

2 Sheets-Sheet 1.

J. B. Winslow,
Wood Molding Machine.

N^o 28,527.

Patented May 29, 1860.

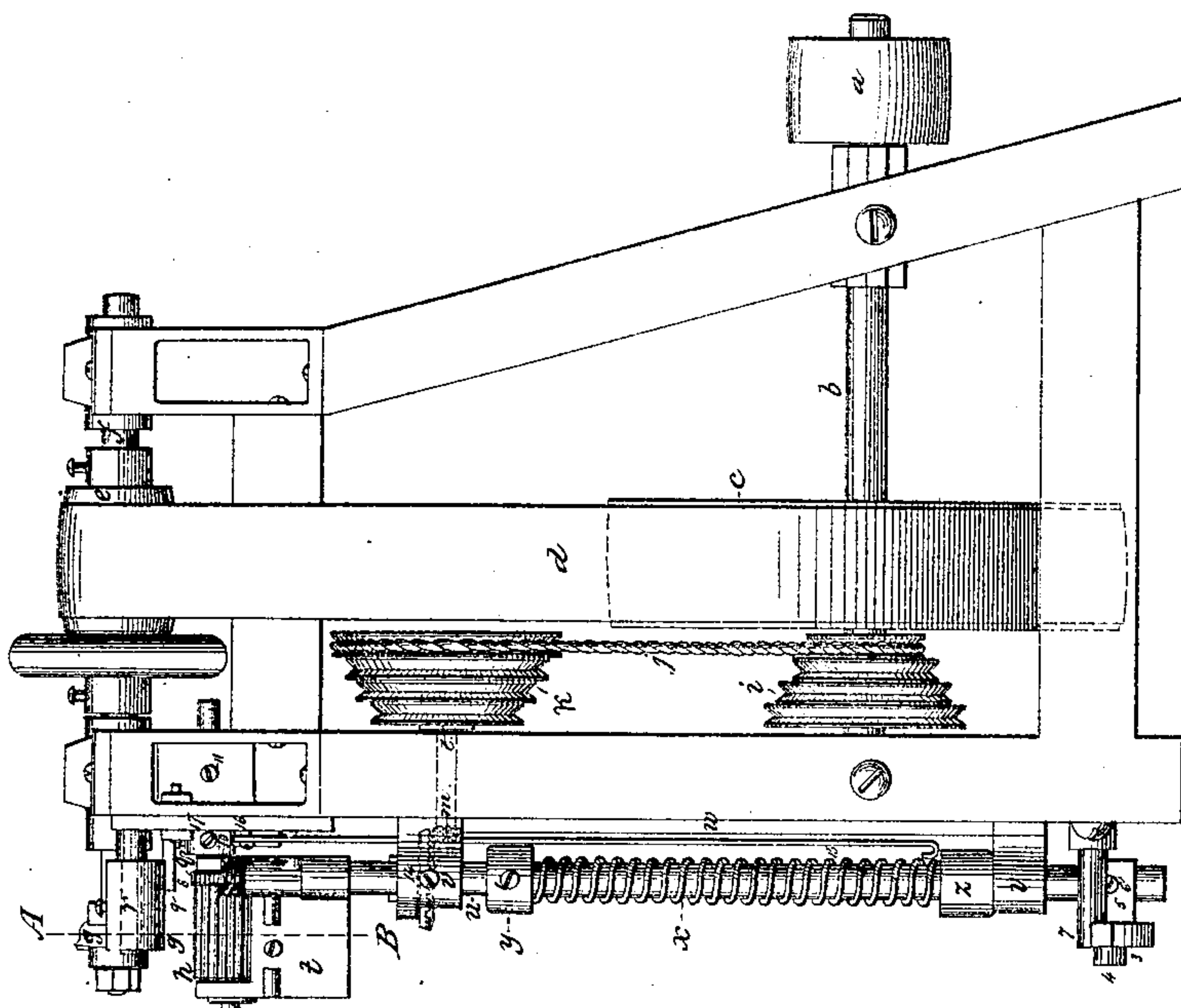


Fig. 2.

