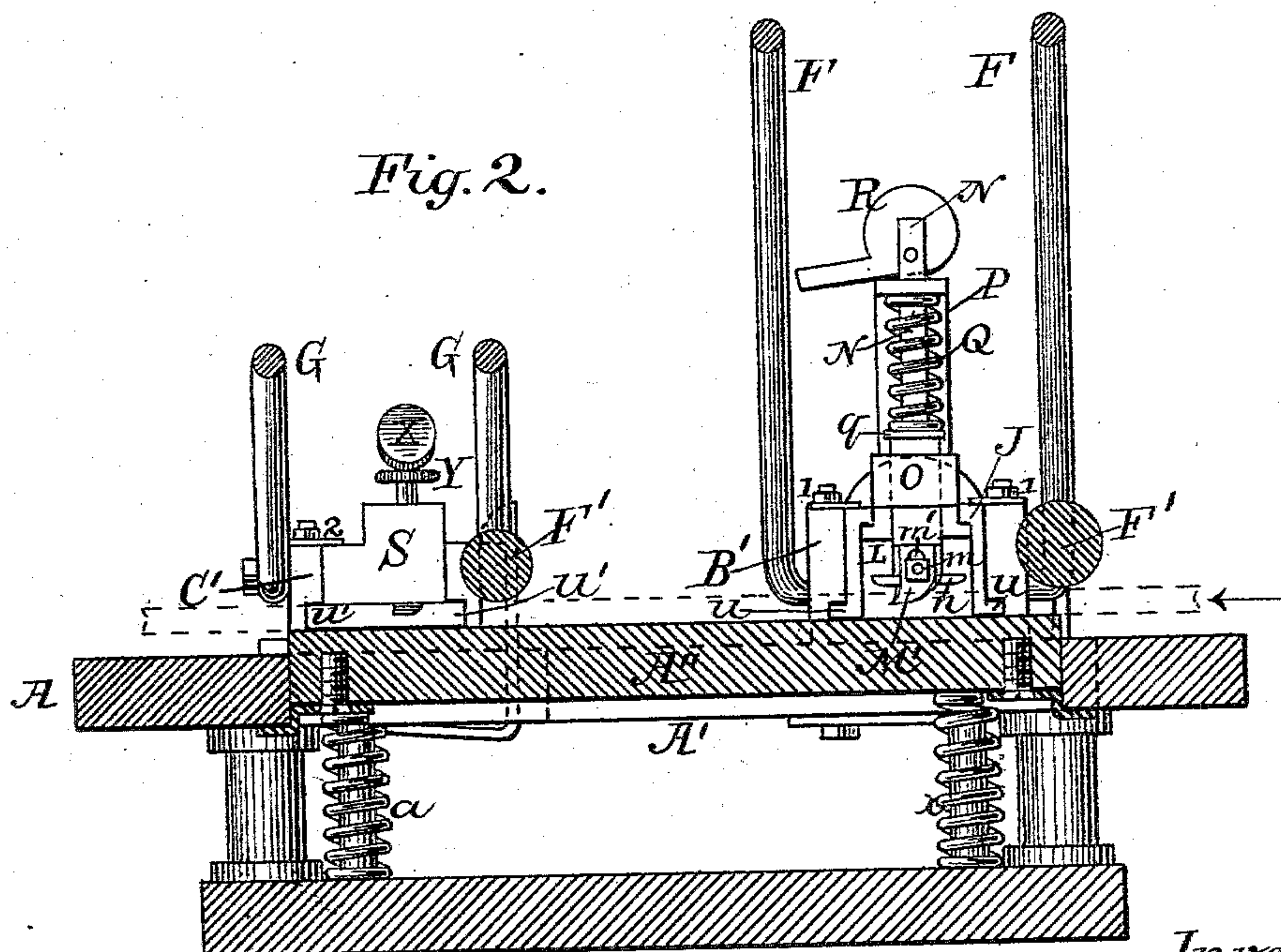
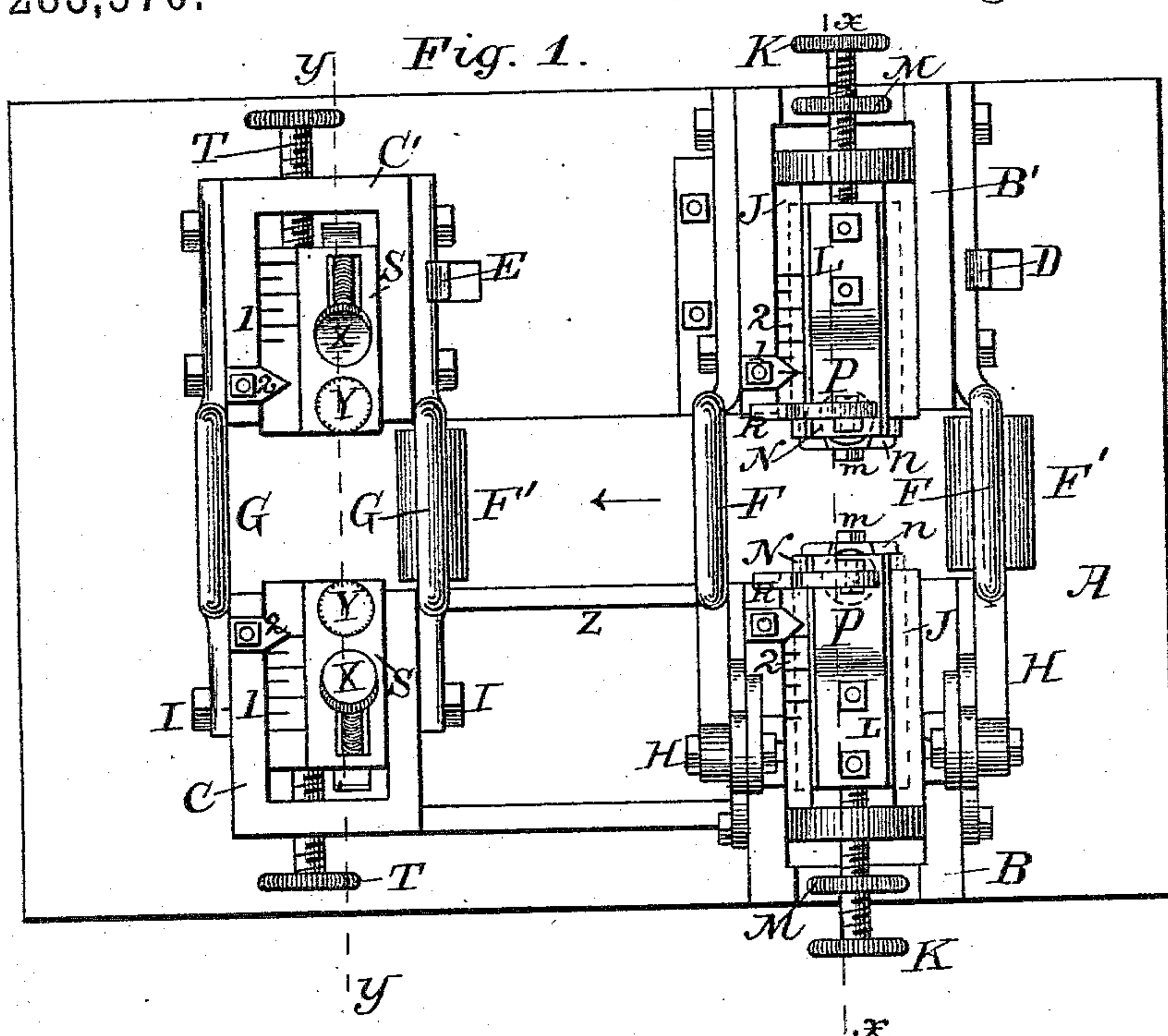


