(No Model.) 2 Sheets—Sheet 1.

R. W. WOODMAN.

MACHINE FOR RABBETING TABLE LEAVES.

No. 406,686. Patented July 9, 1889.

Fig. 1.

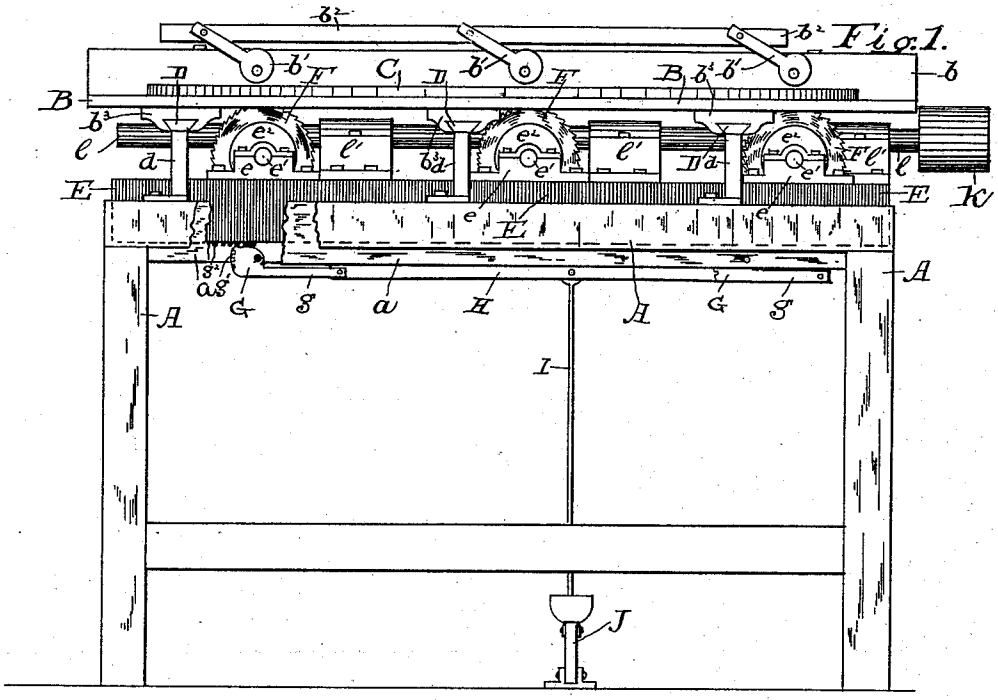
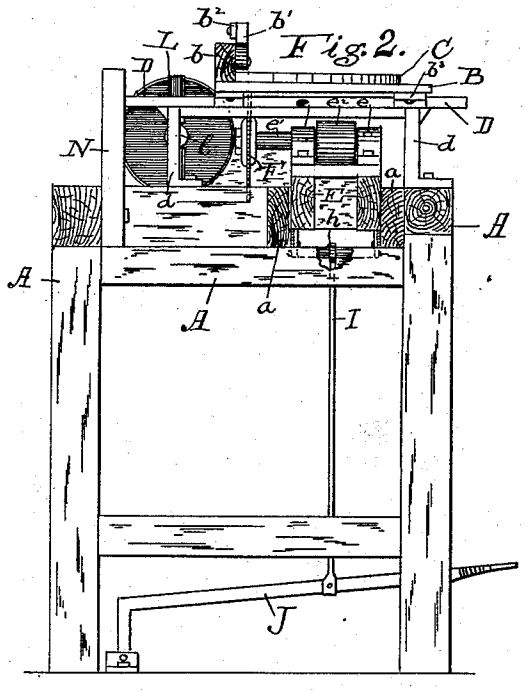


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

R. W. WOODMAN.

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Fig. 3.

