

No. 678,926.

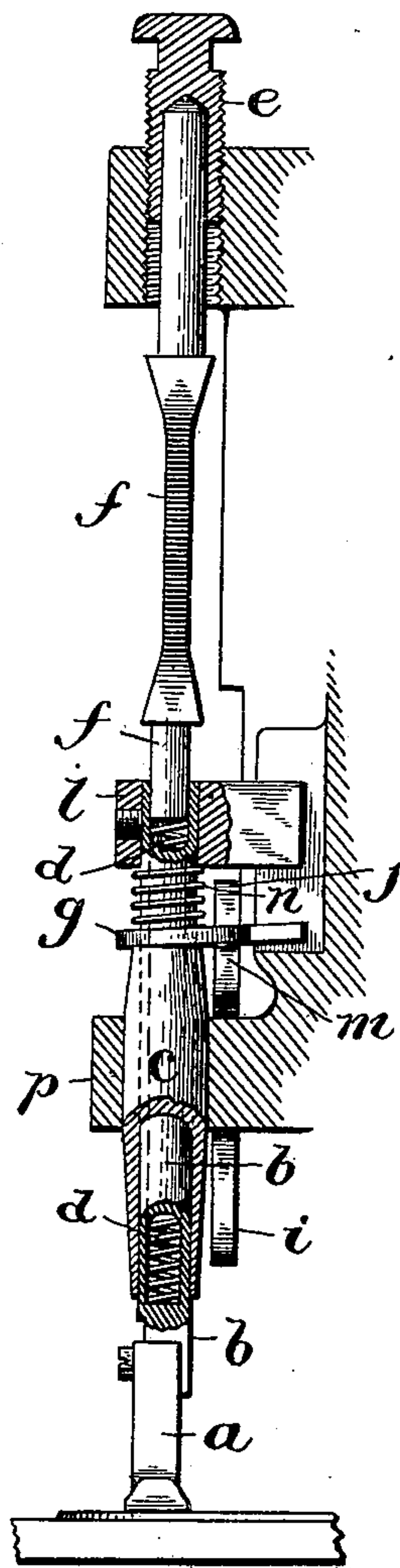
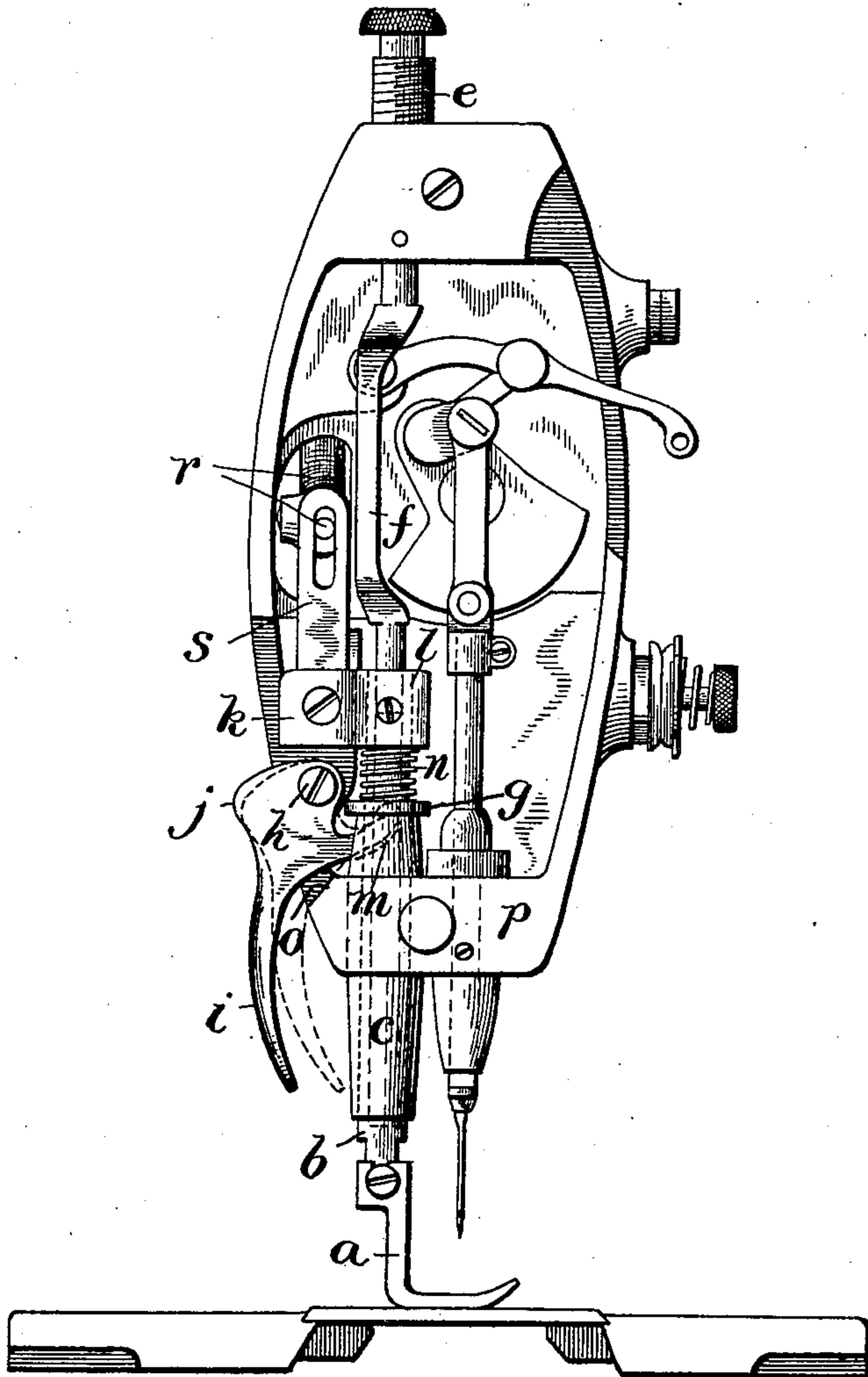
Patented July 23, 1901.