3 Sheets—Sheet 1.

MACHINE FOR CHANNELING HARNESS STRAPS.

Patented Aug. 21, 1883.



Witnesses:

Witnesses:
Edmund Brodhead
A R Brown.

Inventor:

Thomas H. Clark
by Johnson and Johnson Attys

(No Model.)

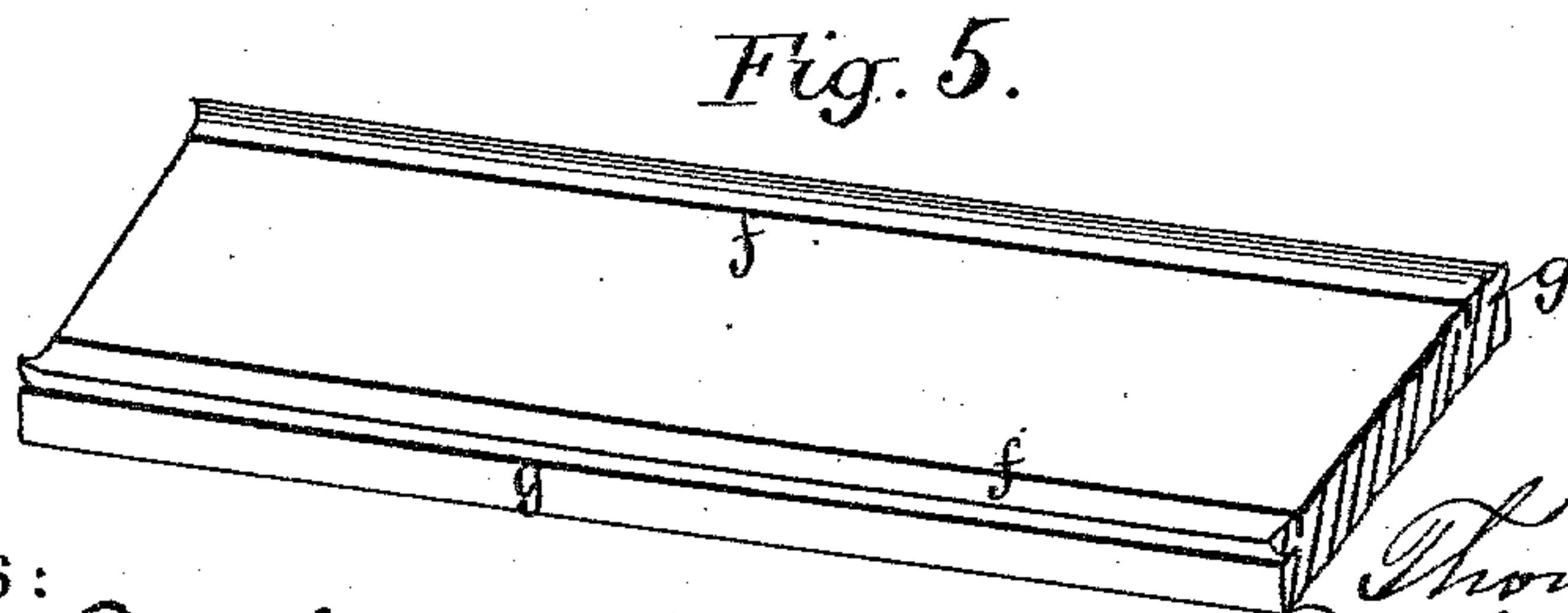
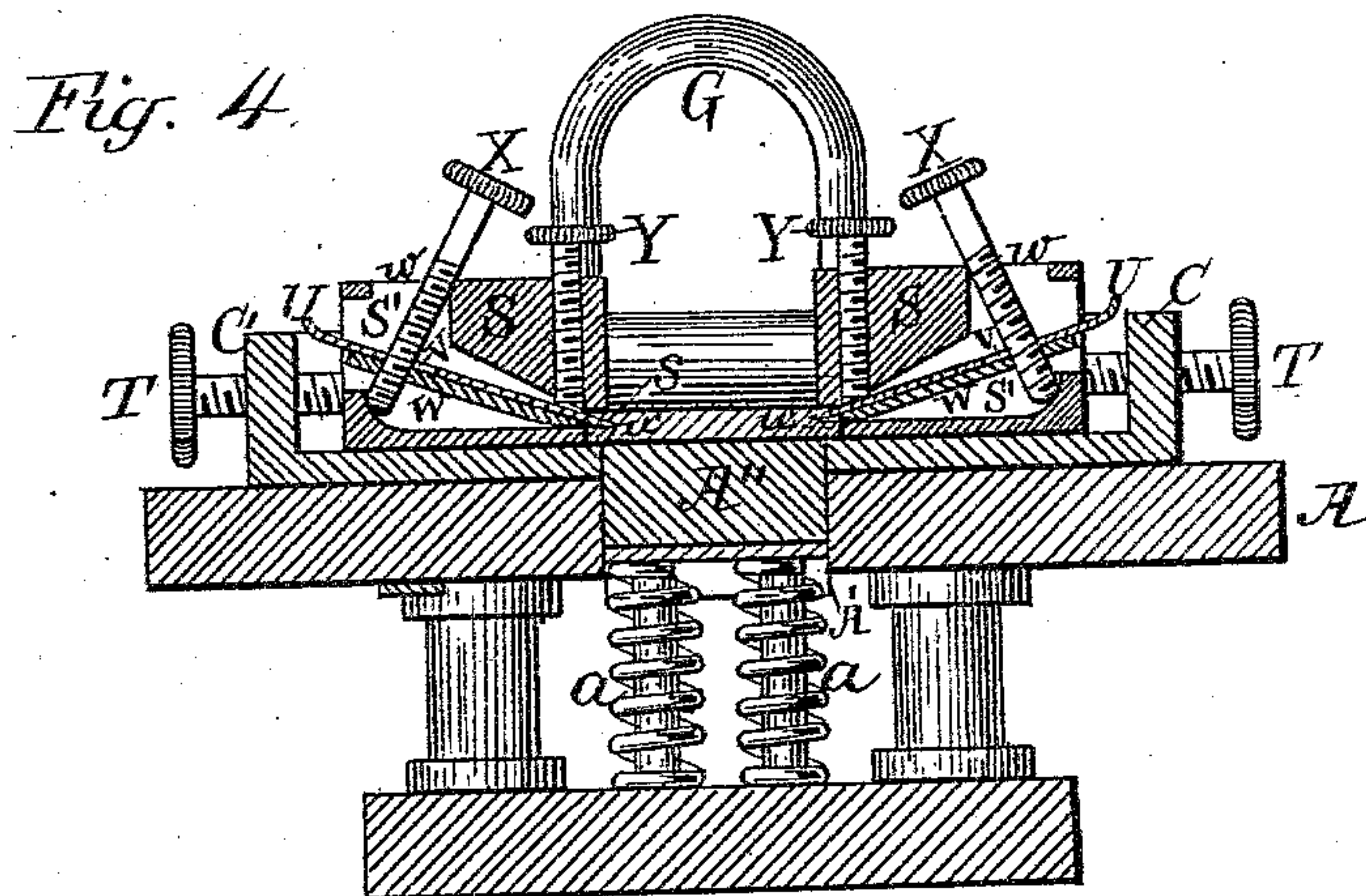
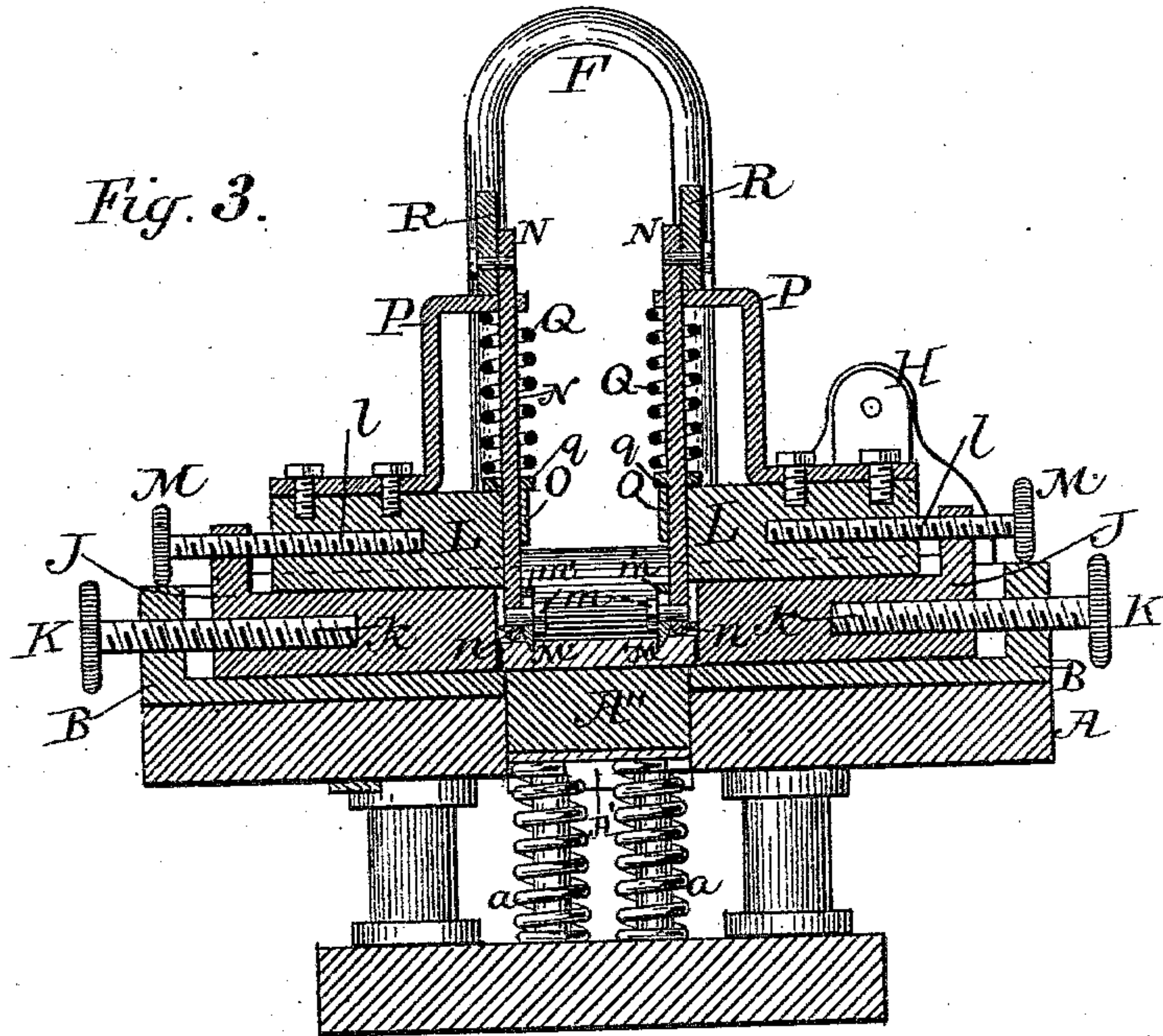
3 Sheets—Sheet 2.

