

G. Stackpole.  
Sewing Machine.  
N<sup>o</sup> 45278 Patented Nov. 29, 1864.

Fig. 1.

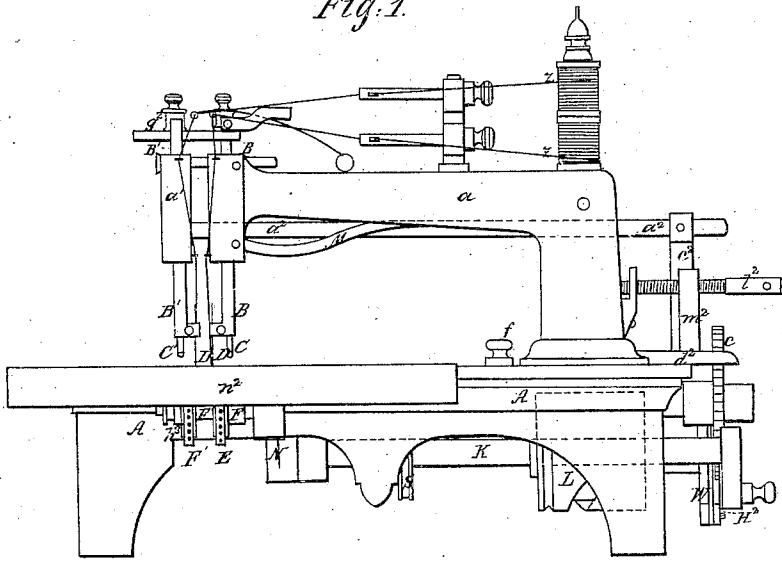
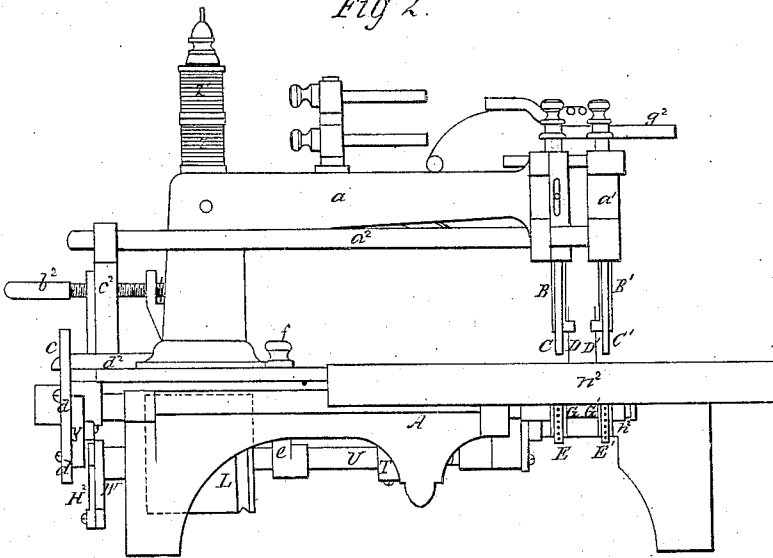


Fig 2.



Witnesses  
Friedrich Flex.  
Inventor's Clerk

Inventor.  
Greenley Stackpole

# G. Stackpole. Sewing Machine.

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Fig. 3.

