. In a basket-stave jointer, the combination, with the sash B, provided with the knives M, the gear-wheels *b c*, the driving-shaft *d*, and the hinged bearing-arm *f*, of the catch-plate *m* and the swinging lever *k*, having shoulders *l*, substantially as herein shown and described, whereby the said gear-wheels are locked in gear, as set forth.

8. In a basket-stave jointer, the combination, with the sash B, provided with the knives M, the gear-wheel *b*, and the locking-lever *k*, having inclined projection *n*, of the trip-pin *o*, substantially as herein shown and described, whereby the said locking-lever will be tripped automatically to throw the gear-wheels out of gear at each revolution of the said gear-wheel, as set forth.

9. In a basket-stave jointer, the combination, with the knife-sash B and the gage-pins V, of the rods Y, the springs *a*, and the cross-bar X, substantially as herein shown and described, whereby the said gage-pins are withdrawn and projected by the movements of the knife-sash, as set forth.

WARREN E. HINCHEY.

Witnesses:

JEROME CROCKER,
E. H. WHITNEY.