T. K. CLARK.

MACHINE FOR CHANNELING HARNESS STRAPS.

No. 283,570.

Patented Aug. 21, 1883.



Witnesses:

Edmund Brodhag
A. B. Brown

Inventor.

Thomas K. Clark
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(No Model.)

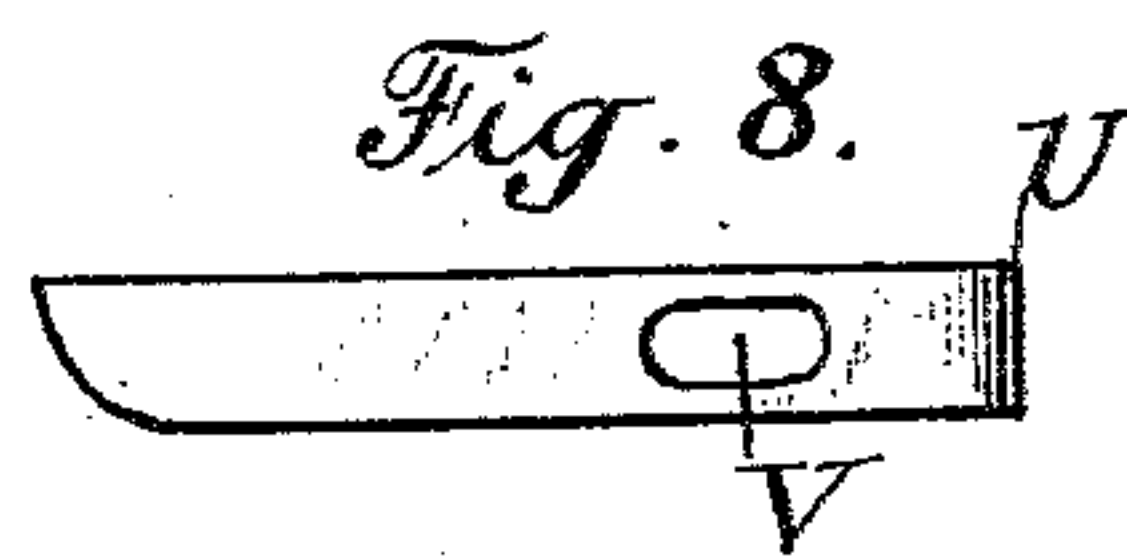
