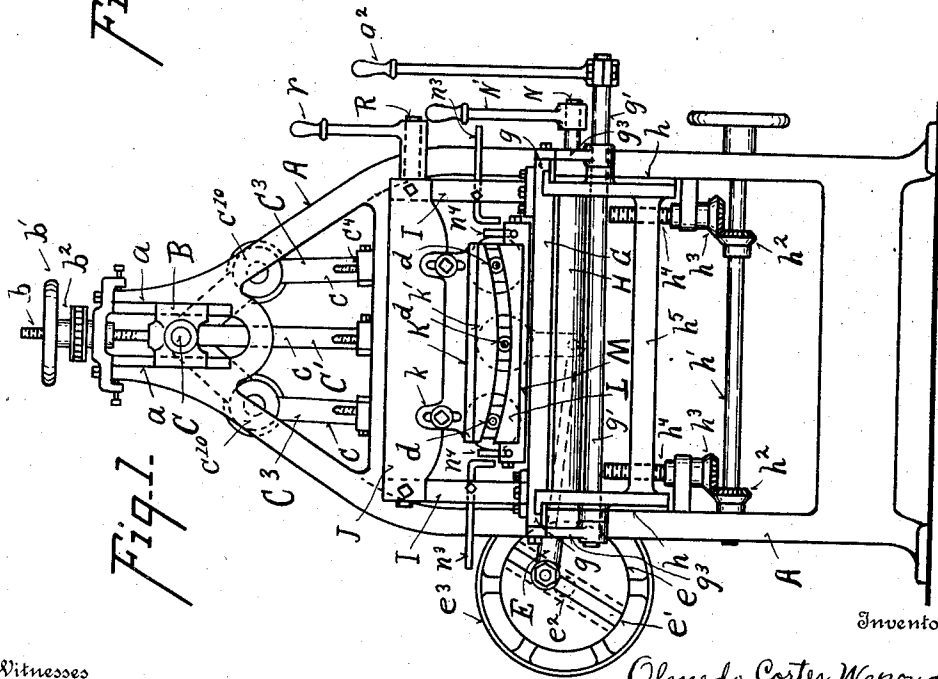
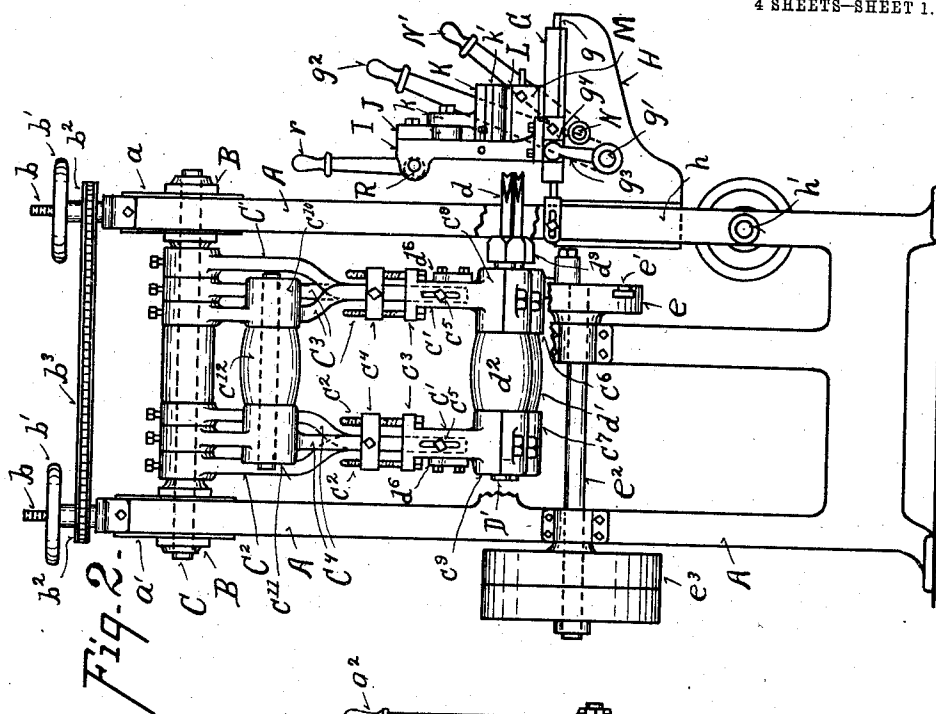


O. C. WYSONG.
MORTISING MACHINE.
APPLICATION FILED JAN. 14, 1911.

1,053,339.

