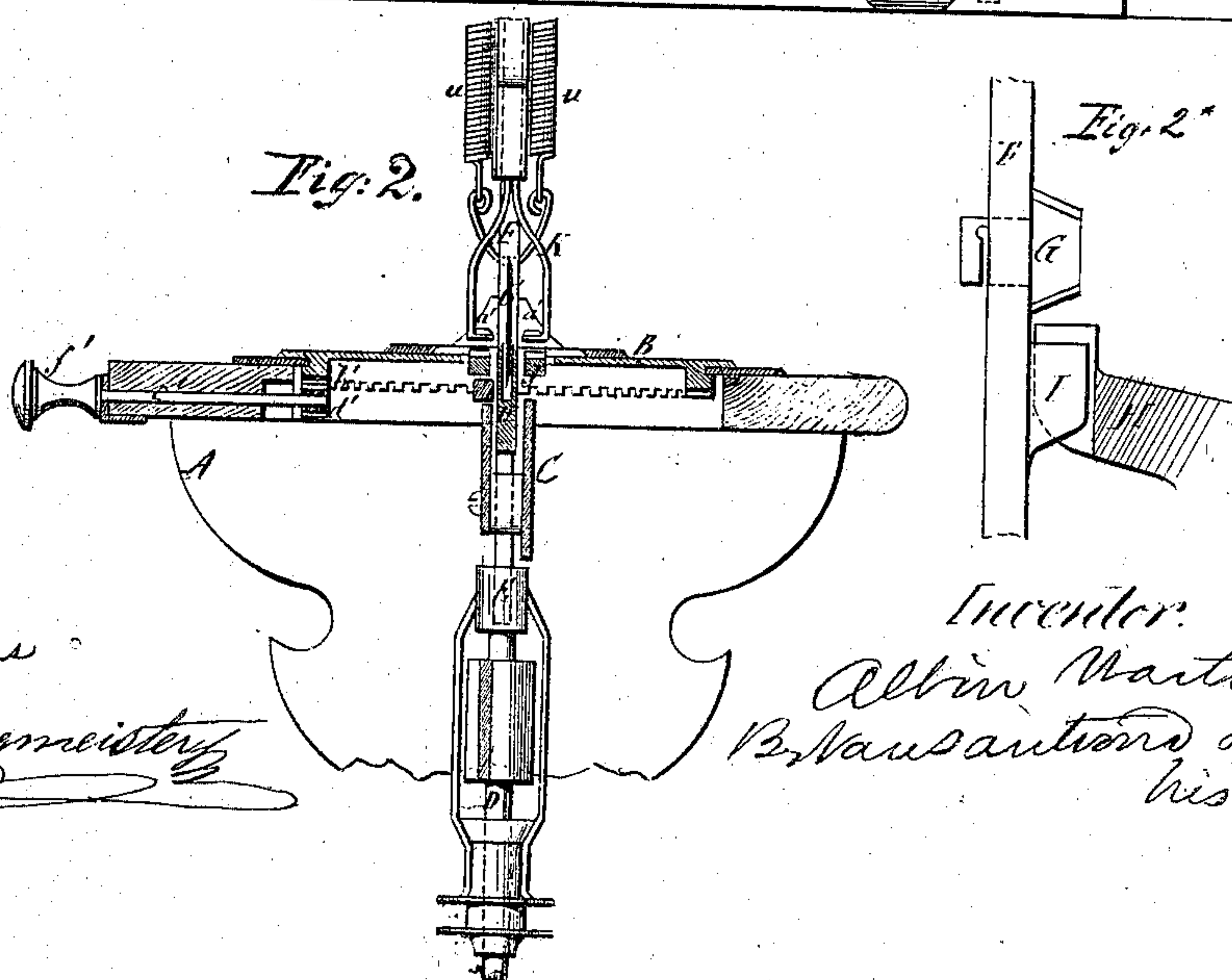
