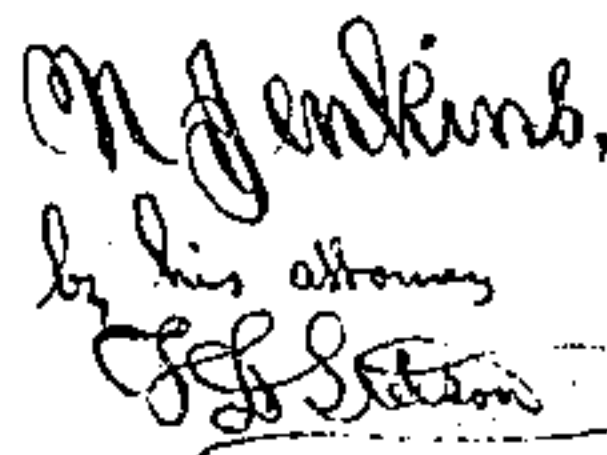


*Patented Nov. 23. 1869.*

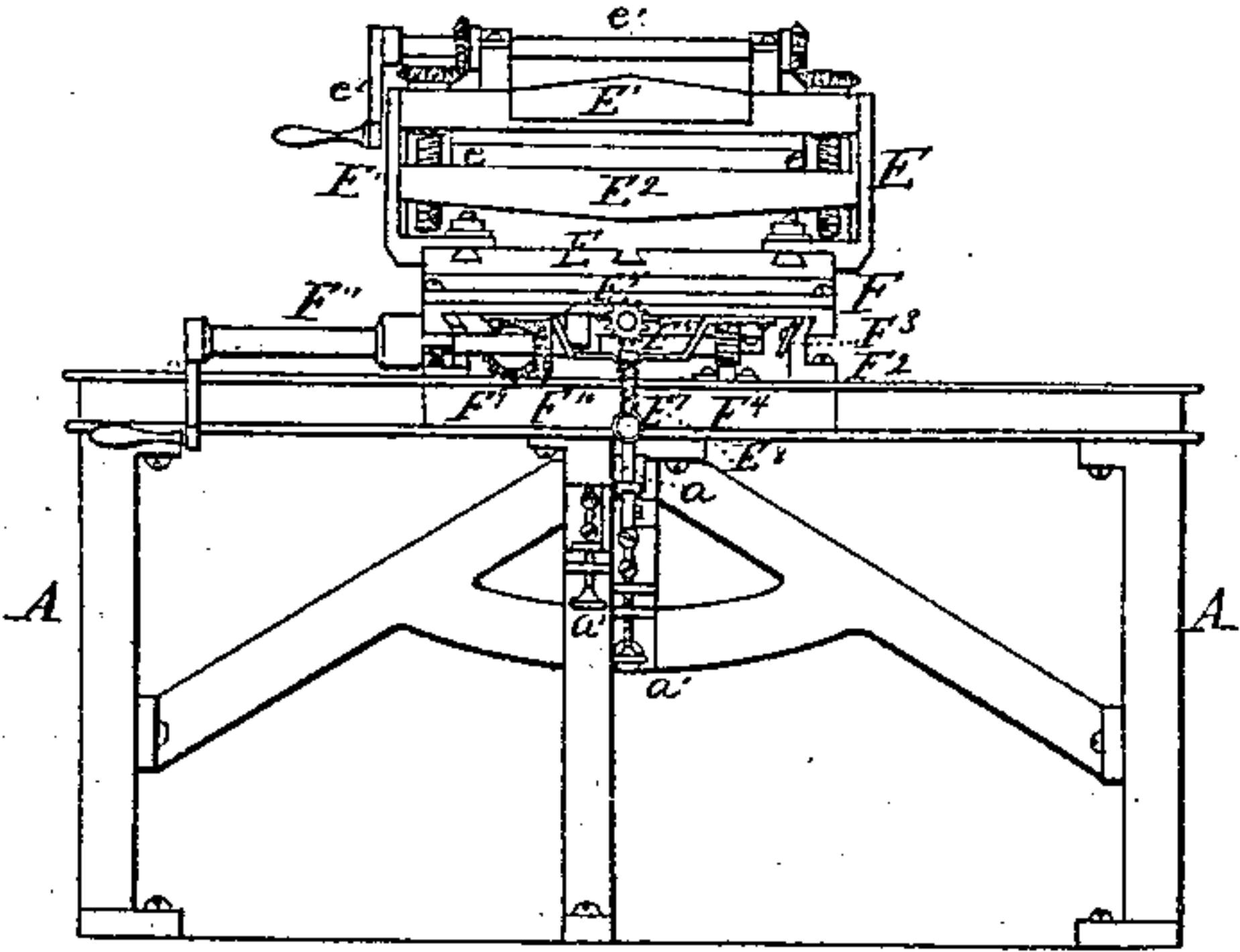


*N. Jenkins. Sheet 2. 2 Sheets.*  
*Paneling Mach.*

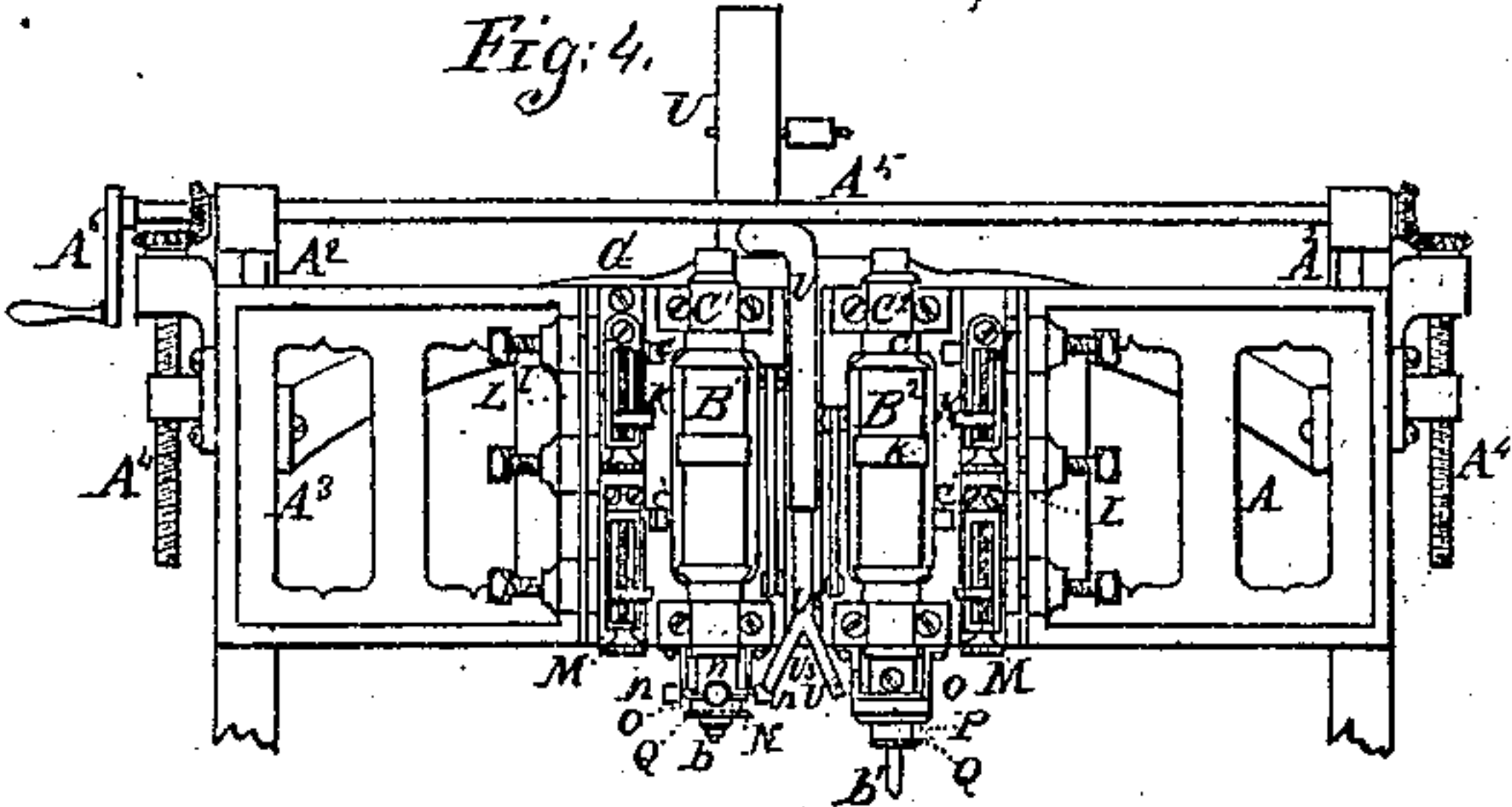
*N<sup>o</sup> 97092.*

*Patented Nov 23. 1869.*

*Fig. 2.*



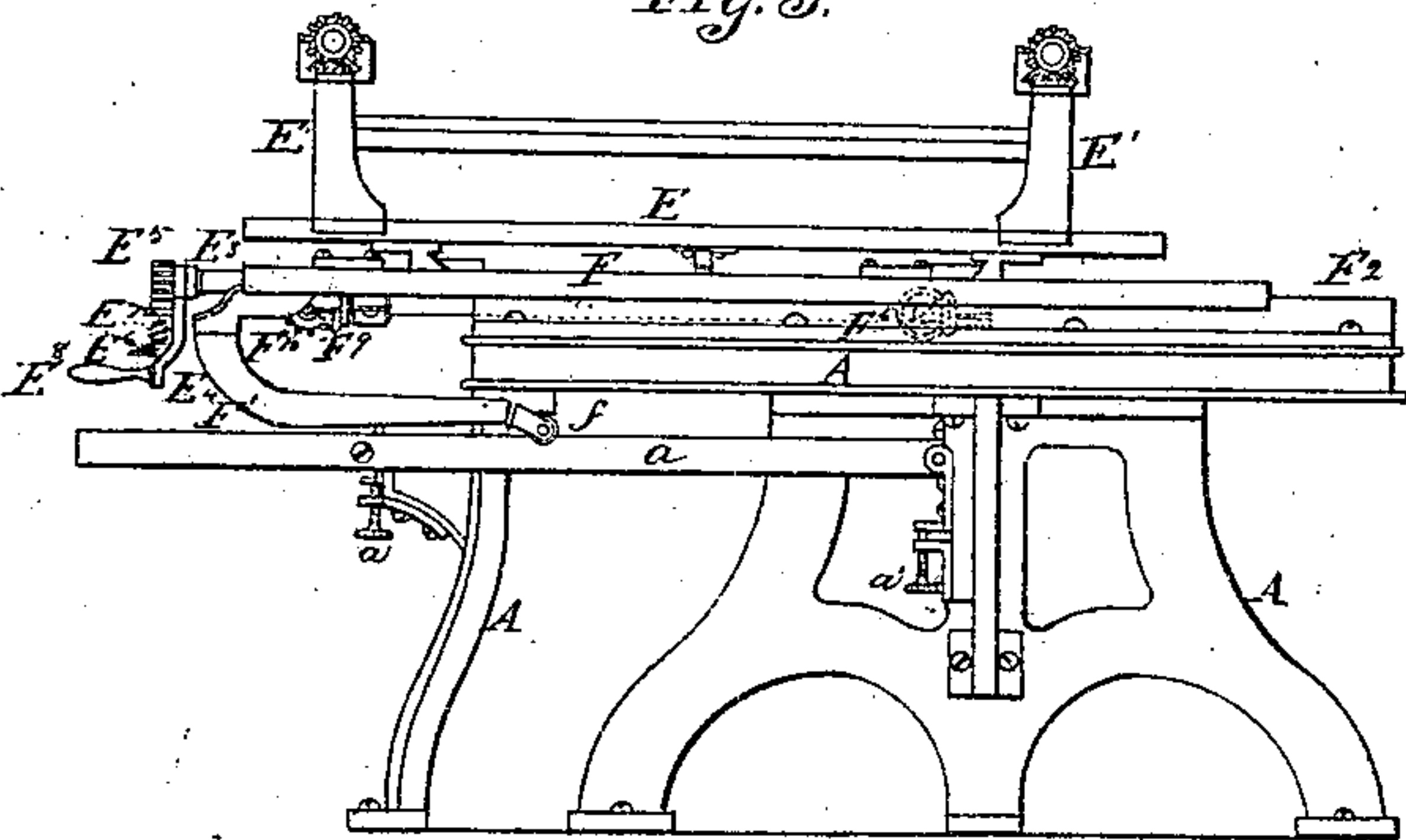
*Fig. 4.*



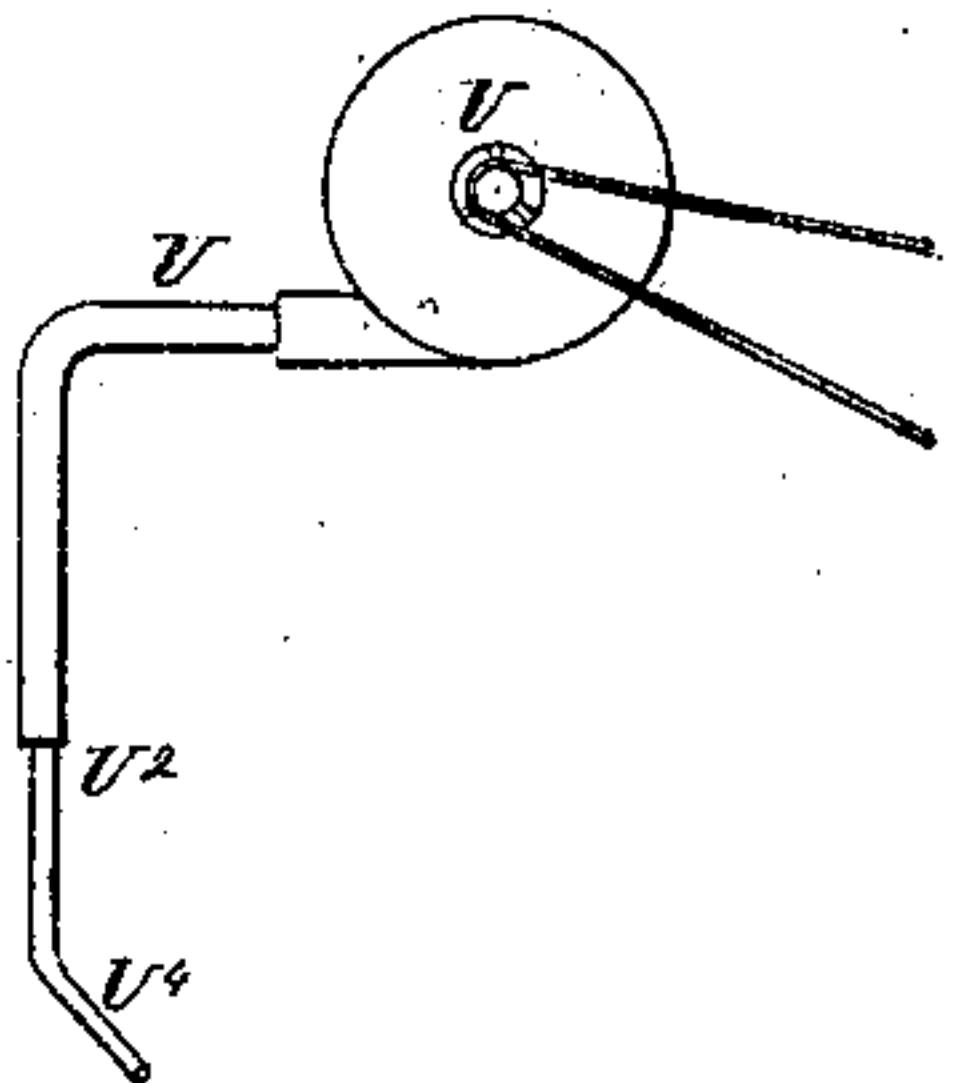
*Fig. 5.*



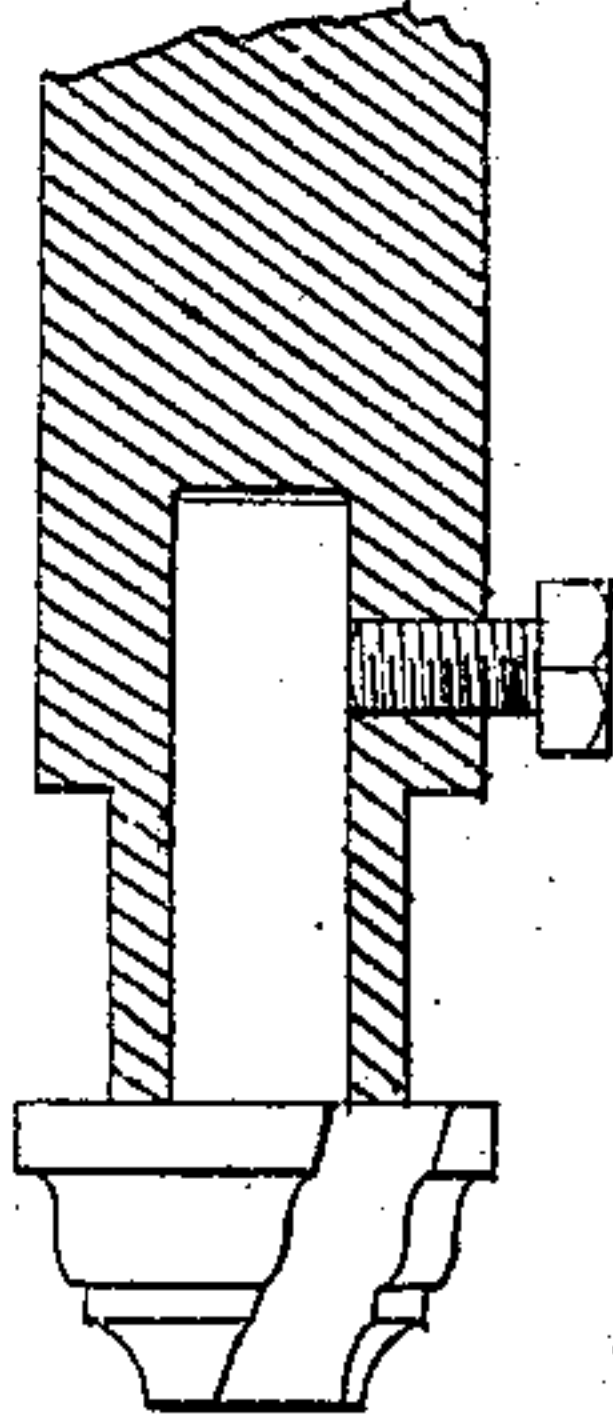
*Fig. 3.*



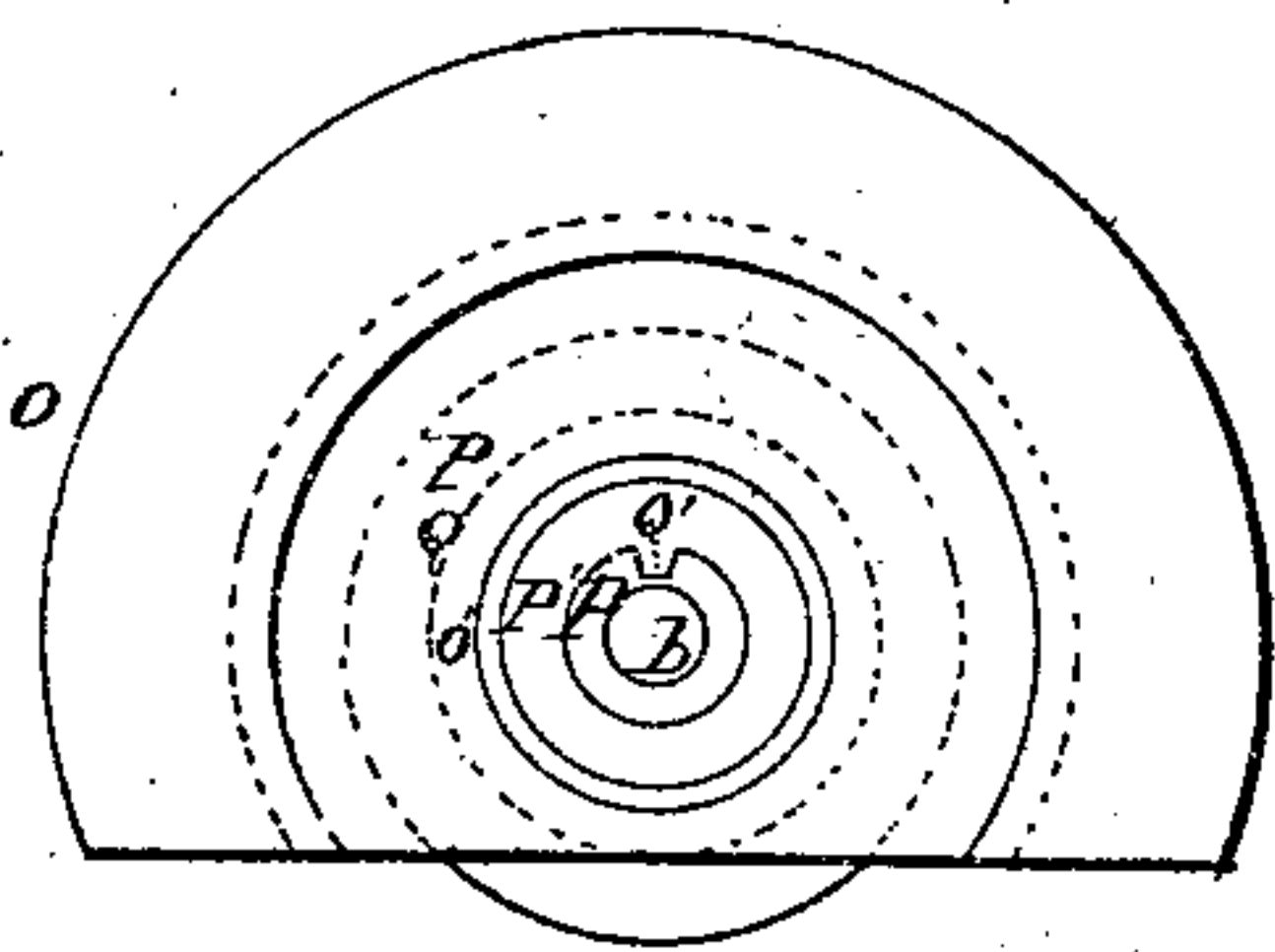
*Fig. 8.*



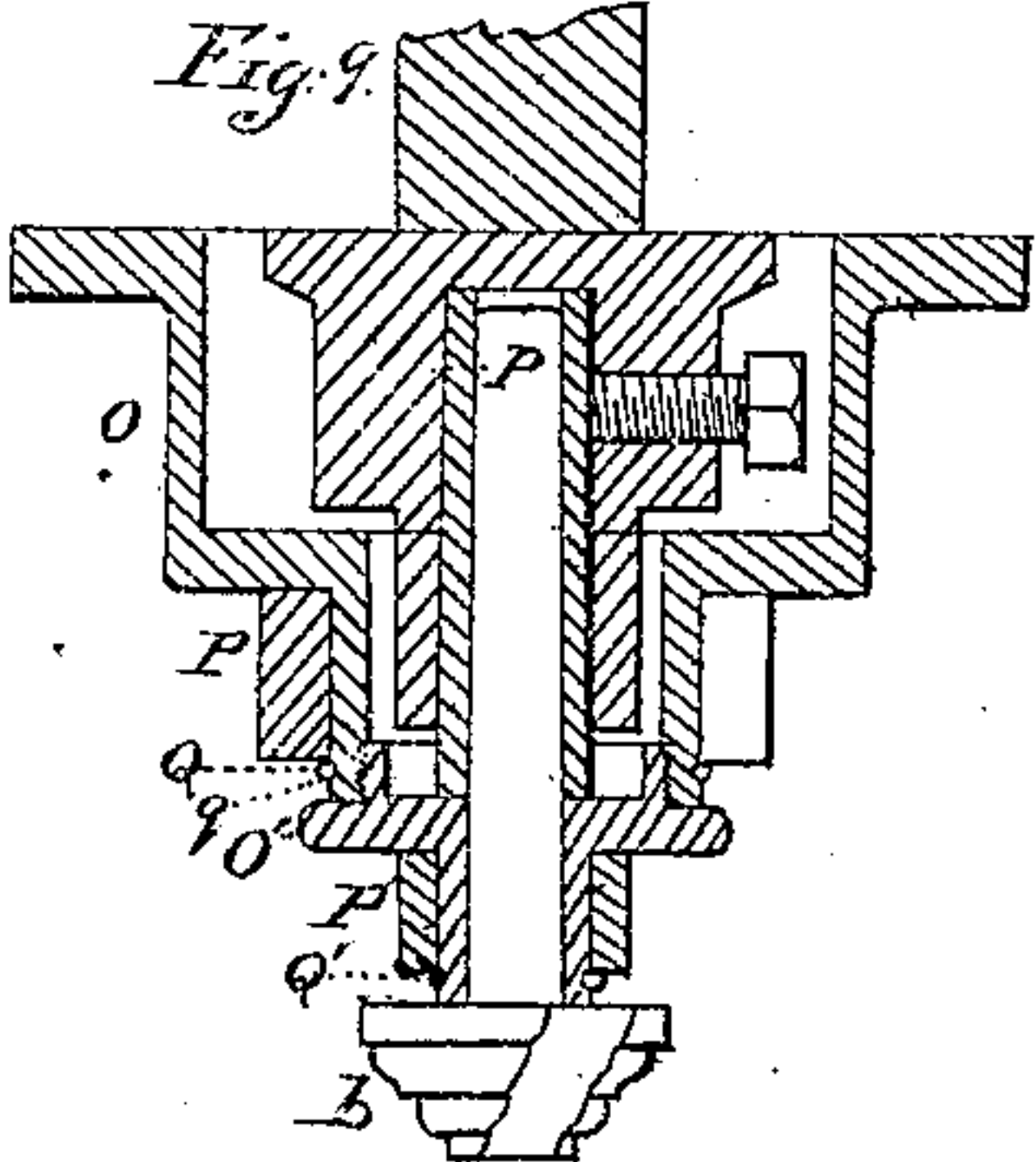
*Fig. 11.*



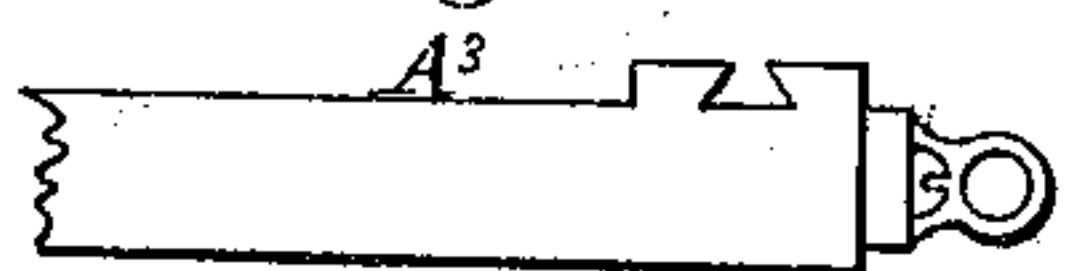
*Fig. 10.*



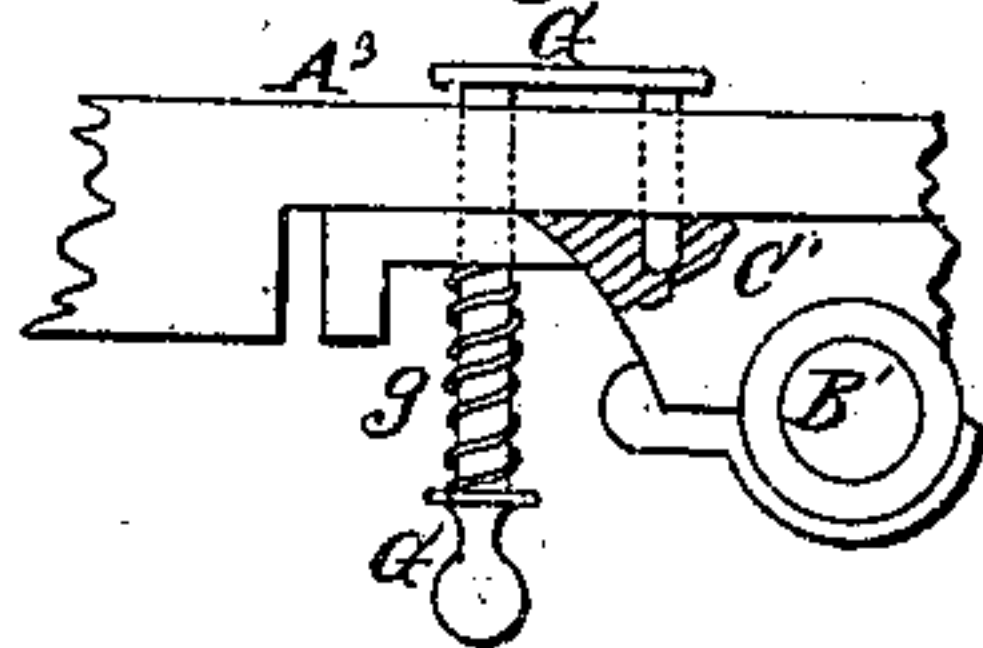
*Fig. 9.*



*Fig. 6.*



*Fig. 7.*



WITNESSES:

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INVENTOR:

*N. Jenkins*  
*by his attorney J. B. Johnson*



# United States Patent Office.

NICHOLAS JENKINS, OF NEW YORK, N. Y.

Letters Patent No. 97,092, dated November 23, 1869.

## IMPROVEMENT IN PANELLING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, NICHOLAS JENKINS, of the city and county of New York, and State of New York, have invented certain new and useful improvements in machines for working wood, denominated Panelling and Variety Moulding-Machines; and I do hereby declare that the following is a full and exact description thereof.

My invention is based on that form of the machine for which Letters Patent were granted to me, dated August 6, 1867.

