

A. MOLTZ.
Sewing Machine.

No. 103,070.

Patented May 17, 1870.

Fig. 1.

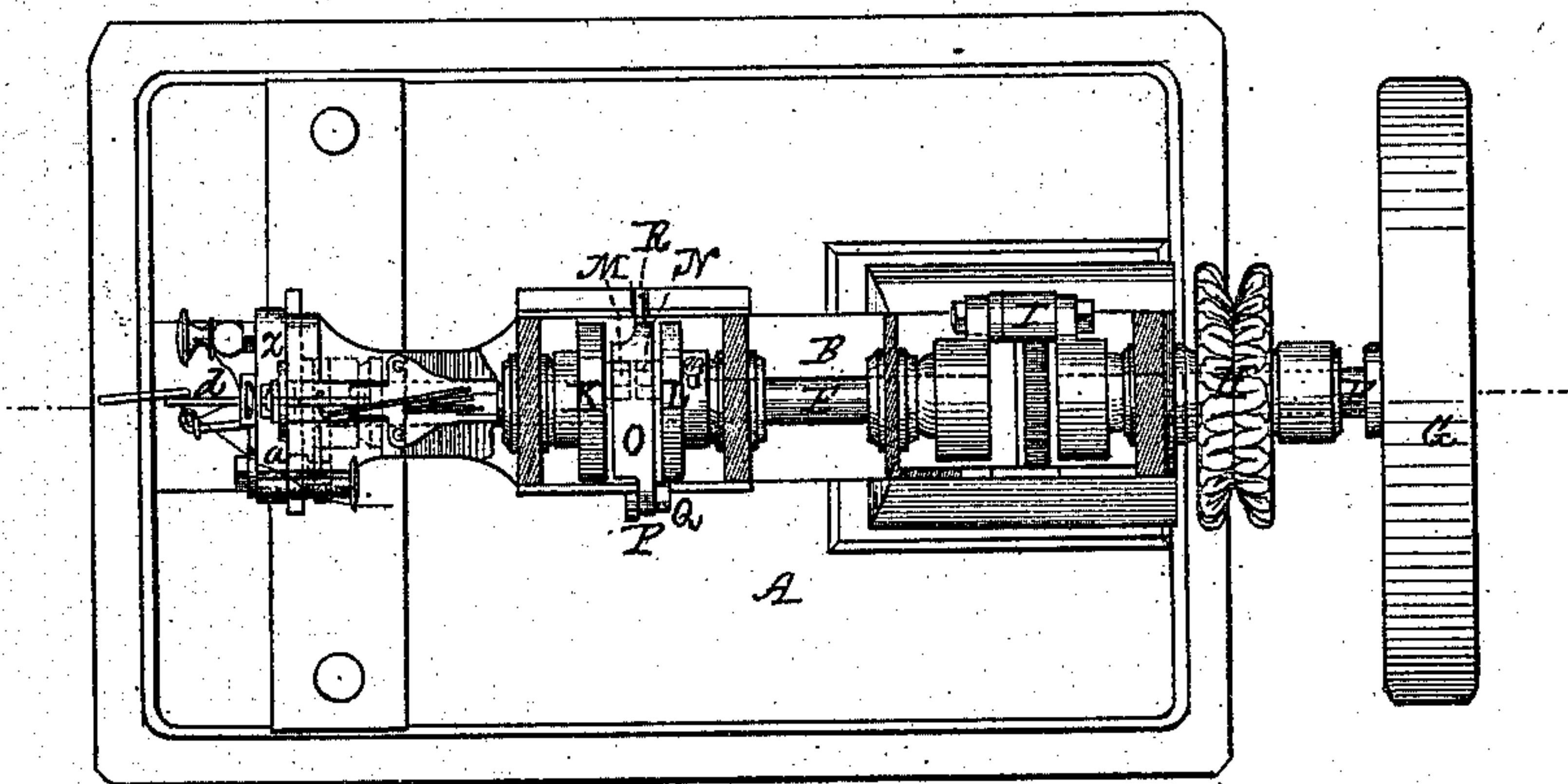


Fig. 2.

