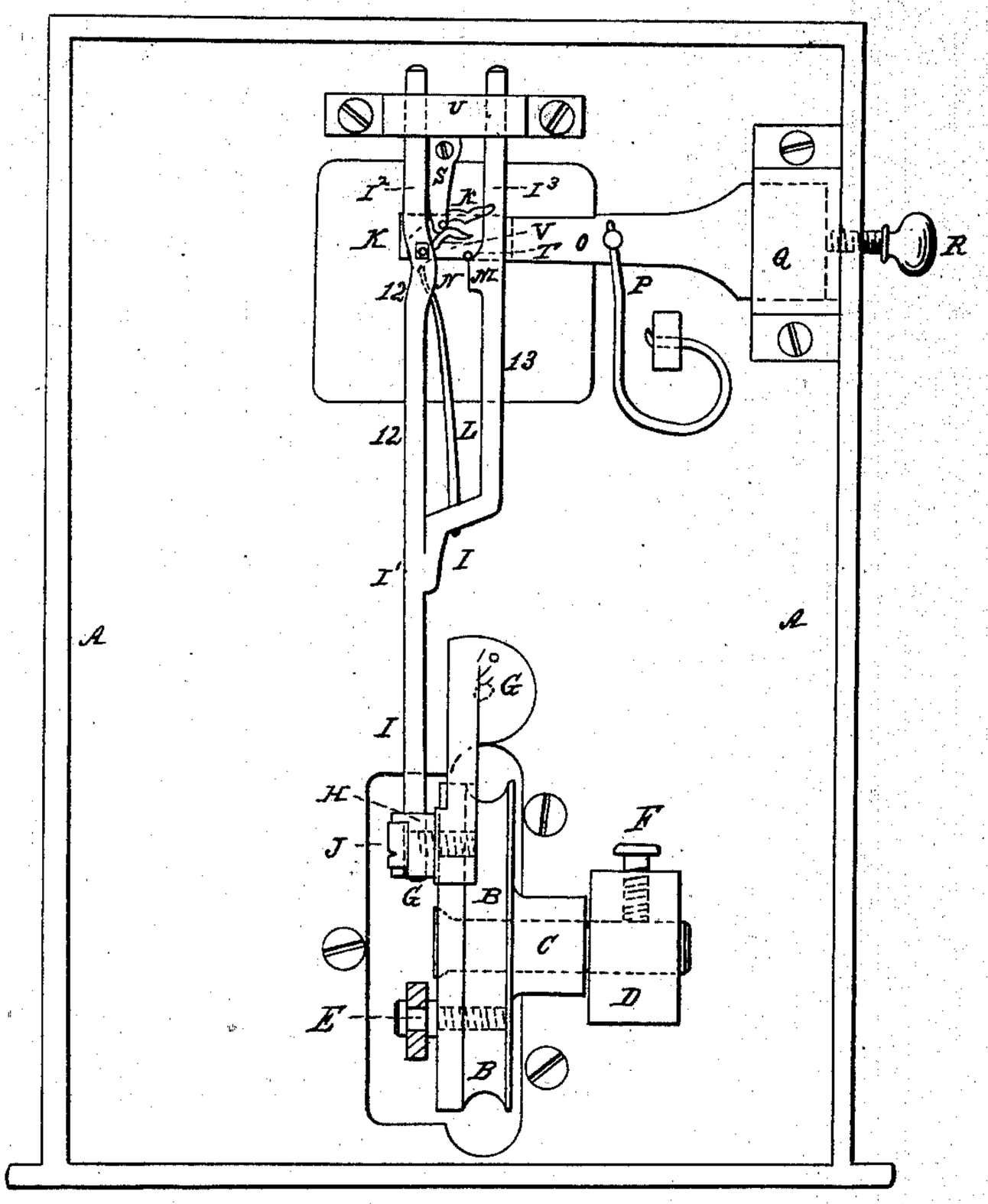
2 Sheets—Sheet 1.

C. W. DICKINSON.

Feed Motion of Sewing Machines.

No. 26,346. Patented Dec. 6, 1859.

Fig. 1.



Witnesses:

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J. W. Bryce

Inventor:

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2 Sheets—Sheet 2.

