J. C. DE LANEY.

APPARATUS FOR MANUFACTURING WOODEN MOLDING.

APPLICATION FILED FEB. 15, 1911.

999,014. **Patented July 25, 1911.**

3 SHEETS—SHEET 1.

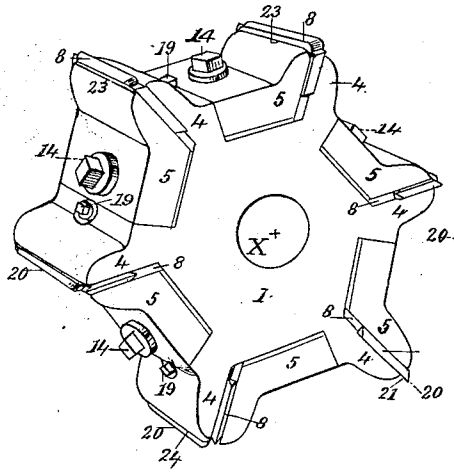


Fig. 1.

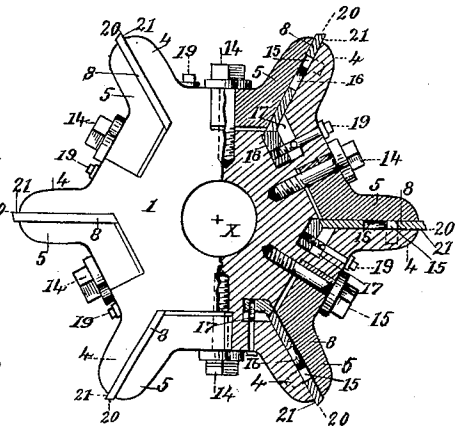


Fig. 2.

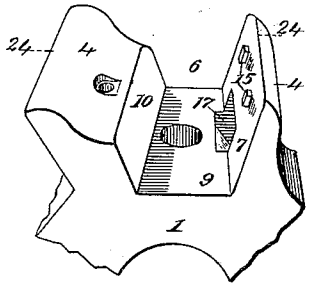


Fig. 3.

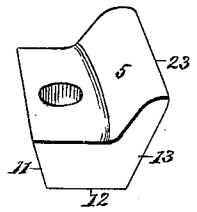


Fig. 4.

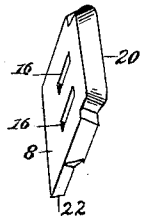


Fig. 5.

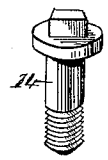


Fig. 6.

Witnesses:
F. J. V. Dalkin
E. F. Kniaz.

Inventor:
John C. De Laney
by his attorney
Charles B. Richardson

J. C. DE LANEY.

APPARATUS FOR MANUFACTURING WOODEN MOLDING.

APPLICATION FILED FEB. 15, 1911.

