

C. W. BALDWIN.
Sewing Machine.

2. Sheets—Sheet 1.

No. 38,276.

Patented April 28, 1863.

Fig. 1

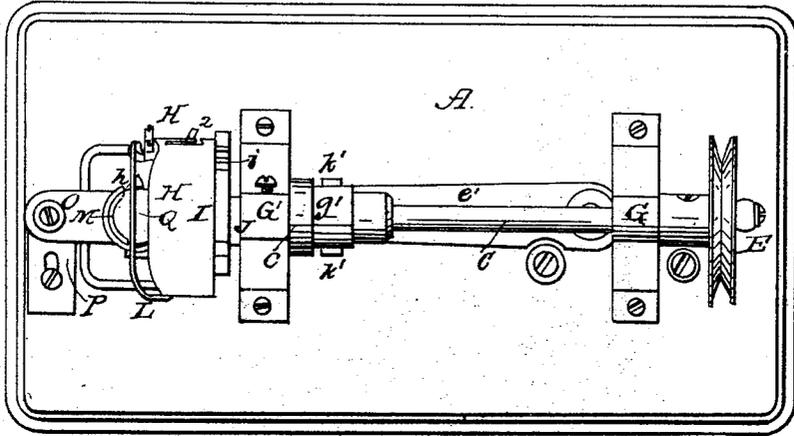


Fig. 6

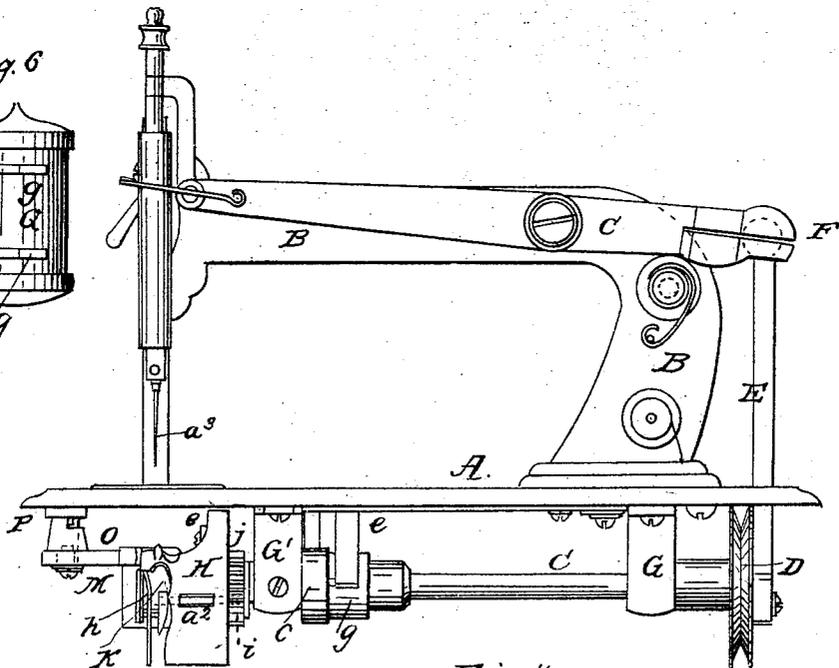
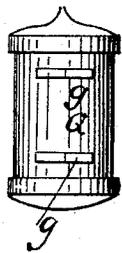
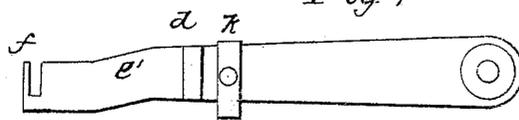