E. B. ALLEN.

SEWING MACHINE PRESSER FOOT LIFTING DEVICE.

(Application filed Jan. 10, 1901.)

(No Model.)



Witnesses:

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EDWARD B. ALLEN, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF NEW JERSEY.

SEWING-MACHINE PRESSER-FOOT-LIFTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 678,926, dated July 23, 1901.

Application filed January 10, 1901. Serial No. 42,746. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. ALLEN, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Sewing-Machine Presser-Foot-Lifting Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 In the operation of sewing-machines the attendant frequently desires to shift the work manually beneath the presser-foot while the machine is running for the making of a few fastening-stitches at the end of a seam by

15 moving the work in a direction opposite to its movement by the automatic feed, or it may be desired to shift the work back and forth during the formation of a few stitches for the purpose of making a stay or bar, and to enable the work to be thus shifted manually

20 the presser-foot must be lifted slightly to release the work. If, however, the presser-foot be lifted too much while the machine is running, there is a liability of skipping stitches,

25 for the reason that the work will lift with the needle, and thus the latter will fail to throw out loops of its thread to be entered by the shuttle or other loop-taking device beneath the throat-plate.

30 This invention has for its object to provide means whereby the attendant may lift the presser-foot slightly, sufficient to release the work, but to a limited extent only, the extent or amount of the limited lift of the said

35 presser-foot being the same from the upper surface of the work whatever the thickness of the latter may be.

To this end the invention in its preferred form comprises a tilting gripping or clutch

40 plate, through which the presser-bar loosely passes, so that in the ordinary operation of the machine the presser will be free to rise and fall to accommodate material of varying thickness and also so that the ordinary lift

45 of the presser when the work is to be inserted or removed will not be interfered with, this tilting clutch-plate being engaged by a limited-movement lifter, so that while the presser may be lifted and held raised for any

50 desired number of stitches the attendant cannot possibly in raising the presser-foot by

this clutch-plate lift the same so high as to cause skipped stitches.

In the accompanying drawings, Figure 1 is a front end view of the upper part of a well-known style of sewing-machine embodying the invention. Fig. 2 is a detail to illustrate the operation of the tilting clutch-plate in raising the presser.

