

(No Model.)

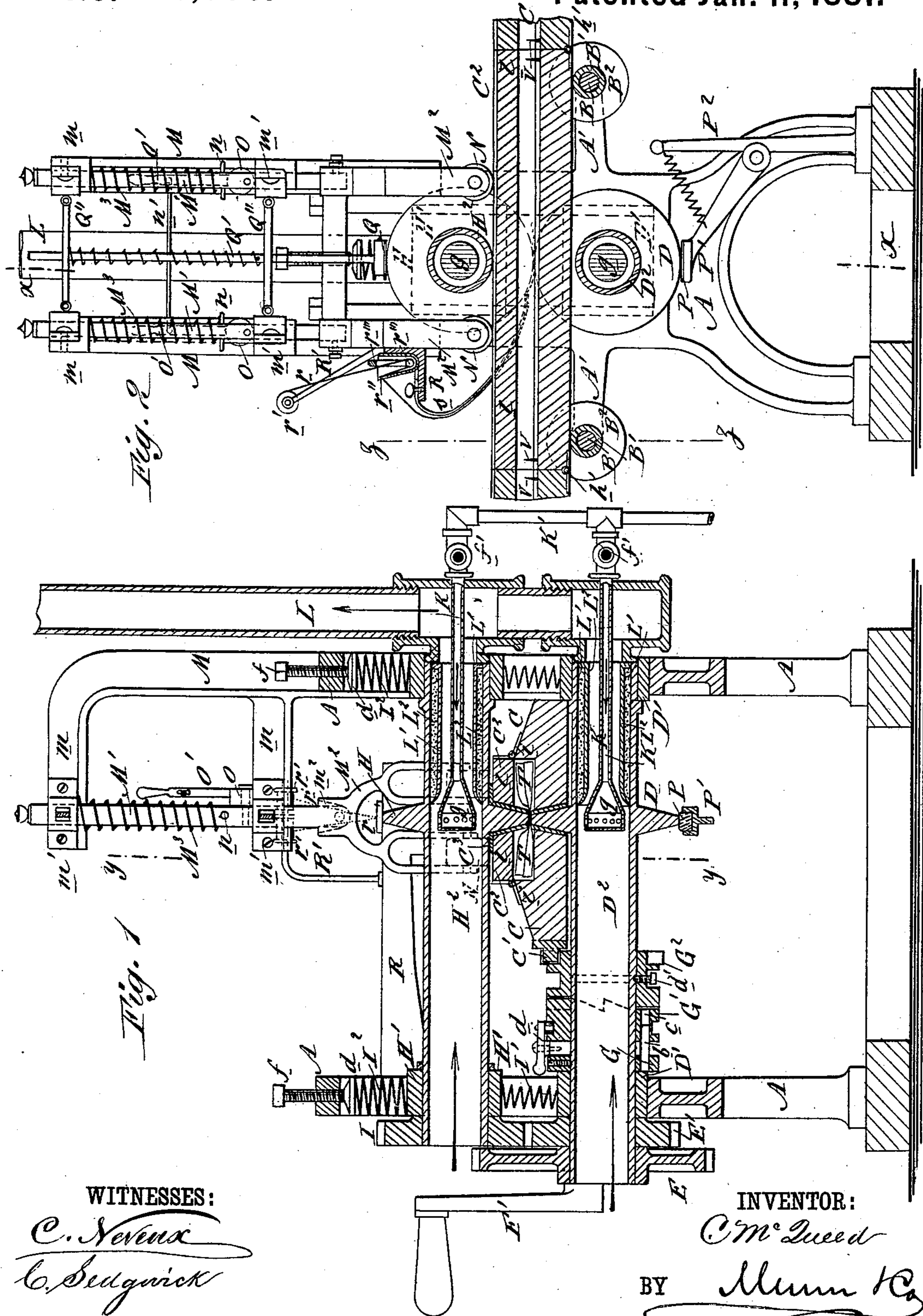
2 Sheets—Sheet 1.

