

No. 677,422.

Patented July 2, 1901.

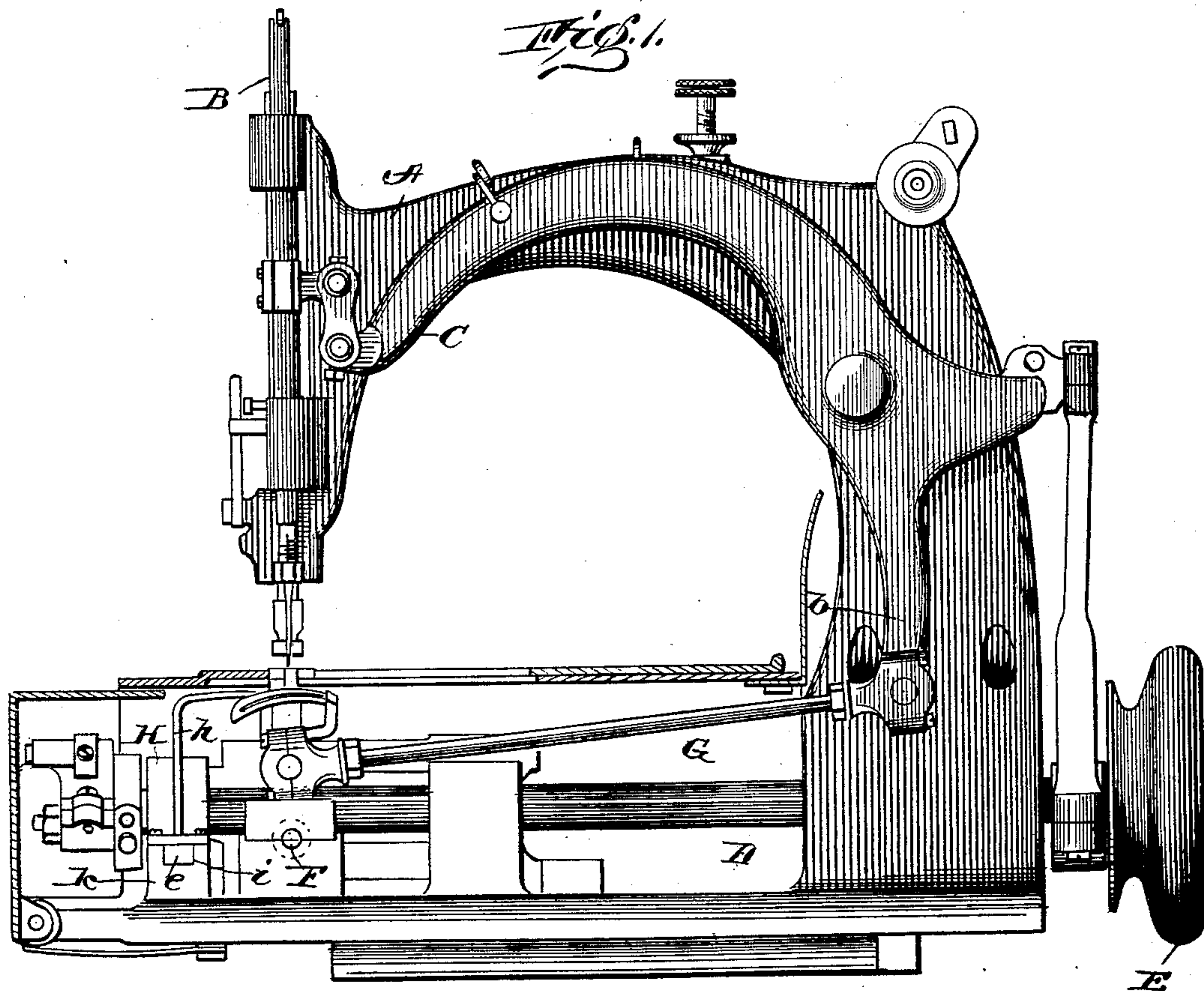
L. ONDERDONK.

LOOP SPREADER MECHANISM FOR SEWING MACHINES.

(Application filed Sept. 8, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
J. M. Fowler Jr.
Gales S. Moore

Inventor:
L. Onderdonk
by C. S. Sturtevant
Attorney

No. 677,422.

Patented July 2, 1901.