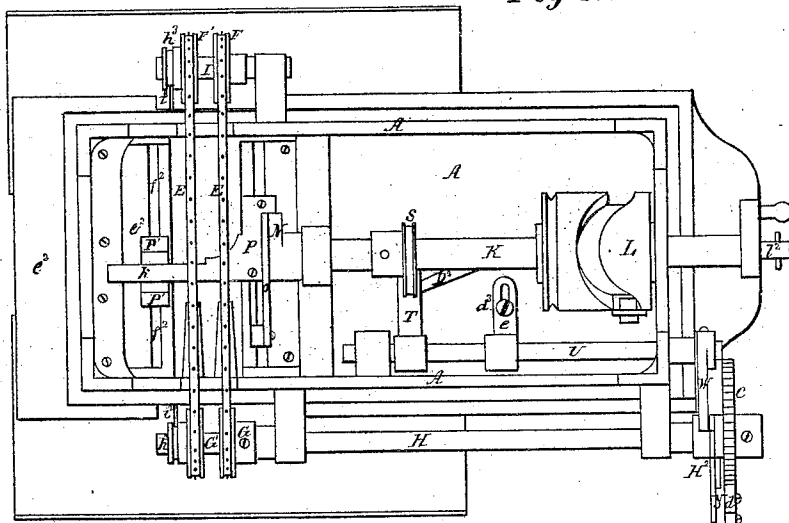


Fig. 5.

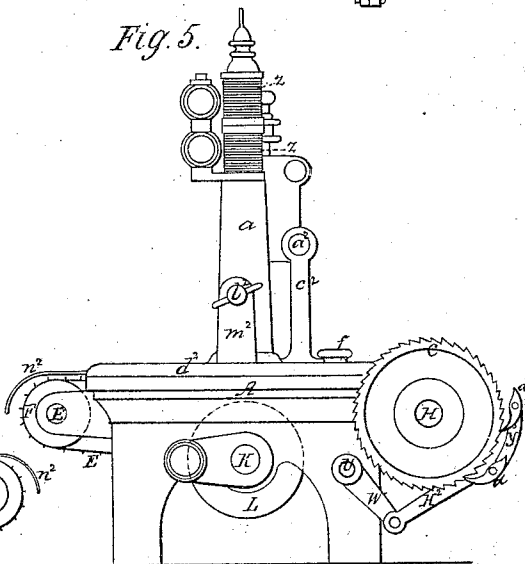
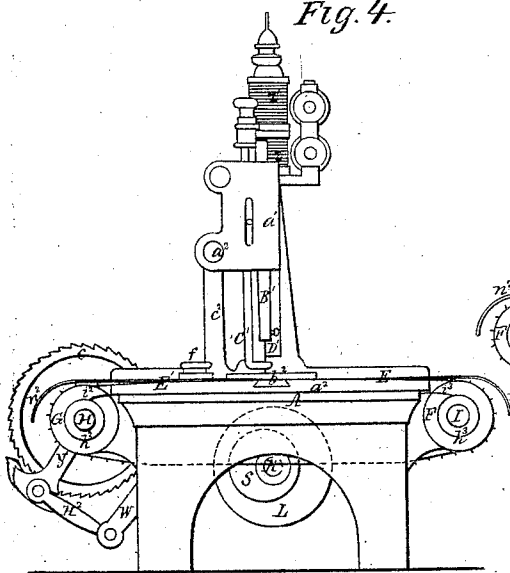


Fig. 4.



Witnesses

Frederick Fox

Henry W. Barker

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Greenleaf Stackpole

# G. Stackpole. Sewing Machine.

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Fig. 6.

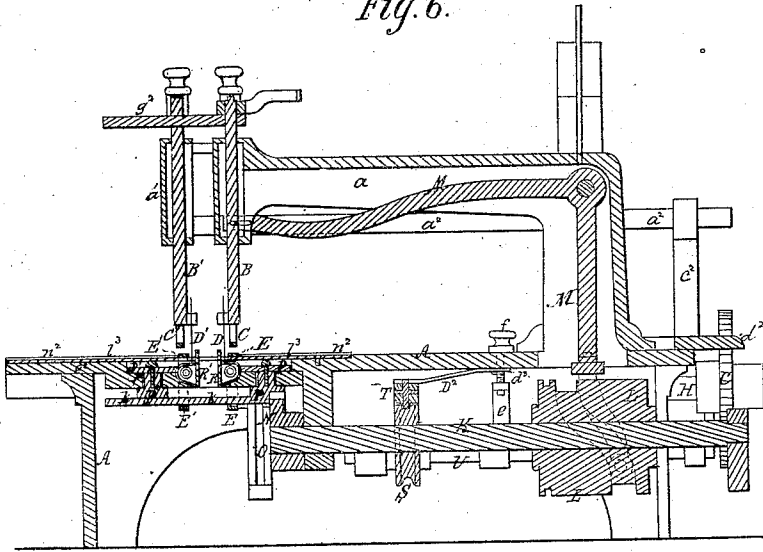


Fig. 7.

