A. T. Serrell,

Wood Molding Machine.

No. 5,575. Patented May 16, 1848.

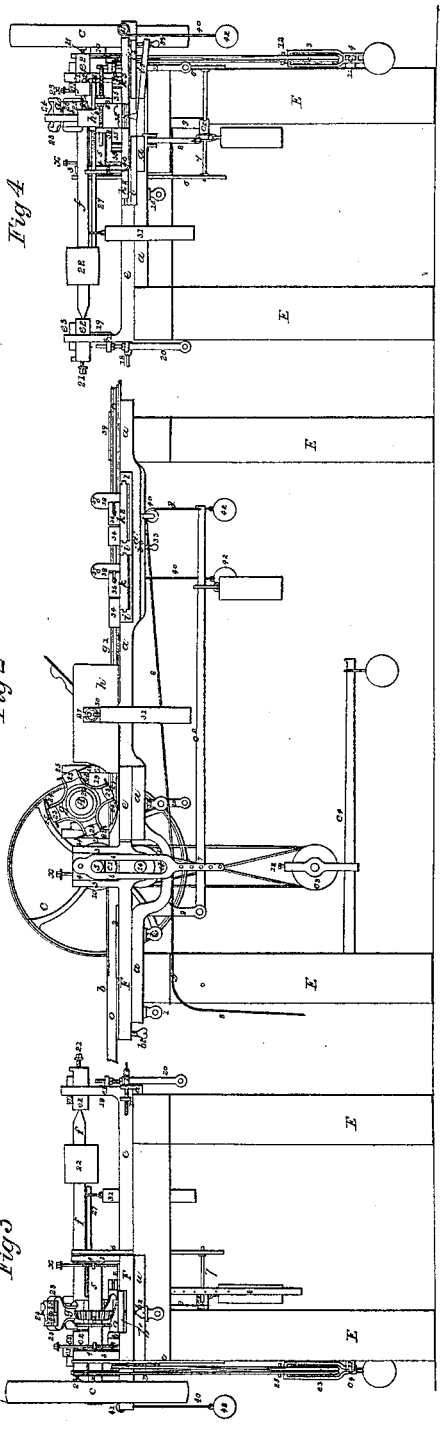

Fig 4

Fig 2

Fig 3

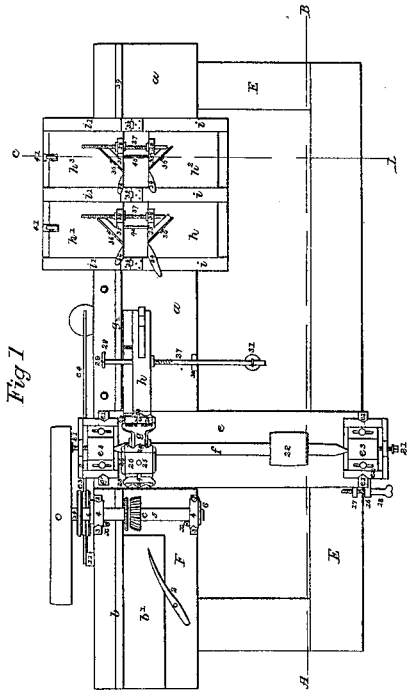

Fig 1

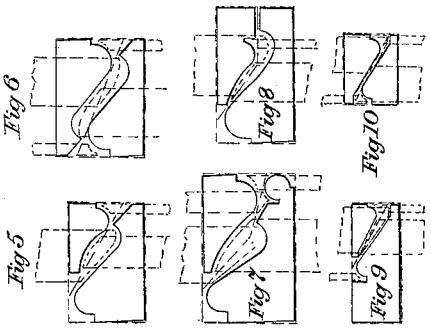

Fig 6 Fig 8 Fig 10

Fig 5 Fig 7 Fig 9

Witnesses:

Geo. W. Reed

Alexander Bain

Inventor:

Alfred D. Serrell

UNITED STATES PATENT OFFICE.

ALFRED T. SERRELL, OF NEW YORK, N. Y.

MACHINERY FOR MAKING MOLDINGS.

Specification forming part of Letters Patent No. 5,575, dated May 16, 1848; Reissued January 7, 1851, No. 187.