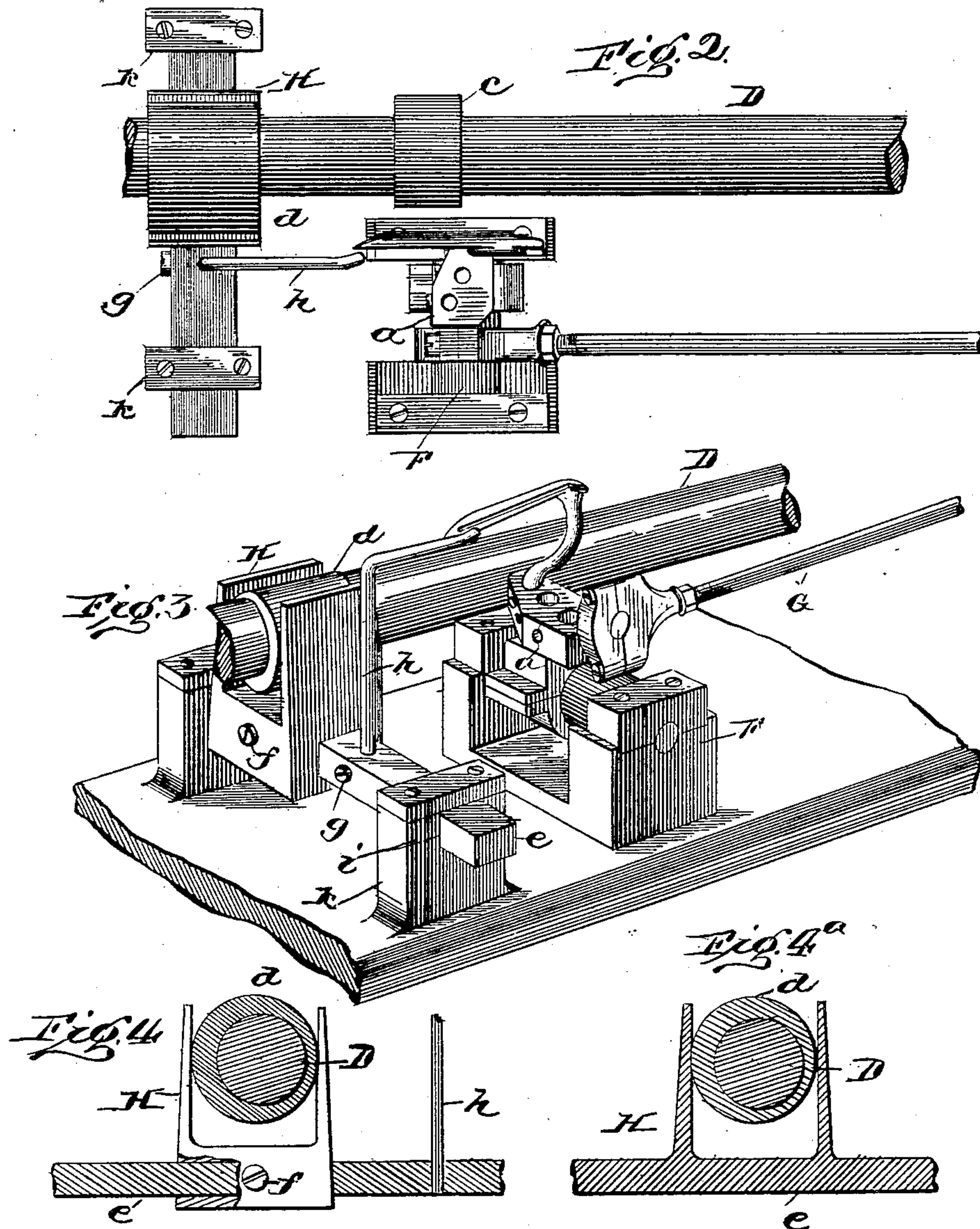
L. ONDERDONK.

LOOP SPREADER MECHANISM FOR SEWING MACHINES.

(Application filed Sept. 8, 1897.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
J. M. Fowler Jr.
Giles Moore

Inventor:
L. Onderdonk
by C. S. Sturtevant
Attorney.

UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS.

LOOP-SPREADER MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 677,422, dated July 2, 1901.

Application filed September 8, 1897. Serial No. 650,908. (No model.)

To all whom it may concern:

Be it known that I, LANSING ONDERDONK, a citizen of the United States, residing at Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to an improvement in sewing-machines, especially of the double-chain-stitch type, in which an under-thread-carrying looper coöperates with a thread-carrying needle to form the stitches. As ordinarily constructed the loopers of such machines are of the kind known as "four-motion" loopers—that is, each looper has a forward movement to catch the loop of needle-thread, a sidewise movement to avoid the needle, a backward movement to leave the needle-loop, and a sidewise movement to get back to the first position.