Fig. 4



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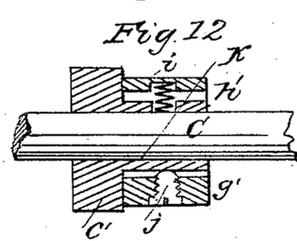
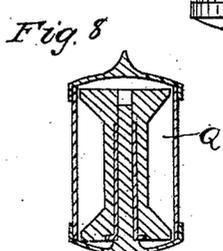
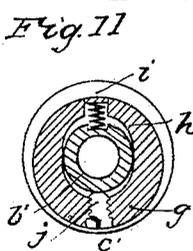
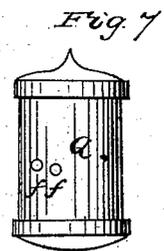
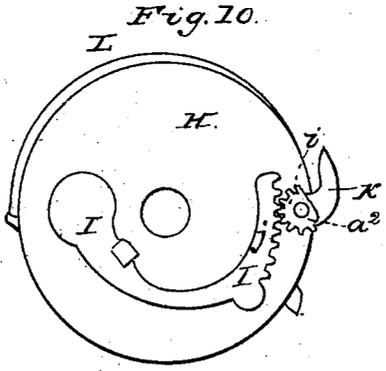
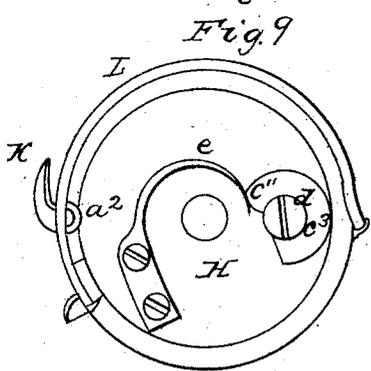
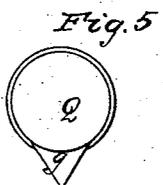
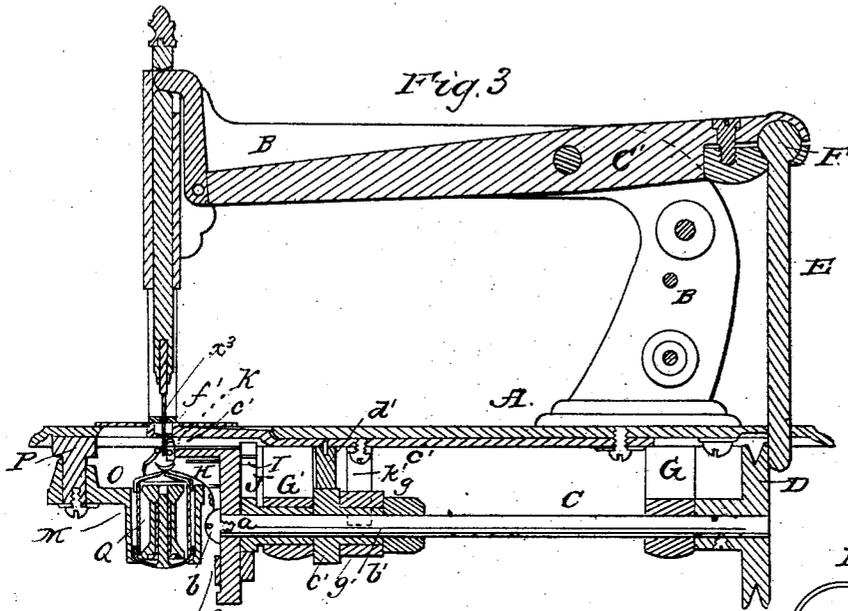
Inventor
Cyrus W. Baldwin

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UNITED STATES PATENT OFFICE.

CYRUS W. BALDWIN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 38,276, dated April 28, 1863.

To all whom it may concern:

Be it known that I, CYRUS W. BALDWIN, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference thereon.

The nature of my invention consists in providing the means whereby I can dispense with the use of the ordinary shuttle and the consequent necessity of rewinding the thread or cotton, while at the same time I produce a regular shuttle-stitch alike upon both sides of the cloth, it being also an elastic stitch. With my improvements I am enabled to run the machine much longer without being obliged to stop its operation to supply it with thread, as an ordinary spool containing two hundred yards can be used in it, while the ordinary shuttle will not hold more than fifty yards.

A machine constructed with my improvements is very simple, compact, and strong, and much less complicated than the shuttle-machine, while possessing all its advantages, and much less liable to get out of repair, while its mode of operation can be readily understood by anyone. Its operation is at the same time attended with much less noise—a very desirable improvement, particularly in a machine adapted to family use.

My invention further comprises a means for giving the required motions to the feed by the use of the spring-cam feeding device hereinafter described, which is much stronger, and at the same time more simple, and less liable to get out of repair, than any now in use.

In the accompanying drawings, Figure 1 is a bottom view of a sewing-machine constructed according to my invention. Fig. 2 is a side view of the same. Fig. 3 is a vertical and longitudinal section of the same. Fig. 4 is a bottom view of the spring-feeder hereinafter described. Fig. 5 is a top view of the bobbin or spool holder herein described. Figs. 6 and 7 are side views of the same. Fig. 8 is a sectional view of the same. Figs. 9 and 10 are side views of the circular head or drum, with hook, spring, spring-arm, cam-rack, pinion, &c., to be hereinafter described. Figs. 11 and 12 are sections of the spring-cam feeding de-

vice, to be hereinafter described. Fig. 13 is a view of the cam operating the hook.

To enable others skilled in such matters to make and use my invention, I will now describe its construction and operation.