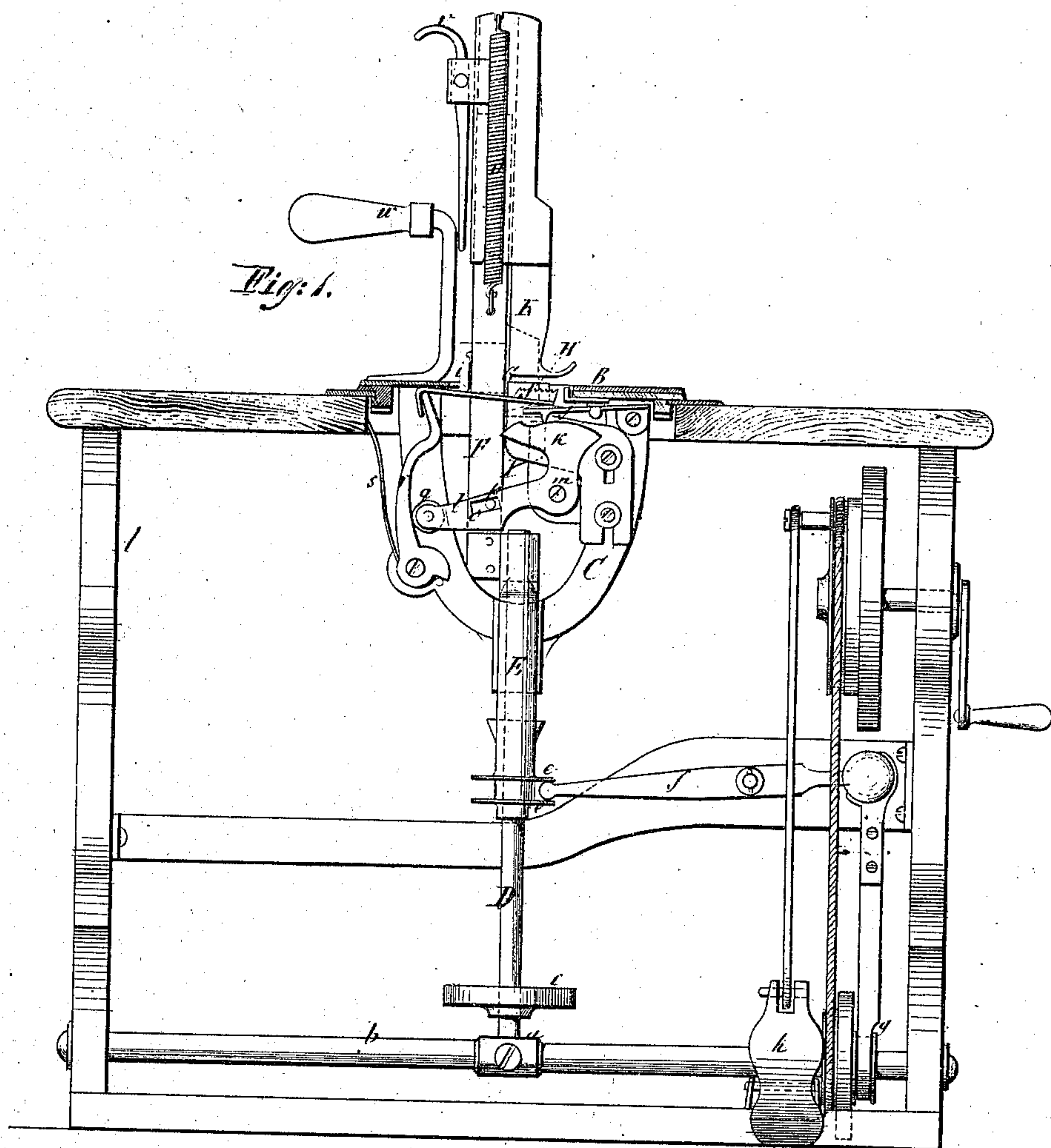


