

No. 614,457.

Patented Nov. 22, 1898.

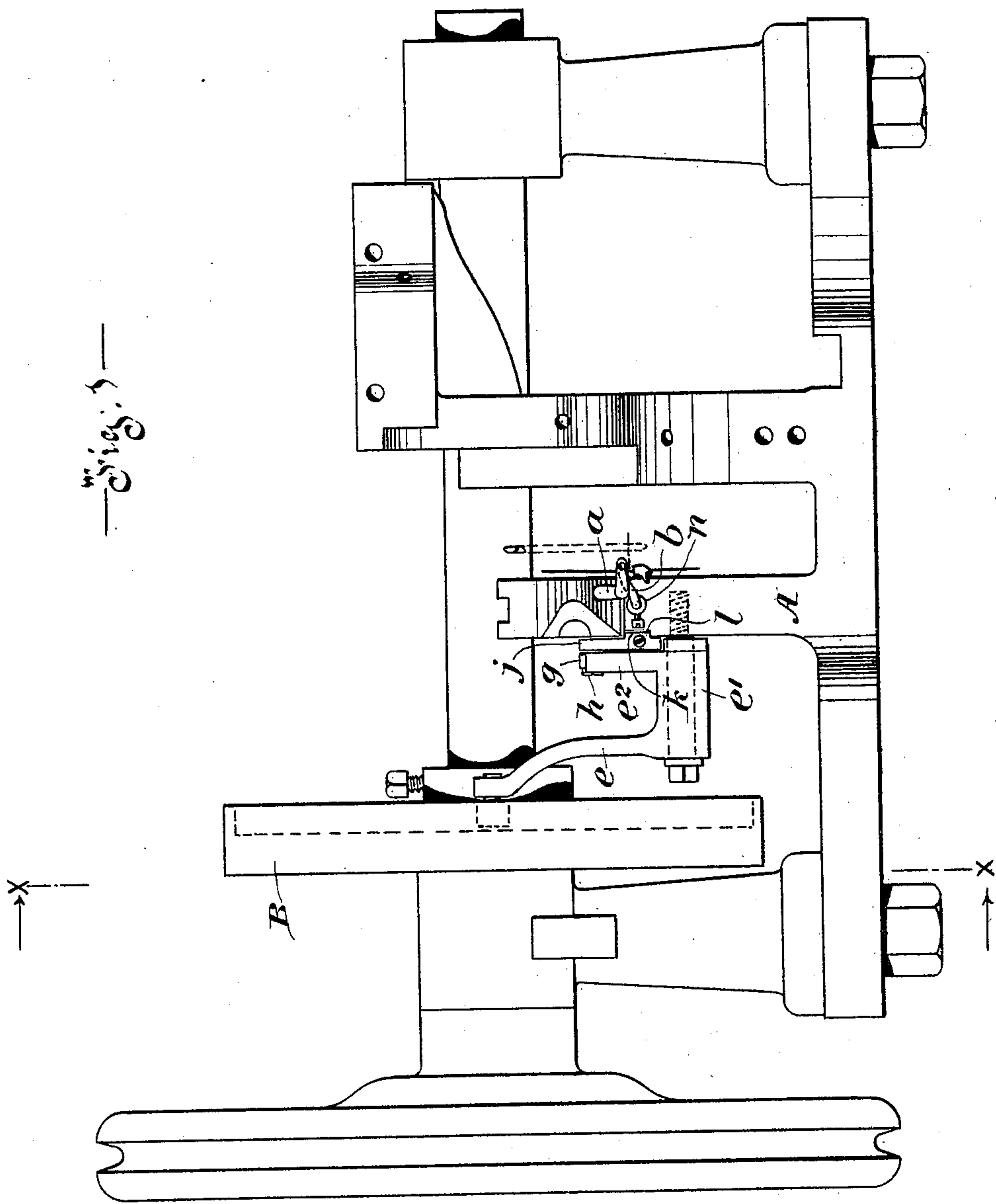
F. J. FREESE.

LOOP RETAINER FOR SEWING MACHINES.

