No. 614,398. Patented Nov. 15, 1898.

A. LAUBSCHER.

FOLDER ATTACHMENT FOR SEWING MACHINES.

(Application filed Feb. 2, 1898.)

(Model.)

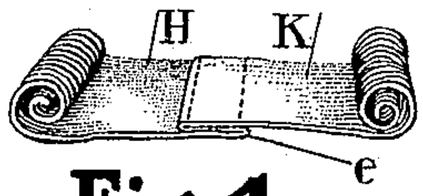

Fig. 4

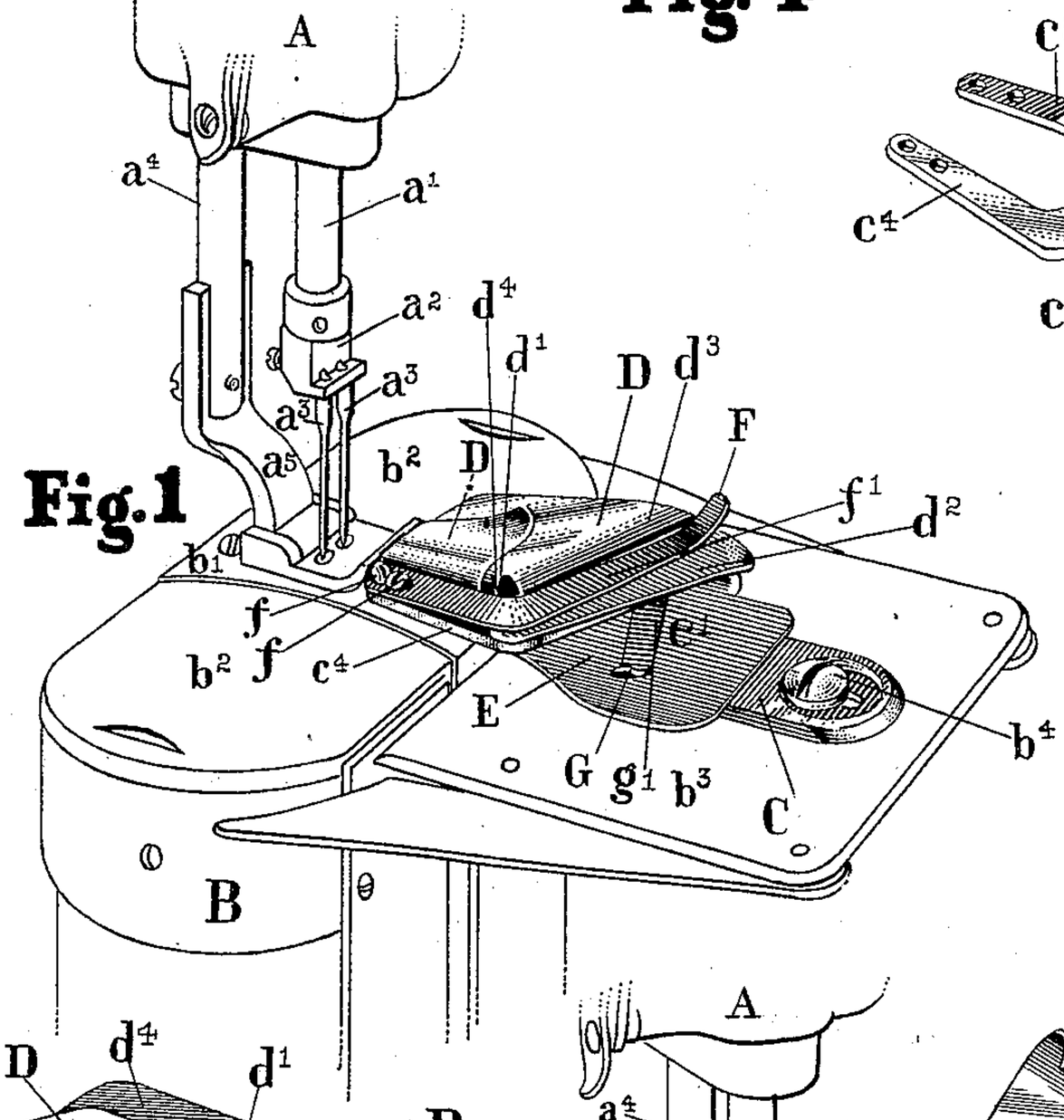

Fig. 1

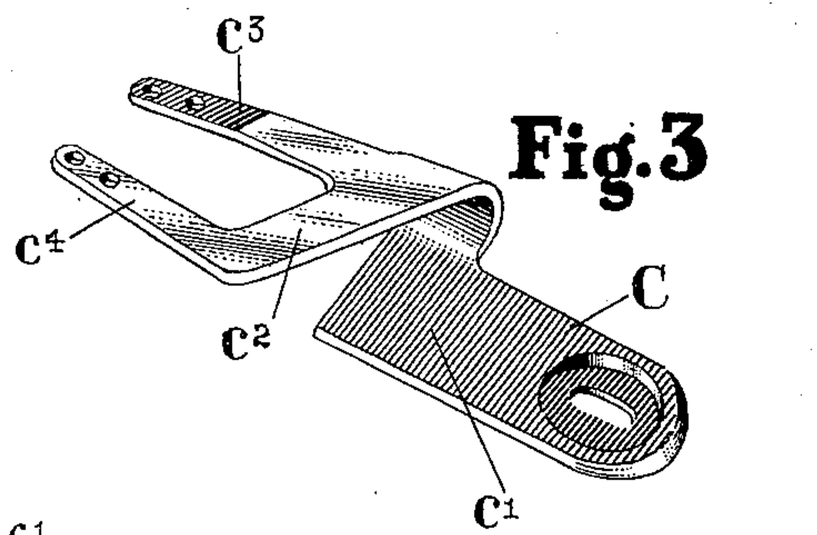

Fig. 3

Fig. 7

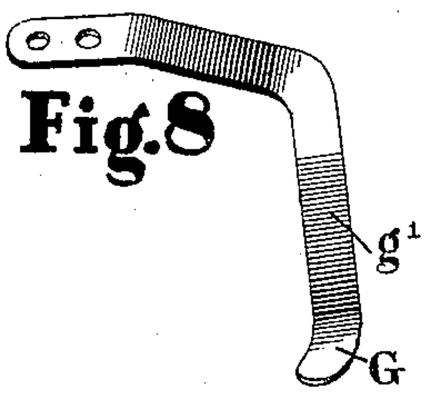

Fig. 8

