

D. H. CAMPBELL.  
Sewing Machine.

No. 241,610.

Patented May 17, 1881.

Fig. 1.

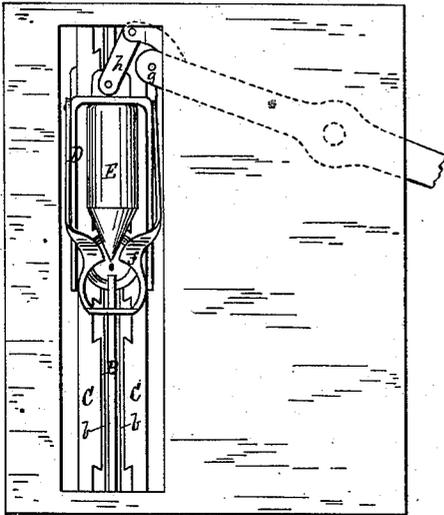


Fig. 2.

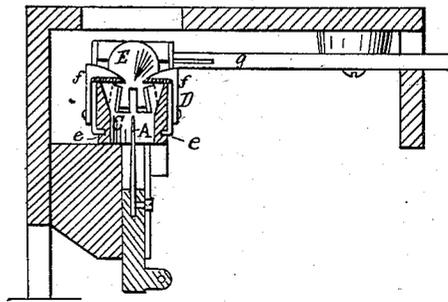


Fig. 3.



Fig. 4.

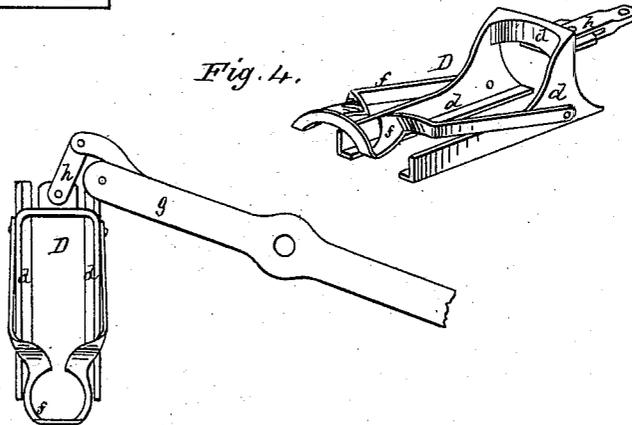


Fig. 5.

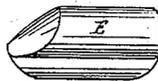


Fig. 6.



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# UNITED STATES PATENT OFFICE.

DUNCAN H. CAMPBELL, OF PAWTUCKET, RHODE ISLAND, ASSIGNOR OF  
THREE-FOURTHS TO HENRY B. METCALF, FRANK E. COMEY, AND  
DANIEL McNIVEN, ALL OF SAME PLACE.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 241,610, dated May 17, 1881.

Application filed May 14, 1879.

To all whom it may concern:

Be it known that I, DUNCAN H. CAMPBELL, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

My said improvements relate to the shuttle, its rail and driver, and are particularly applicable to wax-thread machines in which a hook-needle and a centrally-pointed shuttle are employed. The shuttle is termed "centrally pointed" by me because its point, its axis, and the path of the needle occupy the same plane.

In certain applications for Letters Patent filed by me May 13 and 14, 1879, and designated, respectively, as Cases "No. 1," "A," "B," "C," "D," and "E," I have shown, described, and claimed certain combinations of shuttles with rails of novel construction.

My present invention consists, in part, of the combination, with a shuttle-rail broken away to afford a path for a needle, of a centrally-pointed shuttle provided with a longitudinally-recessed web having flaring sides and inclined retaining-guides on each side of and parallel with the rail, which so engage with the flaring sides of the shuttle-web as to prevent the rising of the shuttle on its rail. These retaining-guides and the rail are preferably mounted in a bed-piece, and the guides are adjustable with reference to the web of the shuttle when on the rail, and this particular construction constitutes another portion of my invention.