I can employ one or more cutters. I usually employ two cutting-arbors, having the same form of cutter in each, but this is not essential to the success of my invention. One arbor alone may be used, or three or more, and all may have different cutters for use on different jobs, or on different portions of the same job.

I will describe the machine as constructed in the preferable form, with two cutters of a desirable plain or fancy shape, mounted in two vertical arbors, capable of being raised or lowered in the machine while rotated rapidly, and the wood to be panelled or moulded, as the case may be, is presented in a horizontal position below, having a pattern or templet attached, to guide it in being presented to the cutters.

My present improvements relate to means of holding the wood, means for moving the wood, means for supporting the carriage on which the wood is held; means for duplicating the gauging, of the depth to which the cutters enter the wood; the construction and arrangement of the guiding-part which encircles each cutting-arbor; the construction of the pipe or passage through which a current of air is conveyed, to blow away the chips or cuttings; means for jumping or elevating and depressing the cutters, so as to produce "carved" panels and carved mouldings; means for locking or firmly confining the cutting-arbors at a certain elevation; and certain combinations of some of the above.

I will first describe what I consider the best means of carrying out my invention, and will afterward designate the points I believe to be new.

The accompanying drawings form a part of this specification.

Figure 1 is a perspective view of the entire machine.

Figure 2 is a front view thereof.

Figure 3 is a side elevation of certain parts, the base of the frame, the carriage and its appurtenances.

Figure 4 is a front elevation of the upper part of the frame, with the cutting-arbors and their appurtenances.

Figure 5 is a plan view of the vertically-sliding carriage, which supports the cutting-arbors.

Figure 6 is a part of the same, on a larger scale.

Figure 7 is another part, on a still larger scale.

Figure 8 is the blower and its connections, detached.

Figure 9 is an enlarged vertical central section, through the extension of the carriage which extends down around the cutter. This is about the full size, and shows the bushing sometimes employed to aid in holding a cutter having a very small shank.

Figure 10 is a top view of the same.

Figure 11 is an enlarged vertical section, through the lower part of the cutter-arbor, showing the fastening of the cutter when no bushing is employed.

Similar letters of reference indicate like parts in all the figures.

Tints are employed merely to aid in distinguishing parts, and do not imply differences of material. The material of the entire machine may be iron and steel.