(Application filed Mar. 12, 1894.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses

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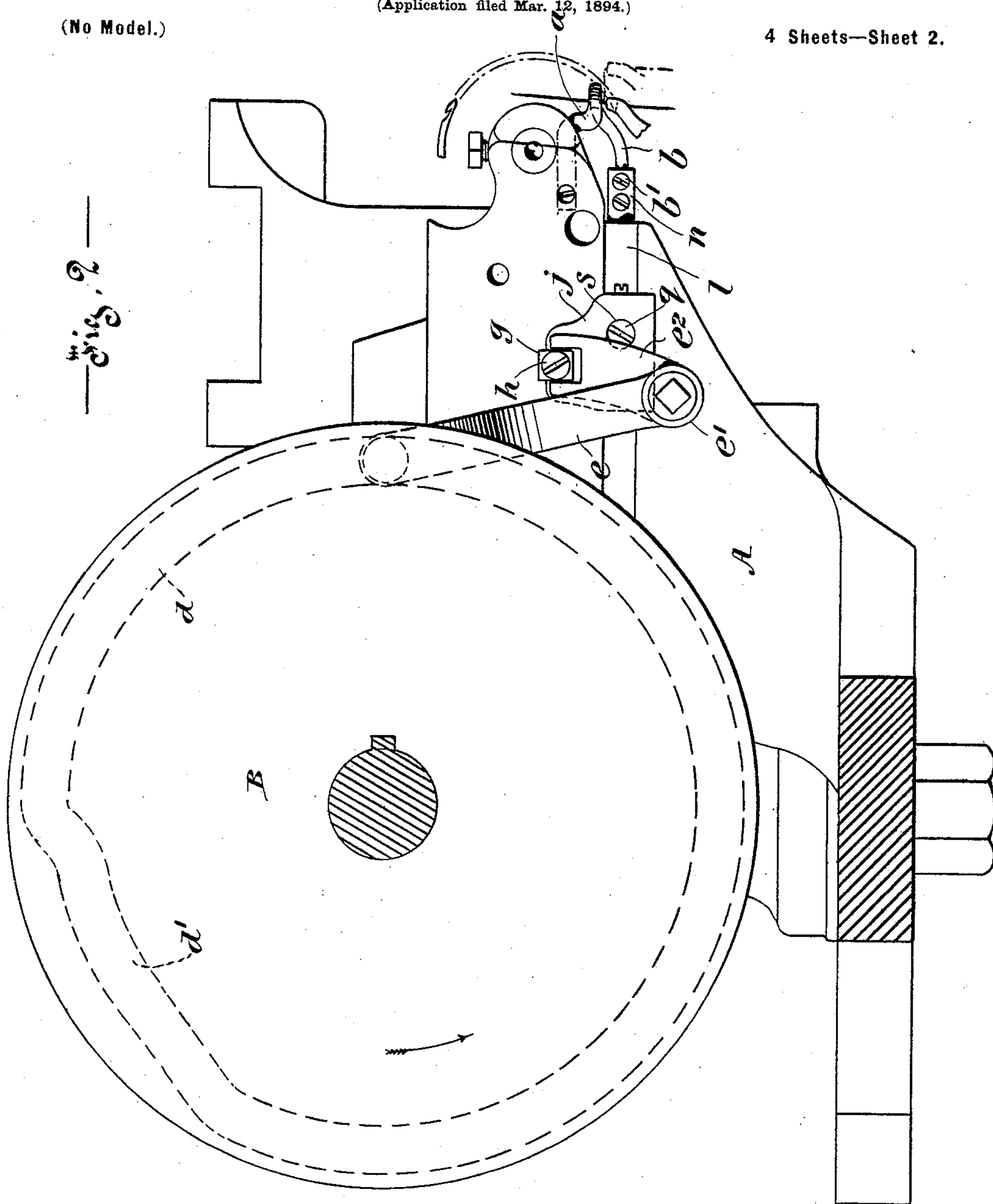
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(No Model.)

