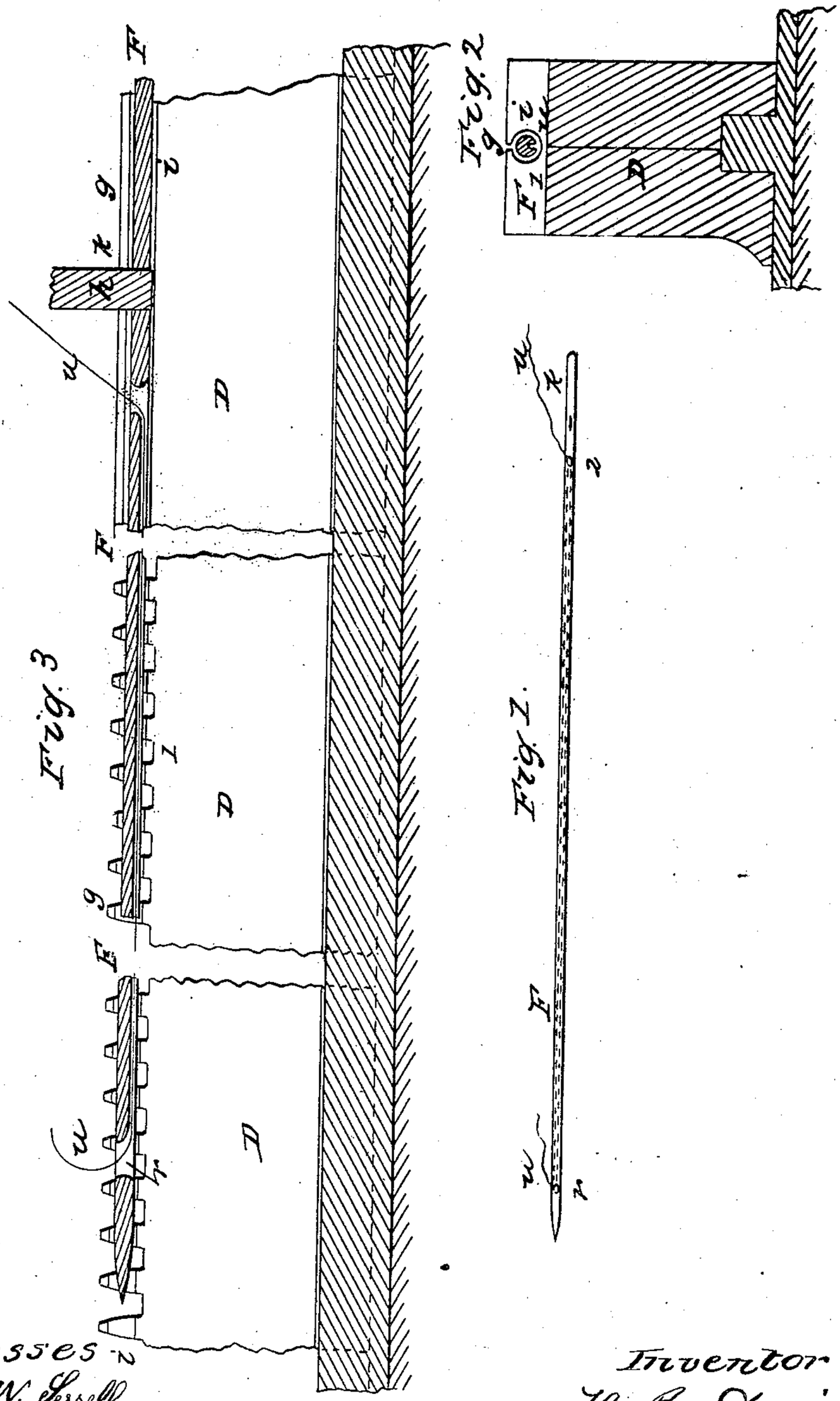
H. R. DAVID.

Sewing Machine.

No. 14,393. Patented March 11, 1856.



Witnesses
Lemuel W. Serrell
Thomas. G Hawley

Inventor
H. R. David.