A is a fixed frame;

A<sup>1</sup> A<sup>1</sup>, heads or upright portions thereon, to support the working-parts; and

A<sup>2</sup>, vertical slides thereon.

A<sup>3</sup> is a broad carriage, sliding vertically on the front of the frame-work, guided by the slides A<sup>2</sup>, and operated by the screws A<sup>4</sup>, which are adjustable by the aid of the transverse shaft A<sup>5</sup>, and the gear-wheels connecting the parts, as represented.

As the crank A<sup>6</sup> is turned, the carriage A<sup>3</sup> is caused to rise or sink within wide limits.

B<sup>1</sup> and B<sup>2</sup> are cutting-arbors, mounted vertically in bearings in the carriages C<sup>1</sup> and C<sup>2</sup>, guided in the broad carriage A<sup>3</sup>, before described.

They are rotated by belts from corresponding pulleys on a back shaft, D, as represented, and the bearings for the belt on the arbors B<sup>1</sup> B<sup>2</sup>, or rather on the long drums or pulleys which are fitted thereon, are sufficiently long to allow the motion to be properly communicated in all positions of the carriages C<sup>1</sup> C<sup>2</sup>; that is to say, the carriages C<sup>1</sup> C<sup>2</sup> may be moved up and down, either separately or together, within wide limits, while the rapid rotatory motion, for operating the cutters, is communicated properly in any position.

The cutters *b*, which produce the mouldings or the panel-work, may be either plain or variously ornamental, and the panelling or moulding produced thereby will be correspondingly moulded.

I propose to employ any form of construction of cutter which may be approved. I will describe my peculiar provision for changing from large to very small cutters further on.

It will be understood that the operation of moulding or panelling is effected in my machine, as in my former one, by lowering either cutter so as to enter the wood to a proper extent, and then moving the wood horizontally in various directions, so that the cutters shall excavate grooves, either straight or variously curved.

Ordinary sawed stuff is liable, from various causes, to vary in thickness in different parts of the same



piece; that is, a board or plank is liable to taper slightly from one end to the other, or from one side to the other. My former machine clamped the wood down upon a flat table. Its back was sure to be in the proper position, but the face would sometimes be oblique, so that the groove produced by the cutter would vary in depth, and correspondingly in its form at some points. I provide, in this improved machine, for gauging the work by the face.

E is the movable carriage.

E<sup>1</sup> E<sup>2</sup> are frames bolted thereon, adapted to receive the boards or planks to be panelled or moulded between the frames E<sup>1</sup> and movable clamping-pieces E<sup>2</sup>.