Patented Feb. 18, 1913.

4 SHEETS—SHEET 1.



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Witnesses

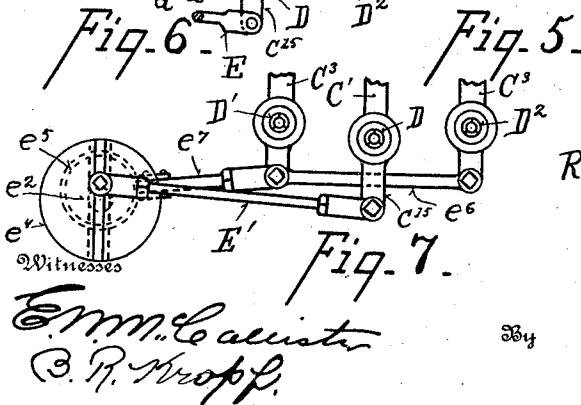
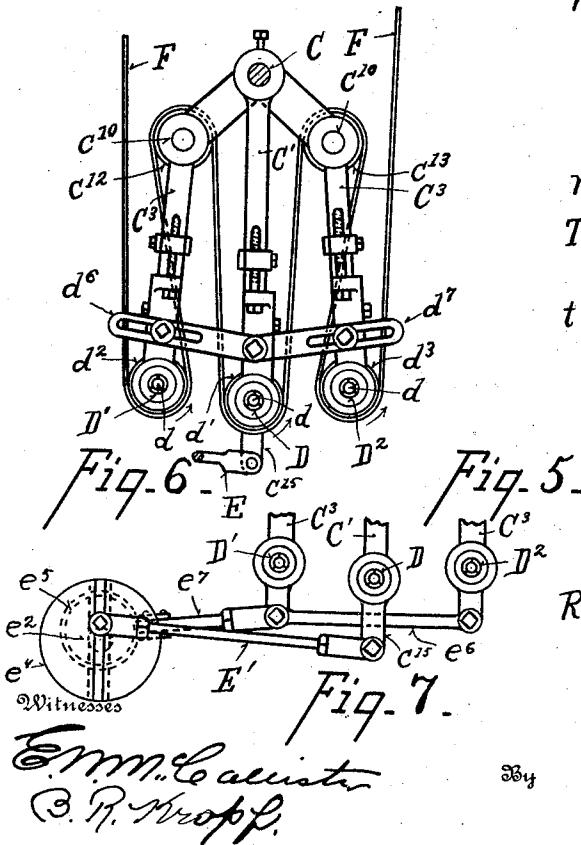
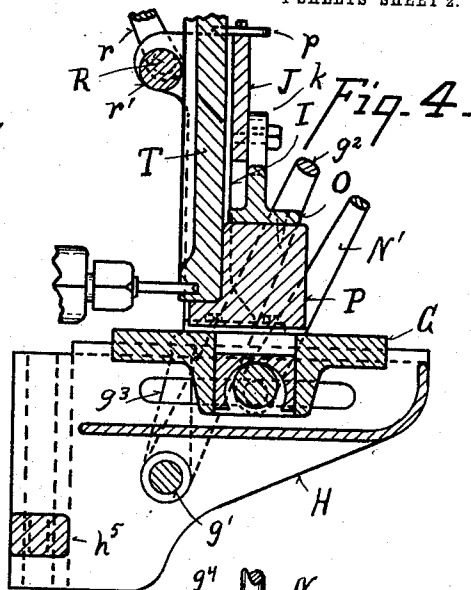
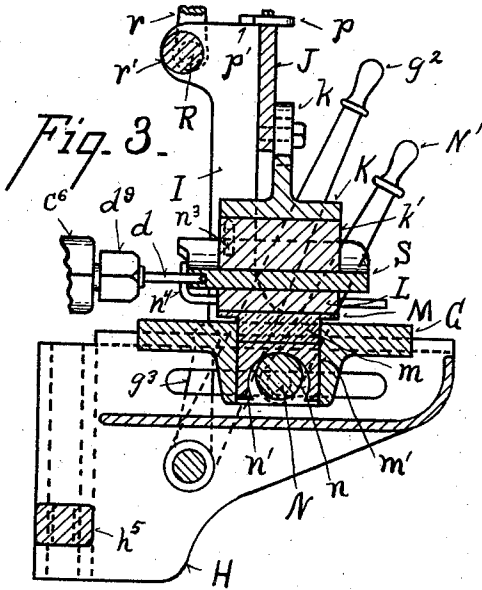
E. M. Caluistr.
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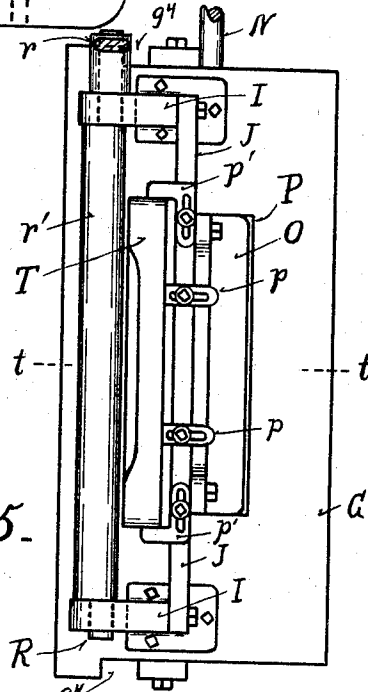
1,053,339.