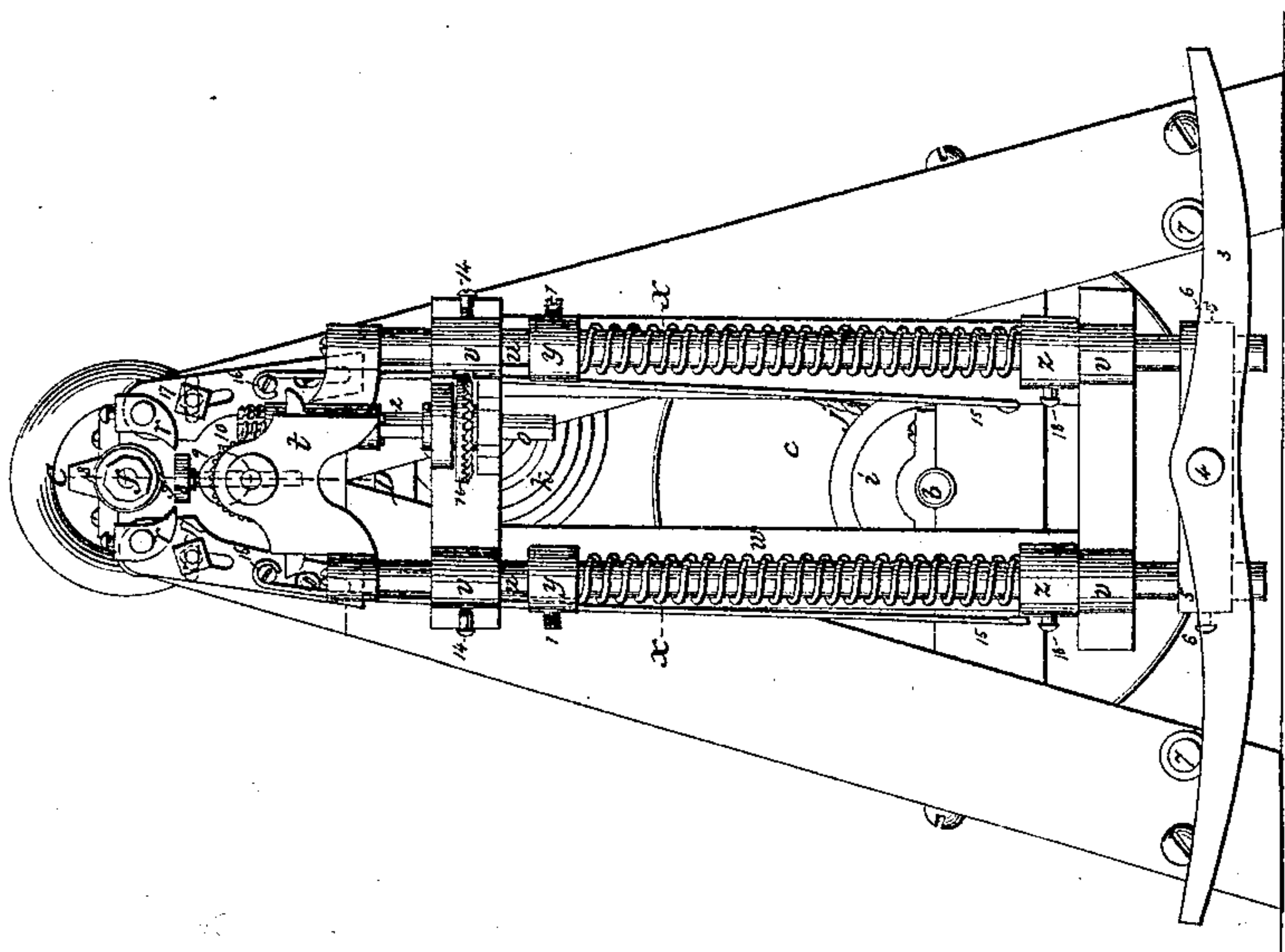


Fig. 1.