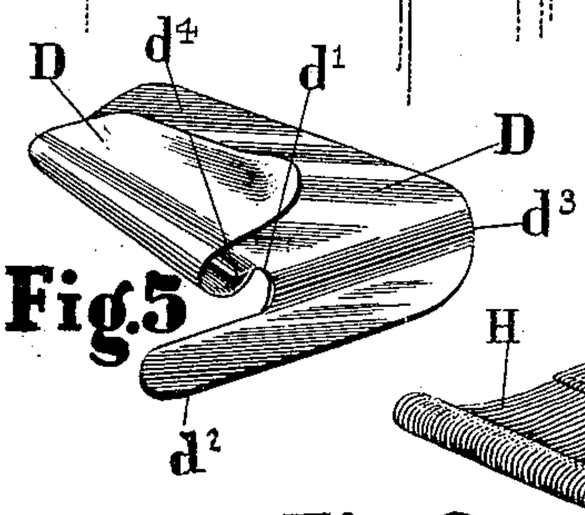

Fig. 5

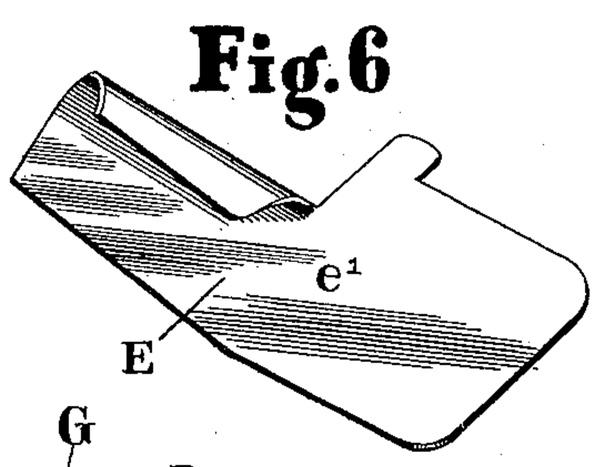

Fig. 6

Fig. 2

Witnesses:
Bleshamilton
F. W. Cutting

Inventor
Alexander Laubscher
By Freeland W. Astrom.
Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER LAUBSCHER, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE WHEELER & WILSON MANUFACTURING COMPANY, OF SAME PLACE.