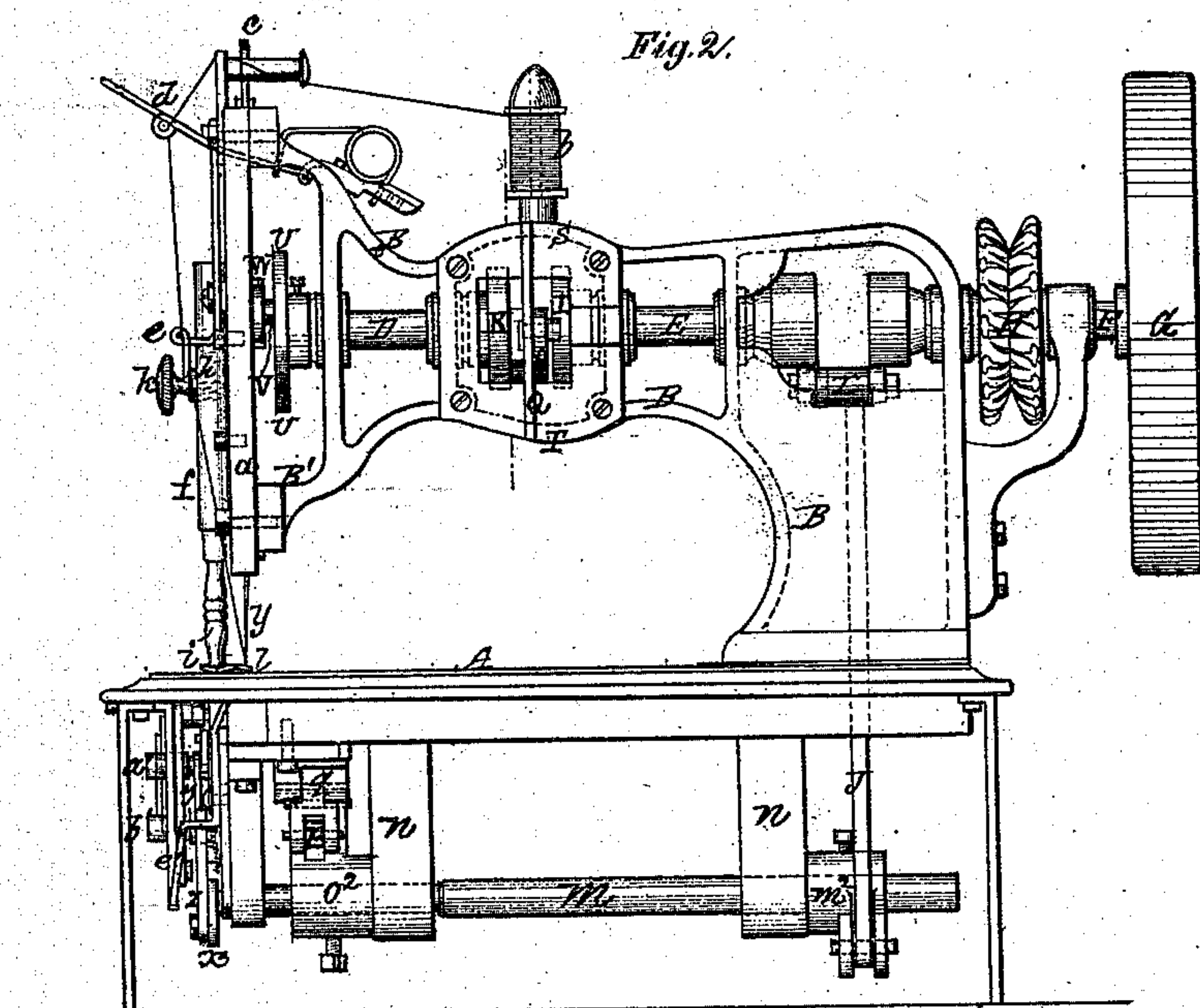
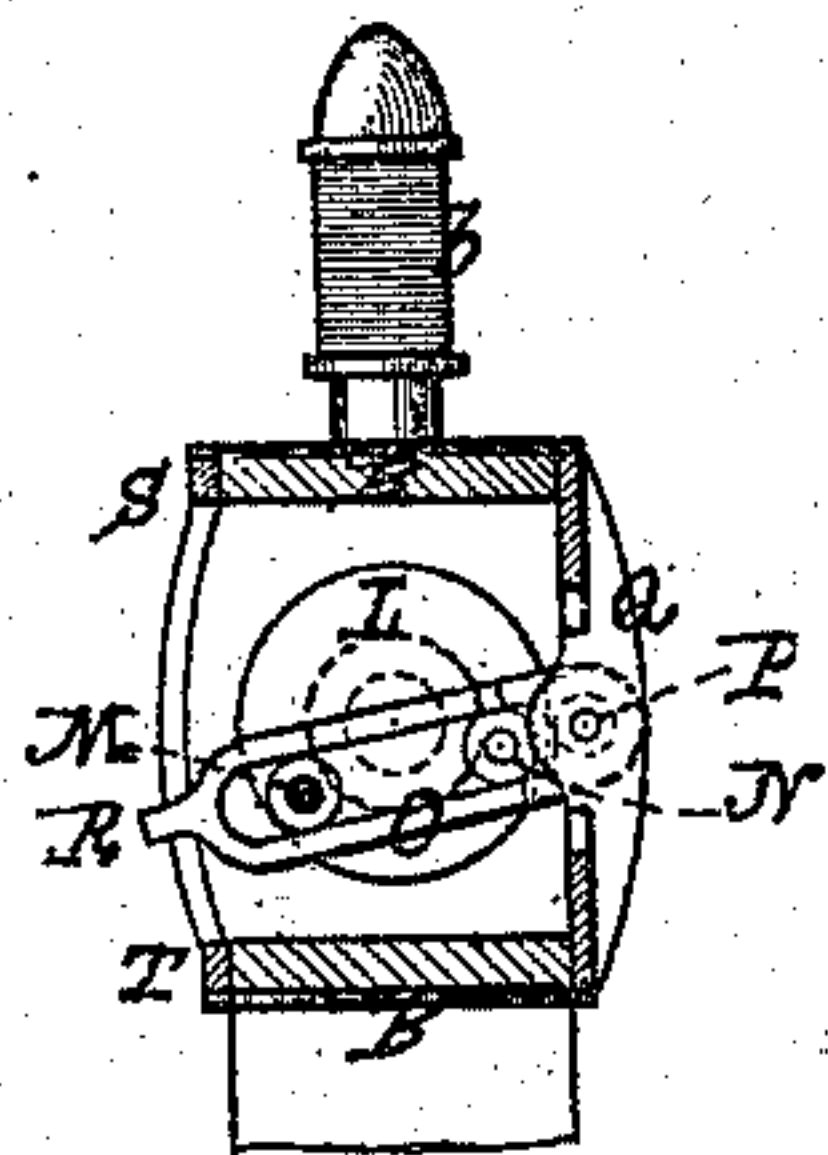