Witnesses:

Arthur Briggs for
Atty C. Laro

Inventor.

John B. Winslow

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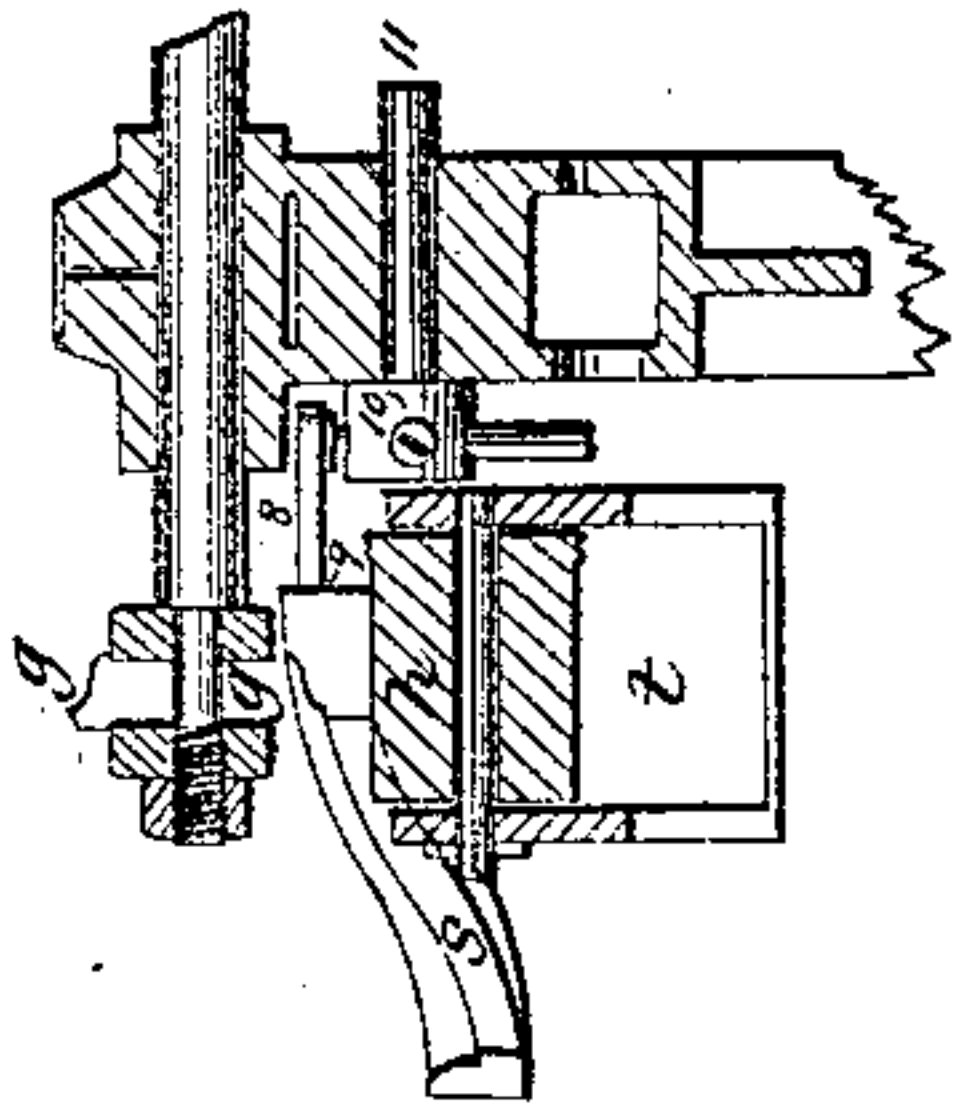


Fig. 4.