C. McQUEED.

Neck Ruching Pressing Machine.

No. 236,606.

Patented Jan. 11, 1881.



WITNESSES:

C. Neven
C. Sedgwick

INVENTOR:

C. McQued

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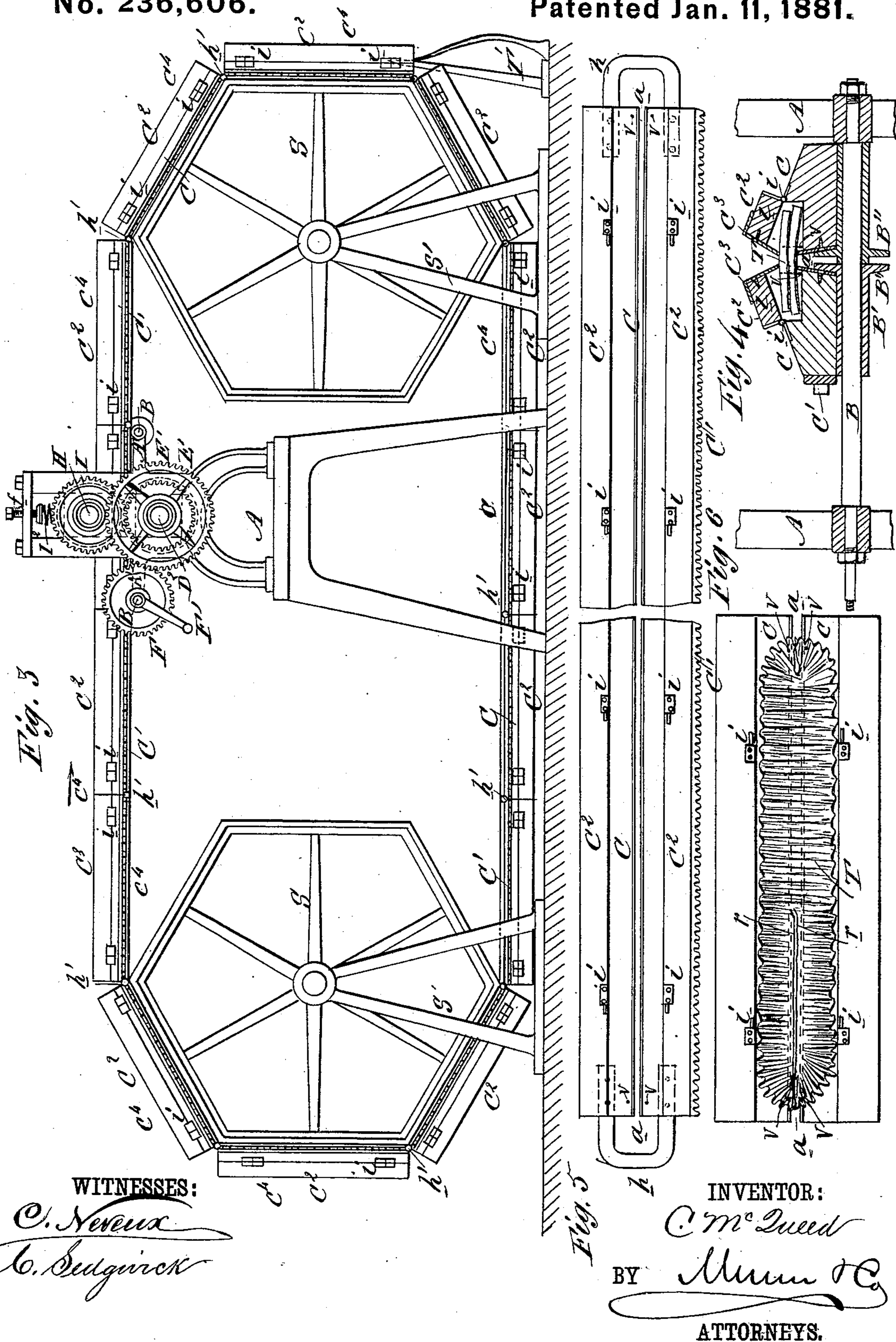
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ATTORNEYS.