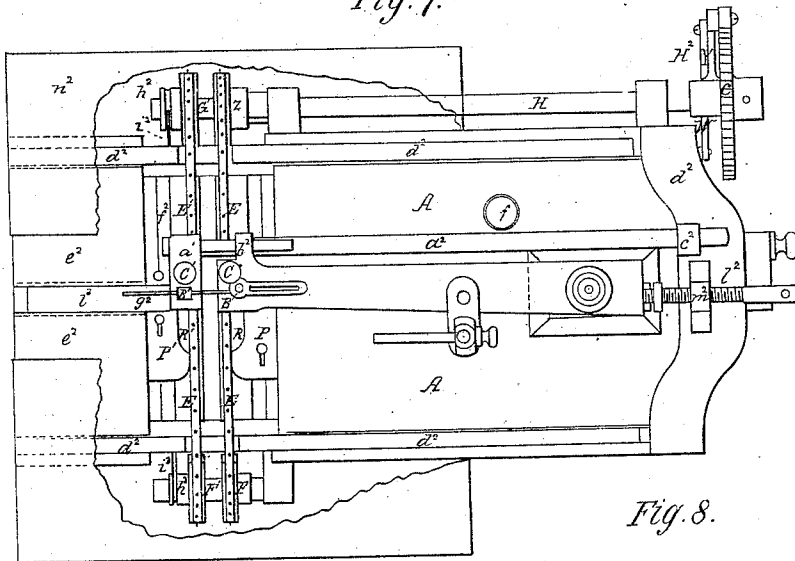
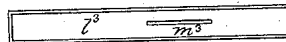


Fig. 8.



Witnesses  
 Frederick Fox.  
 Ironing Barker

Inventor.  
 Greenleaf Stackpole

# UNITED STATES PATENT OFFICE.

GREENLEAF STACKPOLE, JR., OF ELLSWORTH, MAINE.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 45,278, dated November 29, 1864; antedated September 17, 1863.

To all whom it may concern:

Be it known that I, GREENLEAF STACKPOLE, JR., a citizen of the United States of America, and a resident of Ellsworth, in the county of Hancock and State of Maine, have made a new and useful invention having reference to machinery for sewing cloth or other material; and I do hereby declare the said invention to be fully described in the following specification and represented in the accompanying drawings, of which—

Figures 1 and 2 exhibit side elevations of it; Fig. 3, an under side view of it. Figs. 4 and 5 are end views of it; Fig. 6, a longitudinal section of it, and Fig. 7 a top view of it.

The nature of my invention consists in the combination of a sewing-machine for making, (in cloth or other material,) with two threads, one row or line of sewing, with auxiliary machinery for simultaneously making, with two threads, another parallel row of sewing in the said cloth or material, the whole being substantially as hereinafter described; also, in the combination of the said auxiliary sewing machinery with the said main sewing-machine in such manner and by such means as to enable the two to be adjusted relatively to one another in order to make the two lines of sewing either nearer to or farther apart from one another as circumstances may require; also, in the combination of the said auxiliary sewing machinery with the said main sewing-machine in manner and by such means that the auxiliary sewing machinery shall be put in operation by the mechanism which serves to operate the corresponding parts of the main sewing-machine; also, in the combination of a cloth-bridge and needle-guide with the main and auxiliary sewing-machine.

In the said drawings, A denotes the frame of the main sewing-machine, of which *a* is the arm or neck which supports the needle-carrier B and the cloth-presser C, the needle of the said carrier being exhibited at D.

