

(No Model.)

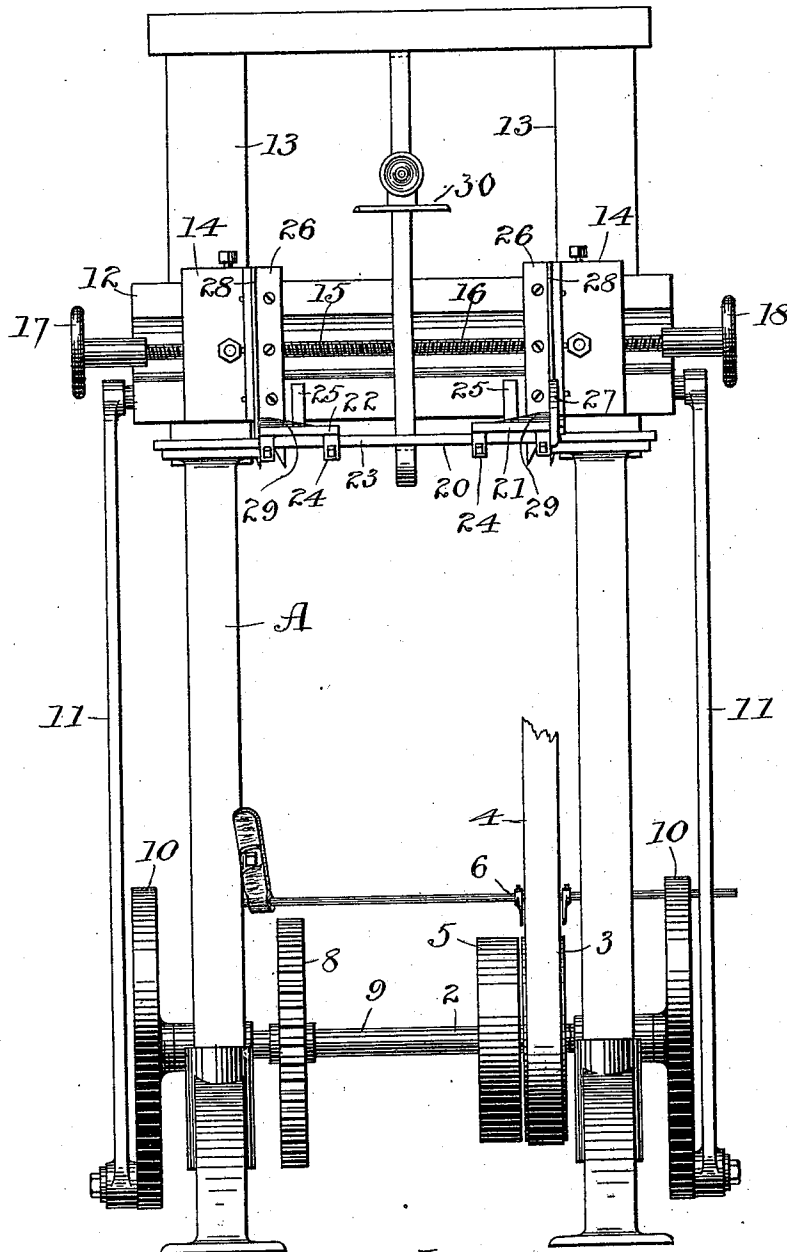
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C. CRISTADORO.
BOX BLOCKING MACHINE.

No. 519,035.

Patented May 1, 1894.

Fig. 1.