999,014. **Patented July 25, 1911.**

3 SHEETS—SHEET 2.

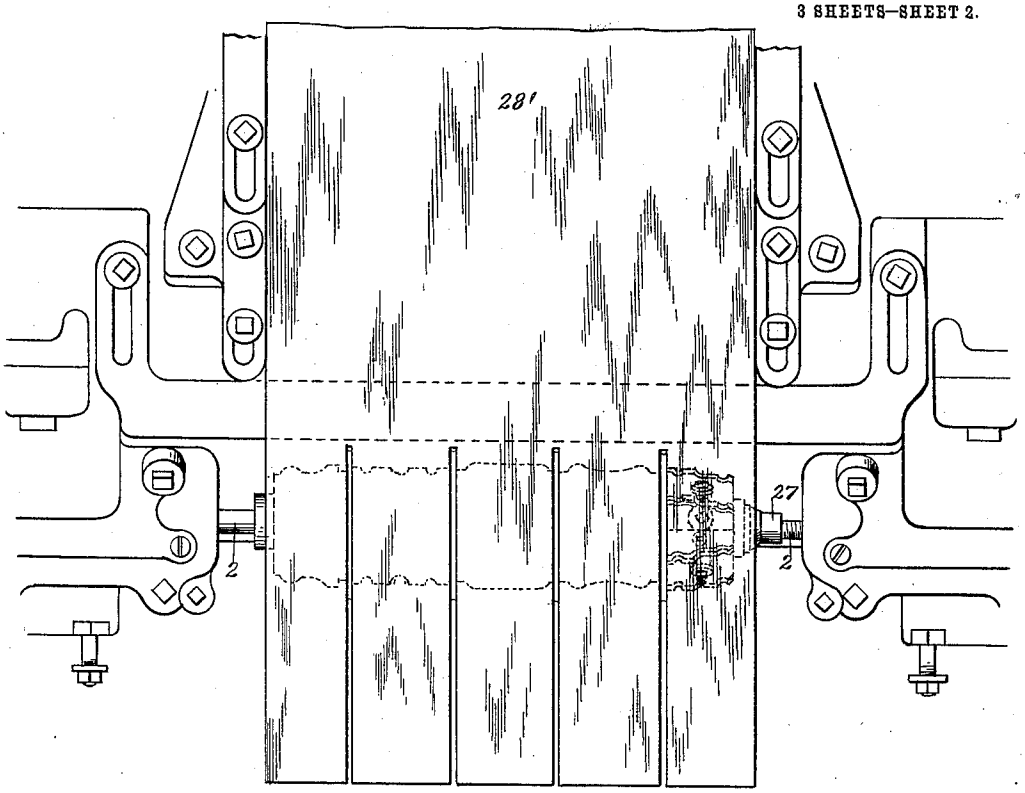


Fig. 7.

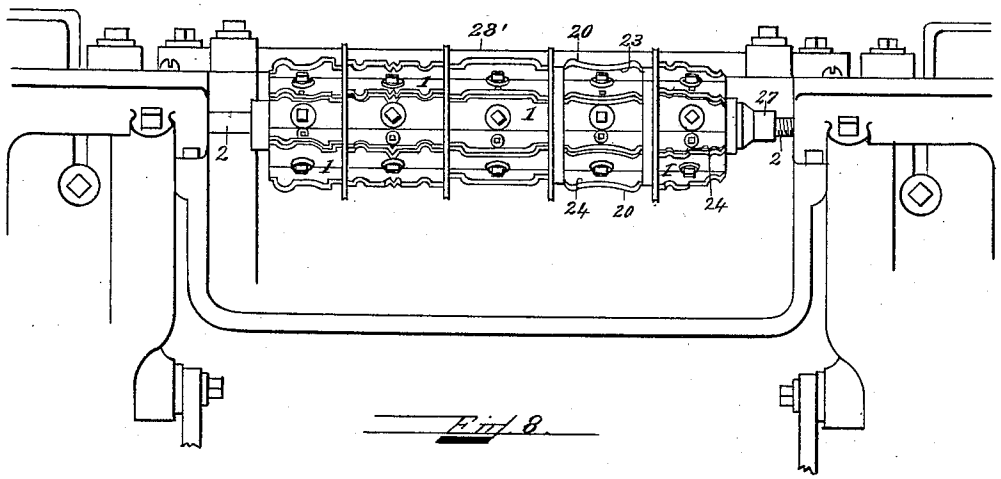


Fig. 8.

Witnesses:
F. J. V. Dakin
E. F. Maniac.

Inventor:
John C. De Laney
by his attorney
Charles E. Richardson

J. C. DE LANEY.

APPARATUS FOR MANUFACTURING WOODEN MOLDING.

APPLICATION FILED FEB. 15, 1911.

999,014.

Patented July 25, 1911.

