No. 745,736. PATENTED DEC. 1, 1903.

L. ONDERDONK.

WORK PLATE OPERATING MECHANISM FOR SEWING MACHINES.

APPLICATION FILED DEC. 31, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

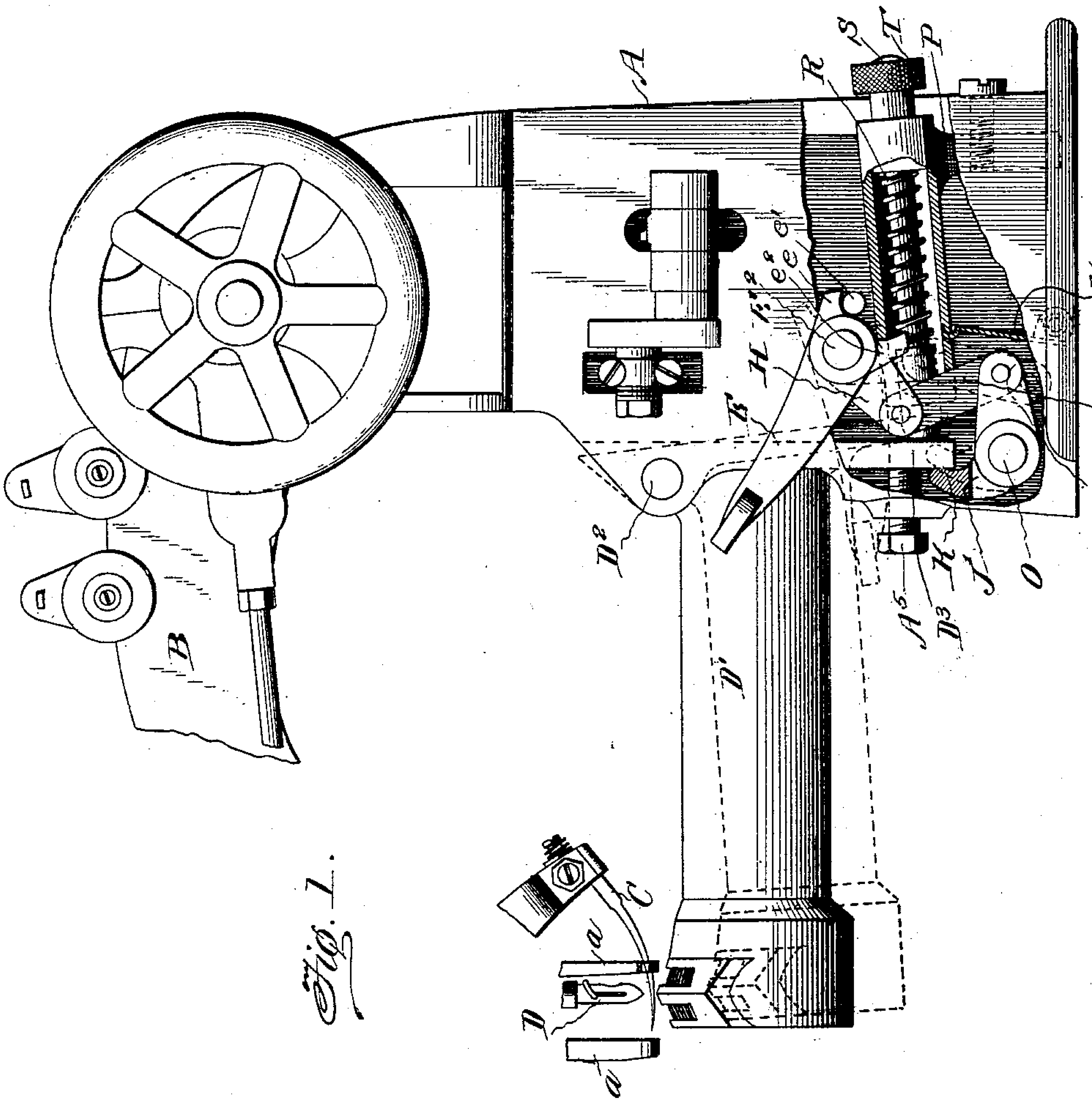


Fig. 1.

