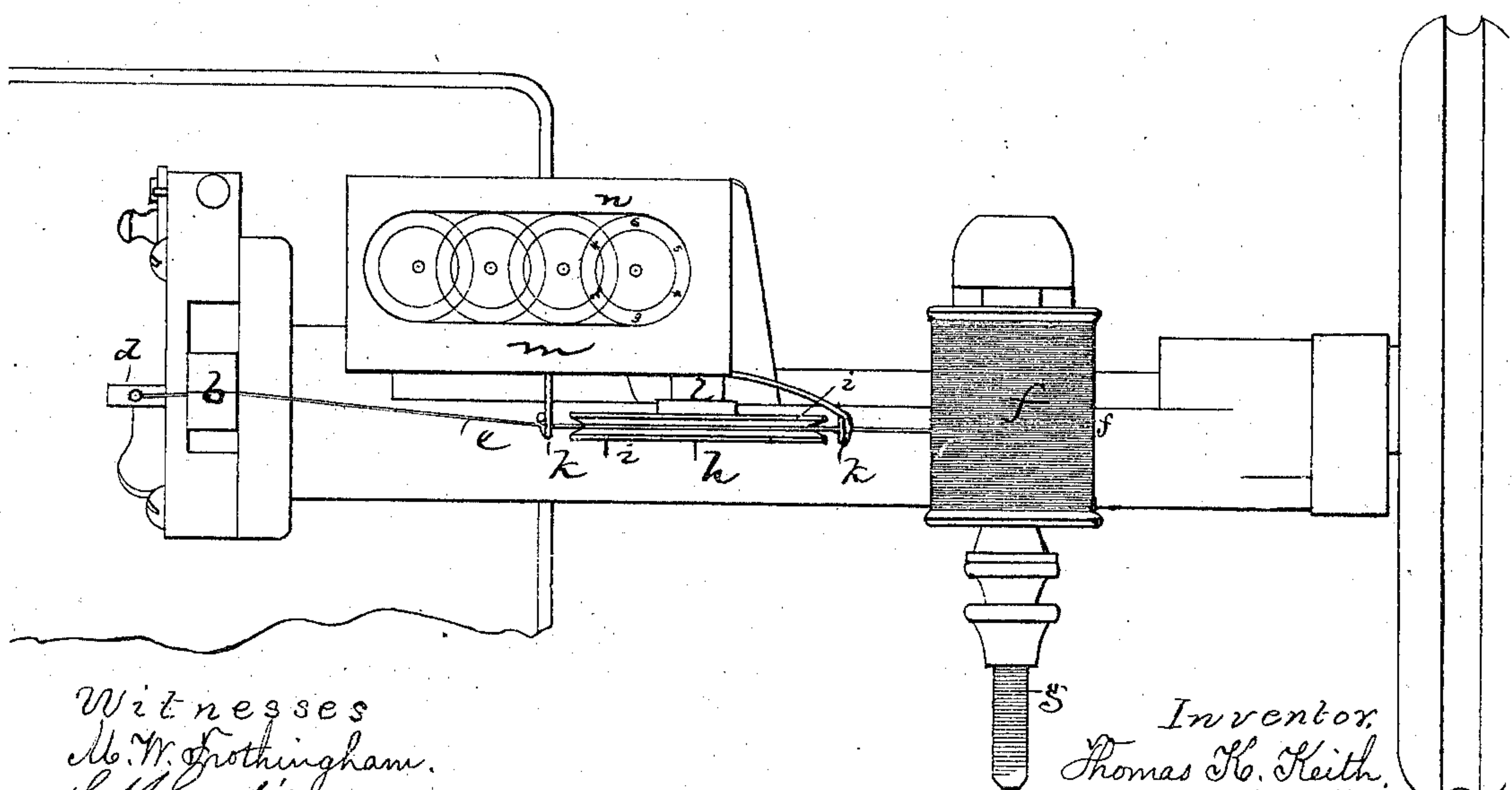
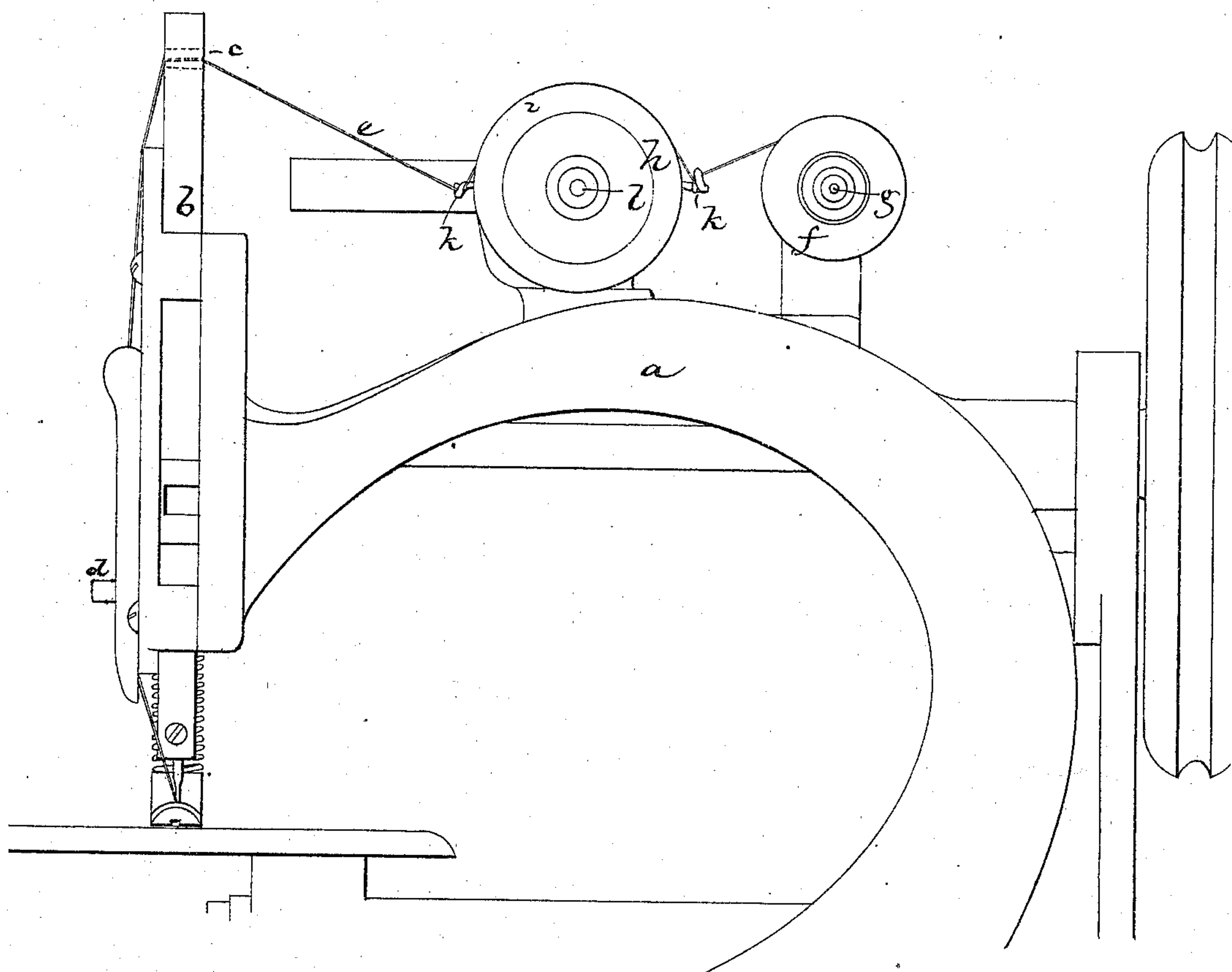


