M. C. GRITZNER.

SEWING MACHINE

No. 44,720. Patented Oct. 18, 1864.

Fig. 1.

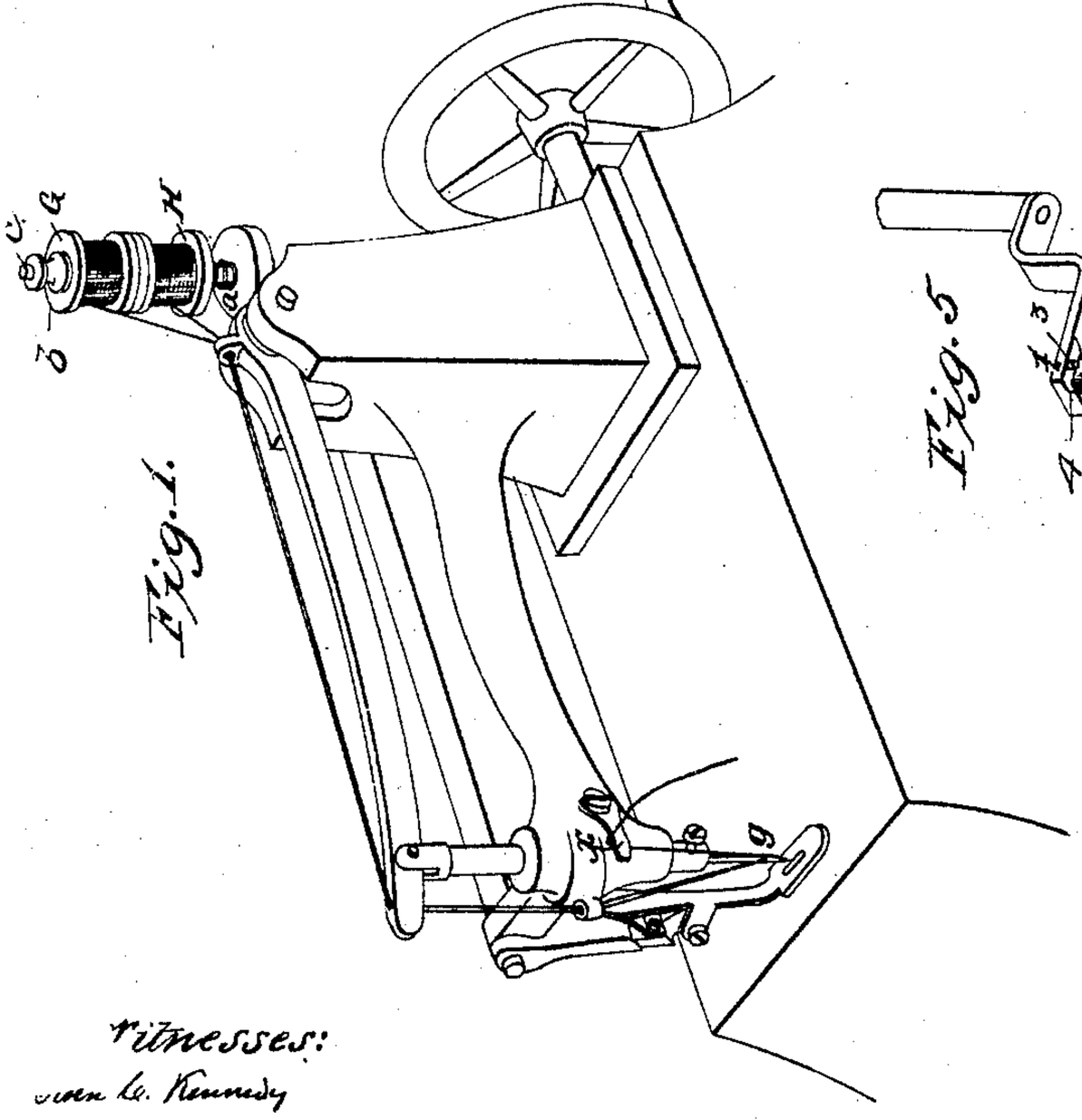



Fig. 2.

