F. CHASE.

SEWING-MACHINE.

No 170,345. Patented Nov. 23, 1875.

Fig. 1.

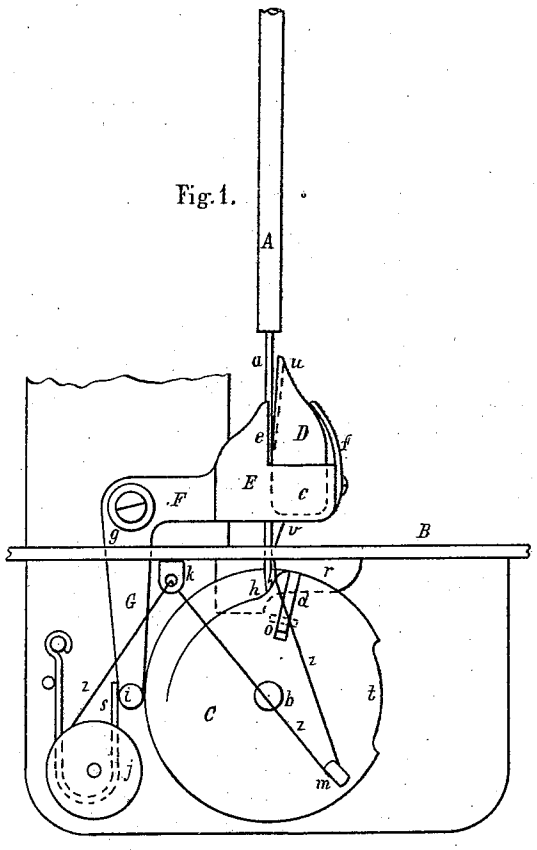
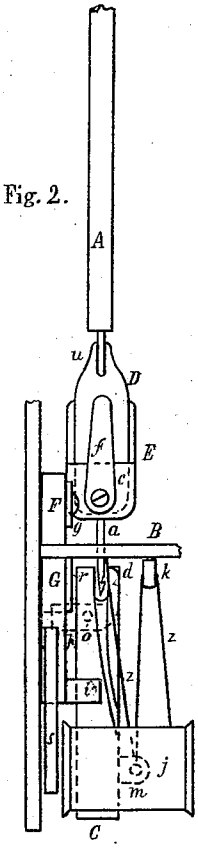


Fig. 2.



Witnesses;

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UNITED STATES PATENT OFFICE.

FRANK CHASE, OF BOSTON, ASSIGNOR OF ONE-HALF HIS RIGHT TO RUFUS LEAVITT, OF MELROSE, AND JAMES M. BRANT, OF WEYMOUTH, MASS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **170,345**, dated November 23, 1875; application filed November 19, 1874.

To all whom it may concern:

Be it known that I, FRANK CHASE, of Boston, State of Massachusetts, have invented an Improvement in Sewing-Machines, of which the following is a specification:

My invention relates to that class of sewing-machines which make the stitch commonly known as the lock or shuttle stitch; and has for its object a hooked needle, in combination with a shuttle nearly or quite longitudinal with the needle, and nearly stationary—that is, a shuttle so constructed and so located as to pass its thread through the loop without making the usual extended reciprocating motion; and, also, in connection with said shuttle, mechanism for forming the loop and taking up the slack thread.

I consider my invention especially adapted to those sewing-machines using the waxed thread.

Figure 1 shows an elevation of so much of a sewing-machine as will illustrate my invention. Fig. 2 is a side view of Fig. 1.

A is the vertical reciprocating needle-bar, carrying the needle *a*. B is the table, on which are placed the articles to be sewed. C is a plate or disk revolving about the center *b*, constructed and regulated in its revolution to operate the mechanism for forming the loop and setting the shuttle, as hereinafter described. D is the shuttle, which it is found best to locate vertically, as shown. The shuttle rests in the seat or socket *c* formed in the piece or holder E. The latter has the side *e*, nearly vertical, against which the shuttle is pressed lightly by the spring *f*. This spring allows, also, the removing the shuttle from the socket for the purpose of threading. The holder E is fixed to the arm F, shown nearly horizontal, connected with the arm G, shown nearly vertical, the two arms forming a lever pivoted at *g*. The revolving disk C has suitably formed upon it, or as a part of it, the hook *h*, for taking up the thread and carrying it to the proper position to be taken by the needle. *d* is a finger, pivoted to the disk at *o*, and pressed against the thread at the proper time by the extension *p*, which is tripped by the stop *r*, to secure a certain seizure of the thread of the needle. The plate C also acts as a cam on the stud *i* attached to the arm G. One of the threads, and, as the machine is here illustrated, the upper thread *v* is, of course, in the shuttle D; the other, *z*, passes from the spool *j* to a stationary guide, *k*, thence to a guide, *m*, on the revolving disk. The parts of the machine being suitably adjusted, and the disk C having the proper revolution in reference to the motion of the reciprocating needle-bar and needle, the hook *h* and finger *d* pass the thread to the needle, which, being formed as a hook, draws the thread upward through the article to be sewed, and above the upper end of the shuttle. The stud *i* which has, during this process, borne against the circular periphery of the disk, pressed by the spring *s*, drops into the depression *t*, and thus the lever G F and holder E tips the top and pointed end *u* of the shuttle toward the needle, so that, by the downward motion of the latter, the loop of the thread is left on and about the shuttle. On the further revolution of the disk the guide *m* draws the thread down and finally off from the shuttle to the article to be sewed. Thus the thread from the shuttle has passed under the other thread, the threads locking each other and forming the lock-stitch. The tension for the lower thread may be either at the guide *k* or in connection with the spool *j*.

I claim as my invention—

1. The combination of the disk and cam C, lever G F, provided with the socket C, substantially as and for the purpose hereinbefore set forth.

2. The combination of the hook *h*, finger *d*, extension *p*, stop *r*, needle *a*, and guide *m*, substantially as and for the purpose hereinbefore set forth.

3. A sewing-machine, having a hooked needle, *a*, and a shuttle, D, set longitudinally with the needle, both needle and shuttle being located on the same side of the table B, and arranged to operate as set forth.

FRANK CHASE.

Witnesses:

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