A. WARTH.

MACHINE FOR CUTTING TEXTILE AND OTHER MATERIAL.

No. 106,101.

Patented Aug. 2, 1870.



Witnesses:

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Fig. 3.

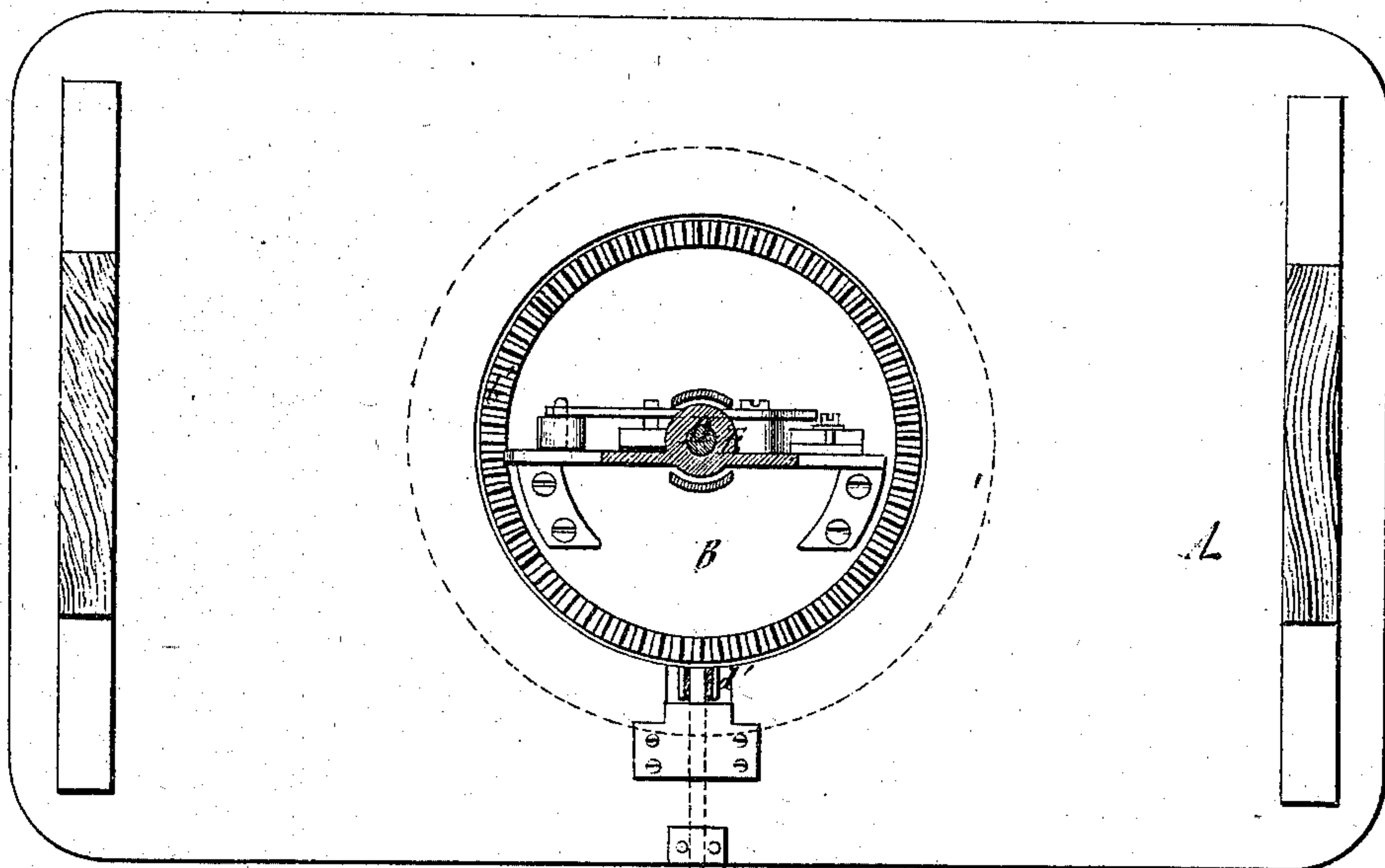


Fig. 4.