WITNESSES
Fenton S. Belt,
Grace P. Brereton

INVENTOR
Lansing Onderdonk
BY Sturtevant & Greeley
Attorneys.

No. 745,736. PATENTED DEC. 1, 1903.

L. ONDERDONK.

WORK PLATE OPERATING MECHANISM FOR SEWING MACHINES.

APPLICATION FILED DEC. 31, 1901.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

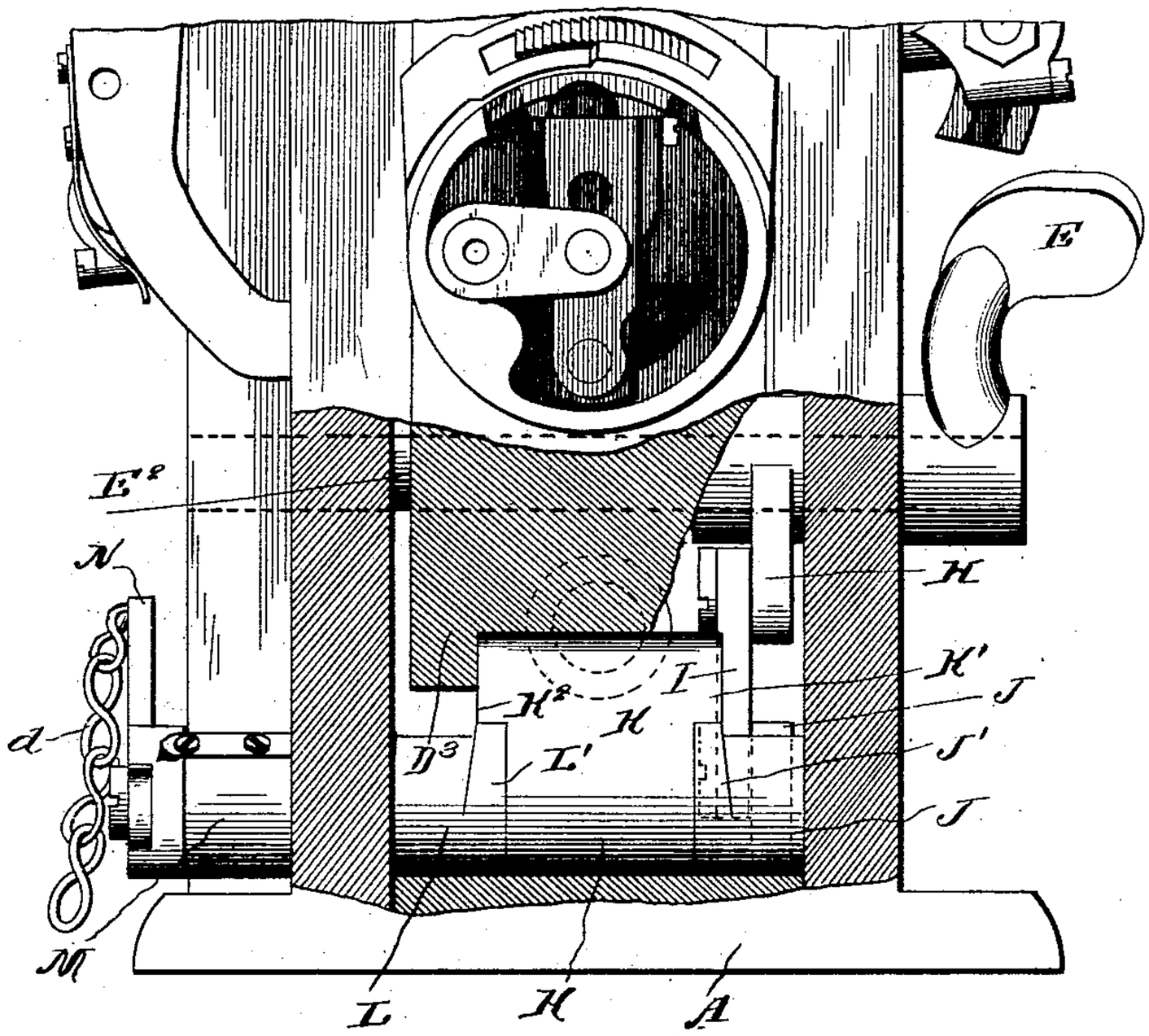
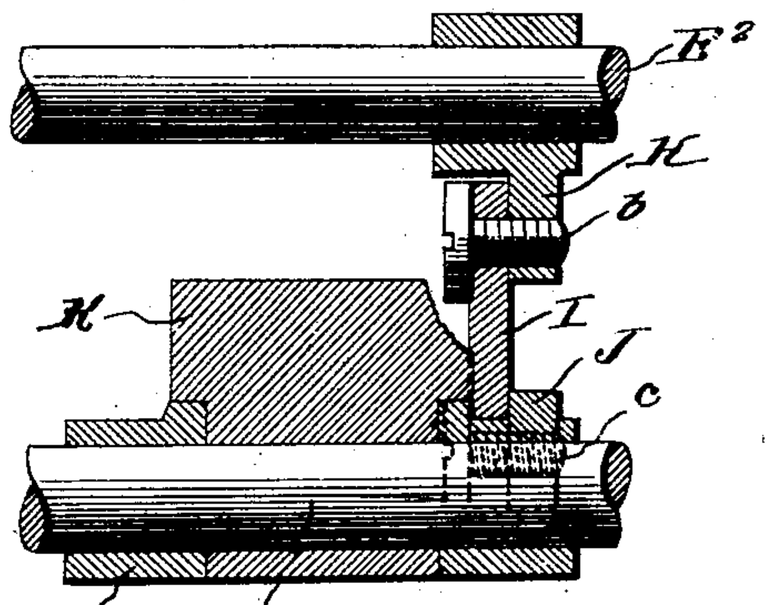