The feeding apparatus of the machine consists of a spurred endless belt, E, which traverses around two pulleys, F G. One of these pulleys—viz., that marked G—is fixed upon a horizontal shaft, H, so as to rotate with the said shaft. The other pulley, F, turns freely on another shaft, I, arranged as shown in the

drawings. The driving-shaft of the machine is exhibited at K. It carries or has fixed upon it a grooved cam, L, which serves to operate a bent lever, M, which extends to and gives motion to the needle-carrier B. On the inner end of the shaft K is a crank, N, which, by means of a connecting-rod, O, (see Fig. 3,) serves to impart motion to a shuttle-driver, P. (See Figs. 6 and 7.) The said shuttle-driver P actuates a shuttle, R, which is to be moved horizontally and transversely of the machine, and to operate in connection with the needle, in a manner substantially like that of an ordinary needle-and-shuttle sewing-machine. The driving-shaft K also carries another cam, S, which rests and serves to elevate a lever, T, which projects from another horizontal shaft, U, arranged as shown in Figs. 2, 3, 5, and 6. A spring, D<sup>2</sup>, serves to depress the lever T and maintain it in contact with the periphery of the cam S. During each full rotation of the driving-shaft K reciprocating movements will be imparted to the shaft U and a crank, W, arranged on its outer end, as shown in Figs. 2 and 5. This crank, by means of a connecting-rod, H<sup>2</sup>, actuates a pawl-arm, Y, which extends from and turns freely on the shaft H, hereinbefore mentioned. The said pawl-arm carries two impelling pawls, *d d*, which act in conjunction with a ratchet, *c*, fixed upon the shaft. By the action of the pawls on the said ratchet *c* intermittent motions will be imparted to the shaft H and the feeding-belt E. The thread for the needle D is represented in Fig. 1 as proceeding from a bobbin, Z.

The feeding movement of the belt is regulated by a screw, *d*<sup>3</sup>, which passes through an arm, *e*, projecting from the shaft U. The said screw is screwed into a nut, *f*, and serves to raise the lever T more or less above the cam S, as circumstances may require.

The machinery thus described constitutes an ordinary needle-and-shuttle sewing-machine, to which additional sewing machinery, as hereinafter explained, is to be applied. The principal parts of the said auxiliary sewing machinery consists of a needle, D', a needle-carrier, B', a feeding-belt, E', a cloth-presser, C', and a shuttle, R', and its driver P', they being arranged with reference to the main sewing-machines as shown in the drawings, and to be

actuated in manner as hereinafter described. The auxiliary needle-carrier B' and its presser C' are supported by a case or frame, a', which is arranged parallel to and directly in front of the front end of the arm a, and is attached to one end of a bar, a<sup>2</sup>, which runs through a guide, b<sup>2</sup>, and is fastened to an upright post, c<sup>2</sup>. This latter projects upward from a yoke, d<sup>2</sup>, that is arranged horizontally on the table of the main sewing-machine, and connects with a platform or frame, e<sup>2</sup>, which is separate from and is supported by the table of the said main sewing-machine. This platform carries the raceway f<sup>2</sup>, which supports the auxiliary shuttle-driver P'.

In order that the auxiliary needle-carrier B' may have movements corresponding with those of the primary needle-carrier B, an arm, g<sup>2</sup>, is extended horizontally from the upper part of the needle-carrier B and directly through a corresponding mortise or hole made through the auxiliary needle-carrier B'. Furthermore, in order that the auxiliary feeding-belt E' may move in correspondence with the primary feeding-belt E, the driving-pulley G of the said auxiliary belt is placed upon the shaft H, and should be connected therewith by what machinists term a "feather connection"—that is, one which will not only cause the pulley G' to be revolved by the shaft H, but enable the said pulley G' to freely slide endwise on the said shaft. A grooved pulley, h<sup>2</sup>, is affixed to the side of the driving-pulley G', and has an arm, i<sup>2</sup>, (see Fig. 7,) extending into its groove and being projected from the yoke d<sup>2</sup>. The pulley F', which turns freely on the shaft I, has a similar grooved pulley, h<sup>3</sup>, and an arm, i<sup>3</sup>. These arms i<sup>2</sup> i<sup>3</sup> and grooved pulleys h<sup>2</sup> h<sup>3</sup> serve to move the pulleys F' G' in correspondence with any longitudinal movement of the yoke d<sup>2</sup>.