Fig. 5.

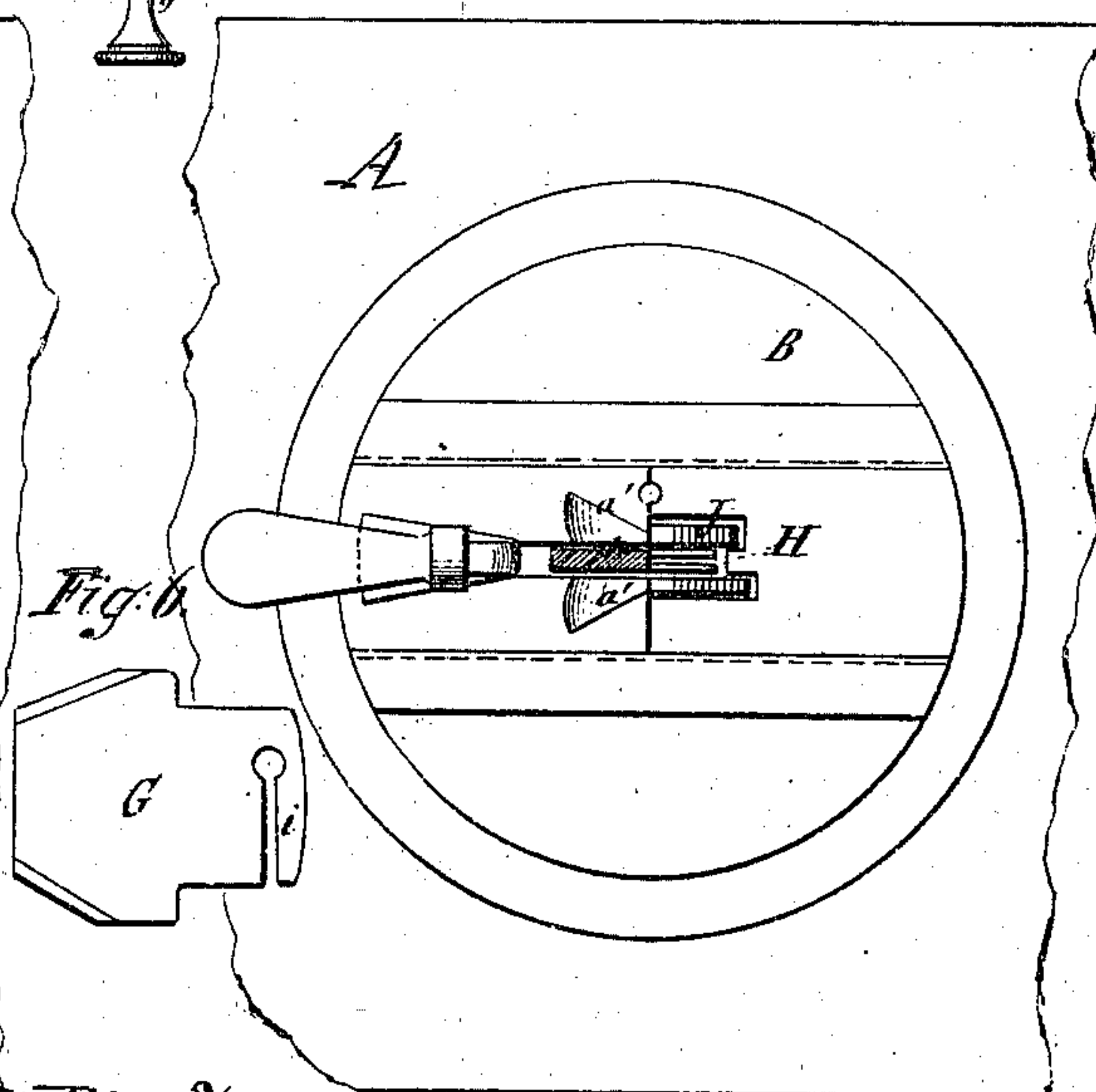
