Turner & Craig
Sewing Machine

116893

PATENTED JUL 11 1871

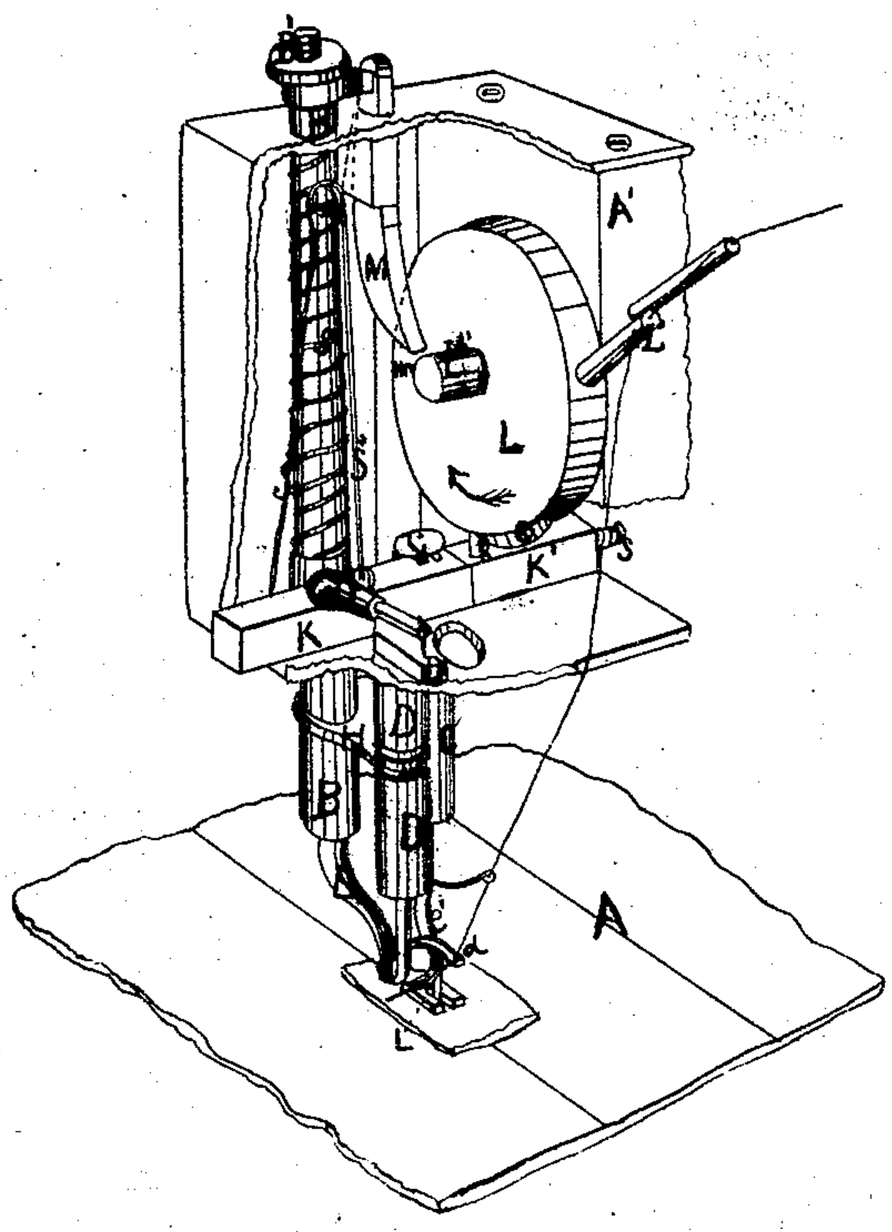

Fig. 1.

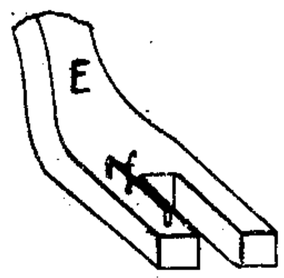

Fig. A.

