(No Model.)

A. J. A. OESTERREICH.

SEWING MACHINE FOR HEMSTITCHING.

No. 537,846. Patented Apr. 23, 1895.

Fig. 1.

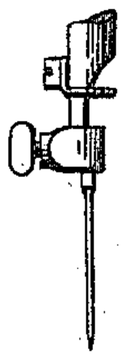


Fig. 2.

Fig. 3.

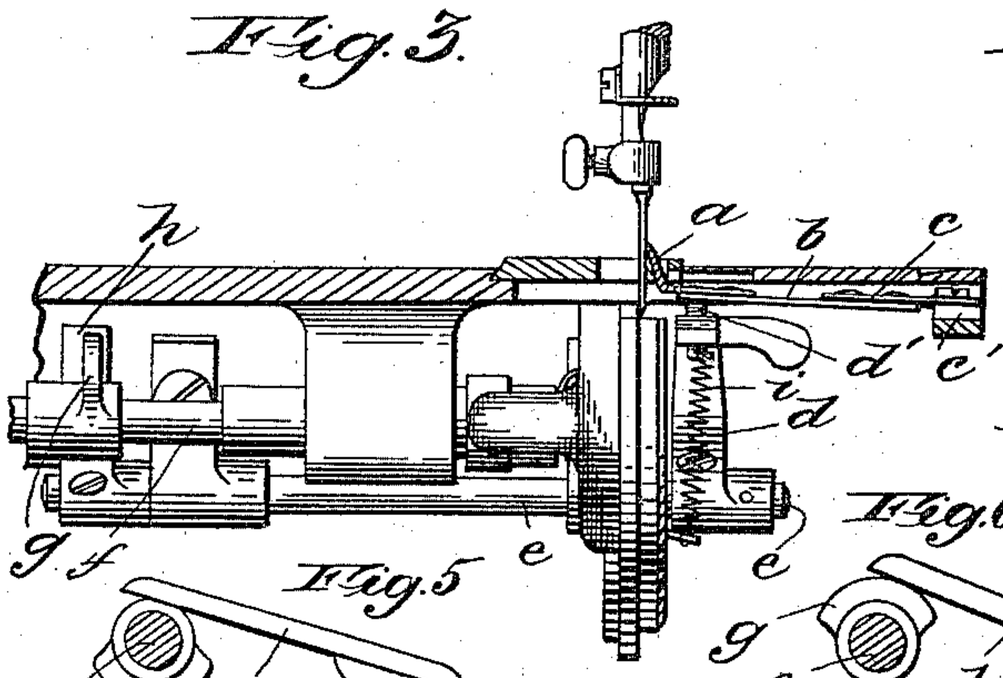


Fig. 4.

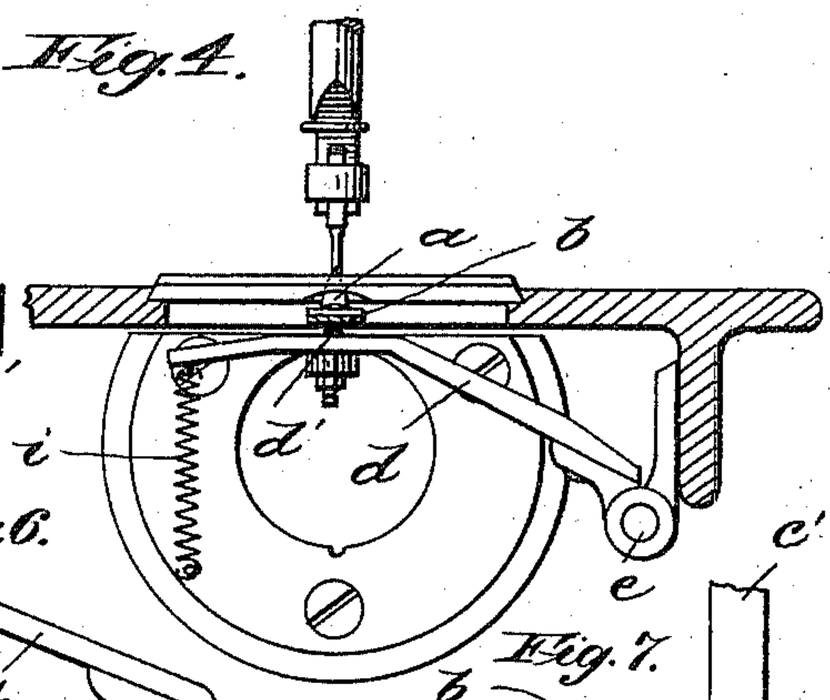


Fig. 5

Fig. 6.

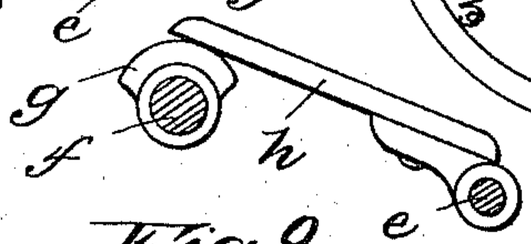


Fig. 7.