Referring to the drawings, *a* denotes the presser-foot, secured to the lower end of the short presser-bar *b*, passing through a steady-ing-sleeve *c*, attached to the frame of the machine, the presser being forced yieldingly downward by a spring *d*, the stress of which may be regulated by the screw *e* through the bar *f*, the lower end of which latter bears on said spring. The regulating-screw *e* is tapped in the top of the head of the machine and engages the upper end of the bar *f*. Resting on the top of the sleeve *c* is a tilting gripping or clutch plate (or it might be a block) *g*, having an opening through which the presser-bar loosely passes, so that the presser in the ordinary operation of the machine may rise and fall or be raised and lowered freely. This looseness, however, between the clutch-plate and the presser-bar is but very slight, so that if the said plate be slightly tilted it will grip the presser-bar, and then a bodily upward movement of the tilted gripping or clutch plate will impart a corresponding upward movement of the presser-bar to raise the presser slightly to release the work.

Pivoted on the screw *h* is a hand-lever *i*, having a cam portion *j* to engage an arm *k*, extending from a block *l*, attached to the presser-bar *b*, said lever *i* having also a finger or projection *m*, arranged to engage the tilting clutch-plate *g*. A light coil-spring *n* is preferably interposed between the block *l* and the plate *g* for the purpose of normally holding the said plate level and for restoring it to such position after it has been tilted and after the presser when lifted by said plate has been lowered.

When it is desired to raise the presser-foot to a considerable height for the purpose of inserting or removing the work, the attendant may lift the cam-lever *i*, and the cam portion *j* of said lever coming into engagement with the arm *k* will cause the presser-foot to be

lifted in the usual manner, or the presser may be lifted to a considerable height by the usual treadle or knee-operated lever *r*, which is connected with the arm *k* through the bar or link *s*. When it is desired to lift the presser slightly when the machine is running just sufficient to release the work, so that it may be shifted beneath the presser-foot by the attendant for the purposes hereinbefore indicated or for any other purposes, the attendant presses the lever *i* to the position denoted by dotted lines in Fig. 1, bringing it against a stop formed in the present instance by the corner or portion *o* of the stationary frame or head *p*. The first part of this downward or inward movement of the lever *i* will cause the finger or projection *m* (which is normally in contact with the clutch-plate *g*) to tilt the said plate, and a further downward or inward movement of said lever will cause the said plate to lift the presser-foot slightly, but sufficient to release the work, this slight lifting of the presser by the plate *g* being always of the same extent above the surface of the work, as the amount of lift of said presser by said plate is always the same whether the presser be higher or lower when the lift commences, as will be understood.

Instead of performing the limited lifting movement of the presser, as hereinbefore described, for the purpose of releasing the work while the machine is running by a hand-lever it is obvious that any suitable connections from a treadle or knee-lifting device to the clutch plate or device *g* might be employed if a suitable stop to limit the lifting movement of the presser by the clutch plate or device be provided, so that the presser-foot will be lifted only enough to release the work, but not enough to endanger skipping stitches.

Instead of employing a coil-spring encircling the presser-bar for forcing the presser-foot yieldingly downward on the work, as in the usual construction, the presser-bar is in the present instance formed hollow, and thus

receives the pressure-spring *d* within it. This construction is neat and compact and centralizes the pressure of the spring relative to the presser-bar, while the tension of the spring *d* may be readily regulated by the screw *e* through the rod or bar *f*.

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

1. In a sewing-machine, the combination with a presser-bar and presser-foot, of a tilting gripping or clutch device to engage said presser-bar, a non-automatic operating device to engage said tilting clutch device, and a stop for limiting the movement of said operating device, so that the said presser-foot may be lifted to a limited extent only, for the purpose of releasing the work when the machine is running to enable the stitch-forming operation to continue without danger of skipping stitches.

2. In a sewing-machine, the combination with a presser-bar and presser-foot, of a tilting gripping plate or device to engage said presser-bar, a hand-lever having a finger or portion to engage said tilting gripping device, and a stop to limit the movement of said hand-lever so that the said presser-foot may be lifted only sufficient to release the work and not far enough to endanger skipping stitches.

3. In a sewing-machine, the combination with a short, hollow presser-bar provided with a presser-foot, of a steadying-sleeve encircling said bar, a pressure-spring inclosed in said hollow bar, a regulating-screw tapped in the top of the head of the machine, a rod engaged at its upper end by said screw and bearing at its lower end on said spring, and a lifter for raising said bar and foot.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD B. ALLEN.

Witnesses:

HENRY CALVER,
HENRY J. MILLER.