These latter are lowered to allow the introduction of the plank, and are raised to press the plank firmly against the under surface of the frames E<sup>1</sup>, by means of the screws *c* and the cross-shafts *c*<sup>1</sup>, with the connecting gear, and the cranks *c*<sup>2</sup>, as represented.

The clamping-pieces E<sup>2</sup> are sufficiently elastic to adapt themselves to any inequalities in the thickness, while the frames E<sup>1</sup> being rigid, hold the upper surface exactly true.

I can, if preferred, for any very irregularly-sawed stuff, disconnect the cross-shafts *c*<sup>1</sup> and turn each screw *c* separately.

The movable table or carriage E is moved transversely from right to left, and from left to right, on the under movable table or carriage F.

This is effected by the ordinary device of a crank-shaft and spur-wheel, working in a ratchet under the table E, the only novelty lying in the crank, which will be described further on.

The under table F, which is traversed backward and forward longitudinally, carrying the other with it, is supported and operated by means somewhat peculiar.

It is supported properly, and without much friction, when in a position much further forward than is allowable in my former machine, this being due to the curved supporting-arm F<sup>1</sup> and wheel *f*, formed and arranged as represented, the arm F<sup>1</sup> being bolted firmly on the under side of the front of the table F and wheel *f*, traversing on a rail, *a*, which is adjusted nicely, to correspond with the wheels F<sup>3</sup>, on which the table F is also supported.

When the table F is run back, and is operated near its back position, the arm F<sup>1</sup> and wheel *f* are of little or no effect, and the guiding and supporting of the table F are due to the ordinary slides F<sup>2</sup>, on the framing A, and to the anti-friction rollers F<sup>3</sup>, mounted thereon, but when the table F is moved forward, to near its extreme front position, and is moved backward and forward there, its rear is supported, as before, on the slides F<sup>2</sup> and wheels F<sup>3</sup>, while the front is supported very effectually by the arm F<sup>1</sup> and wheel *f*, resting on the rail *a*, below.

The peculiar form of the arm F<sup>1</sup> allows it to adapt itself to the frame-work A, when the table F is moved back, and allows it to be supported properly on a shorter rail, *a*, extending out to a less extent in front than would be practicable without this bend in the arm.

The arm F<sup>1</sup> need not extend as far back as is here represented, but in such case the rail *a* must be proportionally lengthened forward, and will be more in the way of the operator in walking across in front of the machine.

The arm F<sup>1</sup> should be attached with absolute firmness to the table F, and be made sufficiently heavy to avoid springing to any great extent; but any spring or bend which shall, by any chance, be found in this arm, may be compensated for, at least in part, by adjusting the rail *a* up and down at either end, by means of the screws *a*<sup>1</sup> and their adjuncts, as represented.

The means of operating are no less peculiar. The table F receives its longitudinal traversing motion by

means of a spur-gear wheel, F<sup>4</sup>, working in a rack fixed on the frame-work A, as represented.

This spur-gear wheel F<sup>4</sup> is mounted on the shaft F<sup>5</sup>, supported in bearings fixed on the under side of the table F, and the shaft receives motion through the gear-wheels F<sup>9</sup> and F<sup>10</sup>, and a longitudinal shaft and pair of gears, not represented except by dots, from the crank-shaft F<sup>11</sup>, which is adapted to be operated by hand, and which possesses the peculiar property of traversing with the table F as it is moved forward and back, by reason of its bearings carried on F, and by the train of connections.

It follows that the proper traversing motion is given to the table F, by operating the crank-shaft F<sup>11</sup>, which, being carried in bearings on the table F, instead of, as in my former machine, being mounted in bearings on the framing A, is always in convenient proximity to the crank which operates the other table, E.

The operator can always hold the crank which turns the shaft F<sup>11</sup> in his left hand, and the crank which turns the shaft E<sup>1</sup> in his right hand.

Returning now to the means of giving the lateral motion to the upper table E, observe that the crank E<sup>4</sup> is loose on the shaft E<sup>3</sup>, and does not of itself directly impart any motion thereto, but may be turned around freely thereon, except for the spring-catch E<sup>5</sup>, which takes in the teeth of a spur-wheel, E<sup>6</sup>. This spur-wheel is fixed on the shaft E<sup>1</sup>.

The catch E<sup>5</sup> is mounted in slides on the crank E<sup>4</sup>, and is free to move therein under the action of the spring E<sup>7</sup>, or of the hand applied to the handle E<sup>8</sup>.

Now so long as the spring E<sup>7</sup> is allowed to hold the catch fast in any given position in the gear-wheel E<sup>6</sup>, the crank operates, in all respects, in the ordinary manner, but when, for any reason, it is desired to change the position of the crank E<sup>4</sup>, on the shaft E<sup>3</sup>, it may be instantly done, by unlocking the catch E<sup>5</sup>. It may be turned a portion of a revolution, and then disengaged and moved idly back, again locked and turned a portion of a revolution forward, or it may be operated effectively backward and forward, in any desired position of a revolution.

Locking-catches and springs, analogous in form and effect to these, have been used before, in other machinery, but I have combined these with the other parts of my machine, so as to impart important and novel qualities thereto.

In operating, I employ rectangular frames or chases, within which each pattern is fitted, in order to be confined by the clamps E<sup>1</sup> E<sup>2</sup>. After the cutter has been lowered, and by the working of the tables E and F, has been moved from side to side and end to end, so as to cut the properly-curved or otherwise ornamental channel, corresponding to the interior edge of the pattern, the pattern is taken out of the chase, and a new one substituted, and the tool passed around this second pattern. I can, if preferred, pile up a number of chases, one upon the other, and work each succeeding cut deeper, as the patterns give more and more enlarged openings, routing off the wood outside of each channel to a level therewith, and then producing swelled mouldings or panels.

In my former patent, I described the swinging hooks I, turning on the pivots *i*, and carrying an adjustable point, K, adjustable by the screw L, and adapted to engage with the carriage, by means of one or more notches therein. My upper hooks, correspondingly lettered in this machine, perform similar functions.

The upper projections *c*, on the carriages C<sup>1</sup> C<sup>2</sup>, rest on the adjustable point K, to gauge or determine the depths to which the cutting-arbors B<sup>1</sup> B<sup>2</sup> may descend. In other words, the stops *c*, in these drawings, correspond to the stop *c* in my former patent. As there were two notches *c* in each carriage, in my



former patent, there may be two or more of the projections *c* on each of these carriages, performing in a similar manner.

By swinging one of the supporting-hooks out of the way, after the carriage has rested thereon for a sufficient time, and then allowing the carriage to descend until it rests on the other hook, by means of the next projection, I provide another independent and adjustable provision, allowing me to work at two different depths, both adjustable.

This is done by means of the lower adjustable stops *M*. They are mounted so far below the adjustable hooks *I*, that they are entirely out of connection therewith, and they support the carriages *C*<sup>1</sup> *C*<sup>2</sup> by means of independent projections, *c*'. Now, when the cutter has performed all that portion of its duty, which is practicable while the carriage has been supported by the contact of the projection *c*, on the adjustable hook-point *K*, that hook is moved away, and the carriage is allowed to descend, not, as before, to an unvarying distance, but to a distance which may be adjusted with all the delicacy desired; that is, it descends until the other projection, *c*', rests upon the other adjustable projection or stop *M*, and now the cutter may perform any further duty which may be required at this lower level.