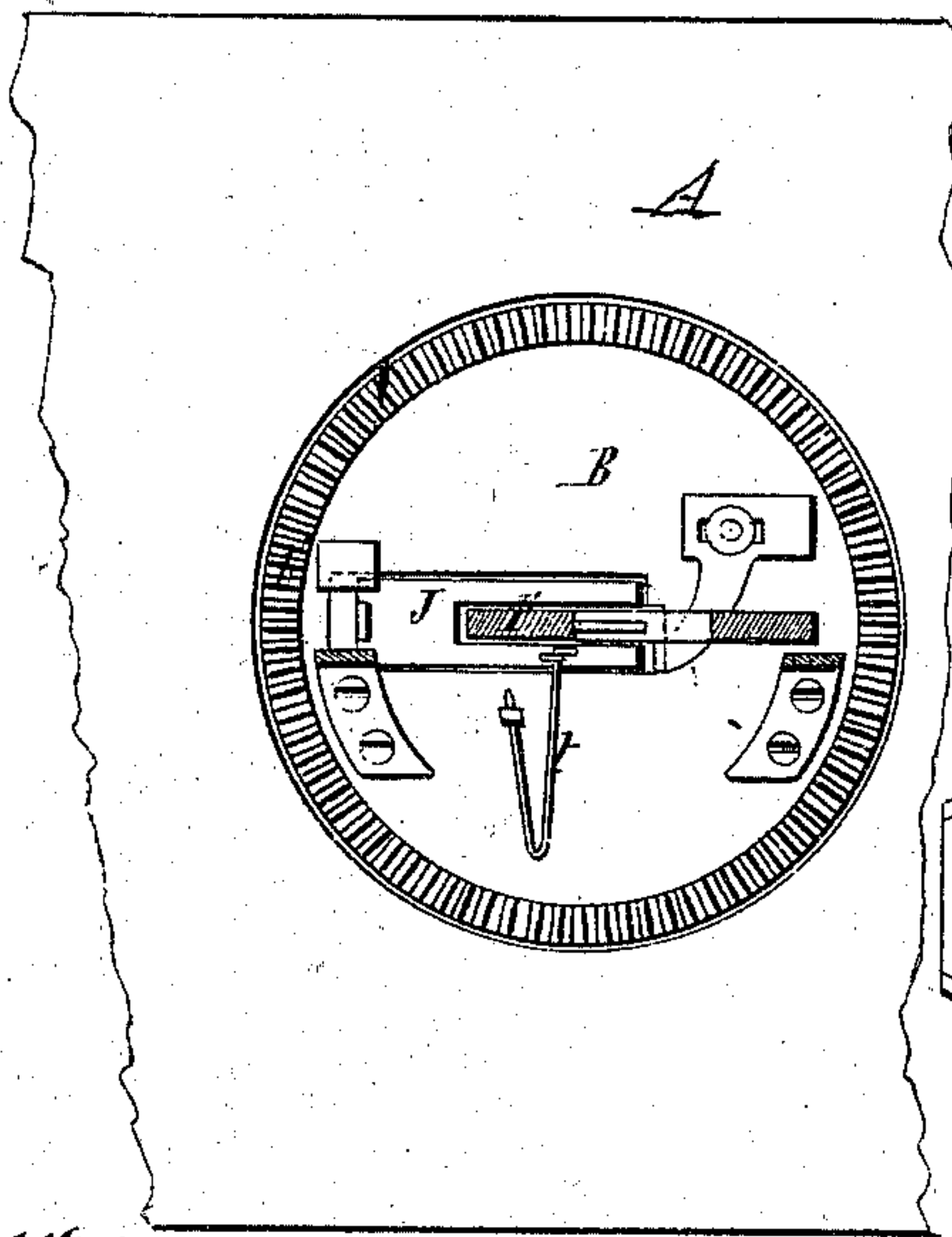