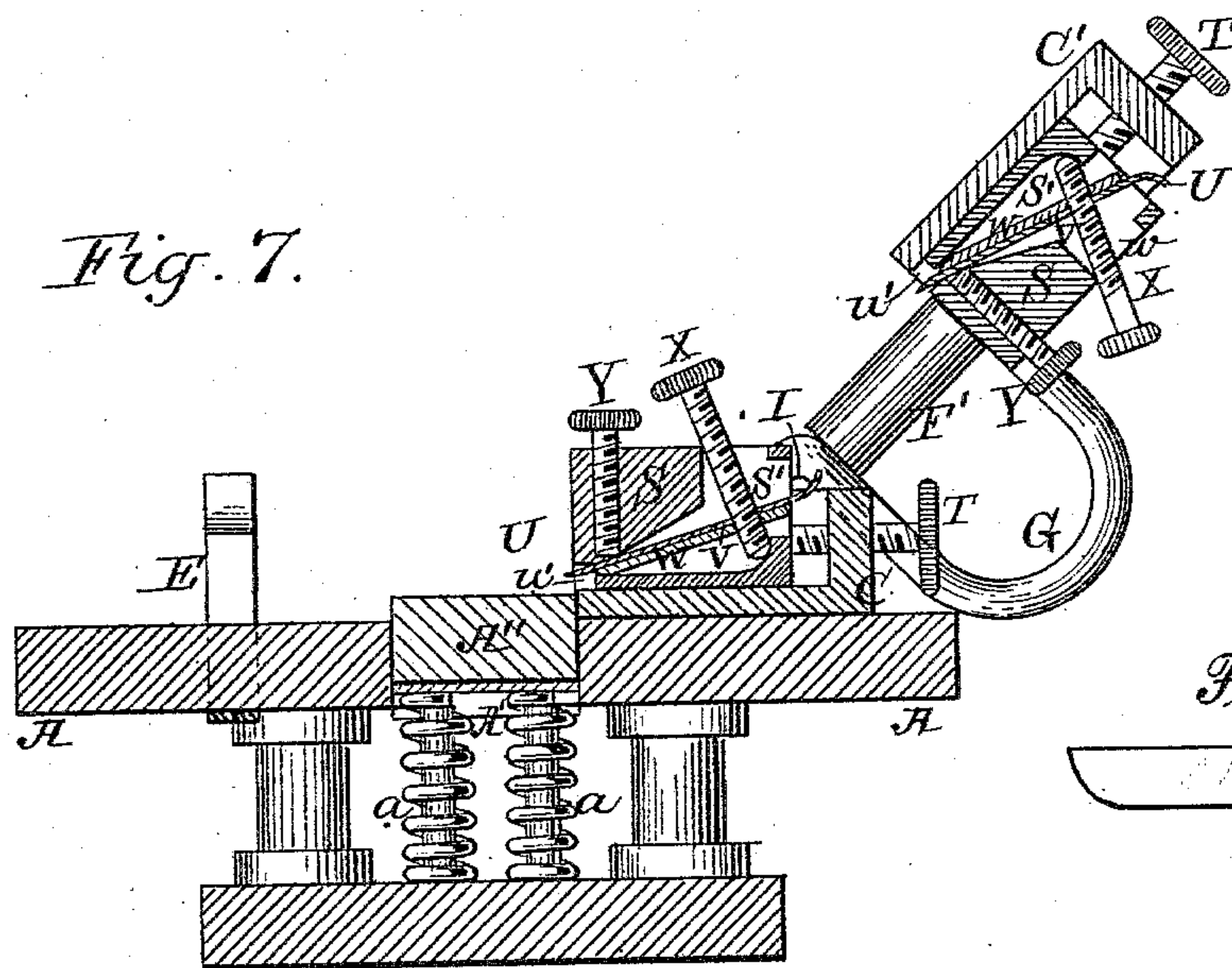
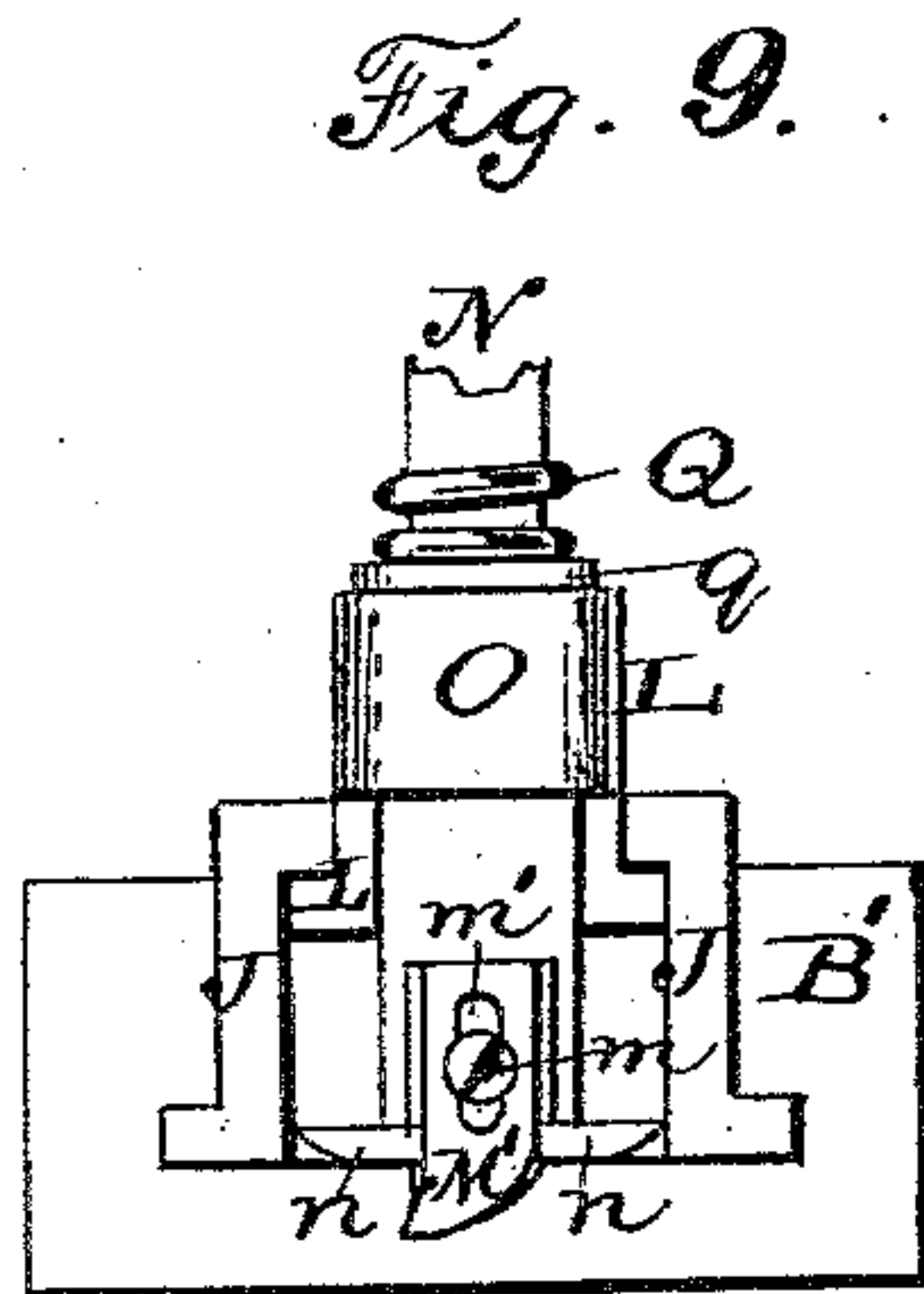
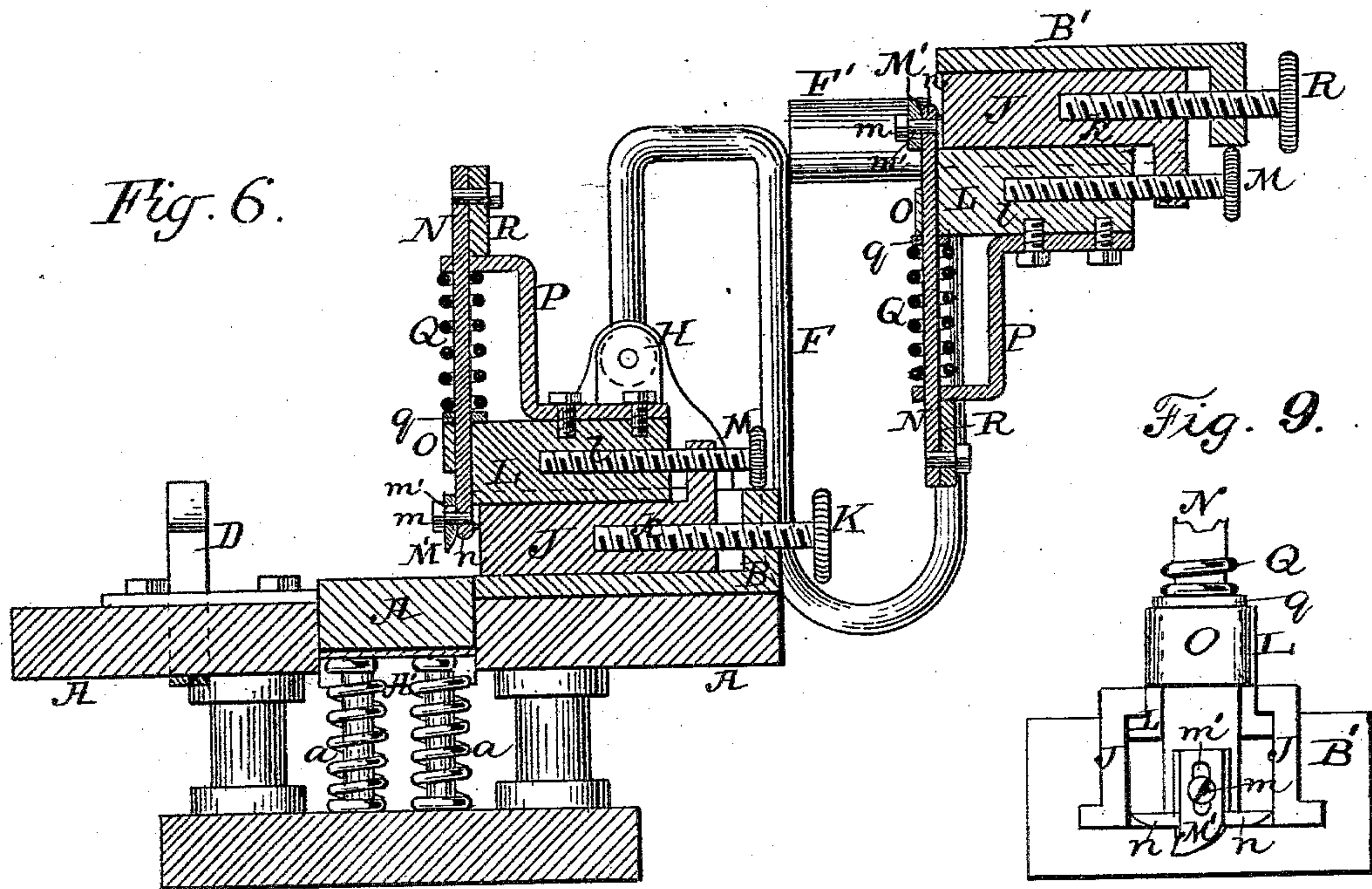
3 Sheets—Sheet 3.