To all whom it may concern:

Be it known that I, ALFRED T. SERRELL, of the city of New York, State of New York, cabinet-maker, have invented and made and applied to use certain new and useful Improvements in the constructive arrangements and conjoint action of well-known mechanical parts employed with parts invented or improved by me for producing wood moldings, being formed with smooth surfaces that will not wrinkle when painted or wetted and become what is termed "woolly faced."

The means employed in said improvements enable me to make such moldings with a saving of materials in the conversion with a reduction in the amount of labor by which the public are furnished with such articles at a less cost than the same can be made for by hand labor and with a uniformity of sectional shape and finish of surface that renders such moldings more effective and acceptable in general use than others for which improvements I seek Letters Patent of the United States, and that the said improvements are constructively and substantially set forth and shown in the following description and in the drawing annexed to and makng part of this specification, wherein—

Figure 1 is a general plan of a machine complete for use. Fig. 2 is a sectional front elevation through the line A, B, of Fig. 1, to remove the framing and show the parts that would otherwise be hid. Fig. 3, is an end elevation at the end A, of Fig. 1, and Fig. 4 is a sectional elevation through the line C, D, of Fig. 1. The Figs. 5, to 10, inclusive represent the general manner in which the wood material is first sawed up and the position and points of operation of the feeding rollers as they work on the molding strips as these are used to form various patterns of moldings.

The same letters and numbers as marks of reference apply to the like parts in all the several figures, wherein E is the frame of wood or metal fitted to support a bed of metal *a*, formed as a T the middle piece crosswise this is to be so shaped and fitted as to receive the working parts.

F, is a metal bed fitted to slide lengthwise on the bed *a*, and secured by clamp screws 1, 1, so as to adjust the feed roller close to the rotary cutters, which screws go through slots in the bed *a*. The bed F, has on one end a fixed fence *b*, which is to guide the stuff into the machine by an adjustable spring 2, pressing the strip of wood against the fence *b*. The outer end of the bed F is countersunk to receive a metal or wood plate b^1, let in so as to be flush with the surface and held in place by two small lugs on the inner end taking indentations in the bed F, and has at the outer end a set screw b^2, going through the bed F which raises the outer end to any required height while the inner end remains even with the face of the bed for a use to be shown hereafter.

3, 3, are two pair of metal standards carrying journal boxes 4, 4, taking the journals of a shaft 5, which is prolonged outside the machine to receive a drum *c*, with a belt going to the power through a pair of conical drums by means of which the speed is regulated and carries in the middle between the standards 3, 3, the feeding roller c^1, which is formed of one or more flat rings or disks with serrated edges of diameters varying with the depth at which each is to work, cut either beveling or straight and keyed on the journal box has two lugs taking set screws *x*, to regulate the point to which they shall descend and outside the boxes 4, 4, the shaft 5, receives two slings 6, 6, secured to the boxes 4, 4, and descending beneath the bed *a*, to receive an adjustable cross piece 7, taking a lever and weight c^2, on a fulcrum 9, on a standard on the bed *a*, the end of the lever receives a strap 8, which goes over a roller on the under side of the bed *a*, and serves to raise the lever and weight c^2, and feed roller and stop the feeding of the material into the machine and is held by a pin going through holes in the strap 8.

The shaft 5, receives a pulley 10 with a band going to the double grooved pulley c^3, which is sustained by the band on the pulley 10, and has a sling going to a lever and weight c^4, on a fulcrum 11, on the frame E, the sling has over the grooves in the pulley c^3, two screws 12, the points of which serve to remove the dust and chips that may fall into the pulley grooves the band passes up

over a pulley 13, on a shaft 14 in the bed F and down again to the pulley c^3, and is then joined on the pulley 10, to the other end of the band, the shaft 14 carries a roller d, let in flush with the bed F, under the feed roller c^1, and to allow a free motion to the roller d, the bed a, is hollowed down as shown in Fig. 2.