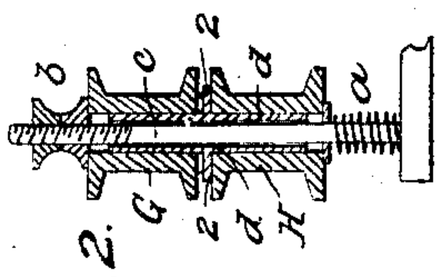



Fig. 3.

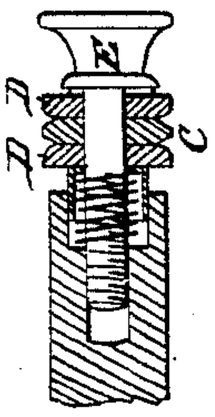



Fig. 4.

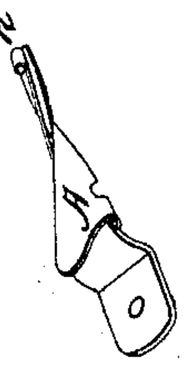



Fig. 5




Fig. 6.

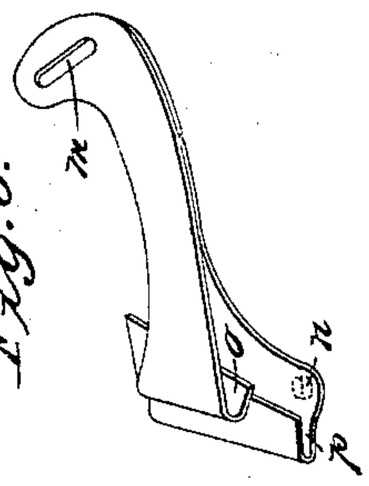
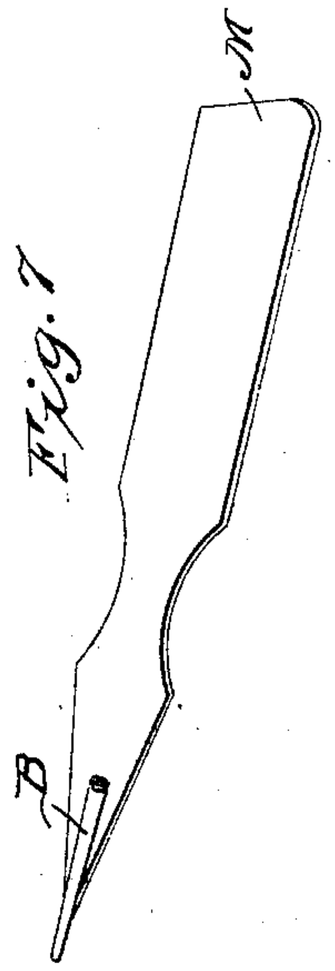



Fig. 7

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# UNITED STATES PATENT OFFICE.

M. C. GRITZNER, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **44,720**, dated October 18, 1864.

*To all whom it may concern:*

Be it known that I, M. C. GRITZNER, of Washington, District of Columbia, now a resident of Paris, in France, have invented new and useful Improvements in Sewing-Machines and certain guides to facilitate sewing on machines; and I do hereby declare that the following is a full and exact description thereof, so as to enable others skilled in the art to make and use my invention.

The nature of my invention consists in the combination of two threads with one needle of a sewing-machine when the tension and friction apparatus for each one of the two threads is so arranged as to act independently of the other, while requiring only one adjustment to regulate the tension and friction of each independent of the other, said combination of parts being applicable to single-thread sewing-machines as at present constructed or to single-thread sewing-machines of new construction without depriving them of their qualities of single-thread machines when to be employed as such.

Figure 1 represents so much of an ordinary one-thread sewing-machine of any construction as is necessary to illustrate my invention. Figs. 2 and 3 represent detached views, hereinafter to be referred to. Fig. 4 represents a perspective view of my improved hemmer for introducing a cord into a hem. Fig. 5 represents a perspective view of my improved cording-foot. Fig. 6 represents a perspective view of my improved spring-clamp for the purpose of guiding such fabrics, the edges of which curl or roll up. Fig. 7 represents a perspective view of my cording-blade.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The two thread-spools G and H are arranged in any of the ordinary ways, either alongside each other or on the top of each other, as represented in Figs. 1 and 2. In the latter arrangement the tension device consists in a spring, *a*, which presses the thread-spools upward, the tension being regulated by means of an adjusting-nut, *b*, working on the screw-spindle *c*.

