

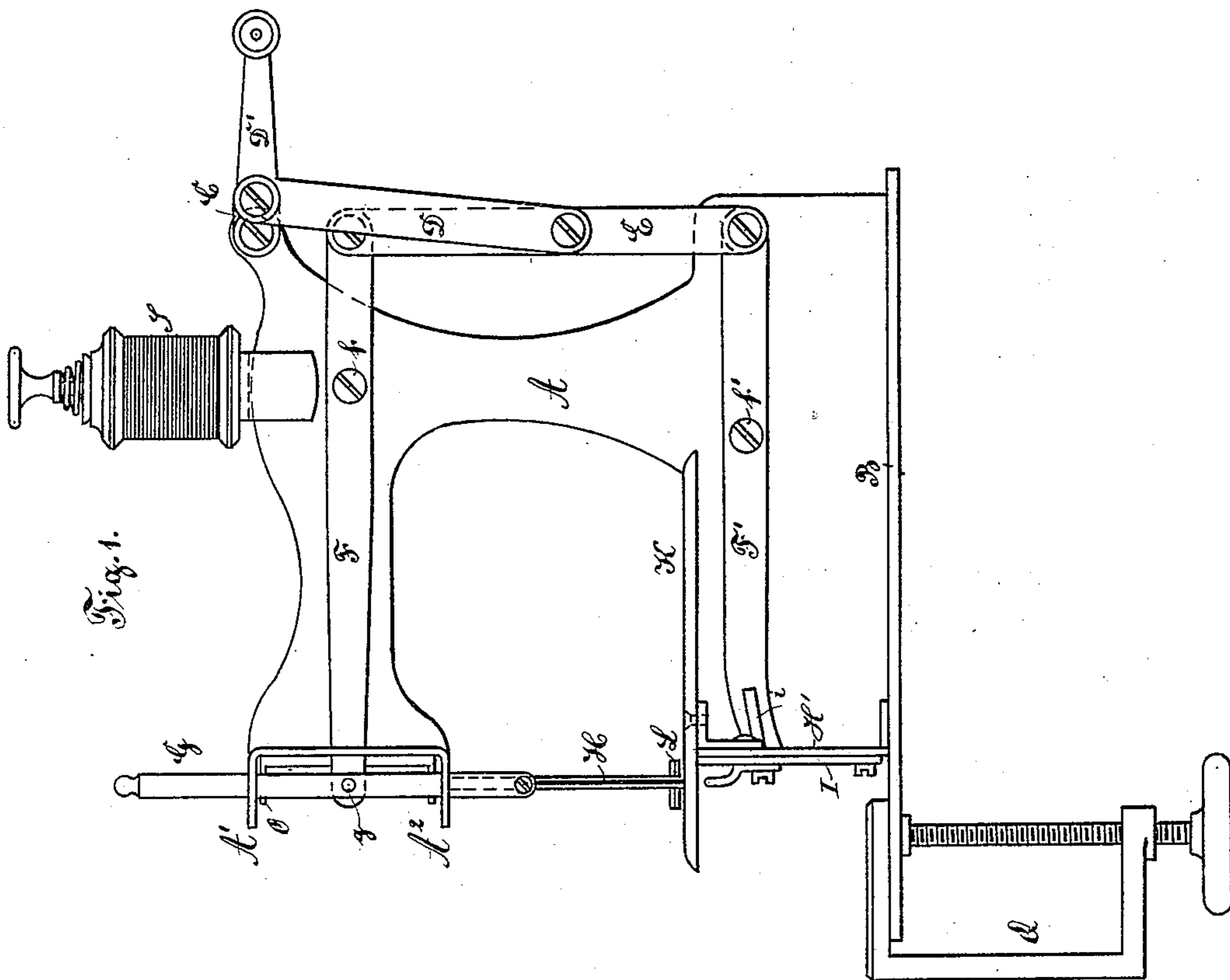