The object of the present invention is to provide a construction of machine in which the sidewise or needle-avoiding movements of the looper may be dispensed with, the liability of skipping stitches being avoided by the use of a "spreading device," so called, which moves against the under thread as the looper is beginning to recede from the needle-loop and as the needle is moving down and forces the under thread to one side, so that the needle will pass between the looper and the looper-thread—that is, into the triangle, of which two sides are formed by the thread itself from the looper-eye to and around the end of the spreader to the point at which it is tied up with the needle-thread in the previous stitch, while the third side of the triangle is formed by the looper itself.

The invention as set forth in the present application consists in the means for supporting and operating the loop-spreader to give it its desired movements and cause its proper coöperation with the needle.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a sewing-machine of the "Union Special" type, embody-

ing my invention, so much of the machine being illustrated as is necessary to a complete understanding of my invention. Fig. 2 is a top plan view of a portion of the machine with the bed-plate removed. Fig. 3 is an end perspective view. Fig. 4 is a sectional side view of the spreader and spreader-supporting bar. Fig. 4^a represents the spreader-bar as integral with the block.

In the drawings, A represents the goose-neck of the sewing-machine; B, the needle-bar; C, the needle-lever, and D the driving-shaft, to which the belt-wheel E is attached. The feeding mechanism is of the well-known "Union Special" type, such as illustrated in Patent No. 299,568.

The looper is mounted upon a short transverse shaft F and has an oscillating movement imparted to it by means of the connecting-rod G, having a ball-joint connection with the looper or its support *a*, sleeved on the shaft F, and at its opposite end connected to the lower end of the extension *b* on the needle-lever.

While it is the main purpose of the present invention to provide a construction whereby the sidewise movement of the looper may be dispensed with, still it will be understood that so far as the mechanism claimed is concerned it might operate in connection with a looper which has a sliding movement imparted to it as well as an oscillating movement, as shown, for example, in the patent to Stocker, No. 583,391, of May 25, 1897.

As herein shown, the main shaft D has the eccentric *c* for raising and lowering the feed-dog, this eccentric being arranged about on a line with the axis of the transverse looper-supporting shaft. At a point on the main shaft forward of the eccentric *c* is arranged an eccentric *d*, engaging a bifurcated block H. This block H has an opening through it at its lower end, as shown in Fig. 4, and through this opening passes a bar or rod *e*, adjustably secured thereto by the set-screw *f*. This bar or rod *e* instead of being secured to the block H may be integral with it, as shown in Fig. 4^a. The bar *e* is herein shown as provided with a socket in which is secured by the set-screw *g* the shank of a spreader *h*,

preferably of the form shown and with its point extending in proximity to the point of the looper and arranged to seize or move against the under thread as the looper is beginning to recede from the needle-loop and as the needle is moving down, thus forcing the looper-thread to one side, so that the needle will catch the looper-loop and there will be no danger of skipping stitches.

It will be understood that a plurality of spreaders and loopers instead of only one each may be used.

As shown in Fig. 2, the spreader support or bar at its opposite ends slides in ways *i*, formed in standards *k*, fastened to the machine-bed.

It will be understood that various modifications and changes in the construction of the device may be made without departing from the spirit of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine, a driving-shaft, a transverse shaft, a thread-carrying looper thereon, means for oscillating said looper in the direction of its length, a carrier supported in fixed bearings, a spreader thereon and means for sliding said carrier laterally bodily at right angles to the axis of the driving-shaft, and the longitudinal axis of the looper, whereby said spreader engages the under thread and forces it away from the looper and into

such position that the needle passes into its bight; substantially as described.

2. In a sewing-machine, a driving-shaft, a thread-carrying looper supported on a transverse axis and means for oscillating it in the direction of its length, an eccentric on the driving-shaft, a forked block embracing said eccentric and arranged to have bodily vibrating movement, and a spreader carried by the forked block, whereby said spreader engages the under thread and forces it away from the looper and into such position that the needle passes into its bight; substantially as described.

3. In a sewing-machine, a driving-shaft, a thread-carrying looper supported on a transverse axis and means for oscillating it in the direction of its length, an eccentric on the driving-shaft, a forked block embracing said eccentric, a bar secured to the forked block, a spreader on said bar, and supports for said bar, in which it has a sliding movement, whereby said spreader engages the under thread and forces it away from the looper and into such position that the needle passes into its bight; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LANSING ONDERDONK.

Witnesses:

CHESTER MCNEIL,
JAMES R. TROWBRIDGE.