

(No Model.)

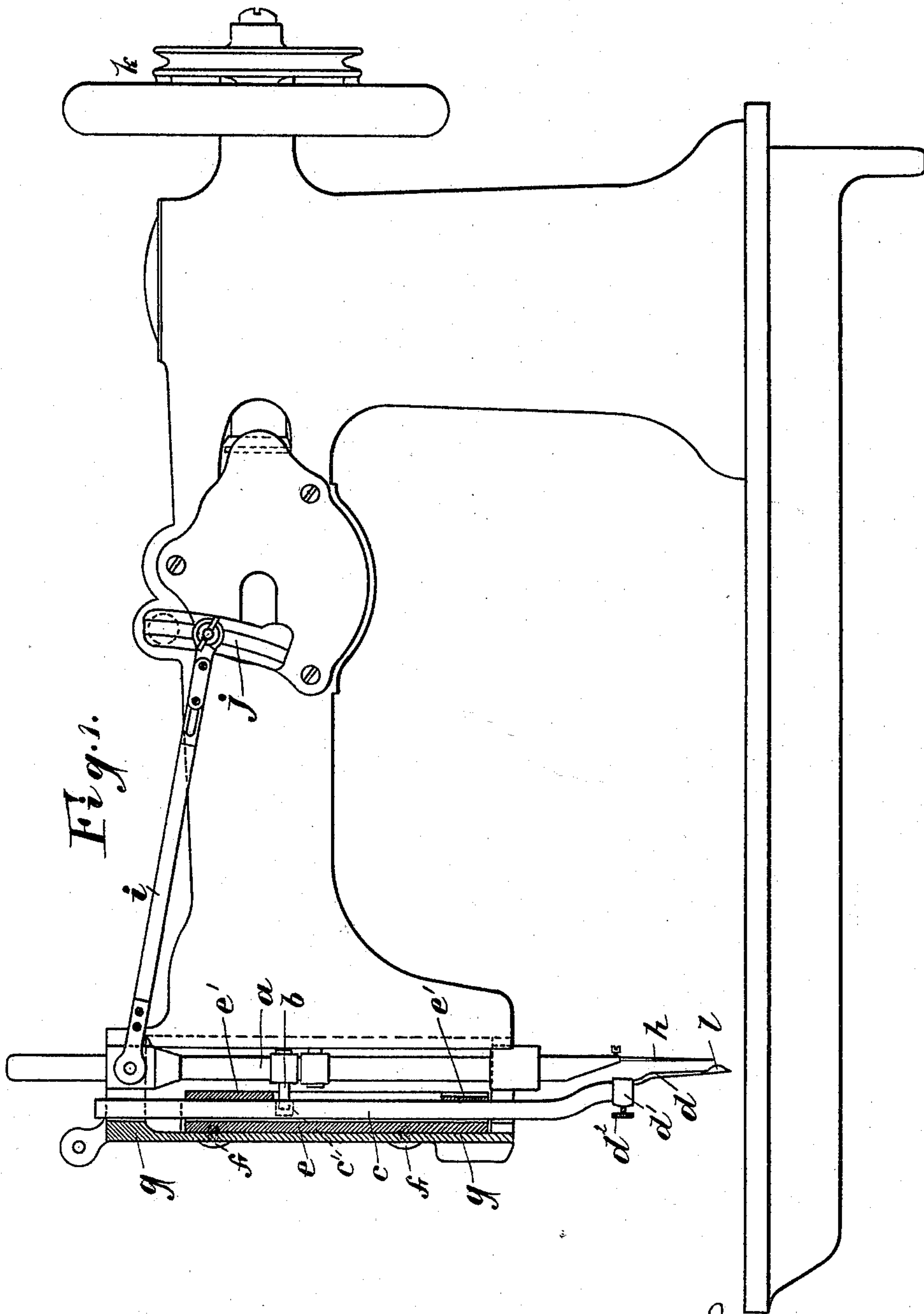
2 Sheets—Sheet 1.

W. J. MACKENZIE.

HEMSTITCH ATTACHMENT FOR SEWING MACHINES.

No. 584,821.

Patented June 22, 1897.



