

G. H. Wooster

Trimming

N^o 44923.

Patented Nov. 1. 1864

Fig. 1.

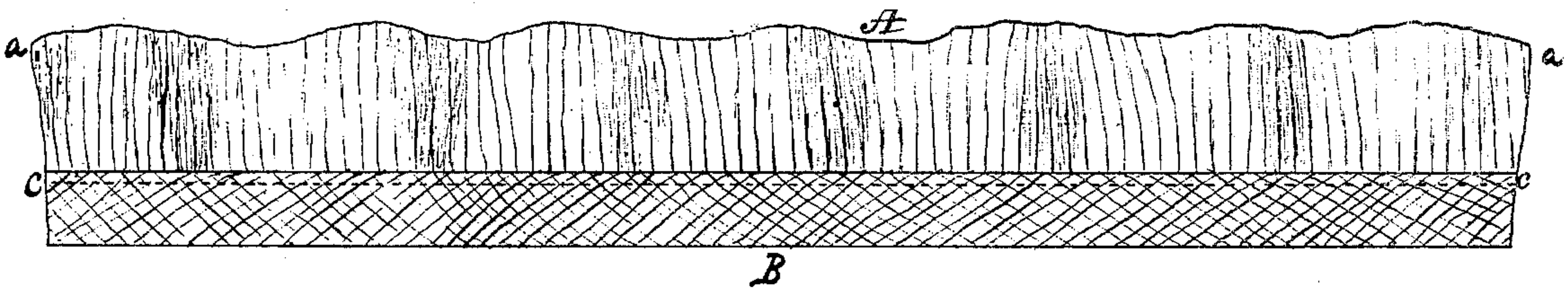


Fig. 2.

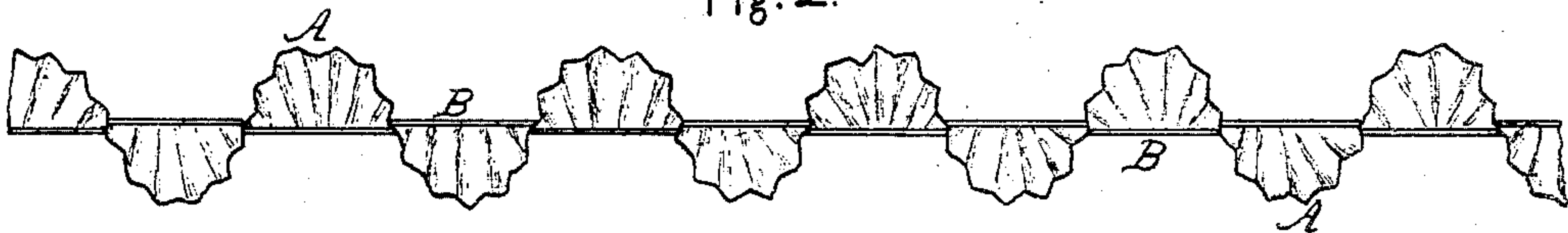


Fig. 3.

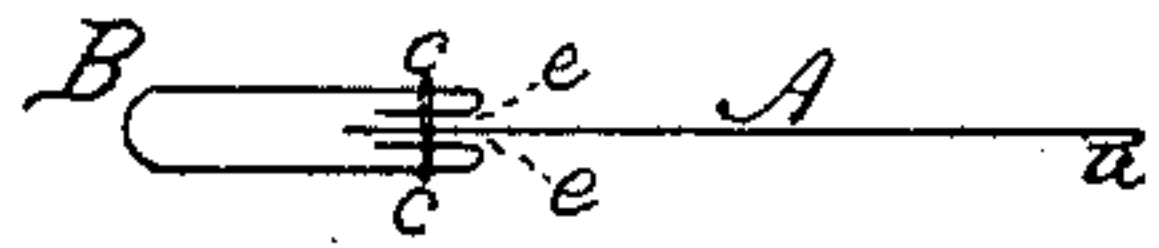


Fig. 4.



Witnesses.

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GEORGE H. WOOSTER, OF NEW YORK, N. Y., ASSIGNOR TO E. C. WOOSTER,
OF SAME PLACE.

IMPROVEMENT IN BAND-RUFFLES.

Specification forming part of Letters Patent No. **44,923**, dated November 1, 1864; antedated
May 1, 1864.