Fig. 3.



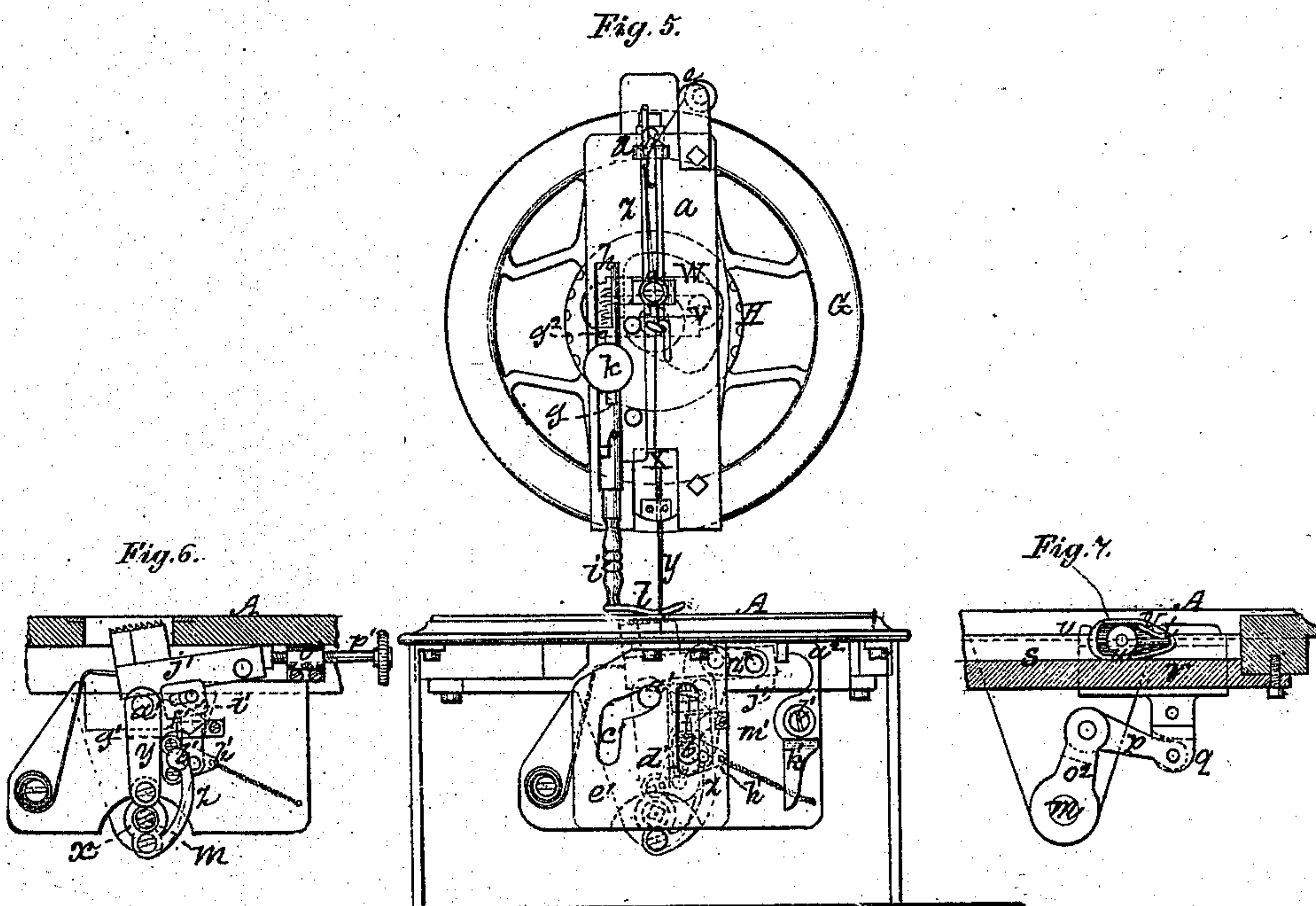