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UNITED STATES PATENT OFFICE.

CHARLES McQUEED, OF NEW YORK, N. Y.

NECK-RUCHING-PRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 236,606, dated January 11, 1881.

Application filed September 3, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES McQUEED, of the city, county, and State of New York, have invented a new and Improved Neck-Ruching-Pressing Machine, of which the following is a specification.

The object of this invention is to provide a machine whereby the work of pressing collars, collarets, or neck-ruching is rendered more accurate and effective and performed at a great saving of time and labor.

In the ordinary machines for pressing collars or neck-ruching the fluted or plaited material used in the manufacture is pushed or fed forward on a stationary bed by hand between the pressing rolls or cylinders, which process is comparatively slow and involves great liability to inaccurate work, especially when any material but that with the narrowest flutings or plaits is used, because an even tension on every part of the material cannot be maintained by hand-pressure, and consequently, when coarsely fluted or plaited material is thus pushed forward, the flutings or plaits thereof are not kept evenly apart. In some other machines designed for this purpose flexible endless belts are used for conveying the material or fabric to be operated upon between the pressing-rolls, the fabric being held between parallel belts; but it is found that the slightly-different movement of the belts and the slipping of one or the other of them causes imperfect work, and with the belts the collars or ruching cannot have their ends turned and immovably secured in place by pins.

My invention is free from all these objectionable points; and it consists of clamps or nippers hinged on a movable table, so as to swing open in a vertical plane, whereby the collars or ruching are introduced and held in position between the pressing-rolls; and it consists, further, in combination, with the movable table and clamps or nippers, of adjustable spring-actuated pressure-rolls that hold said clamps or nippers with suitable pressure upon the collars or ruching as they are moved along, and of other novel devices and combinations of devices, all of which are hereinafter described.

Figure 1 is a sectional front elevation of the device on line *x x*, Fig. 2. Fig. 2 is a sec-

tional side elevation of the same on line *y y*, Fig. 1. Fig. 3 is a side elevation of a modification of a portion of the device. Fig. 4 is a front sectional elevation of a portion of the device on line *z z*, Fig. 2. Fig. 5 is a plan of a moving bed with clamps or nippers hinged thereto. Fig. 6 is a plan view, showing a collar or ruching in position on the moving bed, with the clamps thrown back.

Similar letters of reference indicate corresponding parts.

In the drawings, A A represent the supporting-standards of the machine, provided with opposite laterally-extending arms A' A', whose extremities serve as bearings for the rods B B, that extend across the machine, and have fitted over them the loose table-supporting sleeves B' B', that are provided with beveled flanges B² B², which revolve in a vertical plane in the longitudinal central opening or groove *a*, between the two parallel parts of the table or bed C, which latter is supported and moves on said sleeves B' B' in order to prevent any lateral movement of said table C. This table C consists of two parallel strips of wood or metal set far enough apart to admit the edges of the pressing rolls or cylinders D H between them, said strips being of considerable length and connected at their ends by braces, *h h*, that serve also as handles by which to withdraw the said table C from the machine; or said table C may be constructed in sections hinged together at their ends, as shown at *h' h'* in Figs. 2 and 3. Hinged along the upper and outer edges of said table C, as shown at *i i*, are the clamps or nippers C², that consist of nearly rectangular strips of wood *l l*, having slightly-beveled inner faces, to correspond with the shape of the pressing-cylinder H, and provided with angle-plates C³, of iron or other suitable material, bent over their inner edges and extended down over and below their sloping faces, so that the lower edges of said plates C³ shall rest upon the collars or ruchings on the table C, and hold them securely in position, the said collars or ruchings having been first fixed on the stationary pins V V, that project upward from the bottom of the said table C, while they are being pressed between the cylinders D H, the said plates C³ pressing upon the fabric on

each side of its longitudinal line, so that the cylinders D H may operate along the center line thereof.