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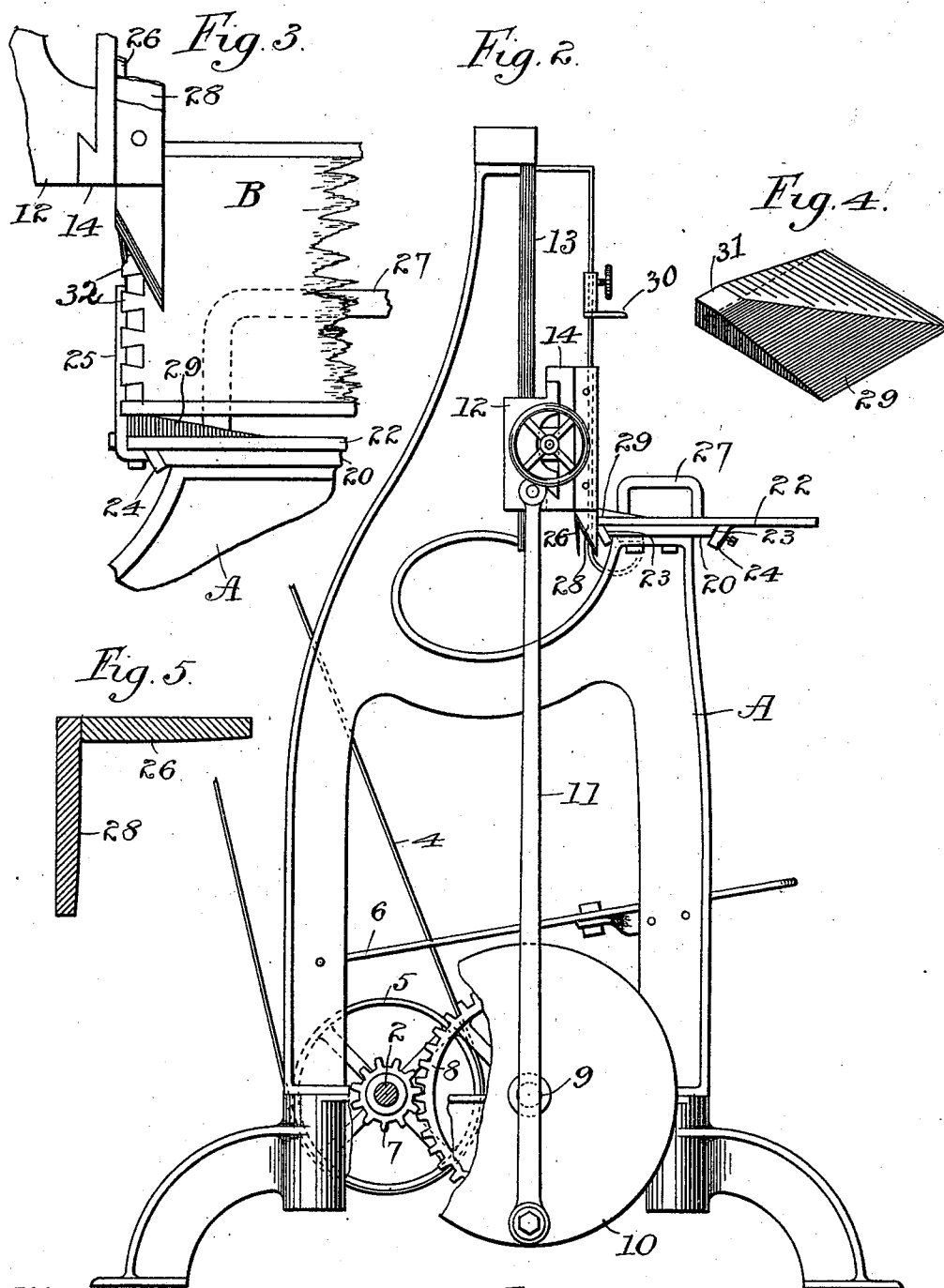
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W. H. Aldwell
W. S. Johnson.

Inventor:-

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per Paul Merwin
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES CRISTADORO, OF ST. PAUL, MINNESOTA.

BOX-BLOCKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 519,035, dated May 1, 1894.

Application filed July 30, 1892. Serial No. 441,657. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CRISTADORO, of St. Paul, Ramsey county, Minnesota, have invented certain Improvements in Box-Blocking Machines, of which the following is a specification.

My invention relates to machines designed to trim off the projecting ends of the tenons upon the corners of wooden boxes and consists in the improved features of construction particularly described and claimed.

In the accompanying drawings forming part of this specification Figure 1 is a front elevation of my improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a detail illustrating the operation of the machine. Fig. 4 is a detail of the corner blocks upon which the box rests when being trimmed, and Fig. 5 is a sectional detail of the knife.

In the drawings A represents the frame of the machine, 2 the driving shaft journaled thereon, carrying the idler belt pulley 3, and the fixed pulley 5 for the drive belt 4, the belt being shifted from one to the other by means of the shift rod attachment 6, in the ordinary manner. The shaft 2 is fitted also with a pinion 7, which meshes with the gear 8 upon the shaft 9. The shaft 9 is provided with the eccentrics or cranks 10, the pins of which are connected by means of the pitmen 11, with the cross head 12. The cross head works upon vertical guides 13, and is fitted with cutter heads 14, adjustable laterally along the same by means of the screws 15 and 16, operated by the hand wheels 17 and 18. Each cutter head is provided with a cutter or knife made up of the blades 26 and 28 secured at right angles with each other, as shown, and having beveled cutting edges meeting at the angle formed by the two blades, and beveled on the outside, enabling them to cut with a shearing action, as clearly shown in Fig. 3. The blades of the cutter are made preferably wider than the thickness of the box boards, and thus project beyond and may come in contact with the face of the board if it is out of line. To avoid gouging into the face of the board under such circumstances, I prefer to form the blades of the knife with their faces slightly convex toward the outer edges. Thus while the blades are perfectly plain surfaced and at right angles with each other

for the full width of the joint, the portion of the blade which may come in contact with the face of the box board flares, or is turned slightly outward, so as not to channel or gouge the board, as is clearly shown in detail Fig. 5.