FOLDER ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 614,398, dated November 15, 1898.

Application filed February 2, 1898. Serial No. 668,883. (Model.)

To all whom it may concern:

Be it known that I, ALEXANDER LAUBSCHER, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Folders or Hemmers Used in Connection with Sewing-Machines, of which the following is a specification.

Prior to my invention the curve or roll natural to the edges of many fabrics, and especially in fabrics of an elastic nature, has necessitated manual manipulation to properly present the material to the folder or hemmer—that is to say, it has been necessary for the operator by hand to uncurl or unroll that portion of the material which when folded forms the finished seam or hem. I have discovered that this operation can be performed automatically and with so little resistance as not to substantially impede the travel of the material caused by the ordinary feeding devices of the sewing-machine, and I have invented mechanism whereby said discoveries may be put in practice and the fabric automatically folded and presented to the stitching mechanism with speed and precision. One feature of my said mechanism consists of an uncurling plate or plates whereby one or both edges of the material are controlled on the way to the folding-scroll of the folder or hemmer. Another feature of said mechanism consists in the novel formation of a portion of the folding-scroll.

In the accompanying drawings, Figure 1 is a perspective view showing a lap-seam folder containing my invention attached to the machine in position to receive the material. Fig. 2 is a like view of the same, but with the material in the act of passing through, a portion of the material being torn out and a portion of the folder being removed to better illustrate the construction and operation. Fig. 3 is a detail of the base-plate upon which the folding-scrolls and uncurlers are mounted. Fig. 4 is a perspective view of a finished seam. Figs. 5, 6, 7, and 8 show detached, respectively, the folding-scroll D, the folding-scroll E, the uncurler F, and the uncurler G.

For the purpose of illustrating and describing my invention I have shown it applied to a folder attached to the well-known form of Wheeler & Wilson sewing-machine commercially known as the "post-machine," the parts of which in the accompanying drawings are lettered as follows:

A is a portion of the overhanging arm; a', the needle-bar; a^2, the needle-clamp; a^3 a^3, twin needles; a^4, the presser-bar; a^5, the presser-bar foot; B, a portion of the upright post attached to the bed of the machine; b', the throat-plate; b^2 b^2, slide-plates; b^3, the cloth-plate suitably attached to the upright post B; b^4, the screw commonly used for attaching folders, hemmers, and like attachments to the cloth-plate b^3. The material is fed to the needles by the usual feed-bar cooperating with the presser-bar foot a^5.

The base-plate C may be of any suitable form, the usual form for the same being shown in Fig. 3.

The folding-scroll E may be of any suitable form, a usual form being shown in Fig. 6. This scroll E is soldered to the base-plate C, as shown in Fig. 1, at the part c', Fig. 3.

The folding-scroll D (shown detached in Fig. 5) may be of a known form and is soldered to the base-plate C at the connecting-piece c^2 between the prongs c^3 and c^4. I prefer, however, to modify the known construction of the folder D to better adapt the attachment for certain kinds of materials, as hereinafter more particularly described.

F is a spring uncurler-plate, preferably of the angular form shown detached in Fig. 7. It is at one end affixed to the under side of prong c^4 of the base-plate C by suitable screws f in such position that its yielding portion f' lies above the flange d^2 of scroll D diagonally across the line of feed.

G is a spring uncurler-plate, preferably of the angular form shown in Fig. 8. It is at one end affixed to the under side of prong c^3 of base-plate C by suitable screws in such position that its yielding portion g' lies above the flange e' of scroll E diagonally across the line of feed.

When placed in the preferable positions, as above described, the uncurlers F and G press upon the materials K and H, respectively, in lines of pressure, each extending diagonally across the line of feed at an angle of about sixty degrees to the line of feed. These lines of pressure, moreover, cross each other at a point which is substantially in the line of feed. By virtue of this position the

pressure of the extremity of each uncurler F and G is exerted upon the material in advance of the pressure exerted at the edge of the material, which facilitates the unrolling of the edge and tends to maintain each edge of the material in proper position with respect to the lines of fold and seam.