D' D' are boxes secured upon the standards A A, in which boxes is journaled the horizontal hollow shaft D², that carries the lower pressing roll or cylinder, D, which pressing cylinder or roll D is beveled from its hub or its union with the shaft D² on both faces to a narrow flat periphery, and, revolving in a vertical plane, extends upward in the central opening or groove *a* of the movable table C.

E is a cog-wheel keyed on the outer end of the hollow shaft D², and E' is another cog-wheel keyed on said shaft D², between the wheel E and the outer journal-box, D'. Motion is imparted to said shaft D² and pressing roll or cylinder D by turning the cog-wheel F, (shown in Fig. 3,) which is set loosely on a rod, B, and gears with the said cog-wheel E. Said cog-wheel F may have power applied to it through the crank F', or in any other convenient manner. On this hollow shaft D² is secured a sleeve, G, provided with pins *b b*, that extend rearward and parallel with the said shaft D², and enter corresponding pin-holes *c c*, in a sliding clutch, G', which is loosely fitted on said shaft D², and is moved or operated by a lever, *d*. Contiguous to the clutch G' is a loose pinion, G², held on the shaft D² by a set-screw, *d'*, so that it may readily turn thereon without sliding.

C' is a rack fixed upon an edge of the table C, and extending the entire length thereof. When the machine is in motion and it is desired to move the table C to feed the collars or ruching between the pressing rolls or cylinders D H, the clutch G' is thrown, by the lever *d*, in gear with the loose pinion G², which latter is engaged with the rack C', and when it is desired to draw said table C back again, preparatory to another passage between the pressing-rolls D, the operator throws the clutch G' out of gear with the rack C', so that said table C may be withdrawn without stopping the running of the machine.

Above the boxes D', and supported by the standards A A, are adjustable journal-boxes H' H', that serve as bearings for the upper hollow shaft, H², that is directly above and parallel with the shaft D², and that carries fixed upon it a pressing roll or cylinder H, which is a duplicate of the roll D, and is revolved directly above it, so that a narrow space is left between the edges or peripheries of said rolls D H, through which the collars or ruching to be operated upon are passed. On the outer end of this pressing hollow shaft H² is fixed a cog-wheel, I, that gears into the cog-wheel E' of the hollow shaft D², so that the revolution of the latter shaft causes the former to revolve in a contrary direction.

Between the journal-boxes D' and H' are spiral springs I', that are for the purpose of relieving, when desired, the pressure of the cylinder H upon the fabrics operated upon.

In the slots *d d* of the standards A A are spiral springs I², that bear upon the tops of the boxes H', and are adjusted by the screw-bolts *f f*, that pass down through the tops of said standards A A, so that by turning down said screw-bolts *f f* the springs I² are compressed, and therefore press the cylinder H with more force upon the fabrics being operated upon, which effect is sometimes desirable when collars or ruchings of two or more thicknesses are being made. A sufficient slacking of the bolts *f f* permits the cylinder H to press downward only with the force due to its own weight and that of the hollow shaft H² and its direct attachments, while if the tension of the springs I² be entirely removed the springs I' will operate to relieve the downward pressure of the cylinder H, as before stated. The pressing-cylinders D H are both heated with gas that is introduced into them or into their respective hollow shafts D² H² through the pipes K K'.