Witnesses:  
W. C. Pinckney  
C. Holloway

Inventor:  
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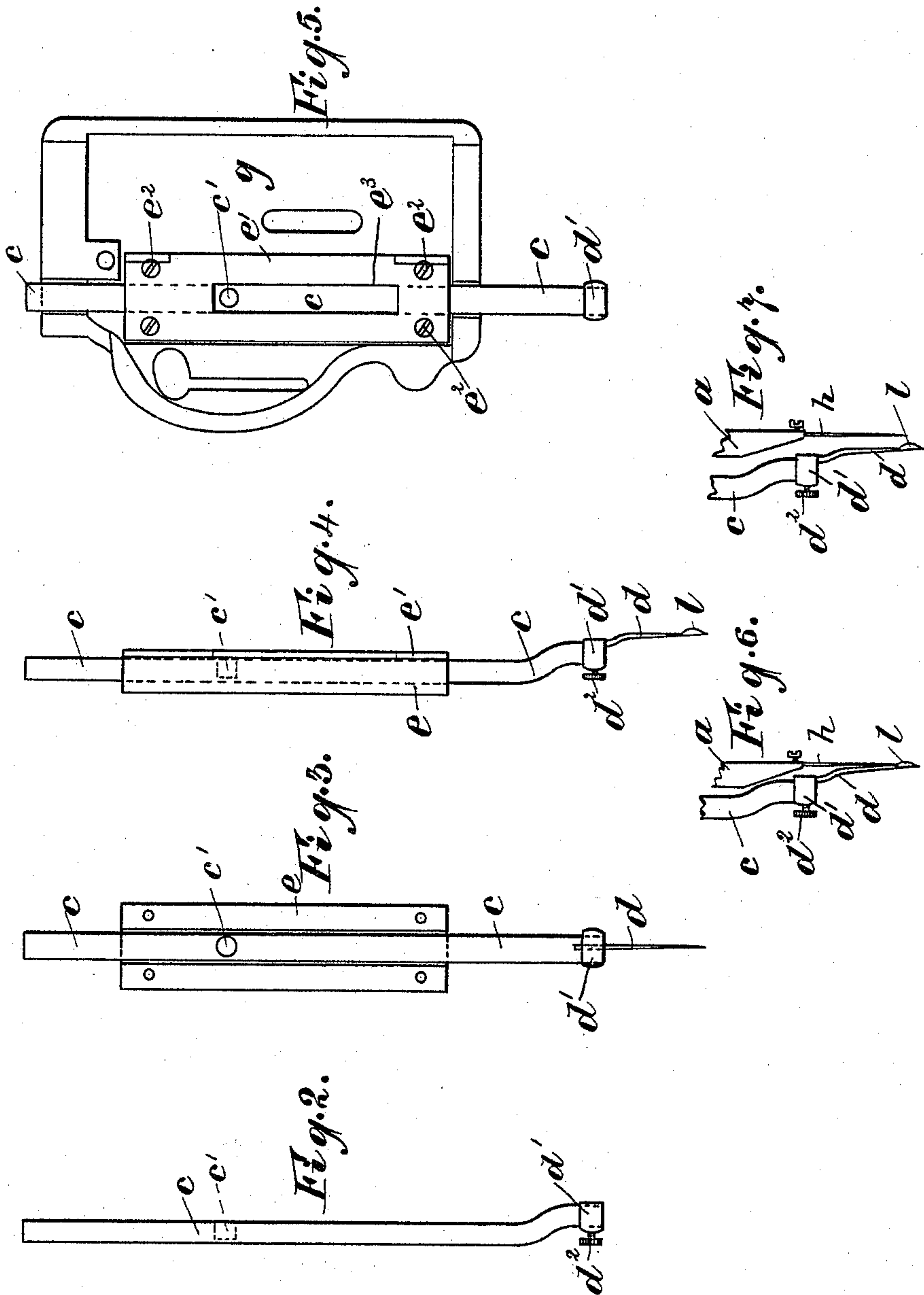
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# UNITED STATES PATENT OFFICE.

WILLIAM JOHN MACKENZIE, OF WARINGSTOWN, IRELAND.

## HEMSTITCH ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 584,821, dated June 22, 1897.

Application filed January 22, 1897. Serial No. 620,211. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM JOHN MACKENZIE, linen merchant and manufacturer, a subject of the Queen of Great Britain, and a resident of Waringstown, county Down, Ireland, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

This invention relates to machines for doing open-work hemstitching on handkerchiefs and other articles.