C. W. DICKINSON.

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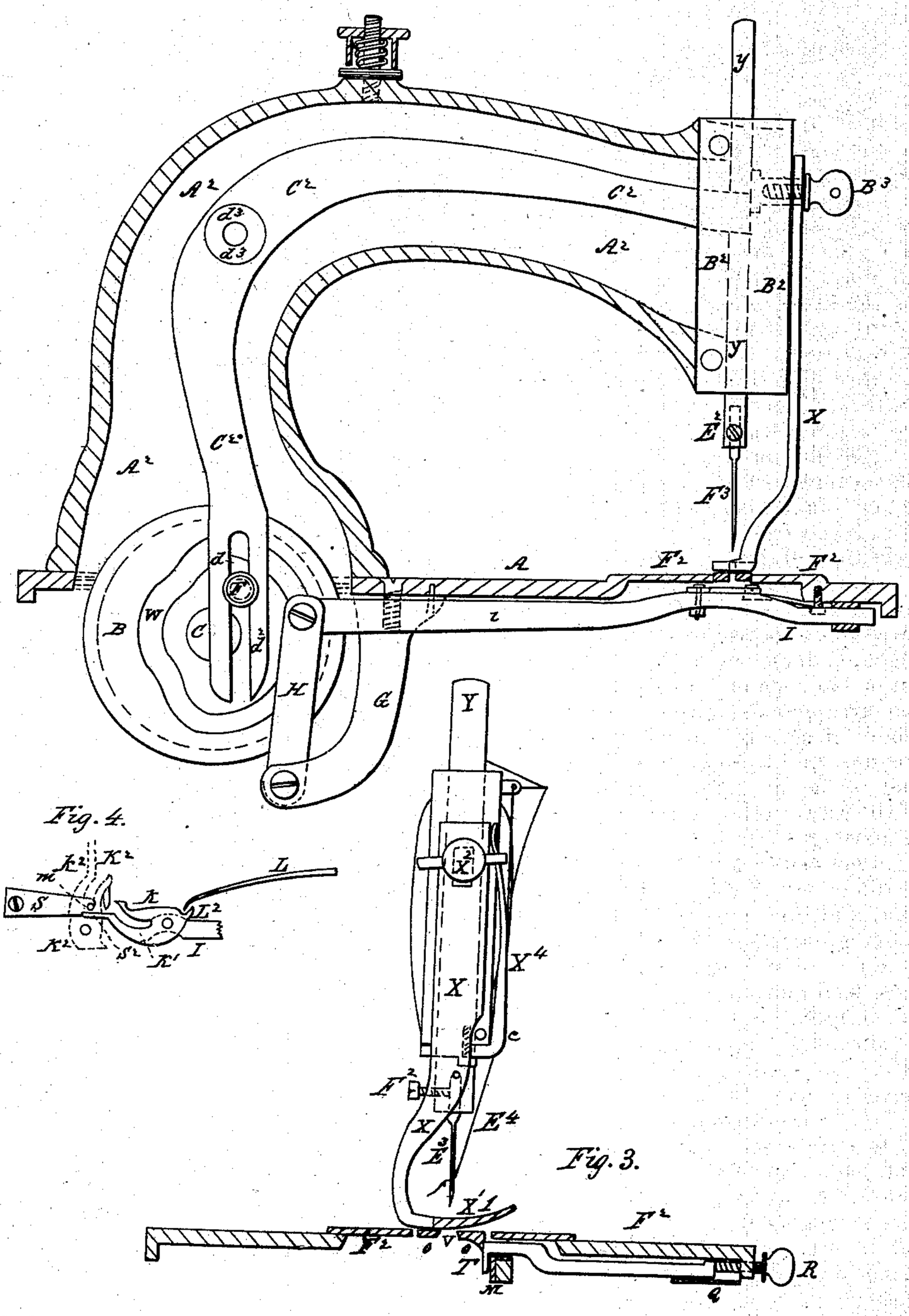

Fig. 4.

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES W. DICKINSON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **26,346**, dated December 6, 1859.

To all whom it may concern:

Be it known that I, C. W. DICKINSON, of the city of Newark, in the county of Essex and State of New Jersey, have invented and made certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

Figure 1 represents the bed-plate or table of the machine inverted or turned upside down in order to indicate the position of the looping and feeding devices. Fig. 2 represents a longitudinal vertical sectional view of the sewing-beam, and also exposing the cam devices. Fig. 3 is a front end view of the hollow sewing-beam and the bed-plate or table in transverse section. Fig. 4 represents the tumbling-looper device.

The nature of my improvement consists in constructing a pendently-swinging self-adjusting stripper or pad, which, through its peculiar form and arrangement, supersedes the use or employment of serrated surfaces and feed-pressure springs, and presents the advantage of admitting of being thrown laterally upward out of the way of the needle in threading, and having no roughened surface to mar or injure the sewed material. My pendently-swinging pad admits of adjustability at its axis or fulcrum-joint, and thereby accommodates itself to any irregularity or varying thickness of material to be sewed. In numbers of sewing-machines, feed-motions with strippers or pads hinged, jointed, or pivoted at their centers or on their sides have been used; and in order to adjust or regulate the pad to varying thicknesses of material, set or regulating screws have to be used, together with pressure-springs, to actuate the feed devices in their pressure and back-and-forth or reciprocating motion against the material to be sewed; but such pressure-spring devices are entirely dispensed with in my improvements, my pendently-swinging pressure-pad having a direct inherent positive motion of itself through its gravitating weight. In connection with my improvements spring devices are employed merely to react or to return the pressure-pad and feed-plate to their original position.

The better to enable others to construct and understand the peculiar feature of my improvement, the following is a description thereof.

In Fig. 1 the table or bed-plate of the machine is inverted or turned upside down, so as to indicate the several parts of the machine.

A A is the bed-plate or table of the machine. B is the driving-pulley; C, the shaft or spindle of the pulley; D, the lug or bearing of the spindle. E is a shackle-pin in the pulley. F is a tightening-screw. G is a bearing or support bracket to the connection H, by which the forked or looper rod I is supported at the end next the pulley, for the purpose of giving the sliding rod I a free motion.