4 Sheets—Sheet 2.



Witnesses

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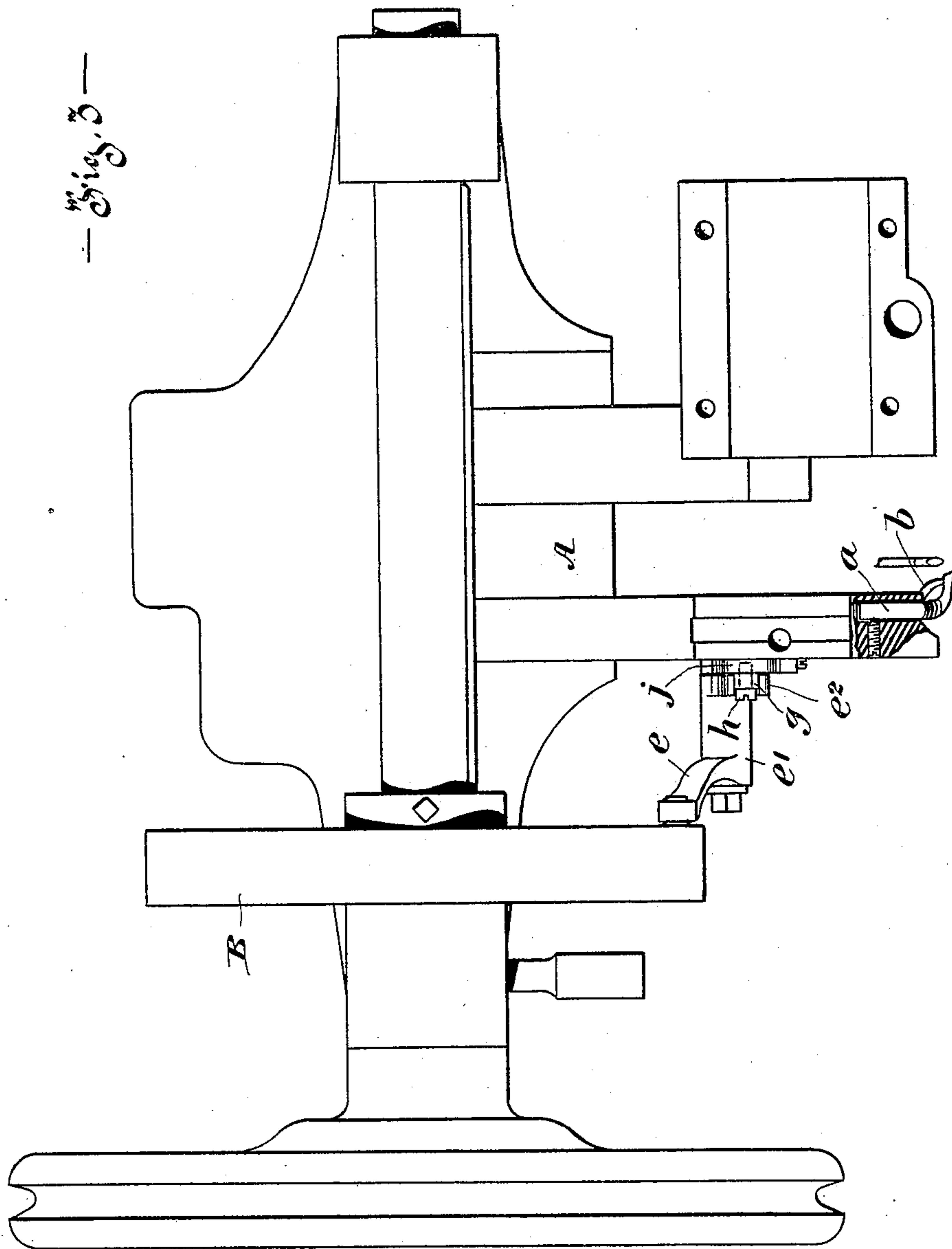
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(No Model.)