Fig. 6.

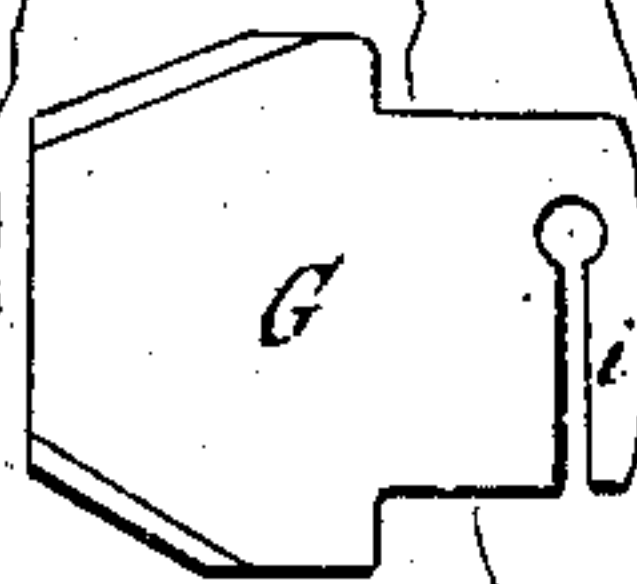
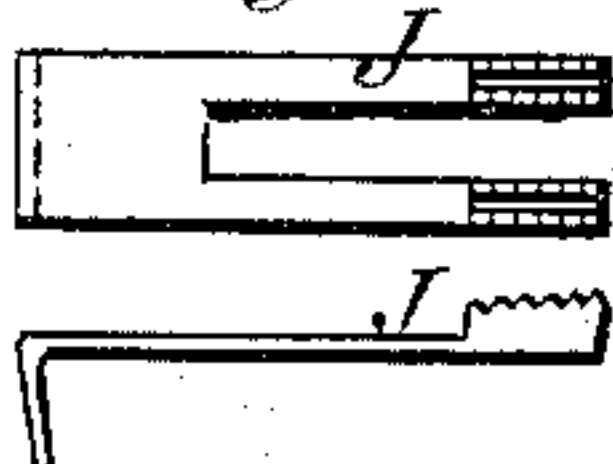


Fig. 7.



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# United States Patent Office.

ALBIN WARTH, OF STAPLETON, NEW YORK.

Letters Patent No. 106,101, dated August 2, 1870.

## IMPROVEMENT IN MACHINES FOR CUTTING TEXTILE AND OTHER MATERIAL.

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, ALBIN WARTH, of Stapleton, in the county of Richmond and State of New York, have invented a new and improved Machine for Cutting Textile and other Materials; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a sectional front view of the invention.

Figure 2 is a transverse section of the same.

Figure 3 is an inverted sectional plan of the same, the line *x x*, fig. 1, indicating the plan of section.

Figure 4 is a similar view thereof, the plane of section being indicated by the line *y y*, fig. 1.

Figure 5 is a sectional plan or top view thereof.

Figure 6 is a detached view of the hasp.

Figure 7 is a detached plan and side elevation of the feed-dog.

Similar letters indicate corresponding parts.

This invention relates to a machine intended for cutting cloth, muslin, paper, leather, or other materials used in the manufacture of garments or shoes, said machine being principally constructed of a reciprocating knife and automatic feed mechanism, in such a manner that the material to be cut is gradually fed under the knife, and that, by turning or guiding the material, the knife can be made to follow a rectilinear or curved path. Instead of turning the material to be cut, the knife and feed mechanism, together with the platform supporting said material, may be made to swivel in such a manner that any desired pattern can be cut out from a large piece of cloth or other material, without difficulty.

With the feed mechanism is combined a presser-foot, which slides on the rod that carries the knife, and is provided with a stop-lever, by means of which it can be locked in an elevated position.

The knife is stamped out of sheet-metal with a double cutting-edge, and with a locking-spring formed at its rear edge, so that, when said knife is passed through the mortise in the rod intended to receive the same, the locking-spring catches over the rear edge of said rod, and retains the knife.

