J. E. GREEN.

Stave-Jointers.

No. 140,699. Patented July 8, 1873.

Fig. 1.

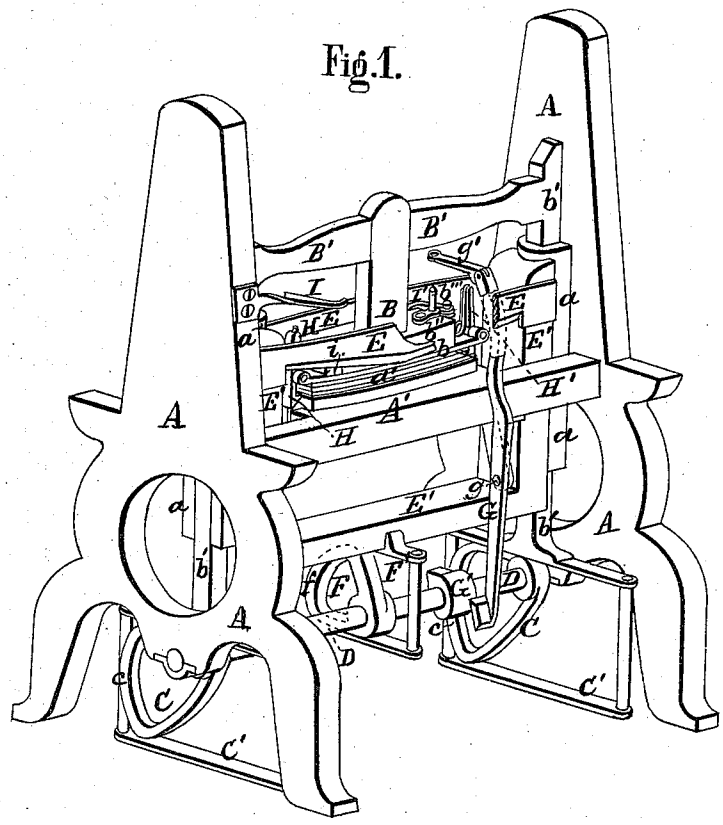
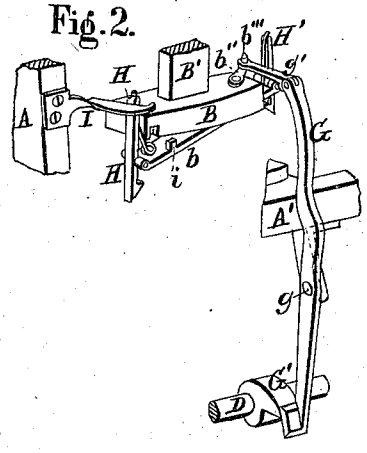


Fig. 2.



ATTEST:

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UNITED STATES PATENT OFFICE.

JAMES E. GREEN, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN STAVE-JOINTERS.

Specification forming part of Letters Patent No. **140,699**, dated July 8, 1873; application filed June 11, 1873.

To all whom it may concern:

Be it known that I, JAMES E. GREEN, of St. Louis, St. Louis county, Missouri, have invented an Improvement in Stave-Jointers, of which the following is a specification:

This invention consists, first, in the holder-block, which is forced down upon the staves to hold them in position while being operated upon by the cutters, the said holder carrying angular hooks, which raise the staves from the table after they have been jointed. The second part of my invention relates to the discharging mechanism, by which the pile of staves is discharged from the machine. This consists in the pivoting the holder upon one side of the middle, and attaching to the pivot a crank-arm, whose pin, as the holder is raised, enters a hole in the end of a cam-lever, by which the pivoted part of the holder is rapidly turned, and one of the spring-catches being automatically thrown outward from the staves the latter are thrown to one side over the cutter. The vertical movements of the holder and cutter are accomplished by cams on the main shaft.

Figure 1 is a perspective view of my improvement, the pile of staves shown being held down by the holder, and the cutters about to descend to joint the edges. Fig. 2 is a perspective view, showing the pivoted plate of the holder thrown into position to discharge the staves, and also showing the mechanism for operating the said plate in this manner.

A is the frame of the machine, having a table, A′, on which the staves *a′*, to be jointed, are placed. B is the holder, the frame B′ of which is guided in vertical motion by the slotted guides *a* of the frame A. The frame B′ has reciprocation communicated to it by triangular cams C secured to the driving-shaft D, and operating in cam-yokes C′ secured to the descending side pieces *b′* of the frame B′. E are jointing-knives, secured to the frame E′, which slides on the outside of the guides *a*, and has vertical reciprocation given to it by the triangular cam F on shaft D. The cam F turns in a yoke, F′. The knives E have the proper curve to impart to the edges of the stave the required curve, by which the bulge is formed in the barrel. The bottom plate *b* of the holder B is pivoted to the head by the crank-shaft *b″*. G is a lever, pivoted at *g* to the frame A, the lower end of which is operated by a tappet or cam, G′, on the driving-shaft D. The upper end of the lever G has a pivoted arm, *g′*, which is perforated to receive the pin *b‴* as the holder B rises, and to impart thereto a movement causing the oscillation of the bottom plate *b* of the holder. H H′ are spring catches or dogs pivoted at each end of the plate *b*, which engage with the staves, and lift the same up between the knives E when the holder B B′ rises; and in the partial rotation of the plate *b* the dog or catch H impinges against the inclined arm I secured to the frame A, which opens the dog and allows the jointed staves to drop out over the knives E and clear of the machine. I′ is a spring for returning the plate *b* back to its original position. *i* is a projection on plate *b* to prevent its being forced too far back by the spring I′.

The operation of the machine is as follows: While the holder B B′ *b b′*, and jointed knives E, and frame E′ are at their highest position a number of stave-blanks are placed on the table part A′ of the frame A. The holder B B′ *b b′* then descends, and clamps or holds the stave-blanks firmly against the table A′ while the radial parts *c* of the cams C are acting on the yokes C′. While the holder B B′ *b b′* is in this stationary position the frame E′, carrying the jointer-knives E, descends, and the knives trim off the stave-blanks, and while at its lowest position remains stationary while the radial part *f* of the cam F is acting on the yoke F′; and while it remains in this stationary position the holder B B′ *b b′* rises, carrying with it, by means of catches H H′, the jointed staves; and in the rising movement of said holder the crank-pin *b‴* engages in the perforation of the arm *g′*, so that the cam or tappet G′ may, through the lever G, arm *g′*, pin *b‴*, and crank-arm *b″*, communicate a turning movement to the bottom plate *b*, and bring the catch H against the arm I to disengage the said catch from the jointed staves and allow the same to drop out clear of the machine. The spring I′ returns the plate *b* back to its original position. These movements all take place before the jointer-knives and frame E E′ commence to ascend.

What I claim is—

1. The holder B, operating cam and yoke C C′, or their equivalent, in combination with the cutter-knives E, operating cam and yoke F F′, and shaft D, substantially as and for the purpose set forth.

2. The holder B with pivoted plate *b*, crank-shaft *b″*, pin *b‴*, dogs H H′, tappet or cam G′, lever G, arm *g′*, and shaft D, in combination with the arm I and spring I′, as and for the purpose set forth.

3. The combination and arrangement of the holder B, frame B *b′* operated by cam and yoke C C′, plate *b*, dogs H H′, crank-shaft *b″*, pin *b‴*, cam or tappet G′, lever G, arm *g′*, arm I, spring I′, and shaft D, with the knives E, frame E′, cam and yoke F F′, and table A′, as for the purpose set forth.

JAMES E. GREEN.

Witnesses:

SAML. KNIGHT,

ROBERT BURNS.