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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

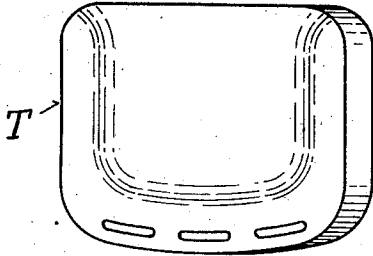


Fig. 13.

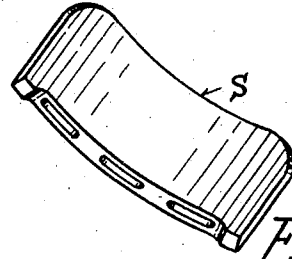


Fig. 14.

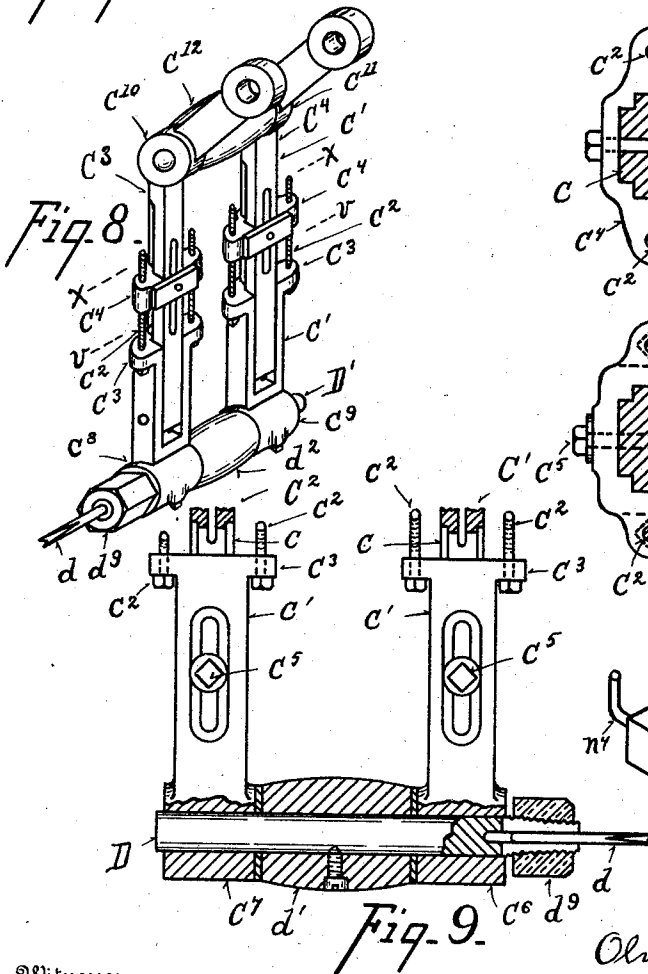


Fig. 9.

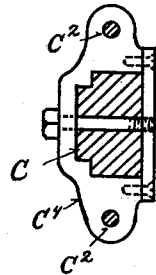


Fig. 10.

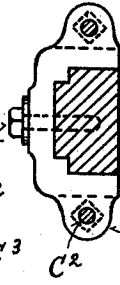


Fig. 11.

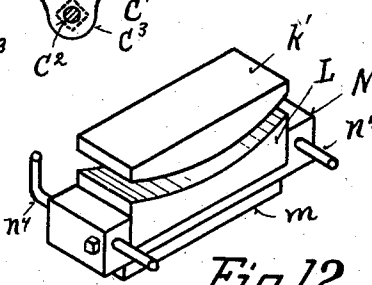


Fig. 12.