The entire mechanism is supported by a platform capable of being swiveled round in either direction, either by a hand-lever attached to its top surface, or by foot-power applied to a foot-piece below, or by a circular rack and pinion, which can be operated from a distance.

The material, after having been cut, is prevented from crowding the knife by means of spreading flanges rising from the platform on either side of said rod.

The knife, on descending, enters a socket with a

double cutting-edge, and provided with a clearer to prevent it from getting choked up by fibers or other small particles liable to become disengaged from the material exposed to the action of the knife.

In the drawing—

The letter A designates a table made of wood or other suitable material, and of any desirable form or size.

On this table is placed a circular platform, B, from the bottom surface of which extends a hanger, C, carrying a rod, D, that is stepped in a bearing, *a*, secured to a rod, *b*, which is fastened between the legs of the table A.

The rod D is firmly secured to the hanger C, and on its lower part is mounted a foot-piece, *e*, so that the operator can turn the hanger and the platform in either direction by the action of his foot, the platform B being fitted into the table A, so that it can be readily swiveled round its own center.

The rod D forms a guide for the sleeve E, from the top part of which extends a flat bar, F, intended to carry the knife G, while on its bottom part are secured two flanges, *e e*, which straddle the end of a lever, *f*, to which an oscillating motion is imparted by an eccentric, *g*, or by any other suitable mechanism.

As the lever *f* oscillates, it imparts to the sleeve E and bar F a reciprocating rising and falling motion.

The eccentric *g* revolves on the rod *b*, motion being imparted to it by hand, foot, or any other power.

If foot-power is used, I employ a treadle, *h*, which is hung at or near the center of its length, so that motion can be imparted to it in one direction by depressing the toes of the foot, and in the other direction by depressing the heel.

The knife G is stamped out of sheet-metal in the form shown in fig. 6. It presents a double cutting-edge, and on its back edge is formed a spring catch, *i*, so that, when the shank of the knife is pushed through its mortise in the bar F, said spring will catch over the rear edge of the bar and retain the knife firmly in position.

As the knife descends, it enters a socket, H, which is firmly secured to the hanger C, and the top of which presents double cutting-edges, either of which is brought in operation according to the position of the knife.

The material to be cut, on being fed under the knife, rests upon the top of the socket, and, as the knife descends, the material is cut by the action of the cutting-edge of the knife against the cutting-edge of the socket.

In the socket works the clearer I, which is firmly secured to the bar F, and passes into the socket from below, (see fig. 2.)

By the action of this clearer, all fibers and small



particles, which are liable to become disengaged from the material to be cut during the operation of cutting, are pushed out of the socket, and thereby the socket is prevented from becoming choked. The action of the clearer is improved by making its edge serrated.

† The material to be cut is fed to the knife by the action of a feed-dog, J, detached views of which are shown in fig. 7.

— This feed-dog straddles the bar F, and its serrated front end is supported by a lever, j, fig. 1, which is pivoted at one end to the hanger C, while its loose end bears upon the cam-shaped end k of a bell-crank lever, k l.

— This bell-crank lever has its fulcrum on a pivot, m, secured in a bracket attached to the hanger C, and its arm l is provided with a slot, o, which straddles a pin, p, secured in the bar F.

— In the end of the arm l is secured a friction-roller, q, that bears against the edge of a lever, r, said lever being pressed up against the friction-roller by a spring, s, (see fig. 1.)

— The upper end of the lever r supports the hook-shaped tail end of the feed-dog J, and said lever is curved, so that, when the friction-roller rises, it imparts to the lever r an oscillating motion, and thereby the feed-dog is carried forward toward the knife G; but before this forward motion of the feed-dog takes place, the cam-shaped end of the arm k of the elbow-lever causes the lever j, and with it the feed-dog J, to rise, so that the teeth of said feed-dog will take hold of the material to be cut, and be in position to carry said material along when the forward motion of the feed-dog takes place.

— A spring, t, (see fig. 4,) which acts on the feed-dog, serves the double purpose of keeping the serrated end of the same down upon the lever j and of pressing the hook-shaped end of said feed-dog up against the lever r.