In certain other applications for Letters Patent recently filed by me, and before herein referred to, I show and describe several shuttle-drivers suitable for operating a shuttle mounted on a rail, and either of them may be employed in connection with the shuttle, its rail, and retaining-guides, as hereinafter shown; and another feature of my invention consists in the combination, with a shuttle having a longitudinally-recessed web on its under side, a rail on which the shuttle is mounted, and retaining-

guides for engaging with the web of the shuttle and preventing it from rising, of a suitable shuttle-driver. I have devised a shuttle-carrier of novel construction for use in this combination, which, while it has a hinged bridle, as claimed in another application for Letters Patent filed May 13, 1879, (Case A,) is not mounted upon the shuttle-rail, as shown in said application; but instead thereof it has slides fitted to longitudinal grooves on opposite sides of the rail bed-piece; and my invention further consists in the combination, with the centrally-pointed web-shuttle mounted on a central rail and secured thereon by retaining-guides parallel with the rail for engaging with the web of the shuttle, of a shuttle-driver mounted upon a bed-piece which contains the rail and the guides.

To more particularly describe my invention I will refer to the accompanying drawings, in which—

Figure 1 represents the front portion of the bed of a machine containing my improvements, a portion of the bed and frame being broken away to show the shuttle and accompanying parts. Fig. 2 represents the same in cross vertical section. Fig. 3 represents the rail bed-piece in top view, detached. Fig. 4 represents the shuttle-driver and its lever detached. Figs. 5 and 6 represent the shuttle respectively in side view and cross-section.

The hook-needle A is as heretofore, and rises to take its loop downward.

The shuttle-rail B is rectangular in cross-section, its upper edge supporting the shuttle. It is broken away centrally at *a* to afford a path for the needle, and is centrally mounted in a bed-piece, C, which is secured at each end to the frame of the machine. On each side of the rail, and mounted in the bed-piece, are retaining-guides *b*, each having an inclined front face coincident with the side of the rail and parallel therewith. The bed-piece is recessed vertically at intervals for the reception of gibs *c* for the guides, having each a set-screw, whereby the guides may be adjusted accurately with reference to the rail, or to the web of a shuttle when mounted thereon. Each guide extends from near the path of the needle to the end of the

rail. That portion of the rail which is immediately in front of the needle serves as a stop for preventing a loop from being carried forward by the shuttle.

5 The shuttle-driver D is composed, in part, of a slide, *d*, fitted to embrace the bed-piece laterally, and is mounted thereon by means of splines which occupy guiding-grooves *e* on each side of the bed-piece. It has also a hinged bridle, *f*, which embraces the front end of a shuttle, the heel of which is engaged by that portion of the slide *d* which overhangs the rail. Said carrier-bridle is the same as shown and claimed in certain other applications for Letters Patent filed by me, hereinbefore referred to. The driver is connected with its vibrating lever *g* by a link, *h*.

10 The centrally-pointed shuttle E has a longitudinally-recessed web on its under side, as heretofore; but said web is novel, as shown in the drawings, in that it has flaring outer sides, as at *i*, they being essential in this machine as a means whereby the shuttle is confined to its rail through the co-operation of the inclined-faced retaining-guides *b*. The shuttle may be removed from its rail by raising the bridle of the carrier and then sliding the shuttle along the rail outward through a hole in the side of the frame. As heretofore, the recessed web operates as a cast-off for freeing the loop from a hook-needle, and it also, as heretofore devised by me, serves as a medium by which it is mounted on its rail and retained thereon. My present invention in this particular connection therefore relates to the particular construction involved and to the combinations of mechanism specified.

The operation of the several parts is too well understood to require any specific description.

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

1. The combination, with a shuttle-rail broken away to afford a path for a needle, of a centrally-pointed shuttle provided on its under side with a longitudinally-recessed web having flaring sides, and inclined retaining-guides on each side of and parallel with the rail for confining the shuttle thereto, substantially as described.

2. The shuttle having a longitudinal recess on its under side, a shuttle-rail broken away centrally to afford a path for a needle, and parallel retaining-guides on each side of the rail, which are adjustable with reference to the shuttle mounted on said rail, in combination with a bed-piece common to the guides and rail, substantially as described.

3. The combination, with a shuttle having a longitudinally-recessed flaring web on its under side, a shuttle-rail, and retaining-guides for engaging with the shuttle-web, of a shuttle-driver, substantially as described.

4. The combination, with the centrally-pointed web-shuttle, a central rail, and retaining-guides parallel with the rail, for engaging with the web of the shuttle, of a shuttle-driver and a bed-piece containing the rail and guides, substantially as described.

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