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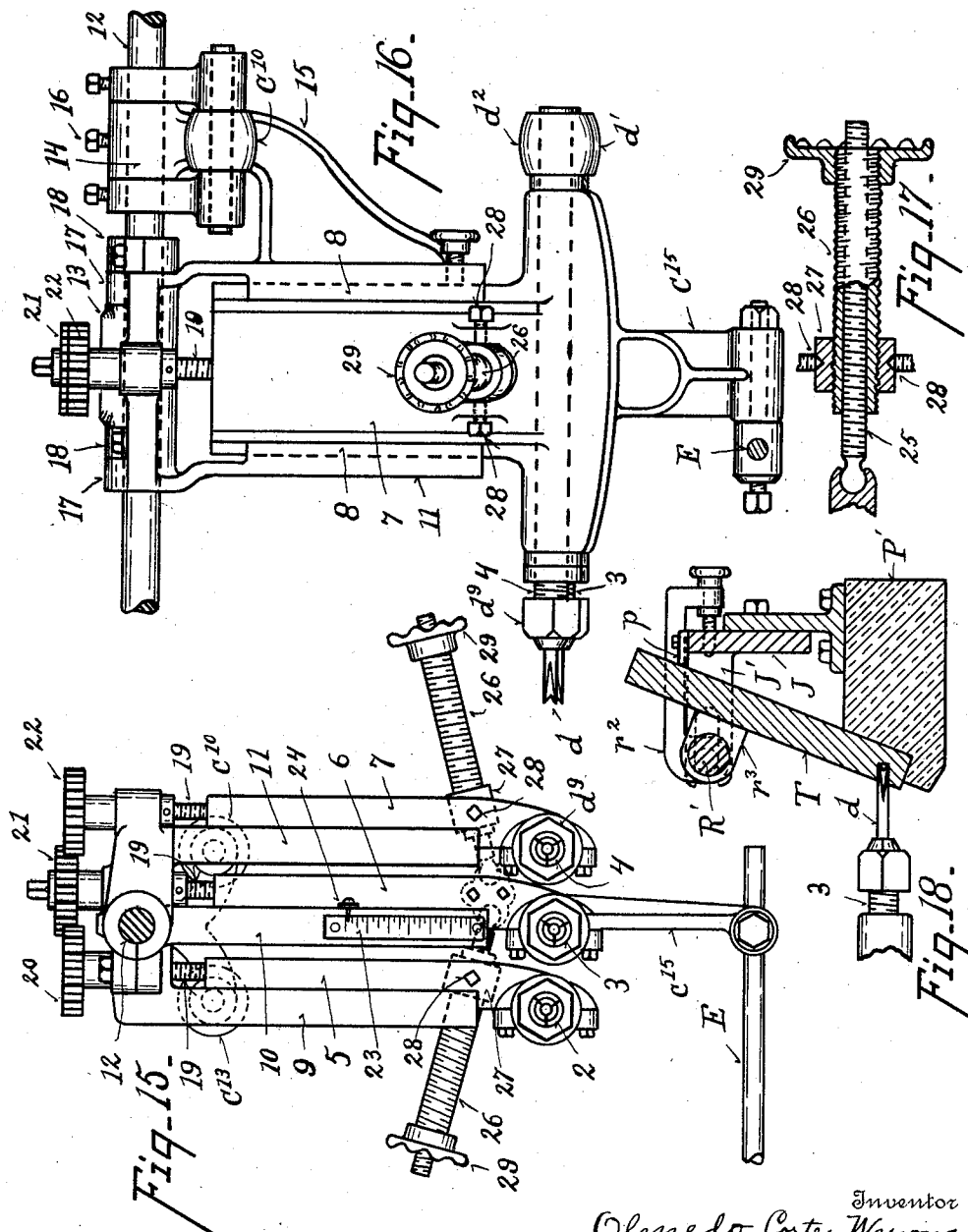
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APPLICATION FILED JAN. 14, 1911.

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Patented Feb. 18, 1913.

4 SHEETS-SHEET 4.



Witnesses

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MORTISING-MACHINE.

1,053,339.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed January 14, 1911. Serial No. 602,587.

To all whom it may concern:

Be it known that I, OLMEDO CORTEZ WYSONG, a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Mortising-Machines, of which the following is a specification.

My invention relates to improvements in mortising machines.

One of its objects is to provide a machine adapted to produce curved mortises, and adapted to mortise chair backs, chair seats and similar articles.