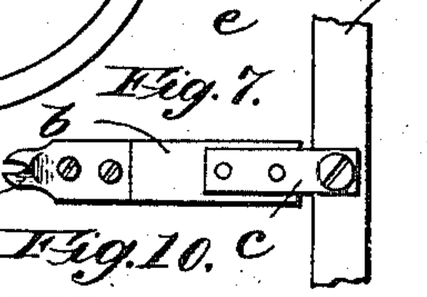
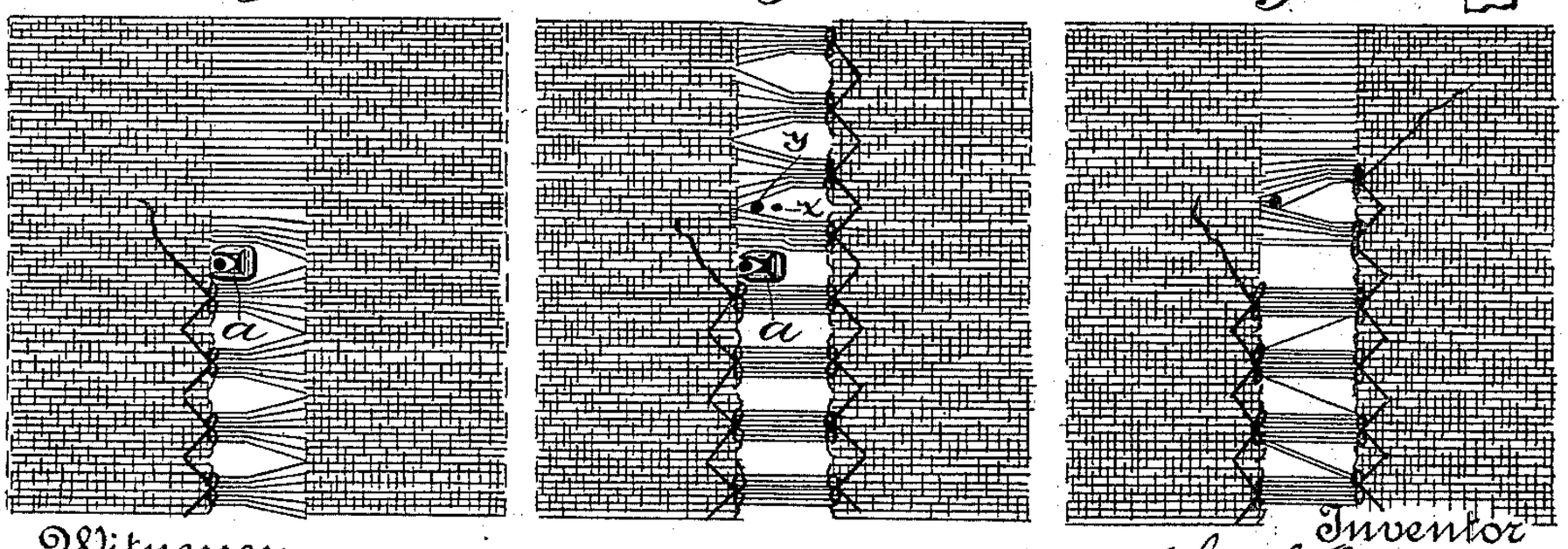


Fig. 8.

Fig. 9.

Fig. 10.



Witnesses:
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UNITED STATES PATENT OFFICE.

AMANDUS JOH. AUG. OESTERREICH, OF HAMBURG, GERMANY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY OF NEW JERSEY.

SEWING-MACHINE FOR HEMSTITCHING.

SPECIFICATION forming part of Letters Patent No. 537,846, dated April 23, 1895.

Application filed January 14, 1895. Serial No. 534,845. (No model.) Patented in Hungary August 26, 1894, No. 986, and in Austria September 26, 1894, No. 44/5,168.

To all whom it may concern:

Be it known that I, AMANDUS JOHANN AUGUST OESTERREICH, a subject of the Emperor of Germany, residing at Hamburg, in the Empire of Germany, have invented certain new and useful Improvements in Sewing-Machines for Hemstitching, (for which I have obtained patents in Austria, No. 44/5,168, dated September 26, 1894, and in Hungary, No. 986, dated August 26, 1894,) of which the following is a specification.

In the use of sewing machines for doing hem stitching, in that class of hem stitching in which some of the weft threads have been omitted or drawn from the fabric so as to form an open-work hem, and in which zig-zag stitches are made along the edge of the open-work referred to, more or less difficulty has been experienced in dividing the threads which are to be drawn together in groups so that the same threads will uniformly be brought into the same group at both sides of the open-work hem.

My invention has for its object to obviate the difficulty referred to, and this object is accomplished by providing a thread dividing prong which is arranged beneath the work plate of the machine, and which is caused to move upward so as to divide the loose threads and hold them apart just before the needle descends, the said prong being preferably notched, so that the needle may descend in close proximity to the point thereof while the prong is still lifted to hold the threads apart, the said prong being permitted to descend beneath the work-plate when the work is to be fed, so that it will be, at such times, out of engagement with the work.