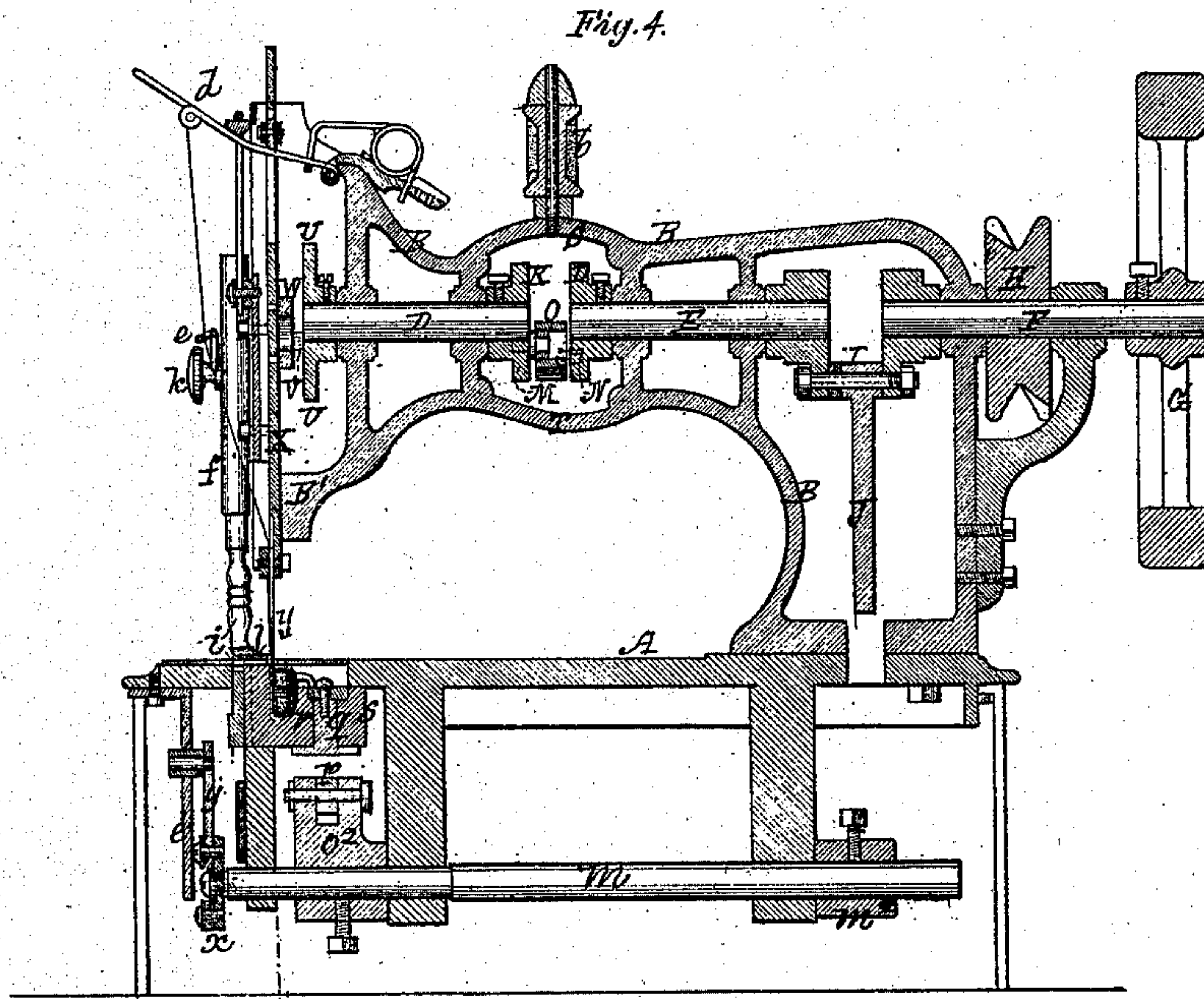
Witnesses:
Arthur O'Neil
Emile Moltz.