To make the tension of the bobbin-threads independent of each other, I use a metal tube, *d*, which I insert into the lower spool, H, and whose horizontal flange 2 rests upon the upper end of the spool H. The upper spool, G, is then placed upon the upper part of the tube *d*, as represented in Fig. 2 in a vertical central section, and the tension of the threads of the spools is independent of each other, but is regulated by the single adjusting screw-nut *b*. This arrangement may be modified to make it suitable for other tension devices—for instance, in applying the tension device consisting substantially of two glass disks on an elastic bolster. The bobbins G H may be set upon the spindle *c* by the application of the central tube, *d*, but without using the tension-spring *a*, and I insert a polished steel disk, C, between the two glass disks D (represented in a section in Fig. 3) and let the threads pass separately each between one of the glass disks and central steel disk, while the tension of both threads is regulated by means of the single adjusting-screw E.

If a friction apparatus is employed in addition to the tension apparatus, one friction apparatus will be found sufficient for both threads when it is so constructed as to permit the two threads to pass through the friction apparatus alongside of each other. The two threads passing from the spools G H through the tension and friction devices and guides are threaded on the needle *g* like a single thread, and are used in sewing like a single thread, and it will be found that a strong and fine seam is obtained, which to all intents and practical purposes does not unravel, and I thus produce a good and substantial seam by the application of a sewing mechanism of the plainest construction. The ends of the threads may be conveniently secured by a little spring, *x*, fastened to the lower bearing of the needle-bar, so that the ends of the threads need not be held by the hand of the operator when beginning to sew.

In sewing with two threads in the manner herein described the threads become more or less twisted and interlaced, which prevents them from being unraveled with facility, as is the case when a single thread only is used on the same machine, and I thus remove the great objection which has heretofore been in the way of bringing that class of machines into general use.

It will also be found that for two threads the

same size needles can, and in fact should be, employed as if only one thread of the same thickness of one of the two threads were used.

To protect the seam against all possibility of unraveling, it is only necessary, after having finished a seam, to slip one end of the thread through the next two loops and let it terminate on the upper side of the seam, while the other terminates on the under side of the seam and two loops farther forward. If preferred, however, the thread ends may be secured by tying the two into a knot.

Fig. 4 represents my improved hemming device for automatically introducing a cord within the narrow hem, such as is required in umbrella work. It consists in the application to a hemmer, A, of a small tube, *h*, through which the cord is passed, which latter is thus automatically inclosed within the hem when the hemmer is used in the ordinary manner.

Fig. 5 represents a new cording-foot. The cord is entered through notch 1 and passes through the needle-hole 2, and thence through the space between the point 3 and the edge 4, by means of which it is held to the cloth while the needle passes through the cloth. By this arrangement the fabric, while the cord is sewed to it, can be turned with the greatest facility, and thus sharp corners can be easily turned, or ornamental designs in cording can be readily applied to the fabric.

Fig. 6 represents my new clamp for the purpose of guiding such fabrics, the edges of which curl or turn up, such as knitted goods. The device is secured to the cloth-plate by means of a screw, which passes through slot *m*, and a pin, *n*, on the lower side of the clamp, fits into a corresponding hole in the cloth-plate of the machine. The edges of the fabric are respectively slipped into the bent jaws *o p* of the clamp-guide, which are somewhat wider at their entrance than on their rear side, and they thus become straightened and are presented to the needle in a perfectly smooth and straight condition, in which they can be sewed with the same facility as any smooth fabric.

Fig. 7 represents my improved cording-blade. It is provided with a conical tube, B, for the passage of the cord, and with an edge, M, at its other end for pressing the cloth against the cord preparatory to introducing the goods under the cording-foot.

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

The transformation of single-thread sewing-machines into complete double-thread sewing-machines by means of a combination of two threads with one needle of a sewing-machine when the tension and friction apparatus for each one of the two threads is so arranged as to act independently of the other, while requiring only one adjustment to regulate the tension and friction of each, said combination of parts being applicable to single-thread sewing-machines as at present constructed or to single-thread sewing-machines of new construction without depriving them of their qualities as single-thread machines.

Signed in presence of two witnesses.

M. C. GRITZNER.

Witnesses:

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