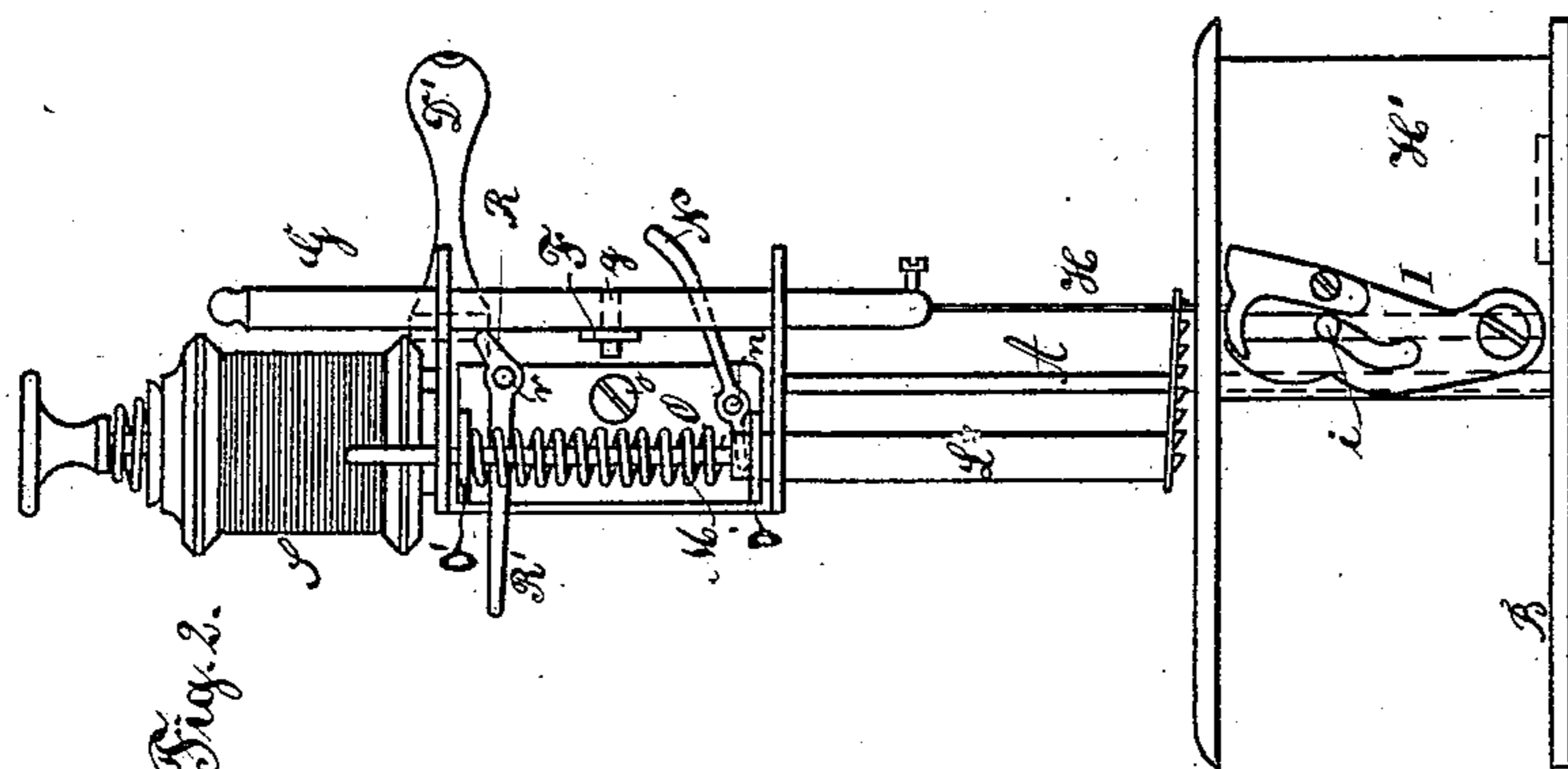
(No Model.)