The middle part of the bed a, receives a sliding bed e, going across the machine which is held in place by a clamp screw 15, in slots in the bed a, and is adjusted by a set screw 18, going through a lug 16, on the bed a, and operating in a lug 17 on the bed e. The bed e, carries at each end a pair of metal standards e^1, formed as slides to receive sliding boxes 19, each with a lug on one side taking a set screw 20, going through a lug on the bed e, by this screw the sliding boxes 19, are adjusted vertically their tops being formed as a box e^2, to receive a journal box e^3, secured by screws going through slots formed lengthwise of the box. The box e^2, carries a set screw 21, operating against the end of the journal box e^3, which on the opposite side is bored out to receive a block or peg of hard wood a journal thus constructed in each pair of standards receives as a center in the block of wood in the box e^3, the ends of the shaft, f, which has a drum 22, to be connected to any competent power by means of which it is driven at the proper speed and carries near the end by the bed F, a cutter block g, with any convenient number of arms with their ends formed flat at nearly a right angle to the radial line and on each side edge of the bed thus made are beads 23, forming slides that receive the cutter tools 24, with the cutting edge so formed as to produce the required shape of the molding when operating on the wood, the middle of the cutter has a slot running to the back of the cutter which receives a screw 25 this passes through a steel cap 26, which is set on outside the cutter 24 to take the strain. This scerw 25 passes through the slot in the cutter 24, and into the block g, by this construction whenever any cutter has to be sharpened or replaced the screw 25, is to be slacked up sufficiently to withdraw the cutter 24, which can be replaced or changed without detaching the cap 26 or screw 25.

The bed a, carries beyond the cutter heads a second fixed fence g^1, by the side of which is a common molding plane h, of the pattern to correspond with that produced by the rotary cutters, fixed as close to the cutters 24, as convenient and has a hole bored through the sides near the center to receive a bar 27, which has a thread to carry a nut setting against one side of the plane h, one end of this bar is turned smaller with a shoulder on the outer end two sides of which are cut away which goes through a slot in a screw stud 28, so that on putting the shaft through the slot and giving it a quarter turn the remainder of the collar will hold it in place to be adjusted vertically by a screw 29, going through the upper part of the slot in the stud 28, or by turning the screw stud 28 when the bar is not in it, a slide 30 on the inner edge of the bed a, receive and hold the shaft 27, and allow of its vertical motion and pressure is given to the plane h, by a weight 31 on the outer end of the bar 27.

Beyond this the bed a, is hollowed down to receive on one side three fixed slides i, which are jointed near the outer edge of the bed a, to three similar slides i^1, by hinges 32 which are connected together and sustained and adjusted by a screw 33, on the part i^3, of the bed a, and the bed a, is removed near the middle to prevent any substance lodging to choke the working of the sliding beds k, k^1, k^2, *and* k^3, which set in the slides i, and i^1, the first two carry stocks 35, for plane irons 36, to form roughing tools and the second two beds k^2, k^3, receive similar stocks and cutters operating as smoothing tools and each plane is fitted with a lug 34, in front of the iron to form the face.

To the under side of each of the beds k, and k^2 is a strap or cord 40 attached which passes over a pulley 41, in the outer edge of the slide k^1 or k^2, and descending sustains a weight 42, each of which serves to draw both pair of beds k, and k^1, k^2, and k^3, toward each other, which is stopped at any required point by screw bars 37, with a nut on one part and a collar a short distance from the other end going through holes in lugs 38 on the plane stocks 35, so that the planes will separate by the bar sliding in the hole but will not approach each other within a certain adjustable point by the collar taking the lug 38. When thus constructed and adjusted for use, the material o, is to be laid on the plate b^1, which is to be raised to the proper height by the screws b^2, and the stuff shoved under the feed roller c^1, which operating on the wood presses it on to the bed which is not a straight line thus making the spring of the wood hold the end down against the operation of the rotary cutter 24, at the same time forcing it forward by its rotary motion the edges of the feed rollers taking into the strip to form the moldings in the parts to be removed by the cutters as shown by the blue lines in Figs. 5, 6, 7, 8, 9, and 10, forces it on against the operation of the rotary cutter which forms the wood into the required shape thence the molding passes under the fixed molding plane h, which is kept in its place and pressed down by the bar 27, and weight 31, and is smoothed a complete shaving being taken off as it passes beneath, thence the strip passes be-

tween the planes 36, the first two taking a rough shaving off each edge, the second two smoothing and the complete molding passes out by the guide fence 39, and is thus ready for use. The screw 33, operating under the slide frame i^1, adjusts that by turning it vertically on the hinges 32, so that if the thickest edge of the molding is to be beveled at more or less than a right angle with its bed it can be done so without disturbing any of the apparatus.