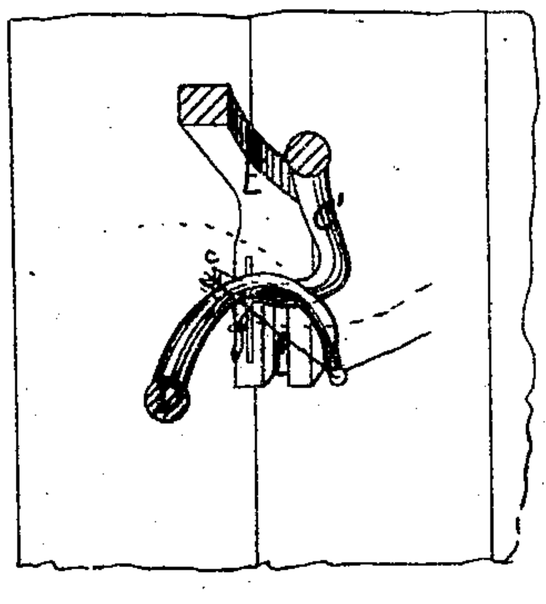

Fig. 2.

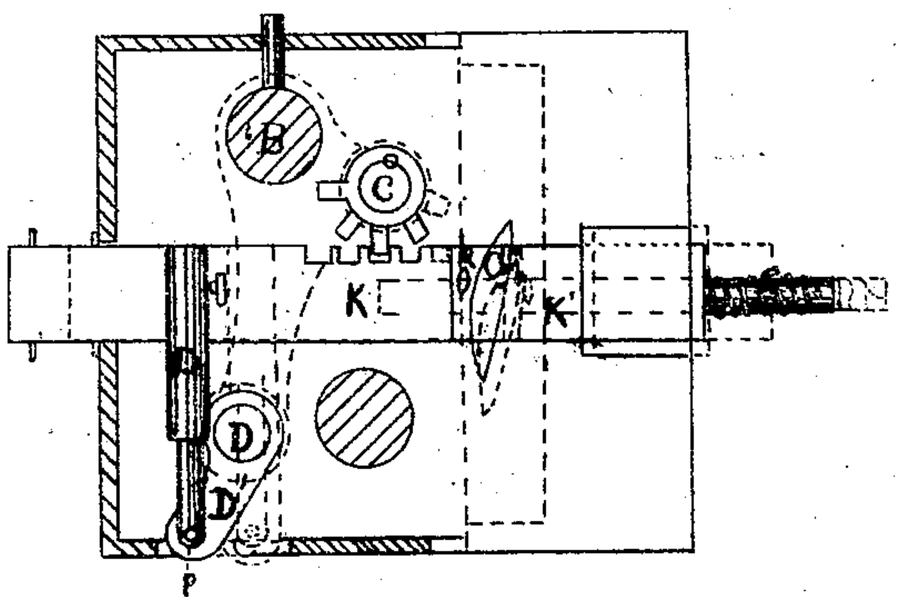

Fig. 3.

WITNESSES.

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116,893

UNITED STATES PATENT OFFICE.

SIDNEY S. TURNER, OF WESTBOROUGH, AND ISAAC S. CRAIG, OF BOSTON, MASSACHUSETTS, ASSIGNORS TO I. S. CRAIG.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 116,893, dated July 11, 1871.

To all whom it may concern:

Be it known that we, SIDNEY S. TURNER, of Westborough, in the county of Worcester, and ISAAC S. CRAIG, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements 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 and to the letters of reference marked thereon.