Fig. 3.



WITNESSES:

Fenton S. Pelt

Grace P. Brereton,

INVENTOR

Lansing Onderdonk

BY Sturtevant & Dooley

Attorneys.

No. 745,736. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF NEW YORK, N. Y., ASSIGNOR TO UNION SPECIAL SEWING MACHINE CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

WORK-PLATE-OPERATING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 745,736, dated December 1, 1903.

Application filed December 31, 1901. Serial No. 87,958. (No model.)

To all whom it may concern:

Be it known that I, LANSING ONDERDONK, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Work-Plate-Operating Mechanism for Sewing-Machines, of which the following is a description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to an improvement in sewing-machines, and especially to a mechanism for raising and lowering the work-support thereof to permit of the insertion of the material to be sewed beneath the presser-foot and needle.

The invention has been especially designed for use in connection with blindstitch sewing-machines of my invention, upon which application has been filed by me in the United States Patent Office on the 29th day of March, 1899, Serial No. 711,025, patented February 17, 1903, No. 721,077, and of even date herewith, Serial No. 87,959; but it will be understood that it may be used in connection with other types of sewing-machines, particularly of the kind embodying a cylindrical work-plate.

The present invention includes certain details relating to the construction of the raising and lowering mechanism for the work-support, means for manipulating the same both by hand and foot power, and various other features, all as hereinafter described, and referred to in the appended claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a sewing-machine embodying my invention, parts being broken away. Fig. 2 is an end view, and Fig. 3 is a detail sectional view of Fig. 2.

In the drawings, A represents the standard of a blindstitch sewing-machine; B, the goose-neck; C, the needle; D, the looper; *a a*, the needle-guides, and D′ the cylindrical work-plate, hinged at its rear end by means of the rock-shaft D^2 to the standard A.