The Figs. 5 to 10, show by red lines the general manner in which I saw out my strips for forming moldings as by this means considerable wood is saved in the conversion into moldings the sawing being effected by one or more diagonal cuts by a circular saw.

It will be further seen that by the formation and changeable adjustment of the feeding rollers they operate so as to stick into those parts only that are to be removed by the rotary cutters, by this means the new and useful effect is produced of saving material first by cutting out two moldings from one strip but this alone would not be effective without feed rollers that act as shown by not bruising the part that is to remain and thus saving the amount that would otherwise be wasted by any feed roller operating equally all over the surface or partially on the highest part of the molding instead of the parts that is to be taken out.

I do not claim to have invented grooved feed rollers to force in the material to be molded. But I do not know of any previous machine, in which such a roller has been applied, of either of one or more rings or disks, that operate to feed the material into the machine, by contact with the part, that has to be removed by the cutters; neither do I claim the rotary cutter for forming moldings, nor a common molding plane, but I do not know of any machine, in which these have been combined together, with a means of maintaining an equal pressure of the plane, on the molding beneath. Therefore,

What I claim as new, and of my own invention, and desire to secure by Letters Patent of the United States, is—

The application of the changeable feeding rollers c^1, made as disks, or flat rings, with serrated edges of varying angles, and changeable or unequal diameters, to feed in material, cut in varying or irregular sections, in combination with changeable rotary cutters, and changeable standing planes, to produce wood moldings, of different sizes, with smooth surfaces, from material cut or prepared in varying or unequal sections, for such purposes; the whole applied, constructed, and operating, substantially in the manner, and with the effects described and shown.

In witness whereof, I have hereunto set my hand, this eleventh day of December, one thousand eight hundred and forty six.

ALFRED T. SERRELL.

Witnesses:
HORACE P. RUSS,
GEO. W. REID.

Disclaimer.

To the Commissioner of Patents:

The petition of JOHN LAWRENCE, of the city, county, and State of New York, respectfully represents that he has, by assignment duly recorded in the Patent Office of the United States, become the owner for the term of six years commencing on the first day of September, 1849, of the right for that part of the city of New York lying east of a line commencing at the south end of Whitehall street, thence proceeding northwardly up the middle of said street to its intersection into Broadway, up the middle of Broadway to the intersection with Chatham street, up the middle of Chatham street to the intersection with the Bowery, up the middle of the Bowery and by the railroad and Union Square to the middle of the Fourth avenue, and up the middle of the Fourth avenue to the northerly termination thereof, to certain new and useful improvements in machinery for making moldings, for which Letters Patent of the United States were granted to ALFRED T. SERRELL, of the said city of New York, dated on the sixteenth day of May, one thousand eight hundred and forty-eight. That said Letters Patent were afterward with the assent and at the request of your petitioner surrendered on account of a defective specification and thereupon a new patent for the same invention with a corrected specification was granted to the said ALFRED T. SERRELL dated the seventh day of January, one thousand eight hundred and fifty-one; that your petitioner has reason to believe that through inadvertence and mistake the claim made in the specification of said last mentioned Letters Patent is too broad including that to which the said patentee was not the first inventor.

Your petitioner therefore wishes to disclaim such parts of the said specification as indicate an intention to claim as new the combination of pressure or feed rollers with rotating or other planes or cutters, either for planing cutting moldings or any other purpose whether used for operating upon regular flat surfaces or upon regular plane surfaces more or less inclined.

Your petitioner therefore hereby enters his disclaimer to all that part of the claim in the aforenamed specification excepting to the combination of the rollers or rings

so constructed as to be adjustable and adapted to varying irregular forms of material to be operated upon after the same has been sawed or cut as nearly as practicable to the general form of the molding to be made so as to act only or most strongly upon those parts of the material from which most is to be taken off substantially as in the specification is described with one or more cutters or planes whether rotating or stationary for giving the proper form or dressing to the molding as described for the purpose of economizing the material and facilitating the operation, which disclaimer is to operate to the extent of the interest in the said Letters Patent vested in your petitioner who has paid ten dollars into the Treasury of the U. S. agreeably to the requirements of the act of Congress in that case made and provided.

JOHN LAWRENCE.

Witnesses:
A. T. BROWN,
M. G. HARRINGTON.

[FIRST PRINTED 1913.]