T. K. KEITH.
Sewing-Machines.

No. 139,962.

Patented June 17, 1873.



Witnesses
M. W. Frothingham.
L. H. Atimer

Inventor,
Thomas K. Keith.
By his Atty.
Crosby & Gould.

UNITED STATES PATENT OFFICE.

THOMAS K. KEITH, OF HAVERHILL, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **139,962**, dated June 17, 1873; application filed May 23, 1873.

To all whom it may concern:

Be it known that I, THOMAS K. KEITH, of Haverhill, in the county of Essex and State of Massachusetts, have invented an Improvement in Sewing-Machines; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In using sewing-machines it is often desirable to measure the amount of thread drawn from a spool, or to test the length of thread upon a spool, especially in using spool-silk.

My invention relates to a means of accomplishing such measurement; and consists in combining with a sewing-machine mechanism, and with a tension-wheel placed between the spool and the needle-bar, a meter mechanism or a train of gearing, by which, by the rotations of the tension-wheel, the consequent length of thread running through it is registered.

The drawing represents a plan and side elevation of a sewing-machine mechanism embodying my invention.

a denotes the arm, at the front end of which is the head and face plate, between which the needle-bar *b* plays vertically. *c d* denote the ordinary guides, through which the thread *e* passes. *f* denotes the spool; *g*, the spool-spindle; *h*, the tension-wheel. At opposite

sides of this wheel are eyes *k*, through which the thread runs, the thread between said eyes passing over the wheel *h* between its corrugated flanges *i*. The wheel *h* is fixed on a shaft, *l*, which passes through a box, *m*, said shaft having a gear that makes one wheel of a train of gears contained within the box, the various arbors of the gears extending through an index-plate, *n*, the arbors having index-fingers that are regularly moved by the gearing as the wheel rotates, the respective index-fingers moving around the respective index-circles of the index-plate. The first index is shown as denoting the number of single yards up to six. The second denotes the number of yards from six to forty-eight, and so on through the train.

As the thread is drawn from the spool by the needle, and runs through the groove in the wheel *h* it turns the wheel, and the rotation of the wheel actuates the gearing, so that the thread is accurately measured, as will be readily understood.

I claim—

In combination with a sewing-machine mechanism, a mechanism, substantially as described, for registering the length of thread.

THOMAS K. KEITH.

Witnesses:

F. G. GREELEY,
GILMAN GREELEY.