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MACHINE FOR CHANNELING HARNESS STRAPS.

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Attest:

Edmond Brodhag
A. B. Brown

Inventor.

Thomas K. Clark
by Johnson & Johnson
Attys

UNITED STATES PATENT OFFICE.

THOMAS K. CLARK, OF THE SIDING, WYOMING TERRITORY.

MACHINE FOR CHANNELING HARNESS-STRAPS.

SPECIFICATION forming part of Letters Patent No. 283,570, dated August 21, 1883.

Application filed April 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS K. CLARK, a citizen of the United States, residing at Tie Siding, in the county of Albany and Territory of Wyoming, have invented new and useful Improvements in the Art of Channeling Leather, being a machine for channeling harness-straps, of which the following is a specification.

This invention is directed to the production of an organized machine for channeling or cutting the grooves in the surface and edges of leather straps used in harness-making; and the said invention consists of a set of vertically-acting and a set of obliquely-acting knives, which make the surface and edge cuts in the straps to receive the uniting sewing-threads, said knives arranged on a suitable frame opposite to each other and in such position as to cut the channel along both the top and side edges of the strap at the same operation, the knives being made adjustable, so as to gage the depth or angle of cut, and arranged in a frame that is capable of adjustment, whereby the distance of the channel from the edge of the strap may be regulated, the strap being held in position beneath the knives upon a spring bed and between guides which are capable of adjustment, in order to receive straps of different widths.

Referring to the accompanying drawings, Figure 1 represents a plan view of a machine for channeling leather straps, constructed according to my invention; Fig. 2, a central longitudinal sectional elevation; Fig. 3, a transverse sectional elevation on the line *x x*, Fig. 1; Fig. 4, a transverse sectional elevation on the line *y y*, Fig. 1. Fig. 5 shows the strap with vertical and oblique channels cut therein; Fig. 6, a transverse sectional elevation on the line *x x*, Fig. 1, showing the vertical channeling-knife as turned back; and Fig. 7, a transverse sectional elevation on the line *y y*, Fig. 1, showing the oblique channeling-knife as turned back; Fig. 8, a top view of the knife, showing the slot therein; and Fig. 9 is an end view of the housing and adjustable carrying devices of the vertical knife.

A is the frame of the machine, having a central longitudinal opening, A', into which a bed, A'', is placed and supported upon springs *a*. Upon the top of the frame A, at one side

thereof, are rigidly secured boxes or housings B C for the cutter-stocks, and arranged opposite to these are similar housings, B' C', merely resting upon the frame A, but removably secured in position by spring-catches D and E, secured to the frame and arranged to engage upon a suitable catch on the housings B' C'. These movable housings are connected to the fixed housings by a set of curved yokes, F and G, secured rigidly to each side of the movable housings, and united to the fixed housings B and C by hinges or pivot-bolts, as at H and I. These housings B B' form the holder for the cutters for making the vertical channel in the straps, and the ones C C' form the holders for the cutters for cutting the oblique channel.

Within the housings B and B' is arranged a box or guide, J, carrying the stock of the vertically-acting cutting-knives, and adapted to be adjusted in or out by the screws K, shouldered in the housings B and B', and passing through nuts formed in the box or guide J, as at *k*. Within the top of these guides J is arranged a cutter-stock, L, moving with the box-guide J, but having a movement or adjustment independent of said guide through a screw, M, shouldered in the end of said guide J, and passing through a nut formed in the stock L, as at *l*. The movement of this part L and its arrangement in regard to the part J is the same as the arrangement and movement of the part J with housing B. These stocks L carry the vertically-acting knives M', which are adjustably secured by a set-screw, *m*, passing through a slot, *m'*, therein to a standard, N, working in a bearing, O, in the face of the stocks L, and through a bracket-support, P, secured to the top of said stocks. The standards N have a presser-foot, *n*, and a spiral spring, Q, for keeping the knives down in place, arranged around the standard between the end of the bracket-support P and a collar or stop on the standard, as at *q*. At the top of the standards is arranged a cam-faced lever, R, for raising and holding the knife from action, or above the work.