The nature of our invention consists: 1st, in combining, with the sewing mechanism of a sewing-machine, an auxiliary take-up and devices for operating the same, which, acting upon that portion of the thread which is between the needle and the previous stitch, takes up a certain desired length of the thread, so that when the hooked needle takes the thread it contracts with the said thread at a point which will form, when drawn through the stock, the lower end of the loop, so that the thread does not slip through the hook and thus be chafed, worn, or cut, as would be the case if the loop had not been previously measured off. 2d, in combining, with the pressure-foot, thread-carrier, and auxiliary take-up, a lifting device, so that the three may be raised and dropped simultaneously. 3d, in combining, with the pressure-foot, a guard to direct the retiring motion of the loop.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and use.

In the drawings, Figure 1 is a perspective view, showing our improvement. Fig. 2 is a plan, showing the thread-carrier, auxiliary take-up, and pressure-foot. Fig. 3 is a plan, showing the actuating devices. Fig. 4 is a sketch, showing the lower end of the pressure-foot with the thread-guard attached.

In Fig. 1, A represents the table of the machine, and A′ the arm to which the parts are attached. B is the pressure-bar, to the lower end of which the pressure-foot E is attached. M is an arm connected to the bar B by the screw-nut B′, and so arranged that when the shaft L″ oscillates in the direction indicated by the arrow the cam *m* will strike the lower end of this arm and thus raise it, together with the bar B, but when L″ oscillates in the opposite direction the cam *m*, will have no effect upon the arm M except to push it to swing it back. H is a plate attached to the bar B, and extending, as shown, into the annular grooves made in the thread-carrier bar D and in the auxiliary take-up bar C, so that when the pressure-foot is raised D and C will also be raised. S′ is a spring, which serves to keep the pressure-foot down upon the work. L is a wheel attached to the oscillating shaft L″, and carries on its periphery the arm L′, which serves as an ordinary take-up, and the cam O which serves to operate the bar K′ K.

The operation of this bar K is best represented in Fig. 3. The head of the bar C is provided with teeth, as represented, which mesh into corresponding teeth made in the bar K so that any longitudinal motion given to the bar K will cause C to revolve on its axis. The bar D is provided with a crank-arm, D′, and is connected, by means of a crank-pin, *p*, and the arm D″, to the vibrating bar K, so that a revolving motion will also be communicated to D by a longitudinal motion of the bar K.

O is a cam attached to the periphery of the oscillating wheel L, and is so arranged, in connection with the vibrating bar K and the pin *k*, that when it passes in the direction indicated by the arrow on L it will throw the bar K K′ forward, the spring S″ S″ serving to throw the bar back. The part K′ of the vibrating bar is free to slip back, leaving the part K unmoved; this is so made to admit of the return of the cam O in front of the peg *k*, as represented by the red lines in Fig 3. *f*, Figs. 2 and 4, represents a guard attached to the pressure-foot, and serves to prevent the loop which is formed by the auxiliary take-up C and carried under the guard from flying back and getting entangled with the awl.

Our invention has for its primary object the avoiding of abrasion and ultimate breaking of the thread. The thread, as it is being drawn down through the stock, slips in the barb of the needle, and is thus worn or frayed more and more at each movement of the needle until it finally breaks; and, to avoid this, the auxiliary take-up C′ is arranged and operated in such a manner that it takes the thread held by the thread-carrier D a little way off from the needle so as to measure off a sufficient length to form a loop for the shuttle before the barb of the needle takes hold of the thread, the parts being so adjusted that the barb takes the thread at that point which forms the

center of the loop so that the thread need not slip through the barb.

As soon as the barb takes hold of the thread, the auxiliary take-up C′ releases it, and, to prevent the loop which is now free from flying back and becoming entangled with the awl, the guard *f* is used, the guard *f* serving to direct the line of motion to be taken by the retiring thread, and thus keep it away from the awl.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

The auxiliary take-up C′ and its operating devices, all constructed, arranged, and operating substantially as described and shown, for the purpose of measuring off sufficient thread to form a loop for the shuttle, and preventing the winding of the thread by the impact of the hook, as set forth.

S. S. TURNER.
I. S. CRAIG.

Witnesses:
FRANK G. PARKER,
CHAS. J. BATEMAN.