Inventor:
Arthur Moltz.

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Sewing Machine.

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Witnesses:
Arthur Weiss
Emile Moltz

Inventor:
Adam Moltz

UNITED STATES PATENT OFFICE.

ADAM MOLTZ, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 103,070, dated May 17, 1870.

To all whom it may concern:

Be it known that I, ADAM MOLTZ, of New York, in the county of New York and State of New York, have invented certain Improvements in Sewing-Machines, of which the following is a specification.

The nature of my invention consists in dividing the driving-shaft into sections for the purpose of obtaining rotary and intermittent motions from the same shaft, whereby the movements of the needle-bar are such as to not only make a large loop, but enable me to employ a large shuttle, carrying a spool of from seventy-five to one hundred yards capacity, (or about the amount of thread required for a day's work,) thereby obviating the necessity of stopping the machine every half an hour to replenish the thread by taking out the shuttle, removing the empty spool, and inserting a filled one in its place; and it further consists of a direct feed movement suited alike to thick and thin material, said movement being composed of slides and cams operated by the rocker-shaft, as hereinafter more fully described.

Figure 1 represents a plan or top view of my improved sewing-machine with part of overhanging arm removed; Fig. 2, a side elevation; and Fig. 3, a sectional view of divided shaft, showing link-connection. Fig. 4, Sheet 2, is a vertical central and longitudinal section of the machine; Fig. 5, a front end elevation of same; Fig. 6, a sectional view, showing cams and springs for operating the feed; and Fig. 7, a sectional view through shuttle and spool, showing toggle-joint connection between shuttle-driver and rocker-shaft.

