

(No Model.)

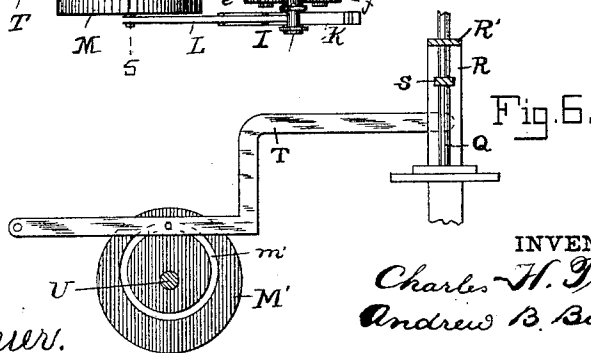
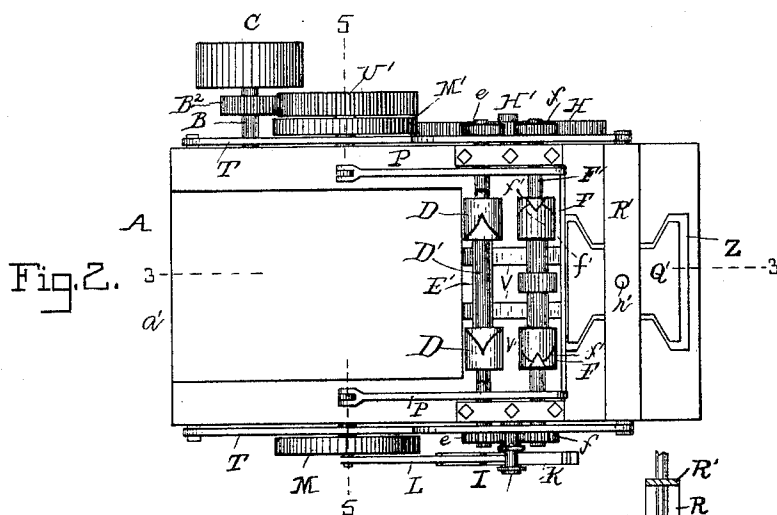
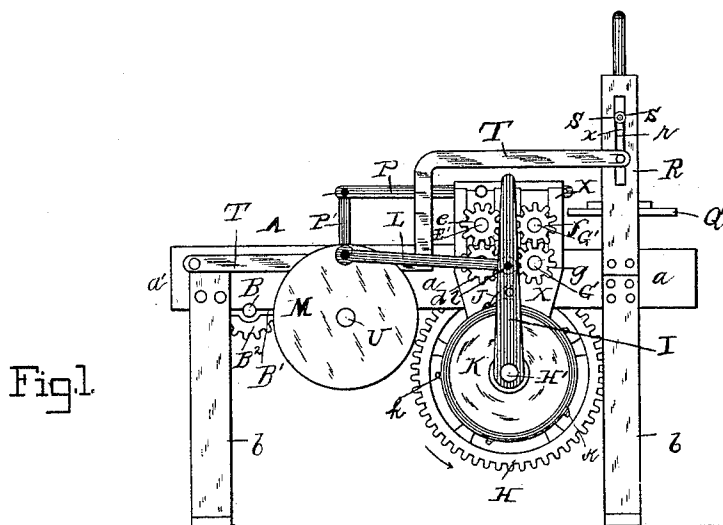
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C. H. TREAT & A. B. BANGHART.

MACHINE FOR CUTTING VENEER DISH BLANKS.

No. 477,086.

Patented June 14, 1892.



WITNESSES:

A. P. Babendriev.

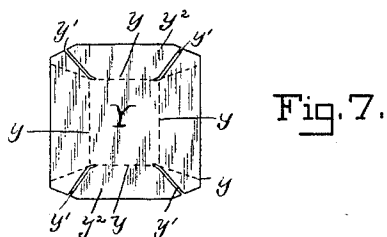
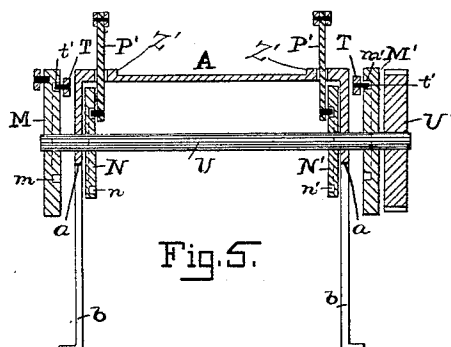
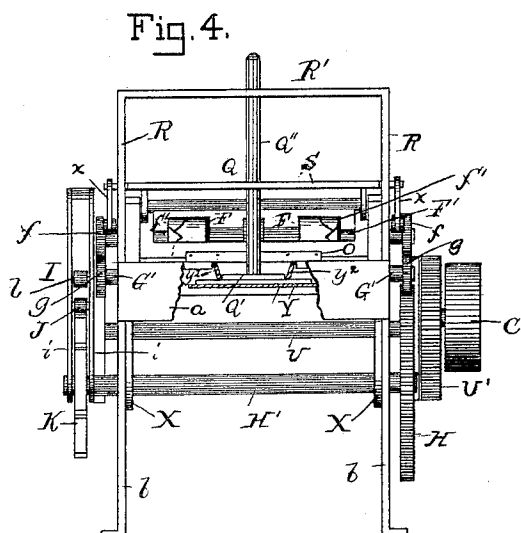
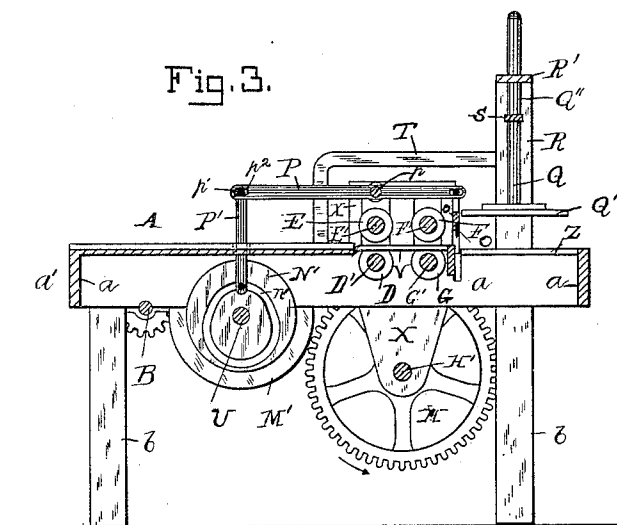
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UNITED STATES PATENT OFFICE.

CHARLES H. TREAT AND ANDREW B. BANGHART, OF BALTIMORE, MARYLAND; SAID BANGHART ASSIGNOR TO SAID TREAT.

MACHINE FOR CUTTING VENEER DISH-BLANKS.

SPECIFICATION forming part of Letters Patent No. 477,086, dated June 14, 1892.

Application filed May 15, 1891. Serial No. 392,931. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. TREAT and ANDREW B. BANGHART, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Machines for Cutting Veneer Dish-Blanks, of which the following is a specification.

This invention relates to machines for making veneer dishes or trays for the use of grocers, provision-dealers, &c.; and it consists in certain novel constructions and combinations of mechanism hereinafter described and claimed for making the veneer blank and partially forming the same to the shape of the complete dish or tray.

In the accompanying drawings, illustrating the invention, Figure 1 is a side elevation of our improved machine. Fig. 2 is a top plan of the same, with the feed-rollers above the scoring-rollers removed. Fig. 3 is a longitudinal section on line 3 3, Fig. 2. Fig. 4 is an end view with a part of the table or bed-plate broken away to disclose a veneer blank which is being bent or folded. Fig. 5 is a transverse section on the line 5 5, Fig. 2. Fig. 6 is a detached view of one of the levers and disks for operating the forming-plunger. Fig. 7 is a view of the veneer blank after it leaves the machine.

The letter A designates the table, which is provided with downward-projecting sides *a* and supporting-legs *b*. It also has side flanges *a'* to properly guide the veneer strip to the feed-rollers. Located near the front end *a'* of this table and extending transversely thereof is a shaft B, which has its bearings in boxes B', secured to the sides of the table. This shaft B carries at one end a pulley C, which is to be connected with some suitable power.