I have found that when constructed and operated as above described the spring-pressure exerted by the uncurlers F and G may in the construction of said uncurlers be so regulated as to be sufficient for removing the roll from the edges of the materials H and K without being so great as to prevent the ordinary feed-bar of the sewing-machine from drawing the material through the folder or hemmer attachment with proper accuracy and speed.

As already stated, with many kinds of material the scrolls D and E may be of any known form for producing the desired folds for seam or hem. In order to enable the scroll in conjunction with the uncurler F to control the material K in cases of especial difficulty—as, for example, in case the material K should contain a seam running diagonally to the seam in course of construction—I have provided an upward curve or hump of the scroll D at d^3. This upward curve or hump is parallel with the uncurler F and has its base or junction with the flange d^2 close to the rear edge of the uncurler F, so that as soon as the material K leaves the uncurler F it is obliged to travel upward over the summit of the curve d^3. This upward curvature forms a corner d' on the scroll D where the upward curvature d^3, parallel with the uncurler F, connects with the downward curvature d^4 of the folder proper.

It is to be observed that the goods have a tendency to curl up in such manner that the under or wrong side is convex and the upper or right side concave. Now the upper and lower spring-uncurlers of the folding attachment uncurl the goods. After being uncurled the goods, if not restrained, would curl back in the original form, so far as circumstances might permit. The under ply, after having passed under the uncurler and become uncurled, has a tendency to curl back, but is prevented from doing so to any great extent by the tension between the needle and the uncurler, and the slight curling back does no harm, because the curl is in the very direction in which it is to be folded. Not so with the upper ply. That, after having passed under the uncurling-spring, has a tendency to curl back in the opposite direction to that in which it is to be folded. It is prevented from curling back at all by being carried over the hump—that is to say, the elevated bearing between the upper uncurler and the folder. In my device a short portion of the goods is constantly stretched over the hump and therefore cannot curl back, and this hump is necessarily located between the uncurler and the folder in order to be effective.

I do not wish to be understood as limiting myself to the use of both the uncurlers F and G, nor to the precise form or arrangement shown of either, nor to the form or arrangement of the folding scroll or scrolls.

I claim—

1. In a sewing-machine folder or hemmer, in combination with the folding mechanism, an angular spring-uncurler, arranged diagonally across the line of feed, whereby an edge of the material is unrolled, and a hump between the folding mechanism and uncurler, substantially as described.

2. In a sewing-machine folder or hemmer, in combination with the folding mechanism adapted to fold two edges, two angular spring-uncurlers, arranged to cross one another and diagonally across the line of feed, by each of which an edge of the material is unrolled, and a hump interposed between the folding mechanism and the uncurlers, substantially as described.

3. In a sewing-machine folder or hemmer, in combination with a folding device, an uncurler adapted to exert pressure diagonally across an edge of the material whereby said edge is unrolled, a second uncurler arranged below the first and diagonally thereto and similarly operating upon the other edge, the lines of pressure crossing each other substantially in the line of feed, substantially as described.

4. In a sewing-machine folder or hemmer, in combination with the folding mechanism adapted to fold two overlapping edges, two angular spring-uncurlers, arranged in different planes and crosswise of one another, each adapted to exert pressure diagonally across an edge of the material thereby to unroll each of said edges, substantially as described.

5. In a sewing-machine folder or hemmer, in combination, a folding mechanism, an uncurler whereby an edge of the material is unrolled and an intermediate guiding-surface inclined with respect to the folding-surface, substantially as described.

6. In a sewing-machine folder or hemmer, in combination, the folding-scroll D containing the flange d^2, the upward inclination d^3 and the downward inclination d^4, in combination with the uncurler F whereby the edge of the material is unrolled in passing over the flange d^2, substantially as described.

7. In a sewing-machine folder or hemmer, a scroll D, a blade F by which an edge of the material is unrolled, and a hump d^3 on said scroll and between the blade and the exit of the scroll, by which the material is stretched and prevented from again rolling or curling, substantially as described.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 4th day of December, A. D. 1897.

ALEXANDER LAUBSCHER.

Witnesses:
F. W. OSTROM,
NATHAN POOR.