Another object is to provide mechanism whereby the arc of the curved mortises may be varied.

Another object is to provide improved work supporting, holding and feeding mechanism, and which is adapted to hold work of varying shape and character.

It further consists in certain details of form, combination and arrangement, all of which will be more fully set forth in the description of the accompanying drawings, in which:

Figure 1 is a front elevation of my improved mechanism. Fig. 2 is a side elevation of the same with a portion of the frame broken away. Fig. 3 is a vertical section through the work table on line *t t* of Fig. 5, with the parts arranged to hold chair backs. Fig. 4 is a similar view showing the parts arranged to hold chair seats. Fig. 5 is a top plan view of the work table as shown in Fig. 4. Fig. 6 is a front elevation of the tool spindles and their supports detached. Fig. 7 is a detail view similar to Fig. 6 illustrating a modification. Fig. 8 is a perspective view of one of the tool spindles and its supports detached. Fig. 9 is a detail side elevation of the same partly in section. Fig. 10 is a detail sectional view on line *x x* of Fig. 8. Fig. 11 is a detail sectional view on line *v v* of Fig. 8. Fig. 12 is a detail perspective view of the work supporting forms. Fig. 13 is a perspective view of a mortised chair seat. Fig. 14 is a perspective view of a mortised chair back. Fig. 15 is a front elevation of the tool spindle carrying mechanism detached, and illustrating a modification thereof. Fig. 16 is a side elevation of the mechanism illustrated in Fig. 15. Fig.

17 is a sectional detail of part of the spindle spacing mechanism. Fig. 18 is a sectional detail similar to Fig. 4 illustrating a modification thereof.

In the accompanying drawings A represents the frame of the machine. The upper portion of the frame is provided with vertical ways *a a'* on which slide boxes B which in turn support opposite ends of a rod or shaft C. The boxes are adapted to be raised and lowered in unison by means of screw threaded shafts *b* attached at one end to said boxes. The upper ends of said shafts are respectively threaded through hand wheels *b'* the hubs of which are provided with sprocket wheels *b²* and rest upon cap plates attached to the top of ways *a a'*. The sprocket wheels *b²* are united by a sprocket chain *b³* to cause them to move in unison in raising and lowering the boxes B.

I have illustrated two modifications of tool spindle carrying mechanism. As illustrated in Figs. 1, 2, and 6 central extensible arms *C' C²* depend from the shaft C and are composed of upper sections *c* which telescope into sections *c'*, and are adapted to be adjusted by bolts *c²* passing through ears *c³* on the sections *c'* and threaded through ears on straps or collars *c⁴* adjustably clamped to sections *c* to lengthen or shorten said arms. Bolts *c⁵* passing through slots in sections *c'* and tapping sections *c* serve to clamp sections *c'* at adjusted position. Sections *c'* at their lower ends are provided with journal boxes *c⁶ c⁷* in which are journaled opposite ends of a mortising spindle D, armed at its forward end with a mortising tool *d*. A belt pulley *d'* on the spindle D serves to drive said spindle. At opposite sides of said central arms are similar adjustable arms *C³ C⁴* which are also supported by the shaft C and at their lower ends are provided with journal boxes *c⁸ c⁹* in which are journaled the ends of mortising spindles *D' D²* adapted to be respectively driven by belt pulleys *d² d³*, and provided with mortising tools *d*. The arms *C³ C⁴* are also respectively provided with journal supports *c¹⁰ c¹¹* for the shafts of idler pulleys *c¹² c¹³*. If desired a greater or less number of mortising spindles may be supported from the shaft C.

The arms supporting the spindles *D D' D²* are provided with slotted links *d⁶ d⁷* piv-

oted to the arms C' C^2 and adapted to be adjusted and clamped to the respective arms C^3 C^4 to hold the spindles D D' D^2 the desired distance apart. The shaft C is preferably pivotally supported in the boxes B , and the eyes or hubs by which the arms C' C^2 C^3 are attached to said shaft are provided with set screws to lock said hubs to the shaft after the adjustment of the links d^6 d^7 .

As illustrated in Figs. 1 and 2 the spindles D D' D^2 are reciprocated in unison with the axis of shaft C as a center, by means of a pitman E pivotally connected at one end to the lower end c^{15} of one of the arms C' and at the opposite end to an adjustable crank pin attached to a T-slot e' in the face of a crank wheel e carried by a shaft e^2 adapted to be driven by a belt on the belt pulley e^3 . The spindles D D' D^2 are preferably driven by means of a single belt F receiving motion from above the machine by means of a suitable countershaft and engaging respectively the pulleys d^2 , c^{12} , d' , c^{13} , d^3 . By raising and lowering the shaft C and adjusting the length of the arms C' C^2 C^3 C^4 the degree of curvature of the mortises may be varied as required.