K represents gas-pipes provided with enlarged perforated burners *g g*, that are introduced horizontally into the rear ends of the hollow shafts D² H², so that the burners *g g* shall be centered within each pressing roll or cylinder D H; and K' represents the connected gas-pipes, provided with air-openings *f' f'*, through which air is supplied to mingle with the gas to produce combustion. The gas enters through the pipes K in the direction of the arrows, (shown in said pipes,) and burns on escaping from the burners *g g*. The products of the combustion of the gas pass rearward from the said shafts D² H² into the connected series of T-couplings and pipes that constitute the smoke-flue L, as shown, the draft being through the shafts D² H² in the direction of their arrows. To prevent undue heating of the rear ends of the shafts D H these portions of them are lined with asbestos, fire-clay, or other non-conducting substance, L', which is held in place by tubes L², as shown.

On one side of the machine the two parallel uprights M M are each provided with arms *m m*, extending over the pressing-cylinder H, and having secured upon their ends journal-boxes *m' m'*, that guide the vertically-adjustable spring-actuated bars M' M', on whose lower rounded extremities are pivoted the doubly-forked roller-carriers M² M². Said roller-carriers M² M² are of the shape of an inverted V, each leg of which is forked and carries in the end of each fork a pressure-roller, N. These pressure-rollers N N bear upon the tops of the clamps or nippers C², directly in front and rear of the pressing-cylinder H, and on both sides thereof, for the purpose of holding said clamps C² with sufficient firmness upon the fabrics that are subjected to the action of the cylinders D H. The sockets *m'' m''* in the tops of these carriers M² are rounded to correspond with the extremities of the bars M' M', so that said carriers M² may adjust themselves and permit the rollers N to be adjusted to the

varying thicknesses of the fabrics being operated upon. The spiral springs M^3 , encircling the bars M' and supported in place by the pins n , that pass transversely through the bars M' , serve to hold said rollers N down with a constant pressure, and this pressure is removed at any time for the withdrawal of the table C or for any other purpose by means of the eccentrics and their handles $O O'$, the former of which are pivoted on the bars M' and bear upon the lower journal-boxes $m' m'$, whereby said bars M' and their connected rollers M are elevated. A horizontal connecting-bar, n' , connecting the eccentric handles O' with each other, assures the synchronous movement of the eccentrics O .

The pressing-cylinders $D H$ are liable to become coated with gum or size from the fabrics pressed between them. To remedy this blocks of wood or other suitable material, P , covered with sand-paper, are held in contact with the periphery of the cylinder D . The sandpapered block P is held against the lower cylinder, D , by means of a spring-actuated arm, P' , that is pivoted on an upright, P'' , that rises from the standard A , and the block Q is held against the edge of the cylinder H by a spring-actuated rod, Q' , that is supported in the parallel bars Q'' , that pass across between the journal-boxes $m' m'$.

An arm, R , attached to the side of the standard A , and extending toward the center of the machine, supports a bent rod, R' , that carries on its horizontal arm, above and in front of the cylinder H , two spools or reels, r' , of thread r , and secured on said arm R , beneath the reels r' , is a cup, r'' , having rods r''' fixed transversely within it, while on the edge of said arm R , in front of the cup r'' , a plate, s , is secured that curves downward and inward toward the space between the cylinders $D H$. It is designed to fill this cup r'' with water, and to pass the thread r through it about the rods r''' , to be retained long enough to become thoroughly wet, and then to pass the ends of the thread r between the cylinders $D H$, that it may rest upon the fabrics being operated upon and moisten them in such a manner and place that the pressure of the said cylinders $D H$ will suffice to make them stick together, said fabrics being properly sized before being submitted to the pressing operation.

In Fig. 3 is shown another device for passing the table C between the pressing-cylinders $D H$. In this instance the table C is made in sections C^4 , hinged together, as hereinbefore described, so as to make a continuous sectional table, and is extended over hexagonal spiders $S S$, that are mounted on suitable standards $S' S'$, and that are designed to be revolved in one direction, as indicated by the arrow, so that the said sections C^4 shall successively and continuously pass between the cylinders $D H$, and as the said table-sections C^4 pass between said cylinders $D H$ and begin to descend they may be opened for the removal of their con-

tents, and the said contents be removed to a basket or other receptacle by contact with the curved finger T' , that is projected upward in such a position that the tip thereof will engage beneath said collars successively and lift them from said table-sections C^4 , or the collars may be removed by other suitable device.