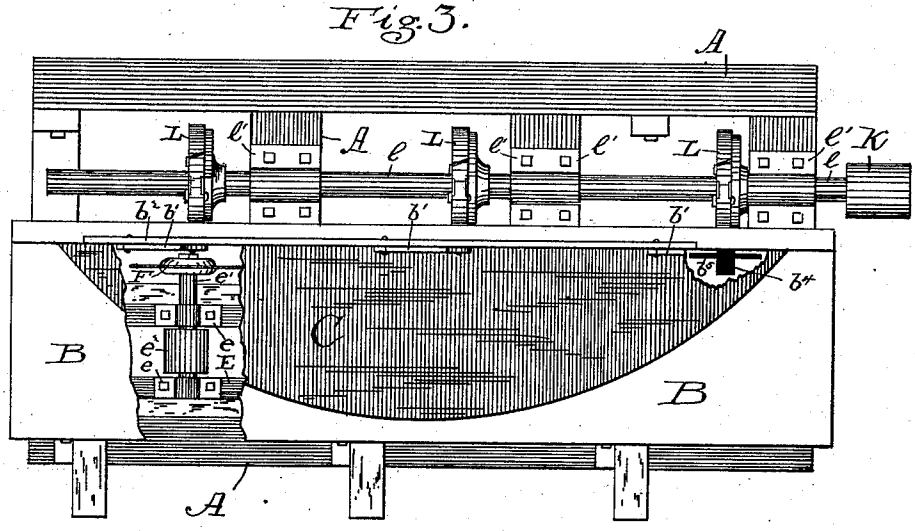


Fig. 4.

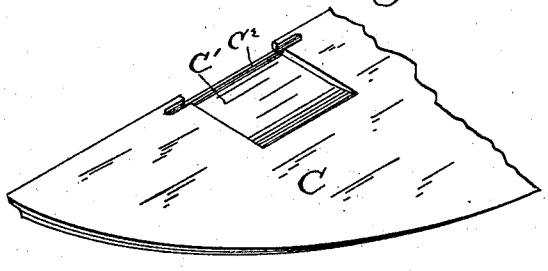
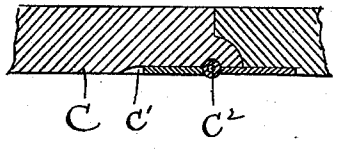


Fig. 5.



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UNITED STATES PATENT OFFICE.

REUEL W. WOODMAN, OF SACCARAPPA, MAINE.

MACHINE FOR RABBETING TABLE-LEAVES.

SPECIFICATION forming part of Letters Patent No. 406,686, dated July 9, 1889.

Application filed November 6, 1888. Serial No. 290,173. (No model.)

To all whom it may concern:

Be it known that I, REUEL W. WOODMAN, a citizen of the United States, residing at Saccarappa, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Machines for Rabbeting Table-Leaves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to machines for rabbeting or cutting recesses for the reception of hinges in the edges of swinging table-leaves such as are used on extension-tables. The hinges by which the swinging leaves are attached to extension and other tables are placed in a shallow recess or groove cut on the under side of the leaf and extending back from the edge. The edge of the leaf is provided with a projecting quarter-round portion which fits a corresponding depression in the adjoining leaf of the main table, the upper part of the joint being straight and at right angles to the surfaces of the table-leaves. In order to have the hinge fit properly in the shallow recess cut for it, it is necessary to have a narrow groove cut across the recess directly under the straight portion of the joint and at the center of the quarter-round projection for the purpose of receiving the cylindrical portion of the hinge. Hitherto these recesses and grooves were cut by hand or by the use of a number of different machines, involving several independent manipulations.

My invention is directed to providing a machine which is largely automatic for fitting these table-leaves to receive their hinges.

The invention consists of various combinations, as set forth in the claims, of the following-named parts, viz: a sliding table to support the table-leaf, a clamp of peculiar construction for securing it thereto, cutter-heads rotating in a plane at right angles to the plane of the table and adjusted to cut the several shallow recesses to receive the hinges, saws or cutters beneath the table, a frame for supporting the same, and means for lifting said frame and giving it a horizontal motion for cutting the longitudinal grooves.

I illustrate my invention by means of the accompanying drawings, in which—

Figure 1 is a front elevation; Fig. 2, an end elevation; Fig. 3, a plan or top view; Fig. 4, a detail of a portion of the edge of the folding leaf, showing the recess for receiving the hinge; and Fig. 5 is an enlarged section through the folding leaf and the adjacent leaf to which it is attached.

A represents the frame-work of the machine. Three rails D, as here shown, extend transversely across the top of the frame, supported on standards *d*, and on these rails slides the table B, supported by guides b^3, adapted to fit the rails D. The table is provided with a back *b*, to which are pivoted the cams or eccentrics *b'*, here shown as three in number. These cams are provided with arms, to the ends of which is pivoted a horizontal bar b^2, by means of which the cams are rotated.

C represents the table-leaf in position to be worked, and the cams are so placed that when rotated by the movement of the bar b^2 they will press downward on the top of the table-leaf, holding it firmly in place.

C', Fig. 4, shows the recess for receiving the hinge, and C^2 the transverse groove for receiving the cylindrical portion of the hinge.

