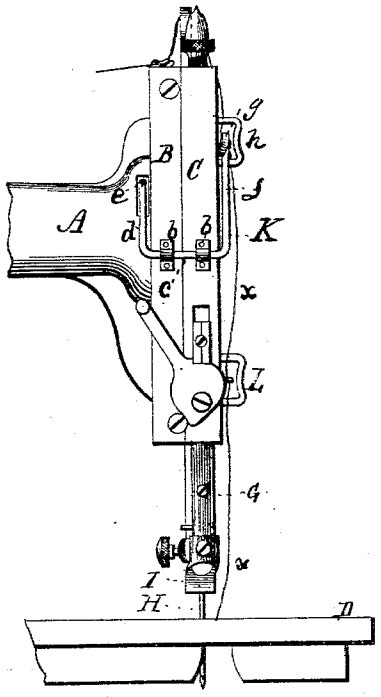
(No Model.)

E. S. CRAM & E. C. COVELL.

SEWING MACHINE.

No. 315,915. Patented Apr. 14, 1885.

Fig. 1.



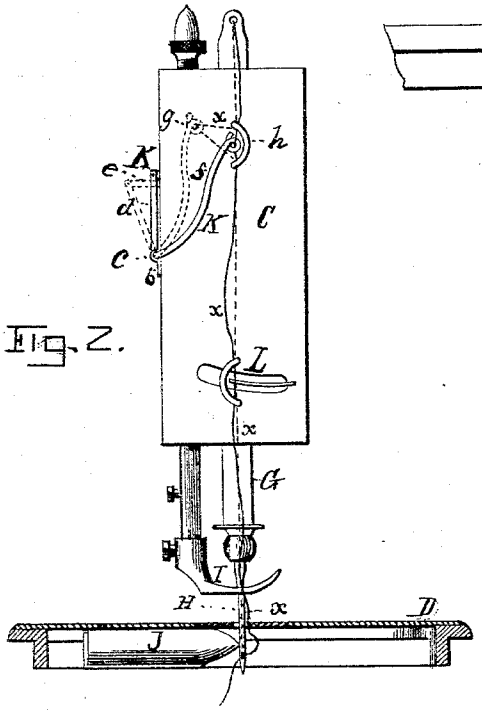


Fig. 2.

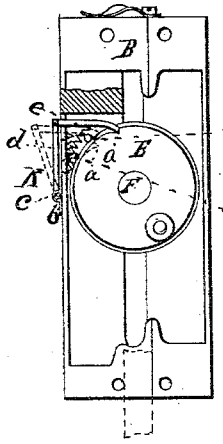


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

ELISHA S. CRAM AND EDGAR C. COVELL, OF LACONIA, ASSIGNORS OF ONE-HALF TO JOHN S. CRANE AND B. FRANK DRAKE, OF LAKE VILLAGE, NEW HAMPSHIRE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 315,915, dated April 14, 1885.

Application filed April 14, 1884. (No model.)

To all whom it may concern:

Be it known that we, ELISHA S. CRAM and EDGAR C. COVELL, of Laconia, in the county of Belknap and State of New Hampshire, have invented an Improvement in Sewing-Machines; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

The purpose of our invention is to prevent the shuttle from taking or breaking the thread in shuttle sewing-machines when the motion of the machine is reversed accidentally or purposely; and our invention consists in a take-up adapted to take up the loose thread in the needle when the motion of the machine is reversed, and thereby not to form or have any loop when the needle is ascending and the shuttle is moving forward by the side of the needle during such reversal of the machine's motion, the said take-up not acting on the thread when the machine is moving forward and sewing.

In the accompanying drawings, Figure 1 is a rear view of the head and a portion of the arm of a shuttle sewing-machine provided with our reverse-motion take up, showing also the needle-bar, presser-bar, and a section of the bed-plate of the machine; Fig. 2, a view of the same at right angles to the view in Fig. 1, showing an outside view of the face-plate with our take-up in place and a section of the bed-plate; Fig. 3, a view of the parts with the face-plate removed and the take-up in cross-section, showing especially the cam-wheel and its shaft.

Like letters designate corresponding parts in all of the figures.

In the drawings, A represents the sewing-machine arm; B, the head; C, the face-plate; D, the bed-plate; E, the cam-wheel; F, the cam-wheel shaft; G, the needle-bar; H, the needle; I, the presser-bar, and J the shuttle. These parts and their subordinate attached parts are or may be all of usual construction, according to the particular make of machine to which our improvement is applied, except the cam-wheel E, which has a notch, *a*, in its edge, abrupt on one side and inclined on the other side, so as to pass by without acting on any part in contact with the periphery of the cam-wheel when the machine is moving forward for sewing, but to act on such a part when the motion of the machine is reversed; or any equivalent of the notch *a* is to be used. Our reverse-motion thread take-up K, in any suitable way, as represented in the drawings, is mounted in bearings *b b* on the rear side of the head B, the rocking part or shaft *c* thereof turning or oscillating in the said bearings. An arm, *d*, extends upward from the rock-shaft *c*, and this arm has an arm or pawl, *e*, extending inward through the side of the head, so as to reach and fall into the notch *a* of the cam-wheel E, and be moved outward thereby when the motion of the machine is reversed, but not to be acted upon by the cam-wheel when the machine has its forward operative motion. From the outer end of the rock-shaft *c* the take-up arm *f* extends upward to a proper position for receiving the thread *x* in a loop, *g*, thereof, as shown, the thread first passing around or through a thread-guide loop, *h*. A slight spring, *i*, holds the take-up arm forward, as shown by full lines in Fig. 2, when the machine is moving forward and at work, and during such movement, since the take-up then has no motion, it does not interfere with or disturb the action of the machine in the usual manner, the ordinary take-up L then acting as usual; but when the motion of the machine is reversed the notch *a* of the cam-wheel E catches by its abrupt side against the pawl-arm *d* of the take-up K and moves it outward at the proper time, as shown by dotted lines in Fig. 3. This action moves backward the take-up arm *f*, as shown by dotted lines in Fig. 2, thereby causing all the slack thread of the needle to be taken up, as indicated by dotted lines in the said figure, and preventing the catching of the thread by the shuttle during such backward movement of the machine. When the take-up arm has thus been carried far enough back and the shuttle has passed by the needle, the pawl-arm *d* strikes a pin or stop, *k*, Fig. 3, which disengages the same from the notch *a* of the cam-wheel as the latter continues to revolve. At the next backward revolution of the cam-wheel this movement is repeated, and so on as long as the motion of the machine is reversed.

We claim as our invention—

The combination, with the stitch-forming mechanism of a sewing-machine having a take-up for tightening the needle-thread upon the shuttle-thread, of an additional take-up device comprising means, as the arms *e* and *f* and notched disk E, whereby the loop of the needle-thread is prevented from being taken by the shuttle when the motion of the machine is reversed.

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EDGAR C. COVELL.

Witnesses:
ISAAC FONDA,
FRANK W. REEVES.