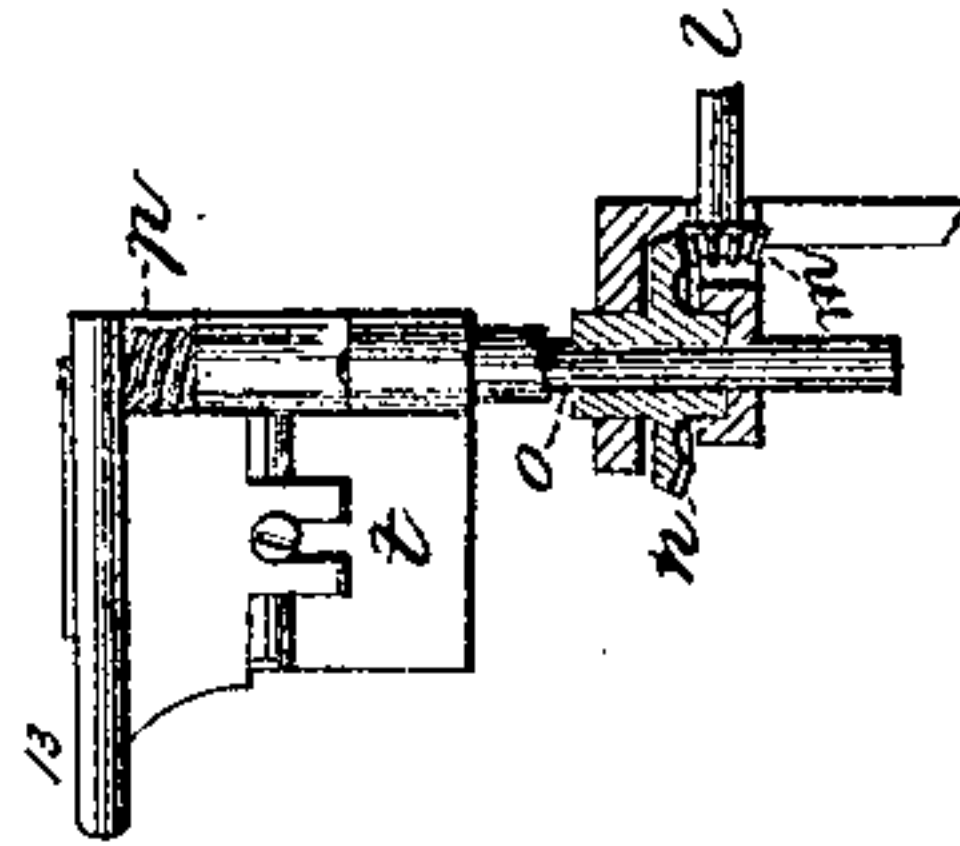


Fig. 6.