3 SHEETS—SHEET 3.

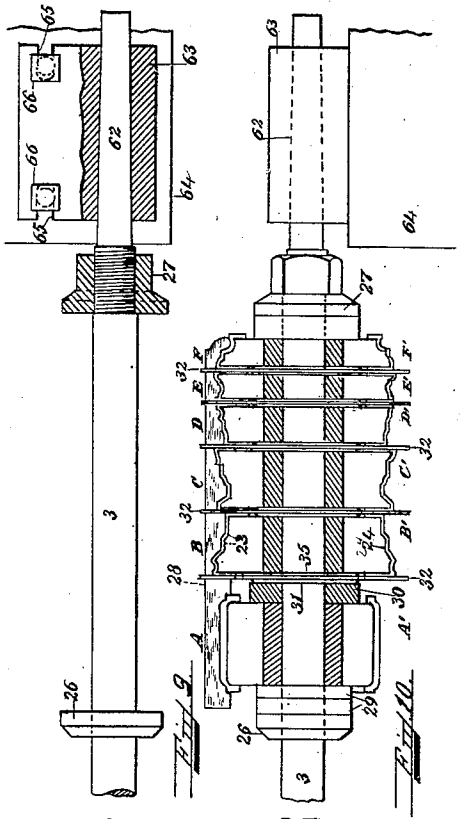


Fig. 9.

Fig. 10.

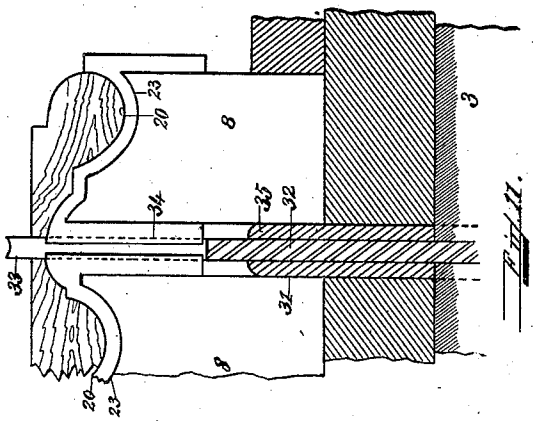
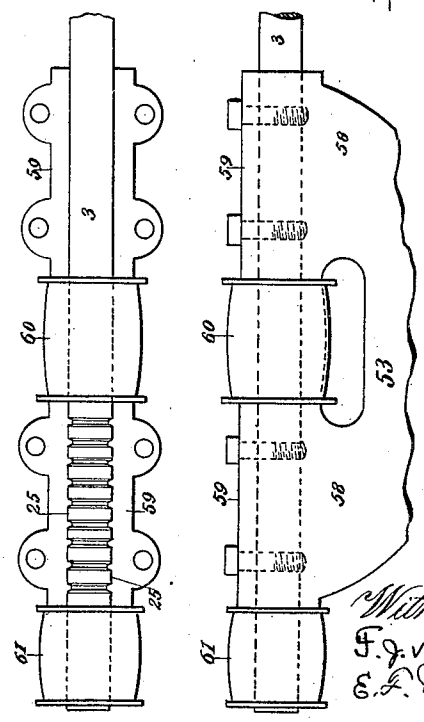


Fig. 11.



Witnesses:
F. J. V. Dakin
E. F. Kniac.

Inventor:
John C. De Laney
by his attorney
Charles D. Richardson

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN C. DE LANEY, OF WATERTOWN, MASSACHUSETTS.

APPARATUS FOR MANUFACTURING WOODEN MOLDING.

999,014. Specification of Letters Patent. Patented July 25, 1911.

Application filed February 15, 1911. Serial No. 608,741.

To all whom it may concern:

Be it known that I, JOHN C. DE LANEY, a subject of the King of Great Britain and Ireland, and a resident of the United States, residing at Watertown, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Manufacturing Wooden Molding, of which the following is a specification, reference being had therein to the accompanying drawings.

The principal object of my invention is to provide a molding head wherein a molding blade may be radially mounted, and so supported as to prevent objectionable vibrations of the blade, and yet have a proper clearance between the body of the molding head and the working edges of the blade; and I attain this object by means of two parallel, longitudinal, locking lips, one of which is adjustable in relation to the other, both lips extending outwardly from the head, and having a radial slot formed between their adjacent parallel surfaces to receive the blade; and also having their outer edge portions in substantial parallelism with, but at a proper distance from, the working edge of the confined molding blade. The great advantage flowing from this feature of my invention is that the molding head may be successfully run at a maximum, instead of a minimum, speed as heretofore, when running moldings. Each of the blades being substantially radial, there may be a greater number of them, hence a greater number of cuts per rotation of the head than previously attained; and the working surface of each blade being short and of uniform depth and properly supported, there are no objectionable vibrations resulting from this maximum speed of rotation.