2 Sheets—Sheet 1.

F. W. MÜLLER, Jr.
SEWING MACHINE.

No. 397,996.

Patented Feb. 19, 1889.



Witnesses,

R. H. Hallis,

Joseph Barker

Inventor

Friedrich Wilhelm Müller Jr.

By

Fraukland Jannet.

Attorney.

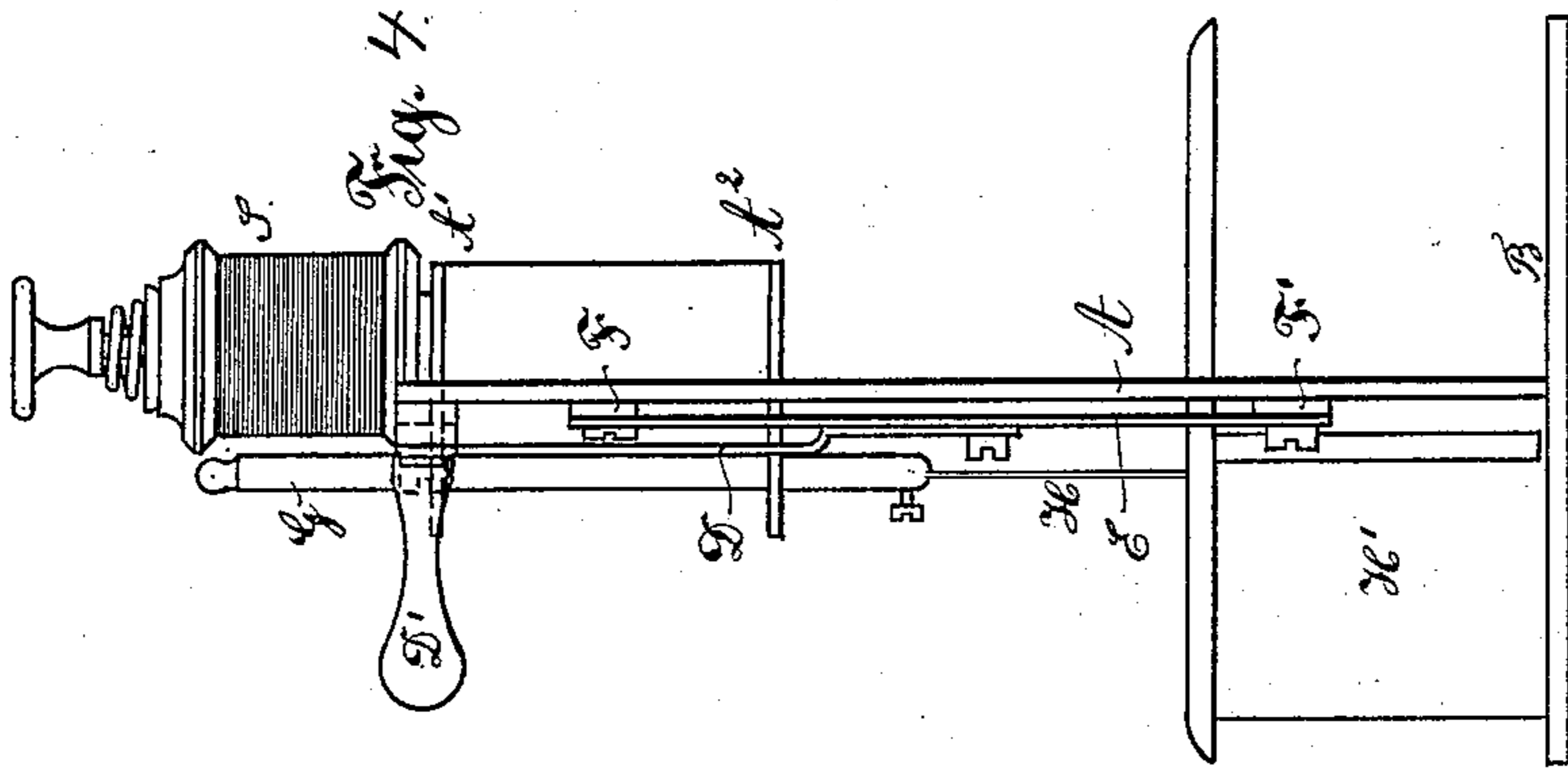
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UNITED STATES PATENT OFFICE.