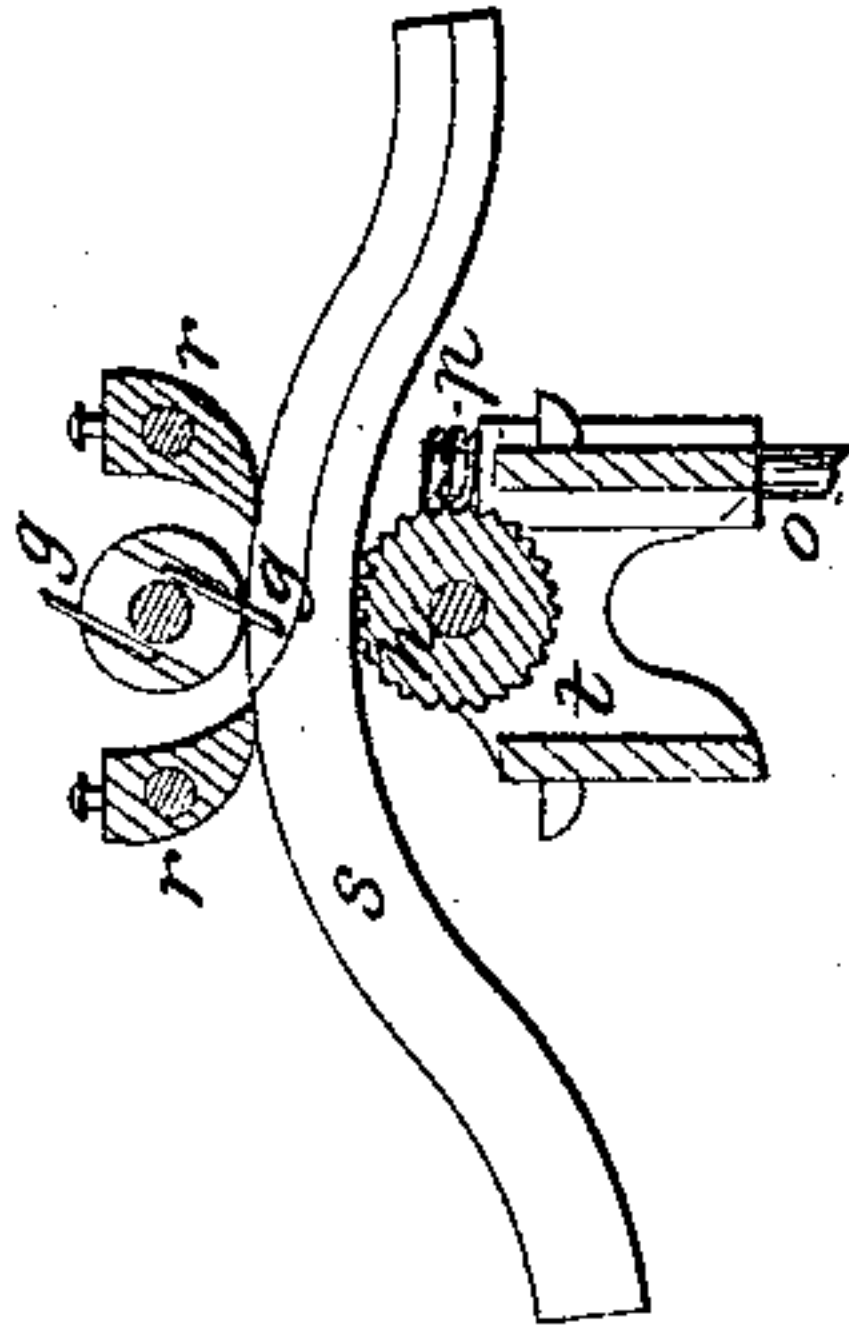
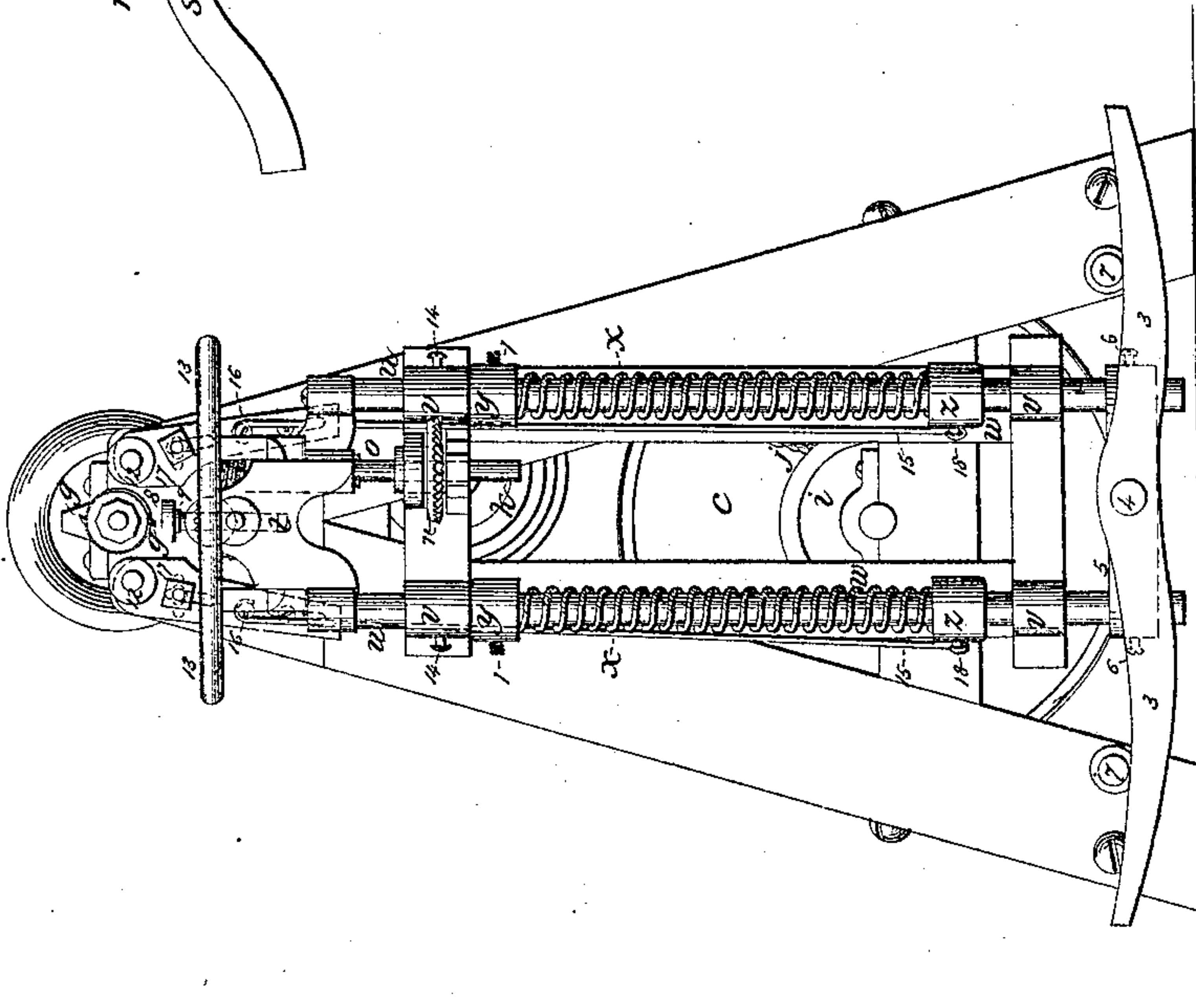