The above mentioned feature, and others will be more particularly pointed out hereinafter.

In the drawings illustrating the principle of my invention and the best mode now known to me of embodying the same in operative structure, Figure 1 is a perspective view of my molding head. Fig. 2 is an elevation, partly in section, showing one form of molding blade, its position in the head, the method of securing or supporting it, and also the method of adjusting it, in the head. Fig. 3 is a perspective view of a portion of the head, showing the seat for the blade, and the lock block. Figs. 4, 5 and 6 are like views of the lock block, the blade and lock bolt, respectively. Fig. 7 is a plan of the rear portion of a molding machine, having therein a board being entirely cut up into strips of molding by means of various molding heads embodying my invention, indicated in dotted lines. Fig. 8 is an end elevation of what is shown in Fig. 7; the resulting moldings being of various widths, and having different molded surfaces. Fig. 9 is a plan of an arbor, without molding heads and saws mounted thereon; certain parts being in section. Fig. 10 is a front elevation showing the arbor with molding heads and saws, partly in section, in operative position, working up a board delivered to them from a molding machine, at the rear, but not shown. Fig. 11 is an enlarged fragmentary detail, in section, showing relations existing between the arbor, saw, molding blades and heads, separating collars, and portions of a board in process of manufacture.

A molding head 1, Fig. 1, is designed to be removably secured upon an arbor 2, Figs. 7 and 8, which in turn is mounted in suitable bearings upon a molding machine; or upon, say, an arbor 3, Figs. 9 and 10. The head is preferably of cast steel, and, in general form is here shown as prismatic, and as being, in transverse section, what may be termed a polygonal star. Those portions constituting each point of the star, comprise two parallel lips, in substantial counterpart, and extending outwardly from the sides of the prism or head; one lip 4 being integral with the head, and the other lip integral with a removable lock block 5, Figs. 2 and 4, which is mounted in a longitudinal seat 6, formed in the exterior of the head between the adjacent integral lip portions 4, 4, of the head; one side wall 7 of the seat, being in a radial plane passing through the longitudinal axis X of the arbor and constituting also a wall of the lip 4 of the head, and serving as a bearing surface for a molding blade 8, Figs. 2 and 5. The bottom 9 of this seat forms with this radial face an obtuse angle, while the other side 10 of the seat is in a plane, say, at right angles to the plane of the bottom 9 of the channel. The lock block 5 has one side 11 and its bottom 12 conform to the bottom 9, and the side 10 at right angles thereto, of the seat, and its other side 13 also forms a wall for the integral lip of the lock block and is in par-

allelism, but not in contact, with the inclined face 7 of the seat and lip; the space between the two parallel faces 13 and 7 of the block and the seat being slightly less than the thickness of the molding blade 8. A lock bolt 14, Figs. 2 and 6, passes through the lock block 5 and into the head 1, and secures the block and head in proper relation. In the inclined face 7 of the seat are two guide pins 15, Fig. 3, to engage two slots 16, Fig. 5, in the molding blade. Also opening out through this face 7, Fig. 3, and a portion of the bottom 9 of the slot, is an adjusting cavity 17 in which an adjusting plate 18, Fig. 2, may be moved up and down in relation to the molding blade 8, by means of an adjusting screw 19, Fig. 2, parallel with the lock bolt 14, and passing down through the integral part 4 of the head into the cavity 17 and into the adjusting plate 18. The outer edge portion of the plate projects through this opening and is beveled so as to be in a plane parallel with the bottom of the seat; this beveled or lifting face engaging a correspondingly beveled base portion of the molding blade.