4 Sheets—Sheet 3.



Witnesses

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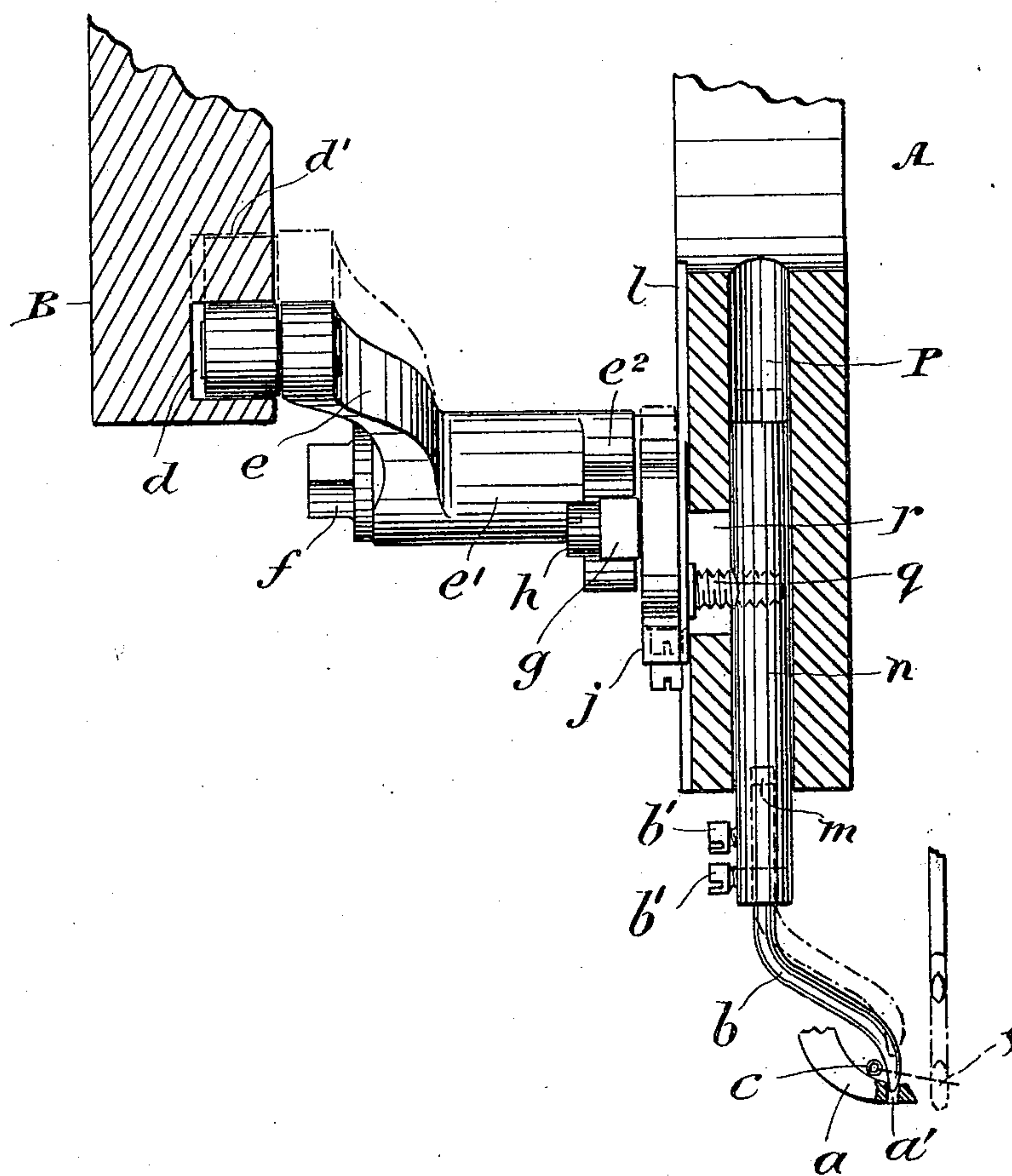
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4 Sheets—Sheet 4.

—Fig. 4—



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UNITED STATES PATENT OFFICE.

FRANCIS JOSEPH FREESE, OF MONTREAL, CANADA.

LOOP-RETAINER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 614,457, dated November 22, 1898.

Application filed March 12, 1894. Serial No. 503,326. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS JOSEPH FREESE, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of the invention is to improve the loop-retainer that the loop can be placed therein and removed therefrom without in any way subjecting the thread to frictional resistance; and it consists in combining with an immovable part having a projecting end portion substantially parallel with the line of movement of the looper and needle as they respectively carry the thread into and out of said retainer a movable part substantially at right angles to said immovable part and having a positive action imparted thereto and causing it to move into contact with and away from said immovable part in order that the retainer formed by said parts may at intervals receive and retain the thread and release same without in any way subjecting it to frictional resistance. For full comprehension, however, of the invention reference must be had to the annexed drawings, forming a part of this specification, in which like symbols indicate corresponding parts, and wherein—

Figure 1 is a front elevation of such portions only of a sole-sewing machine as are necessary to illustrate an application of my invention; Fig. 2, a transverse vertical section, enlarged, taken on line *xx*, Fig. 1; Fig. 3, a plan view with a portion of the frame broken away; and Fig. 4, a detail plan view of the loop-retainer and its operating parts, also enlarged.

The stationary part *a* of the retainer is of the form shown in Fig. 3, being bent so that its forward end portion will lie practically parallel with the line of movement (indicated by dotted lines 1, Fig. 4) of the thread as it is carried into the retainer by the usual looper (indicated at *c*) and out by the needle, so that the thread will not wear nor be obstructed as it is being withdrawn from the retainer, but will be quite free when the movable part *b* is retracted to the position indicated by dotted lines.