E is a hand-lever secured to the shaft E^2, passing through the base or standard of the machine, as shown in Fig. 2, the hand-lever swinging close to the front side of the standard.

Fixed to the shaft E^2 and adjacent the inside face of the standard of the machine is an arm or lever piece H, to which is pivotally secured, by a shoulder-screw *b*, the link I, which link at its opposite end is pivotally secured by the screw *c* to the arm or lever J, loosely sleeved on the shaft O, journaled in the machine-standard.

The arm or lever J is provided with an upwardly-projecting lug or arm J′, which engages the lower end of the latch K, which is loosely sleeved on the shaft O and is provided with an extension K′, which the lug or arm J′ is adapted to engage when the shaft is rocked in one direction.

Upon the shaft O within the standard, near the opposite side thereof from the arm J, is a similar arm or lever L, fixed to said shaft and having an upwardly-projecting arm or lug L′, adapted to engage the extension K^2 on the latch K.

Freely secured to the shaft O on the outside of the standard A is a square-headed collar-piece M, on the square head of which is securely fastened the lifting-lever N, provided with a chain *d*, intended to be connected with a foot-treadle or knee-lever under the machine-table.

D^3 is an extension of the cylinder or work-support D′, which passes down inside the machine-standard.

P is a bracket secured inside the standard and provided with a barrel P′, in which is located a plunger S, free to slide endwise in its bearings. The inner end of the plunger S is normally forced against the part D^3 by a spiral spring R, the pressure of which is regulated by a thumb-screw T.

The action of the spring and plunger against the extension D^3 keeps the work-support D′ in place against the work or presser foot or against the screw A^5, which regulates the position of the work-support, and consequently the amount of bite of the needle into the goods.

When the hand-lever E is up, as shown in

Figs. 1 and 2, the action of the spring R and plunger S causes the work-support to rest against the stop A^5. Now by moving the lever E down the shaft E^2 will rock, and the lever J, through the medium of the connecting-link I and the extension J′, will engage the part K and swing back the lower end of D^3, thus lowering the work-support to allow the insertion of the goods. When the toggles H and I become straightened, then the lever-arm J has been moved down as far as possible, and the work-support is held in depressed position, the arm E and its connections overbalancing the pressure of the spring R. To a little more securely hold the cylinder down, however, I swing said lever E down, so as to cause the connections to pass by the center line of the toggles when straightened out, when the lever E will be stopped by the lower lug e^2 coming in contact with the stop-pin e'. By moving the lever E up when its connections pass to the other side of the center the spring R will force the cylinder to place, the lever being prevented from going too far by the upper lug e coming in contact with the stop-pin e'.

It will be seen that the manipulation of hand-lever E and its parts in action against the work-support D′ is independent of the foot-lever N and its associated parts. J and K are mounted freely on the shaft O, while L and M are fixed thereto. By moving the lever N down, the shaft O, with lever L, is made to turn, thus engaging the latch K and controlling the work-support.

It is intended to have the foot-lever connections through N M, &c., control the cylinder or work-support only when the treadle is pushed down by the operator's foot in order that the operator may cause the cylinder to swing down by pressure of her foot, and by releasing the pressure of her foot the cylinder will come up to place by action of the spring-plunger without necessitating the removal by the operator of her hands from the work; but when it is desired to hold the cylinder down away from the needle and presser-foot she can lock it in such position by using hand-lever E. The spring V is arranged to press against the link I when in locked position, so that by putting pressure upon the foot-treadle and relieving the strain caused by the action of the spring R this spring V will act against I sufficiently to move it to the other side of the center, when the spring K will cause the parts to move up to place. Thus the lever can be unlocked by the foot, leaving the operator's hands free. The spring V is only of sufficient strength to control link I and connecting parts when the spring R is under control of the foot-lever.

It will be seen that the construction referred to permits of a slight automatic yield to the work-plate under the action of a seam or increased thickness of goods, substantially as set forth in an application previously filed by me. Various minor modifications and changes in the construction of the parts may be made without departing from the spirit of my invention.