The molding blade 8, Fig. 5, here shown is made of steel, and its working surface and edges are given the desired conformation, but it is to be particularly noticed that that portion of the blade which molds the board into the desired form, is the edge 20 and face 21, Figs. 1, 2 and 5, which are to lie in the radial plane of the head, containing the longitudinal axis X of the arbor; said edge resulting from the acute angle formed by the intersection of the adjacent surfaces. The bottom 22 of the blade is beveled so that it and the corresponding edge of the adjusting plate 18 may lie in the same plane, and lie in sliding engagement. All of each blade, except so much as is necessary for doing its work, is rigidly confined in the head between the lock surfaces 7 and 13; and the edges 23, 24, of the lips 4 and 5 adjacent to the working edge of the blade are made to conform substantially to the shape of the edge of the blade, as also appears in Figs. 7, 8, 10 and 11, in order to give rigidity to and prevent vibrations of the blades. It is to be noted that by means of these lips 4, 5, the paths described by the molding edges of the blades are at a greater distance from the axis of the head than is that of any of the other parts of the head, say, the heads of the lock bolts 14, so that there is sufficient clearance to prevent any part of the head from injuring the strip being molded.

I have now completed the description of one molding blade, and the means for securing, and for adjusting it in the head. As the other blades and coöperating parts are duplicates of what has been described, a further explanation of them is unnecessary.

To assemble each blade in the head, take the blade 8, Fig. 5, mount it on the face 7 of the seat 6, Fig. 3, the pins 15 in the face, engaging the slots 16 in the blade; place the lock block 5, Fig. 4, in the lock seat 6, the inclined face 13 of the block engaging the outside surface of the blade; and, then by means of the lock bolt 14, draw the lock block down into the seat, thereby tending to compress the blade between the parallel faces 13, 7, of the lock block and seat. If the working face 21 of the blade does not project far enough beyond the outer ends 23, 24, of the lips, the blade may be moved outward radially by suitably turning the adjusting screw 19, which thereby lifts the adjusting plate 18, that, in rising, slides along the bottom of the blade, and moves it in the manner described. The lock bolt 14 is next given the required turn, and the lock block 5, in being drawn down, securely clamps the blade 8 against the face 7 where it is held in proper position in relation to the head. Each blade may be removed from the head, by reversing the above described method of assembling.

The blades shown in Figs. 1 and 5 are for the manufacture of comparatively plain molding; their working edges 20 being mostly straight, and the adjacent edges 23, 24, of the lips in substantial parallelism with, and in comparatively close proximity to, the working edges of the molding blades; but the same substantial parallelism is maintained between the blades and the lips when the working edges of the blades assume more varied forms for molding more complex molded surfaces, such for example as are illustrated in Figs. 8, 10 and 11.

One or more of these molding heads and saws may be mounted, as already explained, on an arbor 2, mounted in bearings, across the tail end of a molding machine, as shown in Figs. 7 and 8, or on an arbor 3, shown in Figs. 9 and 10. Ribs 25 encircle one end portion of the arbor as 3, Fig. 9, and by engaging corresponding channels in one of the bearings, prevent longitudinal motion of the arbor. A ring 26, shrunk on the arbor, serves as an abutment for the molding heads and saws; while a lock and tightening nut 27, to engage left handed threads on the opposite end portion of the arbor, are used to bind the molding heads and saws to the arbor; collars of varying thickness being employed to space the molding heads and saws, and also to stiffen the latter, which, consequently, may be made thinner.

For the sake of illustrating the use of a gang of my molding heads and saws, we will assume that the board 28 to be run into molding, is of the width indicated in Fig. 10, and the width is such that the six following moldings may be made from it:—A pilaster architrave A, and apron B, a sheathing cap C, a base D, an astragal E, and a

picture molding F. In this particular instance, two collars 29 are put onto the arbor 3 and pressed up against the ring 26; then a molding head A′ for the pilaster architrave; then a collar 30 and a saw collar 31; next a saw 32 having short slots 33 for the reception of the side portions 34 of the molding blades 8, as appears in Fig. 11; next a saw collar 35, and the molding head B′ for making the apron molding; the adjacent side portions of its blades partially occupying the above mentioned slots in the molding and splitting saw. The other collars, saws and molding heads, mentioned and shown, are similarly mounted on the arbor; when finally, the lock nut 27 follows on and is turned up, thus binding the arbor and all that there is thereon, rigidly together.