The end of the stationary part is preferably perforated, as at *a'*, and the diminished end of the movable part *b* enters such perforation and renders the inclosure so formed an absolutely certain retainer.

The means for operating the movable part *b* are preferably as follows:

On the inside face of the usual cam-disk *B* for operating the take-up I cut an additional groove *d*, in which takes a roller carried on the end of a lever-arm *e*, projecting laterally from one end of a sleeve portion *e'*, having a similar, though shorter, lever-arm *e''* projecting laterally from its opposite end. This sleeve portion is mounted or fulcrumed on a stud or bolt *f*, screwed into the side of the frame *A*. The shorter lever-arm *e''* has its free end forked to receive a rocking block *g*, pivotally carried on a stud *h*, projecting from the side of a movable guide-plate *j*, provided with a tongue *k* to slide in a groove *l* in the side of the frame *A*.

The movable part or finger *b* of the retainer is preferably circular in cross-section and is inserted in a circular recess *m* in a carrier-bar *n*, also preferably circular in cross-section to fit a horizontal boring *P*, extending inward from the face of the frame adjacent to and parallel with the groove *l*, the movable part *b* being adjustably held in place in the recess *m* by set-screws *b'*.

The bar *n* is pivotally connected at its rear inner end with the guide-plate *j* by means of a stud *q*, secured to the bar and passing through a slot *r* in the frame and entering an eye *s* in the guide-plate.

The groove *d* in the cam-disk *B* is concentric, with the exception of an offset or fall *d'* about a fifth part of its length, which is sufficient to hold the movable part of the retainer out of contact with the stationary part and the inclosure open to allow of the withdrawal of the thread of one loop already formed and the introduction of the supply of thread for the forming of the next loop, as shown in Fig. 4.

The use of the guide-plate *j* is to insure a perfect and invariable movement of the movable part of the retainer, although if its carrier *n* were prismatic in form instead of circular it could in most cases be dispensed

with, and in some forms of machines the carrier *n* could be attached directly to its operating-cam. I make it irregular, however, for convenience in fitting.

5 The movements of the finger are naturally properly timed to act in concert with the other instrumentalities of the machine, it being of course necessary that the retainer be open for the withdrawal by the needle of the thread
10 of one loop already formed and when the looper approaches to insert the thread of the next loop to be formed. This requirement, however, is one which those skilled in the art of manufacturing the various forms of sewing-machines will have no difficulty in carrying out, and it is therefore unnecessary to deal with a complete cycle of operation of any given machine to which my retainer may be applied.

20 What I claim is as follows:

1. In a sewing-machine having stitch and loop forming instrumentalities comprising a looper and a needle, a loop-retainer composed of a stationary part having a projecting end
25 portion substantially parallel with the line of movement of said looper and needle as they carry the thread into and out of the retainer, and a part movable substantially at right angles to and into and out of contact with said
30 projecting end portion with means for moving same, for the purpose set forth.

2. In a sewing-machine having stitch and loop forming instrumentalities, comprising a looper and a needle, the combination with
35 the loop-retaining parts proper, the one sta-

tionary and the other movable, of a sliding carrier-bar, for the movable part carried in the frame, a movable guide-plate to which such slide-bar is pivotally connected; a driving cam-disk and a lever suitably located between said disk and guide-plate, connected with each and operating the latter, as and for the purposes set forth. 40

3. In a sewing-machine having stitch and loop forming instrumentalities comprising a
45 looper and a needle, a loop-retainer composed of a stationary part having a perforated projecting end portion substantially parallel with the line of movement of said looper and needle as they carry the thread into and out
50 of the retainer, and a part having a diminished end, and movable substantially at right angles to and with its diminished end into and out of the perforation in said projecting end portion with means for moving same, for
55 the purposes set forth.

4. In combination, a loop-retainer comprising a hooked piece, *a*, having a perforation *a'*, and a movable part *b*; frame *A*, having groove *l*; cam-disk *B* having groove *d*; fall *d'*; 60 lever-arm *e*; sleeve *e'*; lever-arm *e''*; bolt *f*; block *g*; stud *h*; guide-plate *j*; tongue *k*; set-screws *b'*; recess *m*; carrier-bar *n* taking into horizontal boring *P*; stud *q*, substantially as and for the purpose set forth.

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Witnesses:

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