At J is indicated the follower-pin. Attached to the prong I^2 of the forked sliding rod I is the tumbling looper device K.

At L is a flexible guide-rod connected to the crotch of the sliding forked rod I, and is designed to guide or keep in position the tumbling looper K by resting against the spur L^2 of the looper.

At M, Fig. 1, on the right-hand prong, I^3, is indicated an incline formation, and at N on the left-hand prong, I^2, is a double incline.

At O is indicated the feed-plate, and at P is a curved reacting-spring, the end of the spring resting against a pin, P^2, inserted in the feed-plate O. This curved spring P is used to react or return the feed-plate to its original position after it has performed the office of feeding the material up to the needle.

Q is an end bearing or support to the feed-plate.

R is a screw to regulate the length of stitch or the distance of play of the feed-plate. S is a support for the pawl or tumbling pin S^2, Fig. 4.

At T, Figs. 1 and 2, is indicated a stud or shifter-pin, against which the inclines M strike in order to shift or slide the feed-plate O. U is the bearing or support bar for the prongs of the forked rod I.

At V, Fig. 3, is indicated a slot formation in the feed-plate O, to admit the ingress or passage of the needle and to allow the feed-plate to move clear of the needle.

In Fig. 2, at W, is indicated a cam for actuating the needle-bar C^2 C^2 and the forked looper-rod I, and in Figs. 2 and 3, at X, is represented the pendently-swinging pad or stripper, its lower part bent or curved to the left, and having a foot part slightly curved and slotted, as at X′, Fig. 3, while its upper ex-

tremity has an oblong slot, X^2, through which the stud or axis-pin B^3 passes and supports the pendently-swinging pad X.

At *y* is indicated, in Figs. 2 and 3, the needle-bar.

In Fig. 2 is represented a longitudinal vertical section of the hollow sewing-beam A^2 A^2, and at B^2 B^2 is the side guide-plate on the sewing-beam, behind which slides or works the needle-bar. At C^2 is indicated the lever-arm of the needle, with slotted or forked end d^2 d^2, the axis or fulcrum being at d^3 d^3. At E^2 is the needle-fastening, and at E^3 the needle. At E^2 F^2 is indicated a transverse section of the bed-plate or table part of the machine.

The operation of my improvement is as follows: The pendently-swinging pressure-pad X, Fig. 3, is adjusted in position vertically, and the material to be sewed is placed over the feed-plate O V O, arranged in the bed-plate F^2 F^2 and immediately under the needle E^3, the pad X pressing down the material by the foot part X′. The pulley B is set in motion, which actuates the needle-arm C^2 C^2 C^2, causing the needle-bar Y′, with needle E^3, to move up and down, and thus operating the needle and forcing it through the cloth, carrying the thread with it, and simultaneously with the movement of the needle the sliding forked rod I, Figs. 1 and 2, moves forward, in the act of which the tumbling looper K enters the loop formed after the needle penetrates and passes through the material to be sewed. The needle then recedes, and the tumbling-looper device K, being formed with the curved slot or jaw-like formation K′, Fig. 4, comes in contact with the pawl or tumbling-pin S^2, Fig. 4, which causes the looper to change its position or turn, as indicated at the dots K^2 K^2, Fig. 4. Thus the loop of the thread is placed in such a position as to admit of the needle passing through the loop formed after the needle has again passed through the material. As soon as the neeedle is withdrawn out of the material upwardly the incline N on the fork I^2 of the rod I is forced under the feed-plate O, thereby raising the plate up and pressing the cloth or material against the foot of the pad X, holding the material in place until after the perforation by the needle is made, and after the needle is entirely withdrawn the incline M of the fork I^3 strikes against the pin or stud T, Fig. 1, and thus forces the feed-plate O forward, carrying the material to be sewed therewith forward also the distance or length desired for the forming of the next stitch, and thus the sewing is proceeded with. The pendently-swinging pressure-pad X, moving easily or freely on the stud or axis B^3, admits of its foot part X′ to give way or move forward by the movement of the feed-plate O, the material thus being clamped or gripped between the two smooth surfaces of the feed-plate and pad, and in the act of the sliding, forked rod I moving back or receding, the inclines M and N and the pad X are returned to their original position, and thus releasing the feed-plate O, the pad X being returned to its vertical position by the side spring, X^4, Fig. 3, and the feed-plate returned to its original position by the action of the curved spring P, Fig. 1. The length of the stitch is regulated by the adjusting or set screw R, Figs. 1 and 3.

The stitch made by the devices connected with my improvement is the loop-stitch; but my feeding devices are applicable to the interlocked or shuttle stitch.

Having described the nature, construction, and operation of my improvements, what I claim as new, and desire to have protected by Letters Patent of the United States, is as follows:

The construction of a pendently-swinging, gravitating, self-adjusting pressure-pad or stripper X X, formed with an adjusting slotted end, X^2, suspended on an adjusting pin or stud, B^3, the said pad having no feed-pressure spring, but substantially as described, set forth, and shown.

C. W. DICKINSON. [L. S.]

Witnesses:
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