The arbor with the heads and saws, is mounted at a suitable depth below the top surface of the bed plate of the molding machine, to permit the saws to sever the board into the strips, and the molding blades to mold the under surface of each strip. Power may be applied to the arbor in any well known manner.

Each of the boards 28′ and 28 shown respectively in Figs. 7, and 8 and 10, in passing through the molding machine, has been planed upon its top, bottom and two sides; and before and while engaging the blades and saws on the arbor, is bound in a horizontal plane by well known pressure bars, and feed rolls in the bed, not shown but readily understood. As the board advances over the end of the bed of the machine, it comes into contact with the splitting and molding saws which at once begin separating the entire board into the desired number of molding strips; the sides of the saw cuts being molded smooth and requiring no subsequent sandpapering. The under sides of these strips next come into contact with the molding blades of the molding heads, and at once their surfaces begin to assume the conformations corresponding to the shapes of the various molding blades, and have their molded surfaces of such smoothness that no further smoothing by hand or power is necessary. When the board has once completely passed through the molding machine and over the rotating blades and saws, it has been not only cut up without waste, into the desired number of strips of molding, but it has at the same time been rendered sufficiently smooth to require no further smoothing.

As already pointed out, if the boards to be converted into strips of molding, are, say, narrower than that shown in the drawings, then by choosing heads and saws of suitable widths, and mounting them upon the arbor, the entire board of narrower width may, with the least possible waste due to separating the strips, be embodied in the resulting strips of molding. The widths of molding are so various that it is only necessary to remove the last head, and substitute for it, a head that will mold what would otherwise be a waste strip.

It may be that often there will be strips wide enough only for single strips of molding, in which case, only one molding head need be used on the arbor.

If thought to be desirable, molding blades with working edges that shave, rather than scrape the material, may be mounted in the head which holds the blades in said radial planes; the advantage flowing from holding the blades in those radial planes being that a greater number of blades, than could be heretofore, can be circumferentially mounted in the head. For example, instead of six blades, eight or nine could be, provided the head were simply made into an eight or nine sided polygonal star prism.

Desiring to protect my invention in the broadest manner legally possible, what I claim is:—

1. A molding head provided with a seat, a lock block mounted in said seat and means to secure said block in said seat; two parallel locking lips in substantial counterpart, one integral with said head but extending outwardly from said head, and the other lip integral with the lock block but extending outwardly from said block; said lips being adapted to be shaped to the profile of the desired molding to be cut; a wall surface substantially radial and constituting one wall surface of the seat and one wall surface of the lip integral with the head, and a substantially parallel surface forming the wall surface of the lock block and its integral lock lip; a molding blade; the space between said surfaces serving as a lock slot for said molding blade; all designed to clamp the molding blade in a radial position in relation to the molding head and to provide sufficient support for the blade against vibrations and also sufficient clearance between the body of the head and the working edge of the blade.

2. A prismatic molding head provided with a longitudinal seat in one face of the prism, a lock block mounted in said seat, and a lock bolt to secure said block in said seat; two parallel locking lips, in substantial counterpart, one integral with said head but extending outwardly from said head, and the other lip integral with the lock block but extending outwardly from said block; said lips being adapted to be shaped to the profile of the desired molding to be cut; a wall surface substantially radial and constituting one wall surface of the seat and one wall surface of the lip integral with the head; and a substantially parallel surface forming the wall surface of the lock block

and its integral lock lip; a molding blade; the space between said parallel surfaces serving as a lock slot for said molding blade; all designed to clamp the molding blade in a radial position in relation to the molding head and to provide sufficient support for the blade against vibrations, and also sufficient clearance between the path described by the head of the lock bolt, and that described by the working edge of the blade.

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

JOHN C. DE LANEY.

Witnesses:
E. F. UNIAC,
A. I. CRAWFORD.