Journaled to the frame of the machine back of the table B, by means of boxes *l'*, is a shaft or arbor *l*. This shaft is parallel with the back edge of the table B, and on it are secured a number of cutter-heads L of ordinary construction and having a cutting-edge equal in width to the width of the hinge. I prefer to have these cutter-heads adjustable lengthwise on the arbor. The upper edge of the cutter-head is elevated above the level of the top of the table a distance equal to the thickness of the hinge. These cutter-heads are such as are ordinarily used for rabbeting or "dadoing." Suitable openings, as b^4, Fig. 3, are cut in the table to admit the cutter-heads.

Beneath the table B is the saw-supporting frame E, which extends the length of the machine, and is inclosed on each side by portions of the frame of the machine. This frame rests on four cams G G, which I here show as means for operating the saw-frame, although other well-known mechanical devices may be used. The cams are placed in pairs at each end of the frame and pivoted to the stationary portion of the frame of the machine. The

cams are each provided with an arm g, the two on each side being connected with a horizontal rod H, pivoted to their ends. A cross-piece h, Fig. 2, connects the two bars H at their centers, and pivoted to this cross-piece is a rod I, extending vertically downward and connecting with a foot or other lever J.

A depression of the lever J pulls down the bars H and causes all the cams to make a quarter-revolution. A rack g^2 is secured to the bottom of the frame E at the side of each cam, and one side of each of the cams G is provided near its edge with teeth g', so located as to engage the teeth of the rack g^2 when the cam has made a partial revolution.

Journaled to the frame by means of the arbor e' and boxes e are the saws or cutters F, each having a pulley e^2. Each saw runs in a plane at right angles to the plane of the table B. When the saws and the table are in their normal position, the upper edge of each saw is below the table and in line with the desired location of the narrow groove C^2, Fig. 4. The edges of these "saws," as I shall call them, although they have more of the characteristics of cutters, are preferably made quite thick, and are rounded to make a semicircular groove of the size of the cylindrical portion of the hinge. Openings b^5 are made in the table to allow the saws to pass up through.

The leaf to be fitted is placed on the table and the horizontal bar b^2 is pressed to the right, causing the eccentrics b' to press downward on the top of the leaf, thus holding it securely in place. The table is then pushed forward and three shallow grooves, as C', Fig. 4, cut back a sufficient distance from the edge to admit the hinge. The table is then drawn back to its normal position, at which point the recess made by the cutters is directly over the saws. The treadle J is then depressed, or the cams G are made to rotate by other suitable means, and the saw-supporting frame is first raised by the action of the cam, and then fed horizontally forward as the teeth of the cam engage the teeth of the rack. The edge of each saw thus cuts a groove or scarf C^2 through the recess C' at the position which the cylindrical portion of the hinge is to occupy.

Each of the pulleys e^2 is connected with a driving-pulley (not shown) placed beneath the floor or in any suitable position below the machine, and the belts are loosely adjusted, so that they do not become taut until the saws have reached their highest point. Thus when not in use the saws are not revolving.

It will thus be seen that by the use of my machine I am able in a single operation, which involves simply the pushing forward of the table and the pressing down of a lever, to completely and accurately fit a swinging leaf for its hinges.

I claim—

1. In a machine for rabbeting swinging table-leaves for receiving their hinges, the combination of a sliding table for receiving the table-leaf, a cutter-head rotating in a plane at right angles to said table and having its cutting-edge adjusted to cut a shallow recess or groove in the edge of said leaf, a frame beneath said table, a saw or cutter journaled therein, and means for lifting said frame and feeding it horizontally to cut a narrow longitudinal groove through said shallow recess, substantially as and for the purpose set forth.

2. In a machine for rabbeting swinging table-leaves for receiving hinges, the combination of a sliding table for receiving the table-leaf, a series of cutter-heads rotating in a plane at right angles to said table and having their cutting-edges adjusted to cut a shallow recess or groove in the edge of said leaf, a frame beneath said table having journaled therein a series of saws or cutters, and a lifting device for raising said frame and feeding it horizontally, whereby each saw or cutter is made to cut a narrow longitudinal groove through said recess, substantially as and for the purpose set forth.

3. In a machine for rabbeting swinging table-leaves for receiving hinges, the combination of the saw-frame and the cams for supporting and lifting said frame, said cams being provided with teeth, racks on the bottom of said frame to engage said teeth when the frame is lifted to the desired height, and levers for rotating said cams, substantially as and for the purpose set forth.

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

REUEL W. WOODMAN.

Witnesses:
S. W. BATES,
R. A. DAVIS.