In the said drawings, A indicates the table of the machine; B, the goose-neck or arm attached to said table, which sustains in proper bearings (see Fig. 4) the divided driving-shaft, needle-bar, pulley, and fly-wheel.

D E F is the divided driving-shaft, carrying on its outer section, F, the fly-wheel G and pulley H. The sections E F of the driving-shaft are connected by an adjustable crank-arm, I, said crank-arm carrying the connecting-link J, which connects the driving with the rocker shaft. The sections D E of the driving-shaft are provided with cams K L, carrying pins M N, which play into an open link, O, said link O being pivoted at one end, P, to an upright post, Q, attached to the goose-neck, and at its opposite end said link O is provided with a stop

or projection, R, which abuts against the upper and lower sides, S T, of the goose-neck bearing. (See Fig. 3.) At this point, and by means of the open link O, the rotary motion of the section E converts the section D into an intermittent motion, and this section D, being provided with a cam, U, at its forward end, carrying a pin, V, which plays into a slotted horizontal bar, W, attached to the needle-bar X, (carrying the needle Y,) imparts to said needle-bar the required intermittent movements up and down.

b is the bobbin from which the thread is drawn through the loops *c d e*, the loop *d* being a spring-loop and partaking of the movements of the needle-carrier for the purpose of giving the desired tension to the thread and taking up the slack as the needle leaves the cloth.

f is a hollow tube attached to the face-plate of the goose-neck, has a rectangular slot, *g g'*, and contains a spiral spring, *h*, for operating the presser *i*, which can be elevated by its knob *k* and its foot *l* turned from off the cloth by passing the knob into *g'* of the slot. (See Fig. 5.)

m is the rocker-shaft, sustained in bearings *n n* below the table A, said rocker-shaft being connected by its adjustable collar *m'* with the driving-shaft by the link J, and carrying near its forward end another adjustable collar, *o'*, which receives a link, *p*, which is also connected by a hinge-joint, *q*, with the shuttle-driver *r*, forming a toggle-joint connection between rocker-shaft and shuttle-driver. (See Fig. 7.) This driver *r* slides in a bed, *s*, in the table, and embraces the shuttle *t* in front and rear by its fingers *u v*; and *w* is the spool carried by said shuttle. The rocker-shaft *m* at its forward end carries an adjustable plate, *x*, to which two arms, *y z*, are pivoted. These arms are provided with cam-pins *a' b'*, which play in slots *c' d'* in the confining-plate *e'*. One of these arms, *y*, has a hook, *f'*, which acts on a projection, *g'*, on a small cam, *h'*, and as the arm is operated by the rocker-shaft and the stitch made by the needle this hook catches the projection *g'*, drawing it downward and elevating a link, *i'*, pivoted to the cam *h'* and to the feed-bar, said link *i'* in turn elevating the serrated feed-bar *j'*, holding the same up to the cloth the required time for the other arm, *z*, by its joint link-connection *z'*, to push

the serrated feed-bar forward, when the hook f' of the arm y will drop the projection g' , permitting the feed-bar to fall, (for the next stitch,) when the feed-bar will be drawn backward by the arm z until the next forward movement of the feed-bar is required.

k' is the stitch-regulating finger-bar, attached by a clamping-screw, l' , to an arm, m' , extending downward from the table. The feed-bar j' abuts against this finger-bar k' , the length of stitch being determined by moving the finger-bar head a^2 toward or away from the feed-bar and clamping the same.

What I claim is—

1. The sectional shaft D E F, and pivoted upon link O, combined and connected with the needle-bar X, as set forth.

2. The adjustable plate x on rocker-shaft, arms $y f' z$, slotted plate e' , cam h' , and serrated feed-bar, and elevator i' , in combination, when constructed as and for the purpose described.

In testimony whereof I hereunto set my signature this 17th day of February, 1870.

ADAM MOLTZ.

Witnesses:

ARTHUR NEILL,
EMILE MOLTZ.