— When the bar F rises, therefore, the feed-dog is first caused to take hold of the material, and then it receives the forward motion, thereby carrying the material under the knife, and, when the bar F descends, the feed-dog is caused to drop and then to recede ready for a new move.

— The bar F extends a certain distance beyond the mortise intended to receive the knife, and the upper end of said bar forms the guide for the tubular shank of the presser-foot K.

— This presser-foot straddles the knife, and it is depressed by the action of two springs, u u, one on each side, so as to produce a uniform action. These springs are hitched at their bottom ends to a wire passing through or fastened in the bar F, and their upper ends catch over the top edge of the tubular shank of the presser-foot.

— By the action of the presser-foot, the material to be cut is kept down upon the platform during the time the cutting takes place, and at the moment the feed-motion takes place, the presser-foot is raised sufficiently to allow the material to be fed without obstruction.

— The presser-foot can be raised by means of a handle, v, which is hinged to its shank, and which also acts as a stop to retain the foot in its elevated position.

— For this purpose it is brought to bear upon the edge of a handle, w, which rises from the platform B, and serves to turn the same, together with the entire cutting mechanism, in either direction, as the pattern to be cut may demand.

— From the platform B rise two mold-board-like

flanges, a', one on each side of the bar F, and close to the same, for the purpose of throwing off the material after it has been cut, and preventing the same from crowding against the sides of the bar F.

— The platform B is provided at its under surface with a circular rack, b', (see figs. 2, 3, and 4,) and through the edge of the table A extends a rod, c', which carries at its inner end a pinion, d', and at its outer end a handle, f'.

— By pushing in this rod the pinion d' is thrown in gear with the rack b', and the platform B can be rotated by turning the handle f'.

— The material to be cut is adjusted on the platform B under the presser-foot, and, by imparting to the cutter-bar a reciprocating motion, the operation of cutting is effected.

— If the knife is to follow a curved path, and the piece to be cut is small, the platform may remain stationary, and the material can be turned as required; but if the piece from which a certain pattern is to be cut out is large, and cannot be conveniently turned, then I turn the platform B, either by hand or by foot, causing the knife to follow the outlines of the pattern, previously marked on the material.

— This machine is principally intended for large clothing manufacturers, and it is capable of cutting at one operation through twenty or more thicknesses of cloth or other textile fabrics, or through a still larger number of thicknesses of paper, or through several thicknesses of leather. The manipulation of the machine is quite simple, and its operation is exceedingly rapid, so that it produces a great saving in hand-labor.

— It must be remarked that, for different kinds of work, the knife may be changed; it may, for instance, be made to act as a punch or a button-hole cutter, or as a cutter of any other description.

What I claim as new, and desire to secure by Letters Patent, is—

1. The presser-foot, arranged to slide in the reciprocating shaft of the cutter, and provided with suitable tension-spring, substantially as and for the purpose described.

2. The handle W, rising from the rotating platform B, in combination with the latch v of the presser-foot, serving to operate the platform and hold the presser-foot when elevated, as and for the purpose described.

3. The knife G, provided with a spring catch formed at its rear edge, substantially as set forth.

4. The rotating platform B, carrying the feeding and cutting mechanism and their operating parts, substantially as and for the purpose described.

5. The arrangement of a socket with a double cutting-edge, to act in combination with the reciprocating knife, substantially as described.

6. The arrangement of a clearing-blade, attached to the cutter-bar, and serving to clear the socket H, substantially as described.

7. The bell-crank lever k l and levers j and r, in combination with the cutter-bar F and feed-dog J, substantially as described.

8. The stationary mold-board-shaped flanges a' a', embracing the sides of the reciprocating cutter-bar F, for throwing off the cut material and preventing clogging with the bar, as set forth.

This specification signed by me this 8th day of April, 1870.

ALBIN WARTH.

Witnesses:

W. HAUFF,

C. WAHLERS.