The object of the invention is to provide a simple attachment of improved construction which can be fitted on a Wheeler & Wilson or other well-known style of sewing-machine, whereby the threads of the fabric can be opened out between the stitches, so as to produce open-work hemstitching.

With this invention it is not necessary, as usual, before commencing the hemstitching to pull a number of threads out of the fabric, and in order that my said invention may be properly understood I have hereunto appended two explanatory sheets of drawings, whereon—

Figure 1 is a side elevation of a Wheeler & Wilson machine with the head thereof shown in section. Figs. 2, 3, and 4 are detail views. Fig. 5 is a view of the inside of the face-plate. Figs. 6 and 7 are detail views.

In carrying out my invention I clamp to the ordinary laterally-movable needle-bar *a* of, say, a Wheeler & Wilson hemstitching-machine a stud *b*, which projects into a hole *c'*, made in a spreader-bar *c*, which latter is preferably of square section. This bar, which has a spreader or reliever needle *d* adjustably secured to its lower end by means of a collar *d'* and pinching-screw *d''*, is capable of sliding up and down in a guide-block *e*, secured, by means of screws *f*, to the face-plate *g* of the machine. The guide-block *e* has a cover-plate *e'* secured to it by screws *e''*, as shown clearly at Fig. 5, and a slot *e'''* is cut in this plate, as shown at Figs. 1 and 5, to guide and limit the movement of the stud *b* as it rises and falls with the needle-bar *a*.

*h* is the usual needle, *i* the usual connecting-rod, *j* the usual quadrant, and *k* the usual driving-wheel, of the machine.

It will be seen that the lower end *l* of the spreader-needle *d* is thickened and tapered,

so as to form a sort of spear-point which makes a wide hole in the cloth.

Fig. 2 is a side view of the spreader-bar *c*. Fig. 3 is a front view showing the bar *c* fitted in the guide-block *e*, from which the cover-plate *e'* has been removed. Fig. 4 is a side view of the bar *c* and its guide-block *e*. Fig. 6 shows the needle *h* and spreader-needle *d* closed, and Fig. 7 shows the needle *h* and spreader-needle *d* opened or moved apart from one another. The needle *h* moves away from the spreader-needle *d* when they are both up out of the cloth.

With this invention each time the needle-bar *a* rises up out of the cloth the spreader-bar *c* is raised up with it by means of the stud *b* on the bar *a*, and likewise each time the needle-bar *a* moves down to penetrate the cloth the bar *c* also moves with it. As the spreader-needle *d* is longer than the needle *h*, it follows that it first penetrates the cloth and, owing to the spear-head *l*, presses back or opens out the threads to such an extent as to produce an open-work stitch. When the bar *a* is moved laterally by means of the quadrant *j* and connecting-rod *i*, the bar *c* does not move with it, but remains in its place, the stud *b* merely moving in the hole *c'* in the bar *c*.

The head *l*, which is straight at one side and tapered at the other, as clearly shown at Figs. 6 and 7, tends to throw the threads toward the hem when piercing the cloth.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a sewing-machine, of the head, a reciprocating needle-bar working in the head, a guide fitted in the head, a spreader-bar fitted in the guide and operated from the reciprocating needle-bar and a spreader-needle fitted to the bar, and having an enlarged end *l* tapered on the side toward the needle and straight on its opposite side, whereby it will push the threads toward the hem when piercing the cloth, substantially as set forth.

2. The combination in a sewing-machine, of the head, the reciprocating needle-bar working in the head, the face-plate fitted to the head, a guide *e* secured to the face-plate, a slotted cover *e'* secured to the guide, a spreader-

bar *c* working in the guide and operated from the needle-bar and a spreader-needle secured to the bar *c*, substantially as set forth.

3. The combination in a sewing-machine, of  
5 the head, a guide secured in the head and having a slotted cover or side *e'* secured to it, a spreader-bar movable in said guide, an operating-pin therefor traveling in the slot of

the guide, and a needle-bar outside of said guide from which said operating-pin projects. 10

Signed at Glasgow, county of Lanark, Scotland, this 18th day of December, A. D. 1896.

WILLIAM JOHN MACKENZIE.

Witnesses:

HUGH D. FITZPATRICK,

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