FRIEDRICH WILHELM MÜLLER, JR., OF BERLIN, GERMANY.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 397,996, dated February 19, 1889.

Application filed June 18, 1888. Serial No. 277,411. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM MÜLLER, Jr., a subject of the King of Prussia, residing at Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

My invention relates to improvements in sewing-machines, particularly in small toy or pocket sewing-machines for the use of children; and the object of my invention is to construct a machine which, owing to its great simplicity, may be readily used by any child without previous practice and without the assistance of adults. With toy or pocket sewing-machines hitherto in use children in general are not able to sew by themselves, such small machines, instead of amusing the child and affording a useful occupation for the same, becoming only a source of annoyance.

The improved machine herein set forth also offers the considerable advantage of being cheaper than any hitherto in use, which for toy machines is an essential condition as regards its commercial success.

The improvements consist, essentially, of a new driving device for the working parts of the machine, and, secondly, of an improved feed device and stitch-guide.

To obtain the utmost simplicity in the constituent parts of the machine, I avoid the use of toothed wheels, gearing, and pinions, and also of crank-shafts and like parts which necessitate careful or exact workmanship.

In the improved machine herein set forth nearly every part may be readily stamped out of sheet metal or cast and fitted together by rivets, screws, or soldering.

As a perfect and regular seam can be obtained by this improved construction of sewing-machine, I do not limit myself to the employment of the same as a toy or pocket sewing-machine, as my improvements may be applied to sewing-machines of any size or type. For small-sized or toy machines I prefer the one-thread chain or lock stitch seam, this being the best for children's use, the two-thread or shuttle device giving constant annoyance to the child. Nevertheless my improvements can also be adapted to work with the two-thread or shuttle system.

In the accompanying drawings I have shown my invention as applied to a small-sized toy or pocket sewing-machine.

Figure 1 is a side elevation of the sewing-machine; Fig. 2, an elevation looking toward the front or needle end of the same; Fig. 3, a plan, and Fig. 4 an elevation looking toward the rear end of the machine.

The frame A may consist of a sheet-metal or other convenient standard mounted upon or made integral with a suitable bed-plate, B, which may be fastened to the edge of a table by a suitable clamp, Q, or by other convenient means. The standard A at its upper rear end carries a pivot, C, with a winch-sleeve and handle, D', on it, connected to a reciprocating rod, D, the lower end of which is connected to the driving-rod E, to which it imparts a vertical up-and-down motion.

The two ends of the driving-rod E are connected, respectively, to levers F F', pivoted, respectively, at *f f'* on the frame. In some cases it may be preferable to provide adjustable pivots *f f'* to control the stroke of the lever-arms F F'. The free ends of said levers F F', by means of the driving-rod E, oscillate up and down in a vertical plane while the winch-handle D' is being turned.

The forward end of the upper horizontal driving-lever, F, is attached to a pin, *g*, projecting from the needle-bar G, which, by the oscillating motion of the lever F, is caused to reciprocate in a vertical plane, so that the needle H, secured to the needle-bar, works regularly up and down through the needle-plate.

The lower driving-lever, F', has attached to its forward end a guide-pin, *i*, working within and projecting through a vertical slot in the supporting-plate H'. The pin *i* works within a cam-slot in the thread-catcher I, which is pivoted to the said supporting-plate H'. The said thread-catcher I by this means receives an oscillating motion in a vertical plane across the needle-path, and, catching the needle thread, forms the loop of the chain-stitch and completes the stitch in the manner known in sewing-machines.

Where it is desired to employ a shuttle instead of the thread-catcher I, the shuttle-driving arm receives its to-and-fro motion by means of the aforesaid oscillating motion of

the lower driving-lever, F', in the same or a similar way to that described with reference to the thread-catcher I.