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

1. A sewing-machine comprising stitch-forming mechanism including a needle and a looper, a standard, and a work-support pivoted thereto and extending horizontally from said standard with its free end below the needle and looper, with mechanism for operating said support, said mechanism including devices for keeping said work-support normally in operative position, and a series of levers supported in the standard, adapted to be brought into engagement with the rear end of said work-support, to lower it; substantially as described.

2. A sewing-machine, comprising stitch-forming mechanism including a needle and a looper, a standard, and a work-support extending horizontally from said standard with its free end below the needle and looper, with mechanism for operating said work-support, said mechanism including means for normally keeping said work-support in operative position and means for lowering the same, comprising an extension on the work-support, and a series of swinging levers, within the standard and adapted to engage the extension on the work-support, and means for operating said levers to lower said work-support; substantially as described.

3. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising means for normally keeping said work-support in operative position, and means for lowering the same, comprising an extension on the work-support, a swinging latch to engage the same, and swinging levers or arms with means for operating them to engage and operate the latch; substantially as described.

4. In a sewing-machine having stitch-forming mechanism, a swinging work-support and mechanism for operating the same, comprising a yielding spring-pressed plunger for normally keeping said work-support in operative position, but allowing it to yield on an increased thickness of goods, and means for lowering said support, comprising a series of swinging levers adapted to be brought into engagement with said work-support; substantially as described.

5. In a sewing-machine having stitch-forming mechanism, a swinging work-support and mechanism for operating the same, comprising a yielding spring-pressed plunger for normally keeping said work-support in operative position, but allowing it to yield on an increased thickness of goods, and means for lowering said support, comprising an extension on the work-support, a swinging latch to

engage the same, swinging arms or levers, and means for operating them to engage and operate the latch; substantially as described.

6. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising means for normally keeping said work-support in operative position, and means for lowering the same, comprising an extension on the work-support, a swinging latch to engage the same, swinging levers having projections to be brought into engagement with the latch, and means for operating them; substantially as described.

7. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising means for normally keeping said work-support in operative position, and means for lowering the same, comprising a shaft, a lever loosely sleeved thereon and adapted to engage the work-support, and means for operating the lever; substantially as described.

8. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising means for normally keeping said work-support in operative position, and means for lowering the same, comprising a shaft, a lever loosely sleeved thereon and adapted to engage the work-support, and means for operating the lever, comprising toggle-levers connected to said lever, and means for operating the toggles; substantially as described.

9. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising an extension on the work-support, a rocking shaft, a latch pivoted thereon adapted to engage the extension, a lever loosely sleeved thereon and adapted to engage the latch, a lever fixed thereon, also adapted to engage the latch, and means for operating said levers; substantially as described.

10. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising an extension on the work-support, a rocking shaft, a latch pivoted thereon adapted to engage the extension, a lever loosely sleeved thereon and adapted to engage the latch, a lever fixed thereon, also adapted to engage the latch, and means for operating said first lever, comprising a system of toggles connected therewith, and means for flexing and straightening said toggles; substantially as described,

11. In a sewing-machine having stitch-forming mechanism, a swinging work-support, and mechanism for operating the same, comprising an extension on the work-support, a rocking shaft, a latch pivoted thereon adapted to engage the extension, a lever loosely sleeved thereon and adapted to engage the latch, a lever fixed thereon, also adapted to engage the latch, and means for operating said first lever, comprising a system of toggles connected therewith, and means for flexing and straightening said toggles, and a spring as V to bear against one of said toggles; substantially as described.

12. A sewing-machine comprising a standard and a work-support pivoted thereto and having an extension at its rear end, a spring-pressed plunger adapted to bear against said extension to keep said work-support normally in operative position but having a yielding movement under an increased thickness of goods, and a series of levers adapted to be brought into engagement with said extension to lower the work-support against the pressure of the spring; substantially as described.

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

LANSING ONDERDONK.

Witnesses:
F. A. NORTH,
J. H. HOWELL.