As illustrated in Figs. 15, 16, and 17 the tool spindles are represented by 2, 3, and 4, and are journaled to sliding members 5, 6, and 7 which are mounted in ways 8 on the members 9, 10, 11. The member 10 is supported from shaft 12 by an eye 13 at its upper end and also by an eye 14 at the end of bracket 15 forming part of member 10, and is adapted to be locked to the shaft 12 by set screw 16. The members 9 and 11 are pivotally supported upon the shaft 12 respectively by eyes 17, 18. Screw rods 19 pivotally connected to the respective members 9, 10, 11 and threaded to the members 5, 6, and 7 serve to adjust the members 5, 6, and 7 upon their ways 8 on members 9, 10, and 11 to vary the distance between the tool spindles and the shaft 12. I preferably connect the several screw rods 19 by gears 20, 21, 22 so that said several screw rods will move in unison to adjust the several tool spindles. A gage 23 and pointer 24 enable the operator to adjust the spindles to any desired position. In order to vary the distance between the respective spindles I provide two right hand threaded rods 25 pivotally attached to member 6 and two sleeves 26 having threaded engagement interiorly with the rods 25, and exteriorly threaded with left hand threads which engage nuts 27 which are pivotally attached by centers 28 respectively to members 5 and 7. The sleeves 26 are provided with hand wheels 29 which when turned adjust the sleeves relative to the nuts 27 and also the rods 25 within the sleeves securing a double screw feed and quick adjustment of the distance between the spindles, and also by rea-

son of the telescoping of the rods 25 and sleeves 26 a compact mechanism adapted to the limited space available.

As illustrated in the modification Fig. 7, the shaft e^2 is provided with a crank wheel e^4 and an adjustable eccentric e^5 , and the pitman E' driven by the crank wheel serves to reciprocate the spindle D , while the bearings of the spindles D' D^2 are connected together by a link e^6 and reciprocated in unison by means of a pitman e^7 operated by the eccentric e^5 , the links d^6 and d^7 being omitted. This arrangement permits mortises of different length to be produced by the respective mortising tools.

G represents a work supporting table which is mounted upon horizontal guides or ways g carried by a vertically adjustable frame H . The frame H engages vertical ways on the frame A at h and is vertically adjustable by means of a hand driven shaft h' which by means of beveled gears h^2 h^3 drives the screws b^4 which are threaded into the cross bar h^5 of frame H and serve to raise and lower said frame to bring the work into alinement vertically with the mortising tools. The work table is reciprocated horizontally to and from the mortising tools upon the ways g by means of a rock shaft g' actuated by hand lever g^2 , said rock shaft being provided with crank arms g^3 , the free ends of which engage notches g^4 formed in opposite ends of the table G .

Chair backs S or other work of the general character indicated by Fig. 14 are held upon the work table during the mortising operation in the following manner: I represent vertical standards carried by the table G , which standards are united at the upper end by a cross plate J . A metal plate K is clamped to plate J by slotted arms k so as to be vertically adjustable relative to plate J . To the lower face of plate K is secured a convex form or block k' preferably of wood, of the radius desired. A counterpart or concave form or block L preferably of wood, of the desired radius is mounted upon a metal support M , the lower portion m of which seats in a recess m' in the table G , so as to be vertically movable, but supported against horizontal movement relative to the table, and free to be lifted from the table. A rock shaft N journaled to the table G is actuated by hand lever N' and provided with an eccentric n upon which rides a follower n' supported against lateral movement by and adapted to move vertically within the recess m' , and to engage and raise and lower the support M , thus enabling the work S to be firmly clamped between the forms k' L . By providing the adjustable parts K M adapted to receive wooden forms, the respective operators are enabled to readily provide forms of the exact curvature or outline required for their particular class of

work, also the wooden forms serve to firmly clamp the work and even to restore warped or twisted pieces of work to the desired outline during the mortising operation, and without danger of injury to the work. Adjustable guides or stops n^3 n^4 serve to direct successive pieces of work to a uniform position before clamping the work between the forms. When it is desired to mortise chair seats T or work of the general character indicated in Fig. 13, the parts K $\frac{1}{2}$ L M are removed from the table G and a plate O carrying a form P, preferably of wood, is attached to the plate J, adjustable guides or stops p p' are adjusted relative to plate J to support the upper portion of the work, while the lower edge or portion of the work is supported by the form P. A rock shaft R operated by hand lever r and provided with an eccentric r' serves by the engagement of said eccentric with the work to lock the work in place.