In the drawings, A denotes the table of the machine; B, the standard or goose-neck, and C the driving-shaft, motion being communicated from it to the vibrating lever C' by a pulley, D, and connecting-rod E, furnished with a ball-and-socket joint, F, as seen in the drawings. The driving-shaft revolves in standards G G', and is provided with a circular head or drum, H, at its front end, which is secured to it by a tapering bearing, *a*, and screw *b*, as in Fig. 3. Attached to the rear side of this circular head, H, Fig. 10, is a spring-arm, I, terminating in a segmental rack, *j*. This spring-arm I is connected to a stud, *c*³, on the inner side of the circular head H by a screw, *d*, Fig. 9, which passes through the head H and screws into the arm I, thus attaching the stud *c* to the arm I very securely. A plate-spring, *e*, is secured to the inner side of the head H and presses against the corner or projection *e*² of the stud *c*³, thus pressing the arm I toward the center of the head H and against the cam J, which is attached to the standard G' of the machine. The circular head H is also provided with the hook K and the guides L, as seen in the drawings. The hook K is attached to one end of a short rod or shaft, *a*², which passes through the periphery of the head H, and to the rear end of which rod or shaft is secured a pinion, *i*, Figs. 2 and 10, which engages with the segmental rack *j*.

In Figs. 1, 2, and 3, M represents a drum or case, made to contain the bobbin-holder Q, the said drum or case being connected to the table A by the arm O and stud P, so that it may be turned or withdrawn from under the table, that the empty spool may be taken out and a new or full one substituted. Q is the bobbin or spool holder, lying loosely within the case M, and constructed to contain the spool of thread, Fig. 8, and with two or more holes in its periphery, *f f*, Fig. 7, for the thread to pass through, thus causing the necessary friction for the under thread. Upon the bobbin-holder Q are two projections or spreaders, *g g*, Figs. 5 and 6, (there being a corresponding opening in front of the drum or case

M,) for the purpose of dividing the threads or sides of the loop, as hereinafter described.

Figs. 11 and 12 represent the cam-feeding device, also represented in Fig. 3. *b'* is a metallic cylinder or spindle securely attached to the driving-shaft, and provided with a shoulder or cam *c'*, against which bears the projection *d'*, Fig. 3, attached to the spring-feeder *e'*. So as the cam *c'* revolves with the driving-shaft the rough feeder *f'* is pressed up against the cloth or material to be sewed, and lowered again as the cam turns down. Encircling the spindle *b'* is another cam, *g'*, in which is a slot, *h'*, so as to allow a slight lateral movement upon the spindle *b'*. Between the inner surface of the cam *g'* and the outer periphery of the spindle *b'* is a spiral spring, *i'*, which presses the cam in one direction from the spindle, while its corresponding movement is regulated by the screw *j'*, so that the cam can be shortened or lengthened by the turning of the screw *j'*; and as this cam *g'* is made to connect directly with the spring-feeder *e'* by means of the fork or clamp *k'*, the feeder must receive a backward and forward movement by means of the cam *g'* at the same time that it is moved up and down by the cam *c'*, the length of the movement, and consequently of the stitch, being regulated by the screw *j'*.

The operation of the machine is as follows: The cloth or material to be sewed is fed up under the needle by the feeder *f'*, operated as described. The needle, descending with the thread and returning, makes a loop in the usual manner. The circular head H, revolving at the same time, brings around the hook K at the proper time, which takes the loop formed and carries it down in contact with the spreaders upon the bobbin-holder, by which the loop is divided or spread, so that the thread is carried by the hook partly around the bobbin-holder. At this time, by means of the spring-arm I, the cam J, and the rack *j*, the pinion *i*, which is attached to the hook K by the shaft *a*², is made to revolve, causing a backward movement of the hook and allowing the thread to slip off from it, leaving the loop hanging below the bobbin-holder. By the next revolution of the hook, performing of course at the same time the same operation, the former

loop is drawn tightly up, inclosing and carrying with it the thread from the bobbin, and thus perfecting the stitch.

One great advantage in this machine over others is that on account of the diameter of the head or drum H the hook K must move much faster than the needle, and so secures the loop quicker and with more certainty, so that the dropping or losing a stitch is almost impossible. The guard L on the circular head H is intended to keep the thread from coming in contact with the needle in its descent, or with other working parts of the machinery.

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

1. The revolving and reversible hook K, in combination with the circular head H and its accompanying devices, for enabling the hook to take and release the loop, constructed and operated substantially as herein described, and for the purposes set forth.

2. The bobbin or spool holder Q, with the spreaders *g g*, constructed and operated substantially as herein described, and for the purposes set forth.

3. The revolving hook K, constructed and operated as described in my first claim, in combination with the bobbin or spool holder and spreaders, as described in my second claim, the whole constructed and operating as and for the purposes herein described and set forth.

4. The adjustable cam *g'*, with the spring *i'*, the screw *j'*, the cylinder *b'*, and the slot *h'*, in connection with the shaft *c*, constructed and operating substantially as herein described, for the purpose set forth.

5. The adjustable cam *g'*, constructed and operating as described in my fourth claim, in combination with the cam or eccentric *C'*, and also with the spring-feeder *e'* and rough feeder *f'*, the whole constructed and operated as herein described, and for the purposes herein set forth.

In witness whereof I have hereunto set my hand.

CYRUS W. BALDWIN.

Witnesses:

HENRY G. DENNY,
S. EDWIN IVESON.