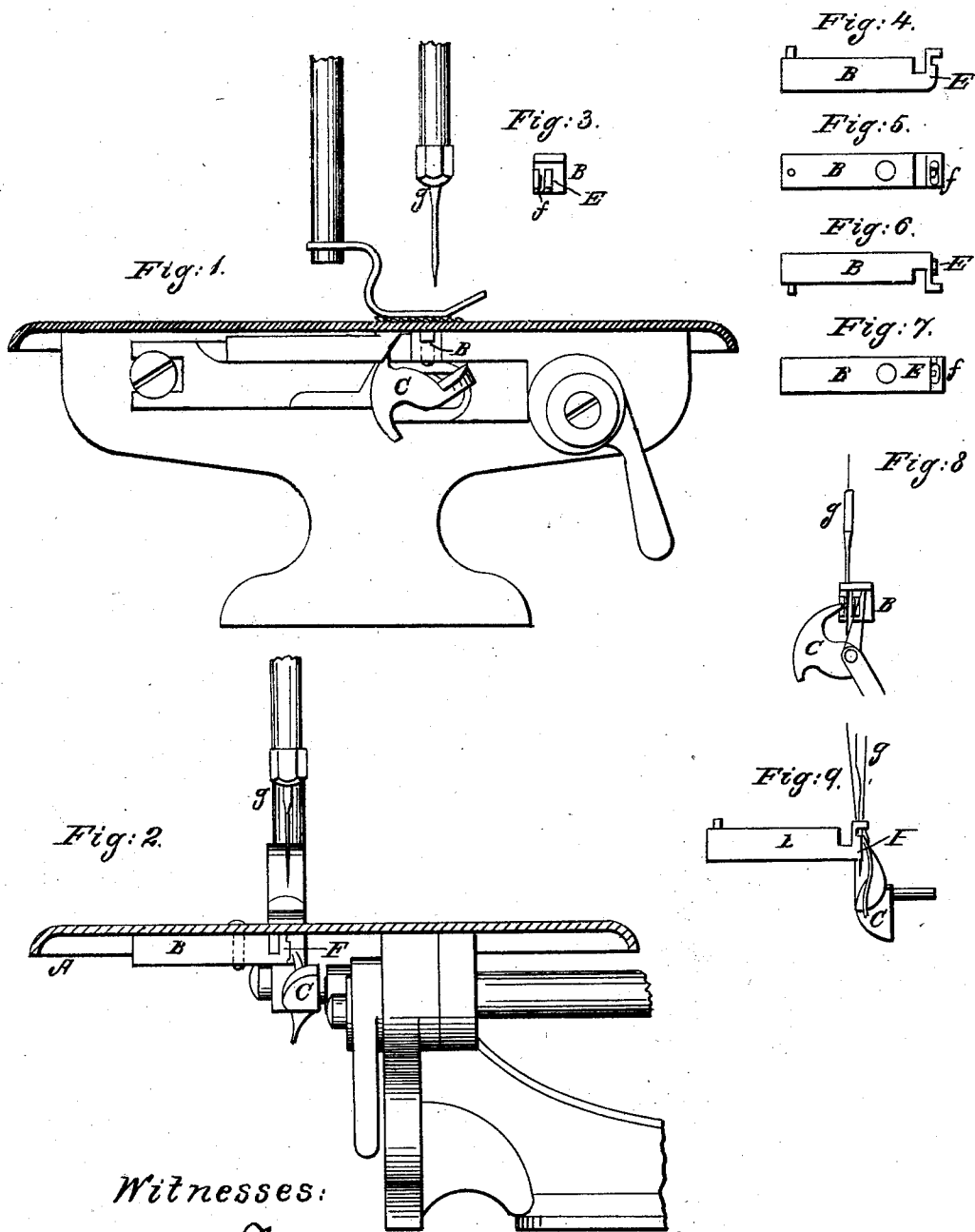


C. H. WILLCOX,  
Sewing Machine.

No. 44,490.

Patented Sept. 27, 1864.



Witnesses:

Chas. Ferguson  
J. L. Coombs.

Charles H. Willcox  
by S. P. Hall  
his atty.