The fabric of which the collar or ruching T is made is suitably sized and fluted or plaited, and then cut into suitable lengths; and when a double collar is to be made the ends of a piece of the fabric are turned in and pinned, by pins V , to the table C , as shown in Fig. 6, the said piece of fabric T being laid centrally and longitudinally over the opening a of the table C . The clamps C^2 are then turned over, so that the edges of the angle-plates C^3 shall bear on the fabric or collar T for its whole length on either side of the groove or opening a . Then, as the table C is moved between the cylinders $D H$, the rollers $N N$ press down upon the tops of the clamps C^2 , to cause the latter to hold the collar or fabric T in place; and at the same time the edges of the cylinders $D H$ are applied to the opposite faces of the said collar or fabric T , and the moistening-thread r is at the same time pressed by the cylinders $D H$ on either side of the center of the collar or fabric T , with the effect of fastening said thread r firmly upon the face of the said collar or fabric T by the combined action of the heated cylinders and wet thread; and if the collar or ruching is made of more than one thickness—if two or more pieces of fabric are laid upon each other—the moisture from the thread r moistens and softens the sizing on the said fabric, so that the pieces will be firmly united by the pressure of the heated cylinders $D H$.

In Fig. 6 a collar or ruching, T , is shown, with the left-hand portion finished by the action of the cylinders $D H$, and the right-hand portion as it appears before being subjected to the said cylinders $D H$. When the said collar T is removed from the table C , after passing through the cylinders $D H$, it is cut in two between the threads $r r$, thus making two small collars, such as are in common use.

This machine is designed more especially for turning the ends of collars or ruchings and holding them securely in place while being pressed—that is, the ruffling or plaiting may be placed on the movable table with the plaits or flutings thereof any desired distance apart, and the clamps or nippers C^3 will hold them firmly in position while being pressed.

There is a great demand for these goods with plaits or flutings wide apart, but hitherto it has not been possible to produce them with uniformity of plaits or flutings.

In other machines the plaited or fluted fabric is either fed forward beneath the pressing-cylinders by hand or carried between endless belts; but in both cases the plaits or flutings become displaced or distorted in a greater or less degree.

It will be seen, also, that I apply a rolling pressure upon the clamps or nippers before the goods enter between the pressing-cylinders, and that the same rolling pressure is applied on the clamps or nippers in rear of the pressing-cylinders to make sure that the goods are carried along from the pressing-cylinders; for said goods, on account of the sizing in them, are otherwise very liable to adhere to the pressing-cylinders if said cylinders be too hot or too cold.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a neck-ruching-pressing machine, the hinged clamps or nippers C², provided with stationary pins V V, constructed and arranged substantially as herein shown and described, whereby the goods to be operated upon are held straight, so that there shall be no displacement or distortion of them in the pressing process, as set forth.

2. The combination, with the hinged clamps or nippers C², of the pressure-rollers N N, arranged to operate substantially as and for the purpose described.

3. As a means for holding the ends of collars, collarets, or neck-ruchings while being pressed in a pressing-machine in the process of manufacture, the stationary pins V V, substantially as herein shown and described.

4. The combination, with the standards A A, supporting-sleeves B' B', table C, hollow shafts D² H², and pressing-cylinders D H, of the hinged clamps or nippers C², provided with angle-plates C³ and stationary pins V V, and pressure-rollers N N, arranged to operate substantially as herein shown and described.

5. The method, substantially as herein described, of producing collars, collarets, or ruchings with uniformity of plaits or flutings, without distortion or displacement, consisting in securing the fabric to be operated upon by means of pins fixed in movable clamps or nippers, as set forth.

CHARLES McQUEED.

Witnesses:

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C. SEDGWICK.