UNITED STATES PATENT OFFICE.

HENRY R. DAVID, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **14,393**, dated March 11, 1856.

To all whom it may concern:

Be it known that I, HENRY R. DAVID, of the city, county, and State of New York, have invented, made, and applied to use a new and useful Improvement on the Sewing-Machine patented by David M. Smith, April 16, 1850; and I do hereby declare that the following is a full, clear, and exact description of the said improvement, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a plan of the needle complete. Fig. 2 represents in larger size a cross-section of the needle and some parts of the sewing-machine with which it is to be used; and Fig. 3 shows a vertical longitudinal section of the point, center, and back end of the needle as similarly applied, and also in larger size.

The same marks of reference denote the like parts.

The nature of the said invention consists in the manner of leading the thread through a grooved needle, whereby the thread remains stationary with the needle, except when drawn off in the cloth, and none of the moving parts of the machine come in contact with the thread to wear or tangle the same, and it is found practically that without this improvement the before-mentioned patent of David M. Smith is inoperative and valueless, because the said machines will not work in a reliable manner without my improvement.

On reference to the before-mentioned patent of David M. Smith, it will be found that the thread *u* passes from a spool through an eye or hole in the slide D and through the eye of the needle F. Said needle is stationary, and the slide D travels back and forth, and the cloth is forced by a pinion onto the point of the needle; consequently the said hole in the slide D travels back and forth on the thread; second, it tends to pull the thread out of the eye of the needle, and the cloth being drawn over the needle by the rack, tends also to pull the thread out of the eye, and the two forces acting together are apt to unthread the needle or break the thread; third, on running the slide D back to draw the cloth off the needle, the cloth acts in the same direction as the hole in the slide and tends to draw the thread off the spool, and unless the operator pulls the thread through the eye as fast as it is given off by the spool said thread will double, clog, and break in the groove containing said needle, and practice shows that it is nearly impossible to draw the thread through the eye of the needle, as the material is run off sufficiently fast to prevent clogging in the manner before mentioned, without pulling so hard on the thread as very often to break it, and that generally occurs in the eye of the needle, and much time is lost in moving said needle in order to thread it. My present invention overcomes all these difficulties by constructing the needle F with a groove, 1, in its under side, leading from the eye *r* near the point of the needle, to a second eye, 2, which passes the thread up through the upper part, *g*, of the groove *i*, containing the needle, in the manner shown by the red lines. The mortise *k* receives the steady-pin or holdfast *k* to retain the needle in place, as set forth in the before-mentioned patent. There is thus scarcely any wear on the thread, and there is no tendency to break the same, and the operator simply takes hold of the end of the thread and runs the slide D back, drawing off the material and pulling the thread along at the same time. The thread, being in the groove, is protected from being entangled, and the only wear on said thread is drawing it once through the two eyes *r* and 2, which is not the least detriment thereto.

I am aware that grooved needles have heretofore been used, and also that needles with two eyes are well known. Therefore I lay no claim to the same; but by combining with the grooved slide in the before-mentioned patent a needle that is provided with two eyes and a groove, in the manner set forth, I am enabled to lead the thread down through the upper part of the groove in said slide, along beneath the needle, and up again through the eye near the point. Thereby there is no wear or strain on the thread, which is stationary, except when drawn along with the material sewed, whereas the eye in the said slide D, before mentioned, running back and forth on the thread, renders the machine, under the said Smith patent, useless, because the thread is continually knotting and breaking and tangling in the groove and around the needle.

What I claim, and desire to secure by Letters Patent, is—

The method herein described and shown of leading the thread to avoid wear or derangement thereto by combining with the slide D, in the before-mentioned patent of David M. Smith, of April 16, 1850, and on which this is an improvement, the needle F, constructed with the two eyes and the groove, to act in the manner and for the purposes specified.

In witness whereof I have hereunto set my signature this 16th day of July, 1855.

H. R. DAVID.

Witnesses:
LEMUEL W. SERRELL,
THOMAS G. HAROLD.