In Fig. 18 is illustrated a modification of the mechanism illustrated in Fig. 4, in which the seat T is held at an angle supported by the block P' and stops p . The eccentric shaft R' is journaled in adjustable bearing members r^2 guided by slotted brackets J' projecting from plate J. The eccentric r' also carries shoes r^3 to bear upon the seat T. The rotary mortising tools are seated in counter-bores in the end of the respective tool spindles, the ends of the tool spindles being split and adapted to be clamped upon the shank of the tools by means of nuts d^9 engaging tapered threads on the end of the spindles as indicated in Fig. 9.

The mechanism herein illustrated and described is capable of considerable modification without departing from the principle of my invention.

Having described my invention, what I claim is:

1. In a mechanism of the character described, a plurality of spindles armed with mortising tools, said respective spindles being mounted in journals movable along the arcs of circles with a center of movement common to all of said spindles, means to rotate the respective spindles, and mechanism to reciprocate the journals of said spindles along said curved paths.

2. In a mechanism of the character described, a plurality of spindles armed with mortising tools, independent journals adapted to support said respective spindles, said journals being adjustable to and from a common center and movable in arcs of circles about said center, means to rotate said respective spindles, and mechanism to reciprocate said journals in paths having said center as an axis.

3. In a mechanism of the character described, a plurality of spindles armed with

mortising tools, independent journals for said respective spindles, said several journals being supported upon a common axis and movable in arcs of circles relative thereto, means to rotate said respective spindles, and mechanism to reciprocate said journals.

4. In a mechanism of the character described a plurality of spindles armed with mortising tools, independent journals adapted to support said respective spindles, said journals being adjustable to and from each other, and movable along the arcs of circles with a center of movement common to all of said spindles, means to rotate said respective spindles, and mechanism to reciprocate said journals.

5. In a mechanism of the character described a plurality of spindles armed with mortising tools and supported in journals movable along the arcs of circles with a center of movement common to all of said spindle journals, means to rotate said spindles, mechanism to reciprocate said spindles, a work table adapted to support the work and movable to and from the mortising tools.

6. In a mechanism of the character described a plurality of spindles armed with mortising tools, journals supporting said spindles and movable along the arcs of circles with a center of movement common to all of said spindle journals, means to rotate said spindles, mechanism to reciprocate said journals, a work table adapted to support the work, said table and mortising tools being relatively movable to and from each other.

7. In a mechanism of the character described, a plurality of spindles armed with mortising tools, journals supporting said spindles and movable along the arcs of circles with a center of movement common to all of said spindle journals, means to rotate said spindles, mechanism to reciprocate said journals, a work table adapted to support the work, said table being adjustable crosswise of the spindle axes and in line with the spindle axes.

8. In a mechanism of the character described, a plurality of spindles armed with mortising tools, journals supporting said spindles and movable along arcs of circles with a center of movement common to all of said spindles, means to rotate said spindles, mechanism to reciprocate said journals, a work table provided with work holding members, said table and mortising tools being relatively movable to and from each other.

9. In a mechanism of the character described, a frame, a supporting rod carried by said frame, a plurality of arms supported at one end by said supporting rod, a plurality of journal boxes adjustably carried by the free ends of said arms, a plurality of mortising tool spindles mounted in said journal boxes and adapted to swing through

arcs of circles with said supporting rod as a center of movement, and mechanism to simultaneously adjust said journal boxes upon said supporting arms to and from said supporting rod.

10. In a mechanism of the character described, a plurality of spindles armed with mortising tools, journals supporting said spindles and movable along arcs of circles with a center of movement common to all of said spindles, mechanism to rotate said spindles, mechanism to reciprocate said journals, a work table, and means carried by said table to hold the work so as to present either the face or the edge of the work to the mortising tools, said table and mortising tools being relatively movable to and from each other.

11. In a mechanism of the character described, a frame, a supporting rod carried by said frame, a plurality of depending arms supported at one end by said supporting rod, a plurality of journal boxes adjustably carried by the free ends of said arms, a plurality of mortising tool spindles mounted in said journal boxes and adapted to swing through arcs of circles with said supporting rod as a center of movement, and means to simultaneously adjust said journal boxes upon said supporting arms to and from said supporting rod.