Fig. 3.



Fig. 7.

Fig. 5.



Witnesses:
Ernest Briggs Jr.
Ally B. Lewis.

Inventor.
John B. Winslow

UNITED STATES PATENT OFFICE.

JOHN B. WINSLOW, OF CHARLESTOWN, MASSACHUSETTS.

MACHINE FOR CUTTING MOLDINGS.

Specification of Letters Patent No. 28,527, dated May 29, 1860.

To all whom it may concern:

Be it known that I, JOHN B. WINSLOW, of Charlestown, county of Middlesex, and State of Massachusetts, machinist, have invented a new and useful Machine for Cutting Double Serpentine Moldings and Moldings of Any Required Curve, and that the following description, with the accompanying drawings, forms a full, clear, and exact specification thereof.

Machines are already in use which cuts a molding upon a sweep or curve in one direction alone. The lines of contour of such moldings when taken, or viewed in a transverse direction being in one plane only; but I believe there has been no machine prior to this invention of mine adapted for cutting double serpentine moldings or moldings having various and simultaneous curves without the lines of contour when taken, or viewed in any direction being necessarily in a geometrical plane. And it was the mechanical want, or rather necessity for such a machine to supply the great and increasing demand for such moldings, which have been hitherto worked or cut out wholly by hand, that has been the mother of this invention, and has led me on, to produce and perfect my machine to its present practical utility and operation. I have one machine now in operation practically saving the hand labor of more than twenty men.

The accompanying drawings represents my machine.

Similar characters represent similar parts in all the views.

Figure 1 is a front view of the machine. Fig. 2 is a side view of the same. Fig. 3 is a detail sectional view, on line A, B, of Fig. 2, showing the principal parts immediately connected with the cutting and feed motions, and also exhibiting a portion of the molding in the act of being run through the machine. Fig. 4 is a detail sectional view on line C, D, of Fig. 1, showing the principal parts about the cutters together with a detailed view of the back guide, and also exhibiting a piece of the molding in the act of being worked.