The bobbin S is carried by a pin secured to the frame A, and the thread is suitably guided to the needle by passing it through a tension device. (Not shown in the drawings.)

My invention further relates to an improved feed device connected with the driving mechanism, as described. The feed-plate is made integral with the presser-foot, which, being lifted at each stroke of the needle, has a forward motion imparted to it on descending again, thereby feeding the work toward the needle. The feed-plate is worked by the upper driving-lever, F, which on each downward stroke comes in contact with the longer arm of a lever, N, pivoted at *n* to a plate, O, hereinafter described, forcing said arm down to a certain extent. The short arm of said lever N, being lifted, engages with a pin or shoulder secured to or formed in one with the feed-bar L, which accordingly is lifted once during each revolution of the winch-handle D'. A spring, M, surrounding the upper part of said feed-bar L, serves to force the same down again when the lever F has released the lever N. Besides this vertical reciprocating motion of the feed-plate or presser-foot, the said foot also receives at each revolution of the winch-handle D' a forward motion to advance the stuff. The amount of the said forward motion may be adjusted so as to vary the length of stitch. In order to obtain this adjustable forward motion of the feed-bar, I pivot on the frame at *o* a plate, O, having wings *o'*, between which the presser-bar is guided. Upon one side of this plate O is secured at *r* a cam-shaped shoulder, R, this shoulder being preferably bolted to the plate, that it may be adjusted in order to project from the plate O to a greater or less extent. This shoulder projects into the path of the lever F, and is struck thereby in the upward movement of the same, thus turning the plate O on its point *o*, and through it moving forward the bar L. In the downward movement of the lever F, when it strikes the lever N, it will force the bar L out of engagement with the fabric, at the same time swinging the plate and bar back to their vertical position, the spring M operating to force the bar, when the lever N is disengaged from the lever F, back into engagement with the fabric.

For the purpose of rendering it more convenient to adjust the throw of the feed-bar, a lever, R', is secured to or made integral with the shoulder R, this lever being readily ac-

cessible from the front of the machine, and by loosening the bolt which holds the shoulder R to the plate O the amount of projection thereof into the path of the lever F may be regulated.

I claim as my invention—

1. In a sewing-machine, in combination with the frame, an upper lever pivoted thereto, a needle-bar secured to the front end of said lever, a lower lever, also pivoted to the frame, a thread-catcher pivoted to the supporting-frame and oscillated by one end of the lower lever, a connecting-rod between the upper and lower levers, and means for operating the same, whereby said levers are simultaneously operated in vertical plane, substantially as described.

2. In a sewing-machine, in combination with the frame, a lower supporting-plate, H', having a vertical slot formed therein, an upper lever pivoted to said frame, a needle-bar secured to the front end thereof, a lower lever, also pivoted to said frame, having a pin attached to its forward end projecting through the vertical slot in the plate H', a thread-catcher pivoted to said plate and provided with a cam-slot engaging with the pin on the lower lever, whereby in the movement thereof the thread-catcher is oscillated, a connecting-rod between said upper and lower levers, and means for operating the same, whereby said levers are operated simultaneously in vertical plane, substantially as described.

3. In a sewing-machine, in combination with the frame, a lever pivoted thereto, a needle-bar secured to the front end thereof and actuated thereby, a presser-bar carrying a feed-plate, a swinging plate pivoted to the frame of the machine and bearing against the presser-bar, a lever, N, pivoted to said plate, and having one end projecting into the path of the needle-bar-actuating lever and the other in engagement with the presser-bar, a spring for keeping said presser-bar normally down, and a shoulder secured to the swinging frame and projecting into the path of the needle-bar-actuating lever, whereby on the upward movement of the same the presser-bar is swung forward to feed the work, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRIEDRICH WILHELM MÜLLER, JR.

Witnesses:

B. ROI,

OTHMAR LENZ.