In the accompanying drawings, Figure 1 is a sectional side view of a portion of a "Singer" sewing machine, provided with a laterally moving needle and having my invention applied thereto; and Fig. 2 is a front end view of the same, with the work-plate in section. Figs. 3 and 4 are views similar to Figs. 1 and 2, but showing the needle and thread dividing prong in different positions than are shown in Figs. 1 and 2. Figs. 5 and 6 are detail views illustrating a part of the operating mechanism of the thread dividing prong, said parts being shown in each of these figures in somewhat different positions. Fig. 7 is a detail plan view of the thread dividing prong, its carrying arm and the spring hinge connection of the latter with its support. Figs. 8 and 9 are diagrammatic views to illustrate the work performed by means of my invention; and Fig. 10 is a diagrammatic view illustrating the imperfect work such as is liable to be performed with the hem stitch devices heretofore in use.

My new thread dividing prong *a* is arranged beneath the throat plate of the sewing machine, and has a shank by means of which it is attached to the plate *b*, the latter being connected by a suitable hinge, as the spring hinge *c*, to a support, as bar *c'*, beneath the work plate of the machine. Beneath the plate *b* is arranged an arm *d* connected to a rock shaft *e*, the said shaft being operated from a rotating or oscillating shaft *f* provided with a cam *g* which engages an arm *h* at the rear end of the said rock shaft *e*, the said arm *a* being held in contact with its operating cam by means of a spring *i* connected to the said arm *d* and to some suitable stationary part of the machine. The operating cam *g* is so arranged and timed relative to the movements of the feed and needle that the thread dividing prong *a* will be beneath the throat plate when the material is to be fed, but will be lifted, as denoted in Figs. 3 and 4, so as to project above the throat plate, to divide the threads of the open-work hem stitch to be made, just before the needle descends; the spring hinge *c* serving to press the plate or arm *b* and the thread dividing prong carried by the latter downward when the arm *d* permits of such movements. The arm *d* is preferably provided with a screw *d'* which is to engage the plate *b* to lift the prong *a*, said screw forming an adjustable abutment by means of which the amount of lift to be given to the said prong, or the timing of the operation thereof, may be varied slightly, as may be desired. The thread dividing prong *a* is preferably notched, as more clearly shown in Fig. 7, so that the needle may descend in close proximity to the point thereof.

Fig. 8 illustrates the operation of my in-

vention in making the first seam at one side of that portion of the work from which the weft threads have been omitted or withdrawn, the thread dividing prong *a*, operating in the manner hereinbefore described, rising and forcing the threads apart, as illustrated in Fig. 8, as the work progresses.

Fig. 9 illustrates the operation of making the seam at the second or last side of the open-work hem, and owing to the fact that the thread dividing prong will rise in the openings which have been made at the first operation it will necessarily follow that the threads to be drawn together will be uniformly divided into groups, the same threads being in every instance, pushed into the same group at both sides of the open-work hem, as denoted at the lower part of Fig. 9, and imperfect work, as illustrated in Fig. 10, such as was likely to occur with the use of hem stitching devices heretofore employed, will therefore be avoided.

In Fig. 9 the dot *x* denotes the position of the point of the prong *a*, and the dot *y* denotes approximately the position of the needle when the latter descends at the edge of the open-work hem to form the stitch which is to draw the thread into groups.

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

1. The combination with a sewing machine of otherwise ordinary or suitable construction, of a thread dividing prong arranged beneath the work-plate of the machine and having its point adjacent to the line of descent of the needle, and mechanism for imparting vertical movements to the said prong, the operating mechanism for said prong being timed so that the said prong will be lifted to divide the threads of the open work hem stitch to be made just before the needle descends, substantially as and for the purpose set forth.

2. The combination with a sewing machine of otherwise ordinary or suitable construction, of the thread dividing prong *a* placed beneath the work plate of the machine, the plate *b* to which said prong is connected, the spring hinge *c*, a suitable support to which said spring hinge is connected, the rock shaft *e* provided with the arms *d* and *h*, the shaft *f* provided with the cam *g* and the spring *i* serving to hold the said arm *h* in contact with the said cam *g*.

3. The combination with a sewing machine of otherwise ordinary or suitable construction, of the thread dividing prong *a* placed beneath the work plate of the machine, the plate *b* to which said prong is connected, the spring hinge *c*, a suitable support to which said spring is connected, the rock shaft *e* provided with the arms *d* and *h*, an adjustable abutment or screw *d'* carried by the said arm *d*, the shaft *f* provided with the cam *g* and the spring *i* serving to hold the said arm *h* in contact with the said cam *g*.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witneses, this 11th day of December, 1894.

AMANDUS JOH. AUG. OESTERREICH.

Witnesses:
K. MARTENS,
JOHN KOCK.