It is practicable to make more than two such stops, one above the other, in which case all but the lower one should be swinging hooks, or be otherwise capable of being moved out of the way, like the hooks *I*. In short, the hook-point *K* and the stop *M* may be both denominated adjustable stops, and the number may be increased at pleasure, it being necessary for all but one to be moved out of the way, to allow the last one to serve. I have provided both carriages, *C*<sup>1</sup> *C*<sup>2</sup>, with similar provisions. This need not be always done, where one arbor, *B*<sup>1</sup>, for example, is intended to do much coarser work than the other; in other words, where all the fine work is to be done by one arbor, that alone may be provided with a multiplication of adjustable stops to adjust the descent.

*G* is what I term a locking-piece, to hold the arbor, with its carriage, up out of the way, when required. It is a piece of metal, passing through holes in the part *A*<sup>3</sup>, as represented, and adapted to enter and lock into the part *C*<sup>1</sup>.

It is actuated by a spring, *g*, which throws it forward with a constant force, tending to hold the carriage *C*<sup>1</sup>, when once locked.

In preparing to lower the carriage *C*<sup>1</sup>, the locking-piece *G* is pressed back by the hand, and the spring *g* is thereby compressed. When the carriage and its arbor have been sufficiently used, and it is desired to suspend their action, the carriage is raised to its original position, so as to present the locking-hole therein to the piece *G*, which immediately enters it and holds it suspended.

*N* are pins, projecting on three sides of the frame *O*, and adapted to be acted on to raise the carriage *C*<sup>1</sup> and its arbor, according to the form of the upper face of the templet or pattern, 4. Thus, if there is, as may usually be preferred, a series of regular waves or elevations and depressions on the upper face of the templet, the carriage *C*<sup>1</sup>, and the arbor and cutter mounted thereon, will be jumped, and the cutting will be what, when straight, are called carved mouldings, and which have never, I believe, been produced before in a curved form. I can, by thus combining the lifting of the cutters to various heights, with the other provisions for cutting along the edges of curved patterns, produce a great variety of work not before practicable. I believe that I can carve faces, birds, animals, and landscapes, in relief, by this means, with success.

I have shown three of these pins, *N*, projecting in as many different directions, and prefer this number,

but a greater or lesser number may be used. I can operate, very successfully, with but one such pin.

I put on each of these pins, *N*, an anti-friction roll, *n*, and believe it is better to do so, though I do not consider such absolutely necessary.

*O* *O* are extensions of the carriages *C*<sup>1</sup> *C*<sup>2</sup>, downward around their respective arbors. The same form of the frame *O* may be employed on each carriage *C*<sup>1</sup> *C*<sup>2</sup>, but I have represented them as different, in order to show two modifications.

The lower end of the extension *O* is turned and polished, and is adapted to support a loose anti-friction ring, *P*, which is held on by a spring-clip, *Q*, fitting, and being partially embedded in a groove, *q*, in the part *O*. The ring *P* is thus readily removed and exchanged, when required. The ring reduces the friction of the pattern against it.

It will be understood that in the operation of my machine in panelling, the pattern which lies on the wood to be panelled, is pressed against the guide *O*, or against the ring or roller *P*, which surrounds the lower part of the frame *O*. Now, the ring *P* requires to be changed in different work, because, while the friction is lessened by making the ring *P* large, and thus it is desirable to use a large ring, *P*, in all work which will allow it, it is impossible to execute small curves and delicate tracery by means of a large ring, for reasons which will be obvious to mechanics without long explanation.

My clip *Q*, fitting as described, occupies very little room, and supplies a very ready means of confining and releasing the rings.

I have provided still another and more radical change of the machine, in order to execute fine and delicate tracery or mouldings, on the same machine, which does large and coarse work rapidly. I will now describe this addition.

*O'* is an extension of the frame *O*. It is applied by screwing the part *O'* into the interior of the part *O*, and thus extending it further downward. This part *O'* may be as small as desired at its lower or projecting end, and is provided with a ring, *P'*, and with a spring-clip *Q'*, similar to, but smaller than the ring *P* and spring-clip *Q*, before described.

In using this means of executing fine work, I first remove the cutter *b* from the arbor *B*<sup>1</sup> and introduce a bushing, *p*, of a proper size, outside, to fill the hole, and of a proper size, inside, to receive the small cutter. This bushing is sawed nearly across, to make it elastic. The hole in the bushing may be as small, and the interior thread cut therein may be as finely pitched as is desired, or it may be made a plain cylindrical hole, and may, in either form, receive and hold firmly a corresponding stem of the small cutter *b'*. I can confine the plain ends within plain holes very effectively, by using the bushing in a partially-divided condition, so that it can readily spring together, and making the exterior a little tapering, so that it will be closed forcibly together as it is screwed into the arbor.

By these means I provide, and in addition to the ordinary provision for coarse work, the small extension *O'* of the guiding-frame *O*, the corresponding small anti-friction ring *P'*, and confining-means *Q'*, and the bushing *p*, and small cutter *b'*, adapted to execute fine cutting.

Now, with these additions to the machine, I can execute work indefinitely finer than that before provided for; but it will, of course, be readily understood that for this work the wood must usually be fed along more slowly.

The fine cutter *b'*, and its connections described, are adapted only for very fine work.

In performing coarse work, I change the machine back to its original condition, in order to work faster.

As there may be graduations or degrees of fineness



in the work to be performed by the small cutter *b*, I can change the rings *P*, by the use of spring-clip *Q*, in the same manner as has been before described for the larger rings and larger clips *P* and *Q*.

*U* is a blower, driven by a belt from the back shaft *D*, as represented. It forces air through the large pipe *U*<sup>1</sup>, which extends directly downward, as represented, thus forming a straight passage, in which the smaller pipe *U*<sup>2</sup> is received, and is adapted to slide nearly or quite air-tight.

The pipe *U*<sup>2</sup> is fixed on the carriage *A*<sup>3</sup>, so as to rise and sink therewith.

The lower end of the pipe *U*<sup>2</sup> is divided into two branches, as indicated by *U*<sup>3</sup> *U*<sup>4</sup>, and these branches point at the cutters.

The blower *U* forces a current of air through the pipe *U*<sup>1</sup>, which is mounted on the fixed framing of the machine, and the air is transferred therefrom to the pipe *U*<sup>2</sup>, which is mounted on the movable carriage *A*<sup>3</sup>, and thus may stand at various levels; but at whatever elevation it stands, the air is received in the same manner in the pipe *U*<sup>2</sup>, and distributed through the branches *U*<sup>3</sup> and *U*<sup>4</sup>, so as to be directed at the points where the cutting is ordinarily effected, however much the carriage *A*<sup>3</sup> and its connections be raised and lowered.