To all whom it may concern:

Be it known that I, GEORGE H. WOOSTER, of the city, county, and State of New York, have invented a new and Improved Band-Ruffle for Ladies' and other Garments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

This invention consists in a new kind of trimming or ruffle composed of a strip of plaited or gathered muslin or other cloth inserted into a double band, which is formed by folding a strip of muslin or other material along the middle of its width and turning in both edges, such band and plaited or gathered strip being united by a single row of stitching, which also serves both to secure the plaits or gathers and to secure the two edges of the band in their turned-in condition, forming a ruffle which is alike on both sides at the union of the plaited strip and band and without a raw edge of the cloth on either side.

Sheet I of the drawings represents my improved ruffle. Figure 1 is a face view; Fig. 2, an edge view; Fig. 3, a transverse section. Fig. 4 is a longitudinal section of the plaited strip.

Similar letters of reference indicate corresponding parts in all the figures on the above-mentioned sheet.

A is the plaited strip, and B the doubled band, into which it is stitched. *c c* is the single line of stitching, by which the strip A is secured in the band, and which also serves to secure the plaits and the turned-in edges *e e*, Fig. 4, of the band B.

I propose generally in the manufacture of this ruffle to perform the plaiting of the strip A, the folding and turning in of the edges of the strip of which the band B is made, and the stitching together of the strip and band simultaneously in a sewing-machine, such machine being fitted with a plaiting device and a device for folding and turning in the edges of the band, and these devices being so arranged relatively to the feeding apparatus and the needle of the machine that the plaited strip is delivered into the band, and both are fed together to the needle.

Sheet II of the drawings represents the construction, arrangement, and combination of the plaiting folding devices. Fig. 1 is a top view, showing the arrangement of the said devices upon the bed-plate of a sewing-machine. Fig. 2 is a longitudinal vertical section, corresponding with Fig. 1. Figs. 3 and 3* are opposite end views of the plaiting and folding devices. Figs. 4 and 4* are transverse sections of the band-folder in the lines *x* and *x** of Fig. 5. Fig. 5 is a top view of the band-folder and the guide for the plaited strip without the plaiting-knife. Fig. 6 is a vertical section of the plaiting apparatus parallel with Fig. 2, but in a different position.

Similar letters of reference indicate corresponding parts in all the figures of this sheet.

A is the bed-plate of the sewing-machine.

B is the folder or folding-guide by which the turning in of the edges of and the longitudinal folding of the band of the ruffle are performed, said folder being attached rigidly to the gage-plate C and secured to the bed-plate A by a screw, D, and steady-pins *b b*. This folder B is made of brass or other metal, and has one end of the form of a tube and nearly flat, as shown in Fig. 3, the width of the said tube being equal to the width of the strip of cloth of which the band of the ruffle is to be formed, such strip being shown in section in red color in Fig. 2. At a short distance from the end shown in Fig. 3 one side of the tube is cut away, leaving a guide in the form of a transversely-curved plate, with its edge turned over on the concave side, as shown in Fig. 4, and toward the other end its curvature increases, and the turning in of the edges is increased until the plate is in the form of the letter V or nearly double, and its edges have a complete double turn, as shown at *c c* in Fig. 4, so that the strip, entering at the end shown in Fig. 3 and being drawn through, will come out folded along the center and with both edges turned in, as shown in red outline in Fig. 4*. The arrangement of this folder upon the sewing-machine is such that this folding of the band may be effected in the movement of the latter toward the needle by the ordinary feeder, *r*, of the machine. The marginal portions *e e* of the folder, by which the

edges of the band are turned inward, do not extend quite to the needle-hole *d*, but are cut away at some distance therefrom, as shown at *s* in Figs. 1, 3*, and 5, though the portion which produces the central fold extends some distance beyond the needle-hole to preserve the form of the fold while the stitching is being performed.

E is a guide for the strip of cloth of which the frill of the ruffle is to be formed, consisting of a flat metal tube of a width equal to that of the said strip arranged in front of and partly within the folding-guide or folder *B*, parallel with the feed-movement, to deliver the strip between the two edges of the band as the latter issues from the folder and approaches the needle. This guide has a slight downward inclination toward the needle, and its lower end rests on the bed-plate close to the feeding device and the needle-hole, and its bottom part, *i*, is made with projections *f f* to enable it to pass between and at the sides of the toothed surface of the feeding-dog. The upper part of the said guide has near its sides two longitudinal slits, *g g*, commencing at a short distance from the end farthest from the needle and extending to the end next the needle, and the end of the tongue *h* thus formed is made to press upon the strip in passing through the guide, and so keep it flattened and produce friction enough upon it to keep it straight on its way into the band. The said tongue *h* is shortened, so that it does not extend so near to the needle-hole by from a quarter to three-eighths of an inch as the bottom part, *i*, of the guide, (see Fig. 2,) thereby leaving the said part *i* exposed for the plaiting or ruffling knife *F* to work upon, as will be presently described. This guide *E* is attached rigidly to the lower part of the guide or folder *B*.