# UNITED STATES PATENT OFFICE.

CHARLES H. WILLCOX, OF NEW YORK, N. Y., ASSIGNOR TO JAMES WILLCOX,  
OF SAME PLACE.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 44,490, dated September 27, 1864.

*To all whom it may concern:*

Be it known that I, CHARLES H. WILLCOX, of New York, in the county and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I hereby declare that the following, taken in connection with the accompanying drawings, forms a full, clear, and exact description of the same.

The invention subject of this patent relates to sewing-machines in which a reciprocating eye-pointed needle is used in combination with a looper having a revolving motion, its object being the prevention of the dropping of stitches in consequence of the thread twisting around the needle when the tension upon the thread is released by the return-stroke or upward motion of the needle.

In all sewing-machines "missed" or "dropped" stitches are of more or less frequent occurrence, the principal cause of which is the twist of the thread, which often causes the loop thrown for the looper to twist around the needle, thus making it impossible for the looper to pass through it, and thereby causing a missed or dropped stitch. The device shown in the accompanying drawings is intended to entirely obviate the possibility of dropping stitches from this cause.

I will now proceed to describe the construction and operation of this device, which, although shown applied to a single-thread or chain-stitch machine, may also be used with any other kind of sewing-machine having the characteristics before referred to.

Figures 1 and 2 represent in front and side elevation portions of the frame and working parts of a Willcox & Gibbs sewing-machine, to the cloth-plate A of which is secured the "needle-gorge" B, whose side facing the looper C is provided with the device I am about to describe. The needle-gorge B is shown detached from the machine in several positions. Fig. 3 represents an end view; Fig. 4, a side view, (the same as that in Fig. 2;) Fig. 5, a top view; Fig. 6, a side view, (the reverse of that shown in Fig. 4;) and Fig. 7, a view from underneath.

By reference to the several views of the needle-gorge it will be seen that under the needle-hole there is a projection, *e*, through which,

in the path of the needle, is made a rounded groove, *f*. The face of this grooved projection *e*, toward the looper C, is just grazed by the point of the looper during its revolution.

I will now proceed, with the aid of Figs. 8 and 9, which represent end and side views of the needle-gorge B, the looper C, and needle *g*, to explain the manner in which the device shown, and which I call the "needle-race," prevents the loop of thread from twisting out of the path of the looper. The blue lines represent the thread.

The needle *g*, it will be seen, passes down through the needle-hole into the needle-race—*i. e.*, the groove *f* in the projection *e*—and, having reached the lowest point of its motion, commences to rise, which causes the thread to bow out, forming a loop on the side of the needle toward the looper, the loop being entirely prevented from forming on the opposite side by the back of the groove, into which the needle fits. The point of the looper C first grazes the face of the projection *e* and the side of the needle *g*, and is shown as just about entering the loop. It will readily be seen that if the loop have a disposition to twist around the needle, out of the path of the looper-point, it will be arrested by the projection *e* and held in the path of the looper-point, which, being sharp, will, if necessary, pick it off the face of the projection *e*.

The impossibility of the looper failing to enter the loop is apparent from the fact that the device described prevents the loop from bowing out on the wrong side of the needle or from twisting out of the path of the looper.

It will be understood that the needle-race described may be used independently of the needle-gorge. It may be attached to the under side of the cloth-plate immediately underneath the needle-hole cut into the cloth-plate; or it may be secured to some other part of the sewing-machine under an arrangement relatively to the needle-hole, so as to operate substantially as hereinbefore described; but I prefer to adapt it to the insulated part of the cloth-plate, containing the needle-hole, and which I term the "needle-gorge," or, sometimes, the "needle-hole" or "throat-piece."

Having thus fully described my improvements, what I claim as my invention is—

1. The method herein described of preventing, in sewing-machines of otherwise ordinary construction and operation, the loop of the needle-thread from being twisted out of the path of the looper by combining with its reciprocating needle and revolving looper a needle-race constructed and arranged, substantially as described, so as to operate in the manner hereinbefore set forth.

2. The combination, with an insulated cloth-plate section containing a needle-hole, of the

needle-race under an arrangement to operate in conjunction with the needle and looper, substantially in the manner and for the purpose set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

CHAS. H. WILLCOX.

Witnesses:

E. P. HATCH,  
JAMES KILNER.