From the above it will be seen that such movements of the pulleys F' and G' will move the endless feeding-belt E' either nearer to or farther from the primary feeding-belt E.

In order that the auxiliary shuttle-driver P' may operate simultaneously with the primary shuttle-driver P, an arm, k, is extended horizontally from the shuttle-driver P directly underneath and across the auxiliary shuttle-driver P' and through a groove or mortise formed therein. (See Figs. 3 and 6.)

The movements of the yoke d<sup>2</sup> are produced by means of an adjusting-screw, l<sup>2</sup>, which screws through a standard, m<sup>2</sup>, extended upward from the said yoke.

The thread for the auxiliary needle D' is represented in Fig. 1 as passing from an auxiliary bobbin or spool, Z'.

A slotted bridge, b<sup>3</sup>, or thin and narrow plate of metal, is fastened at one end to the table or frame A, and extends directly underneath and supports the upper horizontal parts of the feed-belts E E', as seen in Fig. 6. The said bridge b<sup>3</sup> simply rests on the platform e<sup>2</sup> or within a groove made therein to receive it, thus permit-

ting the platform e<sup>2</sup> to move freely without disturbing the bridge b<sup>3</sup>, and sustaining the endless belts at or near their middles. The said bridge b<sup>3</sup> gives support to the cloth while it may be resting on the said belts. The bridge b<sup>3</sup> is also arranged with a slot lengthwise in it, and of a width sufficient to receive the two needles and give support to them laterally. Fig. 8 represents the said bridge in top view, its needle-slot being exhibited at m<sup>3</sup>. n<sup>2</sup> n<sup>2</sup> are covering-plates extending from the platform e<sup>2</sup> of the table A, and serving simply to cover such parts of the machinery as may be desirable to have insulated from the cloth or article to be sewed.

From the above it will be seen that by turning the screw l<sup>2</sup> so as to impart motion to the yoke d<sup>2</sup> the whole or the main working parts of the auxiliary sewing machinery may be moved either toward or away from the corresponding working parts of the main sewing-machine, and thus two rows of sewing may be performed at any desirable distance apart within such limits as are incident to the machine.

I do not claim the simultaneous sewing of two parallel lines of zigzag seams any distance apart, for D. C. Ambler claims that in his patent of November 7, 1854. Neither do I claim the sewing of two straight lines of sewing with two needles and one shuttle simultaneously, parallel to each other, with three threads connected together underneath, for that is done by I. M. Singer in his patent of October 9, 1855; but

I claim—

1. The combination of a sewing-machine for making in cloth or other material with two threads on a straight row of stitches or line of sewing with auxiliary machinery for simultaneously making with other two threads another and parallel separate and distinct straight row of stitches of sewing in the said cloth or material, the whole being substantially as above described.

2. The combination or its equivalent of the said auxiliary sewing machinery with the said sewing-machine in such manner and by such means as to enable the two shuttles and two needles and their accompanying parts to be simultaneously adjusted relatively to one another, so as to cause them to make the two lines of sewing either nearer to or farther apart from one another, as circumstances may require, the whole being substantially as described.

3. The combination and the fastening of one end of the cloth-bridge and needle-guide b<sup>3</sup> to the main machine or to the platform e<sup>2</sup> of the auxiliary machinery, leaving the unfastened end free, so that the unfastened end will move easily in the main machine, or the platform e<sup>2</sup> moves easily under the bridge when one end of the bridge is fastened to the main machine, substantially as above described.

4. The running of two shuttles simultaneously in separate raceways face to face and parallel to each other, which are adjustable any distance apart, in conjunction with the needles, substantially as herein described.

5. The simultaneous running of two separate distinct parallel curved lines of sewing any

distance apart, disconnected from each other when using to form the same two shuttles running face to face.

GREENLEAF STACKPOLE, JR.

Witnesses:

FREDERICK FOX,

IRVING W. PARKER.