The scoring devices consist of two scoring-rollers D of the form shown in Fig. 2, carried by a shaft D'. Mounted immediately above these scoring-rollers on a parallel shaft E' are smooth rollers E, which assist in feeding the veneer strip forward and also provide a bearing-surface for the veneer, against which the said scoring-rollers can act.

The slitting devices consist of two rollers

F, each provided with slitting-knives *f'* and both mounted on the same shaft F' to the rear of and in horizontal alignment with the smooth rollers E. The V-shaped portion of these knives cuts a notch out of the veneer, the sides of which notch form the cut-off corners of two adjacent blanks. The portions of the knives extending from the V-shaped part make the slits *y'* in the blank. Beneath said rollers F and in alignment with the scoring-rollers D are smooth rollers G, which are mounted on a shaft G' and serve a purpose similar to the smooth rollers E.

The table A at the place where the several rollers are located has an opening V', and longitudinal strips V bridge across this opening and are located between the upper and lower rollers just described. These strips V serve to support the veneer while it is between the rollers, and at the same time permit the rollers to properly perform their functions on the veneer strip.

Secured on the ends of the four shafts D', E', F', and G' are pinions *d*, *e*, *f*, and *g*. On reference to Fig. 1 it will be observed that the first lower and upper pinions *d* and *e* intermesh, as do also the second pinions *f* and *g*. All of the shafts, however, are revolved simultaneously by means of a gear-wheel H, which is mounted on one end of a shaft H' below all the rollers and meshes with the two lower pinions *d* and *g*. These shafts of the scoring, slitting, and feed rollers and of the gear-wheel have their bearings on a frame X, the sides of which are secured on the exterior of opposite sides of the table A and project above and below the same.

It is necessary that the scoring, slitting, and feed rollers revolve intermittently. For this purpose a vertical double lever I, comprising the parallel members *i*, is pivoted at its lower end on the shaft H' and carries a pawl J, the point of which engages teeth *k*, disposed equidistant on the periphery of a wheel K, also on the shaft H'. This wheel K is straddled by the two members *i* of said lever. A rod L has one end pivoted to the lever I and the opposite end secured to a crank-disk M.

It will be readily understood that for one-half of the revolution of the crank-disk the

pawl J will be in engagement with one of the teeth k on the wheel, during which period the scoring, slitting, and feeding rollers will be revolved, and that for the other half of the rotation of said crank-disk the pawl will be carried back out of engagement with the next tooth, during which period of disengagement the rollers will obviously remain stationary.

The scores and slits in the blank and the direction in which they extend are shown in Fig. 7 and are designated by the letters $y y'$, respectively, said blank being designated by the letter Y and the two opposite wings or flaps which are to be bent or folded upward by the forming-plunger hereinafter described by the letter y^2 .

The crank-disk M is mounted on one end of a shaft U, the opposite end of which carries a wheel U', meshing with a gear-wheel B², carried by the driving-shaft B.

On the shaft U, beside the crank-disk M, is a second disk N, and near the opposite end of said shaft is a similar pair of disks M' N'. Cam-shaped grooves $m m' n n'$ are formed in the inner surfaces of said disks, one groove being in each disk.

The two inner cam-disks N N' operate the knife O, which cuts the veneer into proper lengths. This knife O is preferably secured to a backing o, which is pivoted to the ends of two horizontal levers P, located at opposite sides of the machine. Each of these levers P is fulcrumed at p to the frame X and is connected by means of a link P' with one of the inner cam-disks, the lower end of said link P' being provided with a roller which travels in the groove of the disk and its upper end being provided with a pin p' , working in an elongated slot p^2 , formed in the end of said lever P. It will be readily seen from the foregoing that the rotation of the disks N N' will raise and lower the knife O, which in its downward passage cuts off from the main strip of veneer the scored and slitted blank Y. This scored and slitted blank Y is next fed to the end of the machine and is forced by means of a vertically-reciprocating forming-plunger Q down into an opening Z, formed at this end of the table, said opening being slightly larger than said plunger. The plate Q' of the forming-plunger and the opening agree in shape, which is that of the blank Y minus the two opposite wings or flaps y^2 , which are to be bent upward. When the blank is forced downward through said openings by the plunger, said two wings or flaps y^2 will be bent upward by contact with the edges and sides of the opening Z. The dish or tray is thus partially formed or shaped. The plunger Q reciprocates between vertical ways R, projecting upward from the sides a of the table A and connected together at their upper ends by the cross-strip R', which is formed with a perforation r' , through which the plunger-rod passes. The plunger is operated by the cam-grooves on the two outer disks M M', being connected with said disks by two