Within the housings C C' are arranged stocks S, which carry the knives for making the oblique cuts in the edge of the straps. These stocks S are adapted to be adjusted so as to approach to or recede from the work in a simi-

lar manner to the ones J of the vertically-acting knives—that is, by a screw, T, shouldered in the housings C C' and passing through a nut in the interior of the cutter-stocks. These stocks S, as also the parts J and L of the vertical knife mechanism, have flanges, at at *n*, Fig. 2, along their bottom edges, which fit into grooves formed along the lower edges of the housings B B' C C' and the guides J, and along the lower front edge of the cutter-stocks S is a groove, *u*'. Through these cutter-stocks S is formed an opening, S', which tapers from front to rear, forming only a narrow slit at the front sufficient to permit the passage of the point of the knife U. Within this opening S' is arranged the cutting-knife, which is composed of a long bevel-ended blade, U, having a slot, V, through its body. Behind this blade is arranged a gage or plate, W, in a screw-threaded hole, at the end of which is received a thumb-screw, X, which passes up through a slot, *w*, in the stock S, and forms the means by which the knife is held in place. At the front of the stock S is a set-screw, Y, which is arranged to engage against the top of the knife near the point, and thereby hold it at any angle that it may be set by the screw X. The knife being slotted, as at V, the degree of protrusion of the knife may be regulated, and consequently the depth of cut gaged.

Suitable scales are formed on the sliding parts, in connection with pointers on the stationary housings, as at 1 and 2, whereby the uniform adjustment of the parts may be determined.

Z is a guide-plate against which the strap is set, and F' F' are rollers secured to the yokes F and G in such position to bear upon the strap being channeled and hold it down in connection with the presser-feet and spring-bottom.

The operation of forming the vertical channel along the top surface of the strap will first be described.

The knives M' are first set at the proper depth and secured by the set-screws *m*. They are then raised above the work by the cam-lever R, and held in this position until ready for action. The spring-catch D is then released from the movable housing B', and the said housing lifted up and swung over upon the opposite side. The strap to be channeled is now placed in position against the side plate, Z, and the housing B' brought back into position and secured by the spring-catch D. By operating the thumb-screws K the guide-boxes J are made to advance until their front edges come flush against the edges of the strap, by which means the strap is held and guided in proper position beneath the knives. Now, by operating the thumb-screws M the cutter-stocks L are advanced over the strap and the knives brought in position to make the desired channel, the degrees of this advancement of the knife beyond the edge of the strap being determined by the scale 1 on the housings. When the knives

are in proper position, by releasing the cams R the springs Q force the standard N down, and the knives being secured thereto they are caused to enter the strap until checked by the presser-foot or stop *n*. Therefore, upon drawing the strap by hand beneath the knives in the direction of the arrow, the channels for the insertion of the sewing-thread are formed regularly and quickly along the top surface of the strap, as shown at *f f*, Fig. 5. The spring-bottom A' clamps and holds the strap up tight against the knives and the rollers F', whereby no lateral movement of the strap is permitted.

The operation of the oblique channeling mechanism is about the same as that of the vertical cutting apparatus, the stocks carrying the properly-adjusted knives being brought up to the work by the screws, which cause the knives to enter the top edge of the strap in an oblique or slanting direction, the stocks being moved forward until the strap is flush against and within the groove along the lower margin of the stocks, which hold the strap secure in place. By drawing the strap beneath the knives in the direction of the arrow the oblique channels along the top edge of the strap are formed, as shown at *g g*, Fig. 5.

If desired, the operation of cutting both the vertical and oblique channels may be performed simultaneously by passing the strap continuously from one set of cutters to the other.

The machine organized, as described, does the work heretofore done by hand, and the channeling-cutters are arranged in said machine to operate upon the strap as it is drawn through the same guideway, whether for making the surface or oblique channels, and the construction of the cutter-carrying mechanism and the means for placing the same in and out of use allow them to be brought into use separately or together to suit the style of channeling required.

I claim—

1. In a machine for channeling leather straps, the combination, with the yielding bed A', the roller F, the housings B B', and the stocks L L, adapted for adjustment within said housings, of the vertically-adjustable standards N N, secured to the ends of said stocks, each provided with a presser-foot, *n*, a knife M', a vertically-acting spring, Q, and a lifting device, all constructed and arranged as and for the purpose described.

2. In a machine for channeling leather straps, the combination, with the housings placed opposite each other, of guide-frames adapted to be adjusted within said housings for different widths of straps, adjustable stocks arranged within said guide-frames, and vertically-acting knives carried by said stocks, as and for the purposes described.

3. In a machine for channeling leather straps, in combination with the stationary housings B and C, carrying each an adjusta-

ble cutting-tool, the housings B' and C', of similar construction and arrangement, and carrying each similar cutting and holding devices, as the parts B and C, and united to said fixed housings by hinged yokes F G, as hereinbefore described.

4. In combination with the housing B, the guide-frame J, sliding therein, and stock L, sliding in the guide-frame J and carrying the vertically-acting cutters M', as and for the purpose hereinbefore described.

5. In combination with the guide flange or plate Z, rollers F', and adjustable cutting-knives, the spring-actuated bottom A'' a, operating to press and hold the strap in position to be acted upon by the knives, as hereinbefore described.

6. The combination, with the housings C C', of the cutter-stocks S S, adapted for adjustment in said housings, the obliquely-arranged cutters U U, and means for adjusting

said cutter and their stocks, as and for the purpose set forth.

7. The cutter-stocks S, having interior openings, S', obliquely-arranged slotted knife U V, plate W, fastening-screw X, and set-screw Y, all arranged and operating as hereinbefore described, for the purposes specified.

8. The combination, with the cutter-stocks S, having a groove or recess, u', forming an overhanging projection along its front lower edge, of the cutting-tools adapted to be vertically adjusted beneath said overhanging projection, and the screws X and Y, as and for the purpose set forth.

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

THOMAS K. CLARK.

Witnesses:

W. J. BROADHURST,
JOHN J. LINDSEY.