And these four views exhibit the material features of my machine as adapted for cutting double serpentine moldings, or moldings of any required curve, and I proceed to describe its construction and operation as follows:

(a,) is the main pulley to which the power

is applied; (b,) the main shaft or arbor, upon which is fixed the pulley (c,) upon which runs the belt (d,) which through the pulley (e,) turns the shaft (f,) upon which, are fixed the rotary cutters, (g,) the cutting edges of which, are of the contour of the molding desired.

(h,) represents the corrugated feed roll, which is driven from the main shaft, as appears by the drawing, through the pulley (i,) the belt (j,) the pulley (k,) the arbor (l,) the two beveled gear wheels (m,) and (n,) the upright shaft (o,) and the spiral gear (p,) working in to the worm gear (q,) which is attached to the inside of the feed roll (h,).

(r,) are a couple of stationary cams, or guides against the lower pointed extremities of which, the upper edge of the molding (s,) is pressed, while passing through the machine by the action of the feed-roll (h,).

It will be observed by inspection of the drawings, and particularly of the detail view, Fig. 3, that the form or blank on which the molding is to be cut, being originally sawed in to the required sweep (be it either circular, elliptical, serpentine or even straight) in being run through the machine, is pressed by the upward action of the feed roll, to its contacts with the lower pointed extremities of the cams or guides (r,), and thus having its bearings and being guided by three points only, to wit: the lower extremities of the cams and the apex of the feed roll.

The form once entered, passes through the machine, and constantly presenting its upper surface in the same relative position to the rotary cutters (g,) has a molding cut upon it, coinciding with the form of the cutting edge of the cutters—and thus the machine is adapted to the curved or serpentine nature of the forms as far as vertical motion is concerned.

For working very thin stuff, I sometimes shape the guides or cams (r,) as shown in the sectional detail Fig. 7, which enables me to bring the points of contact nearer under the rotary knives and holds the form somewhat better while passing through the machine, as a serpentine or curved form or blank in passing through this machine will, from the nature of its shape require a slight but almost constantly varying relative position of the three points of contact just considered, the position of the two cams or

guides (*r*,) being once fixed and stationary. I make the feed roll (*h*,) with a constant automatic vertical adjustment, adapting itself to the size of the form or blank, and with a constant upward tendency or pressure while the machine remains in this modification, and I do this as follows, viz: The feed roll (*h*,) is set in a head or box (*t*) which is fixed to the top of the two vertical sliding columns, (*u*) which move in four projections on bosses (*v*,) fixed upon the frame (*w*) which is secured to the front frame work of the machine. Upon the two sliding columns (*u*,) are loosely circumscribed the spiral springs (*x*,) and the four loose, short concentric sliding cylinders (*y* and *z*). Thus the upper cylinders (*y*,) being depressed so as to bring an adequate amount of strain upon the springs (*x*,) and fixed in that position by the set screws (1,) the lower end of the springs resting (ultimately) upon the lower set of the bosses (*v*,) the evident action of the springs is to give a constant upward tendency and pressure to the sliding columns (*u*,) and the head or box (*t*,) in which the feed roll is set and revolved. To enable the upright shaft (*o*,) to rise and fall with the head of the feed-roll and independently of the beveled gear wheel (*n*,) which is necessarily in a constant fixed position with reference to the gear wheel (*m*,) and the arbor (*l*,) I construct said upright shaft, with a small vertical slot (2,) in one side of it, into which projects a pin or stud from the inner surface of the hub of the gear wheel (*n*,) which is otherwise loose on said shaft, and by which means the shaft (*o*,) although impelled to its revolutions by the action of the wheel (*n*) is allowed to rise and fall, entirely independent of it.

(3,) is a foot treadle which is affixed by a pin at (4) to a cross head (5) which is affixed to the sliding columns (*u*,) and retained in any desired position by the set screws (6) whereby the sliding columns (*u*,) and the parts attached thereto are prevented from rising or being carried by the springs any higher than is permitted by the two studs (7) which project from the stationary framework of the machine.

