O. N. STODDARD.

Sewing Machine.

No. 25,223. Patented Aug. 23, 1859.

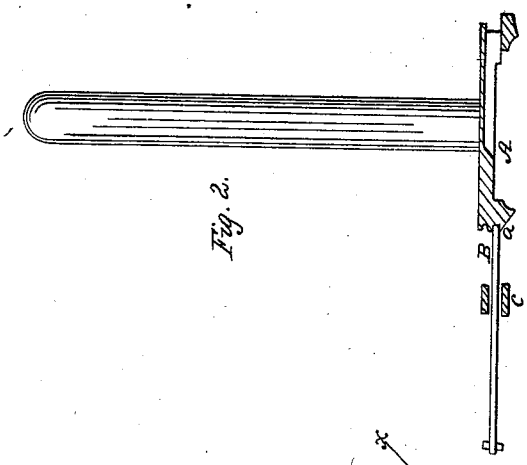

Fig. 2.

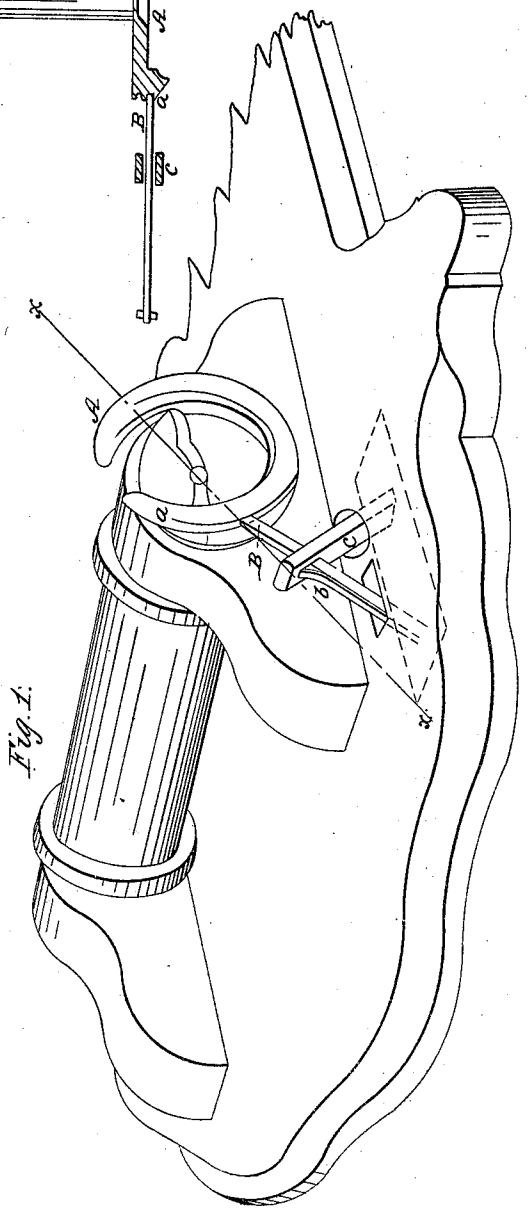

Fig. 1.

Witnesses:

Geo. J. Knight Jr.

C. Steemer

UNITED STATES PATENT OFFICE.

ORANGE N. STODDARD, OF OXFORD, OHIO.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **25,223**, dated August 23, 1859.

To all whom it may concern:

Be it known that I, ORANGE N. STODDARD, of Miami University, Oxford, Butler county, Ohio, have invented a certain new and useful Improvement in Sewing-Machines; and I hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

The improvement relates to that class of double-thread sewing-machines in which the lock is effected by the rotation of a peculiar bobbin-holder called the "hook," in passing around which the loop is temporarily detained by a device familiarly known as the "loop-check" or "pad," the object of which is to prevent the casualty of a broken thread, in consequence of a second engagement of the hook with the same loop.

The subject of the present invention is a yielding metallic loop-check which enters a channel or groove in a portion of the periphery of the hook, its advantages being superior efficiency and durability, and non-liability to derangement.

In the annexed drawings, Figure 1 is a perspective view, exhibiting the combination of the hook and loop-check. Fig. 2 is an axial section at *x x*, Fig. 1.

The hook A may be formed like those now in use, with the exception of a shallow rounded groove or channel, *a*, which, commencing in the periphery of the hook, near its point, is continued in the plane of rotation for near or about half the circuit of the hook, dying out at each end in the beveled or chamfered portions of the latter. A transverse section of the groove *a* is seen in Fig. 2.

The loop-check consists of a slender steel bar or rod, B, pivoted at one end to the frame of the machine, and at the other end formed with a rounded point, which enters the groove *a* as far as possible without actual contact.

C is a slotted post which holds the bar B in a correct position, but allows it a limited play in the plane of rotation of the hook to accommodate it to the shortening of the thread.

b is a spring which maintains the necessary pressure upon the bar B, and returns it to its lowest position when released by the thread. The bar B must be applied at that part of the hook at which the thread can be most advantageously detained, and should, when at rest, be slightly below a position radial in respect to the hook, in order to admit of its rising slightly without receding from the hook. The effect of the loop-check is to detain the thread until the proper instant for its release from the hook—that is to say, until the point of the hook has safely passed the loop.

The pressure of the bar B may be regulated by a set-screw against the spring *b*, and the degree of proximity of the point of the bar B to the grooved periphery of the hook may also be regulated by a set-screw.

Instead of the form described, the end of the bar B may be notched or nicked to receive a corresponding fin or feather around the first half of the periphery of the hook, and the bar B may be placed at an angle more or less oblique to the plane of the groove *a;* but it is proper to state that I prefer the form selected for the illustration, as that which actual test by use has proved to be efficient.

The bar B, instead of being hinged, may be fixed transversely to a shank which may slide in staples and be retracted by a spiral or gum spring; or the said bar may be arranged to vibrate upon an axis coincident with that of the hook, its point being turned around so as to approach the hook and operate in connection therewith without contact in either manner described above.

From a careful observation of the operation of this class of sewing-machines it will be perceived that a considerable shortening of the thread occurs between the period of first detention and that of its release. An unyielding loop-check, by resisting this shortening, seriously endangers breaking the thread, and as the shortening occurs from but one side of the hook it is disadvantageous for the detention of the thread to be accompanied by any compressing of the same between the loop-check and hook. It will also be seen that the shortening of the loop varies with different thicknesses of fabric and different lengths of stitch. Another serious objection to the customary leather pad is the severe wear to which it is subjected, rendering adjustment occasionally necessary, especially when changing from the use of coarse to finer thread.

The following are among the advantages which are believed to be peculiar to this construction and arrangement of loop-check: First, it is subject to no perceptible amount of

wear, needs no readjustment, and may be as permanent and enduring as the hook itself; second, it is adapted to yield to the shortening of the thread, incident to the motion of the machine, and also to compensate for variations in the length of the stitch or the thickness of the cloth, thus avoiding the danger both of breaking the thread by too severe tension, and missing stitches by the thread being drawn too taut to form a loop at the right instant; third, the finest thread is effectually detained without being compressed between the loop-check and hook, so that, although only hard substances are used, the wearing effect upon the thread is much less severe than with the customary leather pad.

I claim as new and of my invention herein, and desire to secure by Letters Patent—

The yielding metallic loop-check B *b*, operating in combination with a grooved hook, A *a*, or its described equivalent, in the manner and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

O. N. STODDARD.

Witnesses:

GEO. H. KNIGHT,

C. STEEMER.