Secured upon the front of the frame is the cross bar 20, having undercut beveled edges 23 to which are fitted the lugs 24 of the sliding tables 21 and 22, the lugs being provided with set screws by means of which the tables may be secured at any desired position along the guide, according to the size of the box to be worked thereon. These tables have rear stops 25, and the table 21 has an end stop 27 against which the box is held when trimmed, as hereinafter described.

Upon the tables are fitted the corner blocks 29 having oppositely beveled upper surfaces leaving a small plane surface 31, only, at the inner corner on which the corner of the box B rests, these being secured in any desired manner upon the tables, and in such position that the knives in descending will fit closely to the sides of the block. These blocks serve the double purpose of furnishing such a support for the box that the upright corner of the box can be brought into perfectly vertical or plumb position without regard to the angle between the sides and bottom of the box, in case the bottom is out of true. The beveled surface of the block serves as a convenient guide upon which to slide the box against the stops. The block also serves, by being adjusted to stand with its supporting corner just within the path of the knife, to support the box corner, and act as one blade of a pair of shears in trimming the projecting ends of the tenons. An adjustable stop 30 may be arranged to stand over the top of the box to prevent its being thrown upward by the return movement of the knives, after being trimmed.

Operation: In operation the tables 21 and 22 are set to the length or width of the box, as the case may be. The blocks 29 being secured in place upon the tables, the cutter heads are then adjusted by means of their screws, so that the cutters will descend close to the corners of the blocks 29. The box B is then slipped into place by sliding it up the incline of the block 29 till in contact with the

stops, the corners resting upon the surface 31 of the blocks. The belt is then thrown on to the pulley 5, whereby the shaft 9 and its eccentrics are turned so as to carry the knives downward, trimming off the projecting ends of the tenons 32 on the corners of the box with a shearing cut, as illustrated in Fig. 3. The tops of the supporting blocks 29 after being beveled off, offer no support for the box excepting upon the surface 31. Thus any irregularities upon the bottom of the box will not serve to throw the corners out of plumb.

I claim—

1. A corner trimming knife having the face which plays next the stock convex near the edge opposite the corner of the stock.

2. A corner trimming knife, having a diagonal cutting edge, and the face playing next the stock convex.

3. A right angled corner trimming knife, having bifurcated cutting edges, the face of each blade which plays next the stock being slightly convex near the outer edge.

4. A right angled corner trimming knife, having diagonal cutting edges meeting at the angle of the blades, and extending downward and outward to the outer edges of the blades, said cutting edges being beveled on the outer faces of the blades, and the inner face of each blade being slightly convex near its outer edge.

5. A box corner trimming knife, comprising two similar blades having diagonal cutting edges, and their faces which play next the box convex, and means for securing the same together at right angles with each other, whereby said edges operate with a shearing cut.

6. The combination of the table, the stops having their faces at right angles with each other, the cutter head working toward and from the table, and the corner cutting knives carried by said head, the cutting edges of the knives aligning with the faces of said stops, substantially as described.

7. The combination with the supporting frame, of the tables laterally adjustable thereon, box supports upon said tables, stops at the edges of said tables, cutter heads working to and from said tables, and the corner cutting knives carried by said cutter heads, the cutting edges of the knives aligning with the faces of said stops, substantially as described.

8. A box corner support, consisting of a right angled block having its top surface sloping away from the right angled corner, substantially as described.

9. A box corner support consisting of a rectangular block having an inclined ridge extending between opposite corners, the surface of the block being beveled on each side of the ridge, substantially as described.

10. The combination with a suitable supporting frame, of the tables laterally adjustable thereon, the stops upon said tables, laterally adjustable cutter heads working to and from said tables, corner cutting knives carried by said cutter heads, with their cutting edges aligning with the faces of said stops, and the rectangular blocks upon said tables fitting against said stops having their top surfaces beveled away from the inner corner, substantially as described.

11. A box blocking machine comprising in combination, a support for the corner of the box, stops for the adjacent sides of the box, a cutter head working toward and from said support, a right angled knife carried by said head, its cutting edges and the corresponding inner faces of said stops being in the same plane, substantially as described.

12. A box blocking machine comprising in combination, a rectangular block serving as a support for the corner of the box, the top of said block being beveled away from the corner, stops for the adjacent sides of the box, and a right angled knife working to and from said block with its cutting edges aligning with the sides of the box when in bearing contact with said stops, substantially as described.

13. A box blocking machine, comprising in combination, a support for the corner of the box, stops for the adjacent sides of the box, and a bifurcated right angled knife, the fork forming the cutting edges of the knife, said edges aligning with the sides of the box when in contact with said stops, substantially as described.

14. The combination with the frame, of the adjustable box supports provided with stops, the cross head working to and from said supports, the adjustable cutter heads carried by said cross head, the corner trimming knives carried by said cutter heads having their faces which play next the box convex, and the means for driving said cross head, substantially as described.

In testimony whereof I have hereunto set my hand this 23d day of July, 1892.

CHARLES CRISTADORO.

In presence of—

T. D. MERWIN,
H. S. JOHNSON.