12. In a mechanism of the character described, a frame, a rod supported in bearings vertically adjustable relative to said frame, a plurality of arms supported upon said rod, journal boxes at the free ends of said arms, a plurality of spindles armed with mortising tools supported in said journal boxes, and movable, with said rod as an axis of movement, means to rotate said spindles and mechanism to reciprocate said spindles laterally relative to said axis.

13. In a mechanism of the character described, a frame, a rod vertically adjustable relative to said frame, a plurality of arms pivotally supported upon said rod, journal boxes at the free ends of said arms, a plurality of spindles armed with mortising tools supported in said journal boxes and movable laterally with said rod as an axis of movement, means to rotate said spindles, mechanism to reciprocate said spindles relative to said axis, and a work table, said work table and mortising tools being relatively movable to and from each other.

14. In a mechanism of the character described, a frame, a rod vertically adjustable relative to said frame, a plurality of extensible arms pivotally supported upon said rod, journal boxes at the free ends of said arms, a plurality of spindles armed with mortising tools supported in said journal boxes and movable laterally with said rod as an axis of movement, means to rotate said spindles, mechanism to reciprocate said

spindles relative to said axis, and a work table, said work table and mortising tools being relatively movable to and from each other.

15. In a mechanism of the character described, a frame, a rod vertically adjustable relative to said frame, a plurality of arms pivotally supported upon said rod with their free ends adjustable relative to each other, journal boxes at the free ends of said arms, a plurality of spindles armed with mortising tools supported in said journal boxes and movable laterally with said rod as an axis of movement, means to rotate said spindles, mechanism to reciprocate said spindles relative to said axis, a work table, said work table and mortising tools being relatively movable to and from each other.

16. In a mechanism of the character described, a frame, a rod vertically adjustable relative to said frame, a plurality of longitudinally adjustable arms pivotally supported upon said rod, journal boxes at the free ends of said arms, a plurality of spindles armed with mortising tools supported in said journal boxes and movable laterally with said rod as an axis of movement, means to rotate said spindles, mechanism to reciprocate said spindles relative to said axis, and a work table, said work table and mortising tools being relatively movable to and from each other.

17. In a mechanism of the character described, a frame, a supporting rod carried by said frame, a plurality of arms supported at one end by said supporting rod, a plurality of journal boxes adjustably carried by the free ends of said arms, a plurality of mortising tool spindles mounted in said journal boxes and adapted to swing through arcs of circles with said supporting rod as a center of movement, means to simultaneously adjust said journal boxes upon said supporting arms to and from said supporting rod, and mechanism to adjust said spindles relatively to and from each other.

18. In a mechanism of the character described, a frame, a supporting rod carried by said frame, a plurality of arms supported at one end by said supporting rod, a plurality of journal boxes carried by the free ends of said arms, a plurality of mortising tool spindles mounted in said journal boxes and adapted to swing through arcs of circles with said supporting rod as a center of movement, and means to adjust said spindles relatively to and from each other.

19. In a mechanism of the character described, a frame, a supporting member carried by said frame, a plurality of arms carried by said supporting member and with their free ends adapted to be reciprocated with said supporting member as an axis, journal boxes adjustably supported upon said arms, means to adjust said journal

boxes upon said respective arms to and from said supporting member, and means comprising threaded rods and internally and externally right and left hand threaded sleeves pivotally attached in pairs, adapted to adjust journal boxes to and from each other.

20. In a mechanism of the character described, a frame, a supporting member carried by said frame, a plurality of arms carried by said supporting member and with their free ends adapted to be reciprocated with said supporting member as an axis, journal boxes adjustably supported upon said arms, means to adjust said journal boxes upon said respective arms to and from said supporting member, a plurality of mortising tool spindles journaled in said journal boxes, and mechanism to adjust said spindles to and from each other.

21. In a mechanism of the character described, a spindle armed with a mortising

tool, journals adapted to support said spindle, said journals being supported upon and adjustable to and from a pivotal center, means to rotate said spindle, and mechanism to reciprocate said journals in paths having said center as an axis.

22. In a mechanism of the character described, a spindle armed with a mortising tool, journals adapted to support said spindle and movable along the arc of a circle, mechanism to rotate said spindle, means to reciprocate said journals, and a work table adapted to support the work, said table and mortising tool being relatively adjustable to and from each other.

In testimony whereof I have affixed my signature in presence of two witnesses.

OLMEDO CORTEZ WYSONG.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."