I can, if preferred, make two branches at the base of the pipe *U*<sup>2</sup>, separately adjustable, or I can branch the pipe *U*<sup>1</sup> above, and make two separate large pipes descend therefrom, and provide two separate small pipes, sliding therein, each partaking separately of the motion of its respective arbor-carriage, *C*<sup>1</sup> or *C*<sup>2</sup>; but this complication is not generally necessary.

Some of the advantages due to certain features of my invention may be separately enumerated as follows:

First, by reason of the fact, that in clamping my wood for panelling, I press its upper face against a fixed surface, *E*<sup>1</sup>, by means of the movable clamp or adjustable piece *E*<sup>2</sup>, as shown, I, in effect, gauge the moulding by the face, instead of, as before, by the back of the wood, and, by reason of this latter fact, I am able to panel perfectly in wood of uneven thickness, without special preparation, which would not be possible under the old plan of gauging by the back, while I can introduce and remove the wood by clamping and unclamping with about the usual facility.

Second, by reason of the fact that both cranks, *E*<sup>4</sup> and *F*<sup>1</sup>, for operating the carriage both forward and back, and to the right and left, are mounted and connected as specified, so that they are both carried forward and backward with the carriage, I am able to produce longer panelled and moulded figures, and to keep the hands of the operator within a convenient distance from each other, (which was not possible with my former construction and arrangement, where one of the crank-shafts moved forward and back with the carriage, while the other remained mounted in fixed bearings on the framing.)

Third, by reason of the crank *E*<sup>4</sup>, ratchet *E*<sup>5</sup>, catch *E*<sup>6</sup>, and spring *E*<sup>7</sup>, constructed and arranged as represented, relatively to each other, and to the carriage *E*, and cutting and guiding-means above described, I am able to operate successfully on a long plank, which projects at the front so as to prevent the crank from performing an entire revolution, which would not be possible with the ordinary arrangement; and am also able to operate with more facility on short pieces, because, when frequent movements of the crank are required in any particular portion of the work, I can instantly change the crank around so as to work it in that part of its revolution which is most convenient to the operator, and by reason of the fact that my changeable crank *E*<sup>4</sup>, clamps *E*<sup>1</sup> *E*<sup>2</sup>, and cutters *b*, as above designated, are used in combination with the changeable patterns 1, 2, 3, &c., and the chase or

chases 1, 2, &c., I am able to execute work having a very high degree of elaboration with perfect success and with ease to the operator, because I can both change the crank into any part of the circle most convenient to trace the fine portions of the pattern, and can cut in lines which cross each other, scallop each other, and combine with each other, in what have been heretofore considered impossible relations.

Fourth, by reason of the sub-support *F*<sup>1</sup> *f a*, at the front of the carriage *F*, constructed and arranged as represented, I am able to support the carriage with sufficient firmness, when moved forward to a heretofore impracticable extent, without unreasonably protruding any portion of the fixed frame-work, and without involving serious friction or complication.

Fifth, by reason of the fact that I employ a second adjustable stop, *M*, in addition to the swinging adjustable stop *K*, I am able to graduate, with nicety, two depths to which the cutting-tool may penetrate the wood, and thus to increase the capacities of my machine for executing varieties of work with a small number of cutters.

Sixth, by reason of the fact that my duplicate adjustable stops *K* *M* are used in combination with the devices *E*<sup>1</sup> *E*<sup>2</sup>, above described, for gauging the penetration by the face of the wood, I am better able to render available the delicate and plural adjustments of the depth of the cutting, so as to produce practically perfect work, without special care or skill.

Seventh, by reason of the fact that the steadiment *O* is provided with an internal thread, and made to receive the additional steadiment *O*<sup>1</sup>, as represented, I am able to employ small rings, and to cut smaller curves and figures than would be otherwise possible, without changing the arbor *B*<sup>1</sup>, or but few of the parts of the entire machine. In other words, I can cut heavy work, or work of extreme fineness and delicacy with the same mechanism, by this small addition.

Eighth, by reason of the fact that my ring *P* is confined and released by the spring-clip *Q*, as represented, I am able to change the rings with great facility, and can employ rings of such depth that they shall extend down nearly to the lower edge of the steadiment *O*.

Ninth, by reason of the locking-device *G*, and spring *g*, arranged as represented, I am able to lock and unlock the carriage *C*<sup>1</sup>, supporting the cutting-arbor, without complicated, expensive, or bulky mechanism.

Tenth, by reason of the fact that the blast-pipe *U*<sup>1</sup> *U*<sup>2</sup> is made telescopic, as represented, I am able to blow at exactly the right points, in all positions of the apparatus, without changing the position of the blower, and without introducing any flexible or perishable parts.

Eleventh, by reason of the employment of the pins *N*, with or without the anti-friction rolls *n*, arranged as represented, I am able to produce curved panelling, by aid of suitable projections on the patterns, while at the same time cutting in accordance with an ornamental shape of the pattern, and thus to greatly increase the capacity of the machine.

Having now fully described my invention,

What I claim as new, and desire to secure by Letters Patent, as my present improvement in paneling and variety moulding-machines, is as follows:

1. The clamp *E*<sup>1</sup> *E*<sup>2</sup>, in combination with the paneling-cutter *b*, constructed and arranged for gauging by the face of the wood, substantially as herein set forth.

2. Supporting both the cranks *E*<sup>4</sup> and *F*<sup>1</sup> on the carriage *F*, and providing the connections *F*<sup>2</sup>, &c., or their equivalents, so as to operate and traverse forward and back together, relatively to the paneling-cutter *b*, as herein set forth.

3. The means *E*<sup>5</sup> *E*<sup>6</sup> *E*<sup>7</sup>, or their equivalents, for changing the crank *E*<sup>4</sup> around on the shaft at will, in combination with the table *E*, herein described, and



with the panelling-cutters *b*, and their connections, as herein set forth.

4. The sub-support *F*<sup>1</sup>, for the carriage *F*, running on the rail or way *a*, constructed and arranged as herein set forth.

5. The stops *K M*, separately adjustable, as specified, arranged as represented, in combination with the cutters *b*, and the other parts, as herein set forth.

6. The turning-ring *P*, the spring-clip *Q*, or its equivalent, and steadiment *O*, arranged relatively to each other, and to the cutting-arbor *B*<sup>1</sup>, as herein set forth.

7. The device *G*, reaching through from the front, and penetrating the back, with the spring *g*, arranged as represented, to lock and unlock the cutter-carriage *C*<sup>1</sup>, as herein set forth.

8. The telescopic blast-pipe *U*<sup>1</sup> *U*<sup>2</sup>, arranged as represented, relatively to the carriage *A*<sup>3</sup>, the movable cutting-arbor *B*<sup>1</sup>, and fixed blower *U*, for the purposes herein set forth.

9. The pins *N* and rollers *n*, arranged to operate, relatively to each other, and to the arbor *B*<sup>1</sup>, and to suitable lifting-devices on the pattern, as herein set forth.

In testimony whereof, I have hereunto set my name, in the presence of two subscribing witnesses.

NICHOLAS JENKINS.

Witnesses:

THOMAS D. STETSON,  
WM. C. DEY.