When it is desired to let down the feed roll to put in a new form, or to stop the action of the machine for any other purpose—the foot of the operator is placed upon either extremity of the treadle, and the weight of his body immediately effects the object desired.

To enable the machine to accommodate itself to a form curved also in a direction transversely opposite to its vertical curvature before considered, I fit in the machine the back guide (8) formed as exhibited by the drawings, with the convex face (9) against which the back of the form is naturally pressed in its passage through the

machine, by action of the cutters, and it passes through in correct position, either automatically or with a very slight directing movement by hand of the operator in passing some of the sharpest portions of the convex curves, and thus by the combined points of contact viz: the feed-roll and the lower extremities of the stationary cams (*r*,) and the convex face of the back guide (8) serpentine forms of almost any intricacy when once entered, are guided through the machine. Either automatically; or with a very slight directing motion by hand of the operator, and a molding of any desired form is cut upon their upper exterior edge by the rotary cutters, which was the practical end aimed at, and accomplished in this invention.

The back guide (8), to render the machine more perfectly adapted to forms of various widths and thicknesses, is made adjustable vertically and retained in any required position by the set screw (10,) and it is also made adjustable horizontally, and retained in any required position by the set screw (11,) all of which appears by the drawings.

It must here be observed that the machine as already explained and exhibited, is both theoretically and practically adapted to cut a perfectly straight molding as one of its varieties; but inasmuch as the running of serpentine molding through this machine requires a little more care on the parts of the workman, than the running of straight moldings through an ordinary planing machine, I arrange my machine, so that when a large quantity of straight moldings is to be cut, the same machine, by a change of some of its parts, can be made, as far as its operation is concerned like an ordinary planing or molding machine, and Figs. 5 and 6 represent my machine thus modified.

Fig. 5 is a front view of the entire machine and Fig. 6 a side view of the parts immediately about the head or operating parts of the machine.

To effect this modification from the machine, as more especially adapted for curved or serpentine work, I take off the stationary cams or guides (*r*,) and apply in their place, the two compressure rolls, (12) I also affix as shown the stationary table board (13,) the upper surface of which is set slightly below the apex of the feed roll and answers the same purpose as in ordinary molding and planing machines. It will be observed that the table board is fixed to the same sliding or moving head as the feed roll and when using the machine as modified for straight work. I set this movable head in any desired position, according to the size of the work, and hold it firmly in position by the set screws (14). I then put on the connecting rods or wire (15) the upper ends of which are secured at the pins (16) to

the slotted palms (17) which hold the compressure rolls, and the lower ends of which are secured to the cylindrical slides (*z*) at the pins (18). Thus it will be observed
5 that the action of the springs is exactly reversed from what it is when the machine was in its curved or serpentine adaptation. The feed roll and table board, now being stationary and the action of the springs
10 through the connecting rods (14) being to draw down the slotted palms (16) and the compressure rolls (11,) and thus retain the form closely and firmly upon the feed roll and table board in its passage through the
15 machine, and thus the same machine which in its first described modification is adapted to all the peculiarities and advantages of my invention, is, in this second modification also adapted to straight work with no
20 more requisite care in its operation than the ordinary molding and planing machines.

Having thus described the construction

and operation of my machine, what I claim therein, and desire to secure by Letters Patent, is—

25

1. The combined action of the cams or guides (*r*,) and the self adjusting feed roll (*h*,) of their equivalents, substantially as described.

2. The adjustable back guide (8) acting 30 with the cams or guides (*r*,) and the feed roll (*h*,) or their equivalents, substantially as described.

3. The connecting rods or wires (15) or their equivalents arranged in the machine, 35 substantially as described, whereby the action of the springs (*x*) is changed from the feed roll (*h*) to the compression rolls (12) for the purposes set forth.

JOHN B. WINSLOW.

Witnesses:

LUTHER BRIGGS, Jr.,
ABBY B. LAWS.