The plaiting or ruffling knife is made with a straight and moderately-sharp but not a cutting edge, of a length equal to the width of the strip of which the ruffle is to be composed, the said edge being arranged at right angles to the feed movement. The said knife is attached by an elastic shank, *j*, to a bent lever, *G*, the said shank keeping the edge pressed hard down upon the bottom part of the guide and holding the knife with a downward inclination toward the needle-hole at an angle of about thirty degrees to the surface of *i*. The lever *G* works on a fixed fulcrum, *t*, at the back of the bed-plate, and derives motion in one direction from the rod which works the needle-arm and in the opposite direction from a spring, *I*, or has imparted to it by any other mechanical means the necessary motion to produce a movement of the knife upon the bottom *i* of the guide *E* toward and from the needle-hole *d*. This movement of the lever may be varied by means of a set-screw to give the knife a greater or less movement, according as finer or not so fine plaiting or ruffling is desired, the movement of the knife requiring to be as much greater than the feed movement as the intended width of the plaits. This knife commences its move-

ment before the feed, and when the knife has moved a distance equal to the intended width of the plaits the feed movement commences, and the movement of the knife continues at the same speed as the feed movement, while the latter carries both band and ruffle toward the needle.

The presser *H* of the sewing-machine is made of a width sufficient to cover the whole width of the ruffle and a sufficient portion of the band, but it is made shorter than usual at the end where the work enters beneath it, in order to allow the knife to come close or nearly close to the needle, and its under side is beveled at that end to allow the knife to pass under and push the plaits under it as it gathers them up by its movement toward the needle. The operation of gathering up the plaits is illustrated in Fig. 6, where the strip which forms the ruffle is shown in red color.

The sewing-machine in connection with which these folding and plaiting devices are applied to manufacture my ruffle may be of any of the kinds in common use.

The operation of manufacturing the ruffle is as follows: The strip of cloth to form the band *e* is inserted through the guide *B*, and the longer strip to form the ruffle, which has been previously hemmed along one edge, is inserted through the guide *E* and under the knife *F*, and with its hemmed edge in front or outward, and the ends of both strips brought under the presser, and when the presser has been let down upon them the machine is set in operation as for ordinary sewing. As the two strips are drawn forward by the feed-movement the band is folded and has its edges turned in, and the ruffle-strip is delivered into the fold of the band and ruffled by the action of the knife, as hereinbefore described, and sewed into the band by the needle passing through both the upper and lower part of the band, close to the edges thereof. In the ruffling operation the knife *F* is prevented from acting on the under part of the band by the extension of the lower part, *i*, of the guide *E* beyond the upper part and below the knife, the said part of the band passing under the extended portion of *i*, and the ruffle-strip passing over it for the knife to act upon, and the said extended portion protecting the lower part of the band from the action of the knife. When the plaited strip has been stitched into the band the part close to the band lies flat, as shown in Fig. 4; but after the ruffle leaves the presser of the sewing-machine the fullness of the plaited strip causes it to assume at its outer edge a wavy form, substantially as shown in Fig. 1.

I do not confine myself to the use of the particular means herein described of manufacturing my ruffle, but have described the means which I at present believe to be the best suited to the purpose. The ruffle might be made entirely by hand, or the band might be folded and the frill plaited separately and the two merely stitched together in the sewing-machine; but it is obvious that it will be more economical

to perform the several operations simultaneously by attaching the folding and plaiting devices to a sewing-machine.

I do not claim the employment of a single series of stitches to secure the plaits or gathers in a strip of cloth, and to secure the said strip to a band or binder, as that is now well-known; nor do I claim the combination and arrangement of mechanism herein described for forming my double-band ruffle, as that is the subject of an application for Letters Patent filed in the Patent Office by Thomas Robjohn; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The within-described band-ruffling, composed of a plaited or gathered strip and a double band having the said strip inserted into and between opposite portions of it, and having its edges turned inward, such strip and band being united by a single row of stitching, which also serves the two other purposes of securing the plaits or gathers and of securing the turned-in edges of the band.

GEORGE H. WOOSTER.

Witnesses:

HENRY T. BROWN,
JAMES LAIRD.