levers T, located at opposite sides of the machine. The plunger-rod is rigidly attached to a horizontal bar S, the end of which travels in the slots r , formed in the vertical ways R, and to each end of said bar is attached one end of a link x . The other end of this link is connected to a lever T. By this construction an up-and-down movement of the plunger is obtained. These levers are each bent, as shown in Figs. 1 and 6, and at one end pivoted to the table A. At a suitable point they are provided with projections carrying rollers t' , which travel in the grooves $m m'$, formed in the disks M M'. Thus rotation of said disks will cause the reciprocation of said forming-plunger.

The operation of the machine, briefly stated, is as follows: Motion being imparted to the driving-shaft B, the end of the strip of moistened veneer is fed to a point where it will be engaged by the rollers D and E, the former of which will score the veneer at the places which are to form the angles of the complete dish or tray, after which it is fed intermittently, and is successively acted on by the slitting-rollers, cutting-off knife, and forming-plunger. This partly-formed dish or tray falls from the opening Z and is ready for completion.

We do not wish to limit ourselves to the precise construction herein specified, as mechanical equivalents for certain of the parts will readily suggest themselves.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine for making veneer dishes, the combination of scoring-rollers and feed-rollers parallel therewith, cutting and slitting rollers and feed-rollers parallel therewith, the said cutting and slitting rollers having knives which notch out the edges of the veneer strip and slit the latter inward from the notched portion, mechanism for intermittently revolving the rollers, and a vertically-reciprocating knife for cutting off the scored, cut, and slitted blank from the main strip of veneer.

2. In a machine for making veneer dishes, the combination of a table having an opening through it at one end, scoring-rollers and feed-rollers parallel therewith, cutting and slitting rollers and feed-rollers parallel therewith, the said cutting and slitting rollers having knives which notch out the edges of the veneer strip and slit the latter inward from the notched portion, mechanism for intermittently revolving the rollers, a vertically-reciprocating knife for cutting off the scored, cut, and slitted blank from the main strip of veneer, and a vertically-reciprocating plunger to act on the cut-off blank and force it through the opening in the table, whereby it is bent into the desired shape.

3. In a machine for making veneer dishes, the combination of scoring-rollers and feed-rollers parallel therewith, cutting and slitting rollers and feed-rollers parallel therewith,

mechanism for intermittently revolving the rollers, a knife for cutting off the scored and slitted blank from the main strip of veneer, horizontal levers of the first class, from the end of which said knife is suspended, links depending from the opposite ends of said levers, and revoluble disks having cam-grooves engaged by suitable rollers on the lower ends of said links.

- 10 4. In a machine for making veneer dishes, the combination of a table having an opening through it at one end, scoring-rollers and feed-rollers parallel therewith, cutting and slitting rollers and feed-rollers parallel therewith, 15 mechanism for intermittently revolving the rollers, a vertically-reciprocating knife for cutting off the scored and slitted blank from the main strip of veneer, a vertically-movable plunger to act on the cut-off blank and force 20 it through the opening in the table, whereby it is bent into the desired shape, horizontal

levers pivoted at one end to the table, links connecting their opposite ends with the plunger, and revoluble disks having cam-grooves engaged by rollers carried by the said horizontal levers. 25

5. In a machine for making veneer dishes or trays, the combination of a scoring and a feed roller, one above the other, a slitting and a feed-roller, one above the other, the table provided with an opening where these rollers are located, and strips bridging across the said opening on the same plane as the table and located between the upper and lower rollers. 30

In testimony whereof we affix our signatures 35 in the presence of two witnesses.

CHAS. H. TREAT.

ANDREW B. BANGHART.

Witnesses:

F. P. DAVIS,

CHAS. B. MANN.