

No. 30,111.

PATENTED SEPT. 25, 1860.

G. B. ARNOLD.
MANUFACTURE OF RUFFLES.

Fig. 1

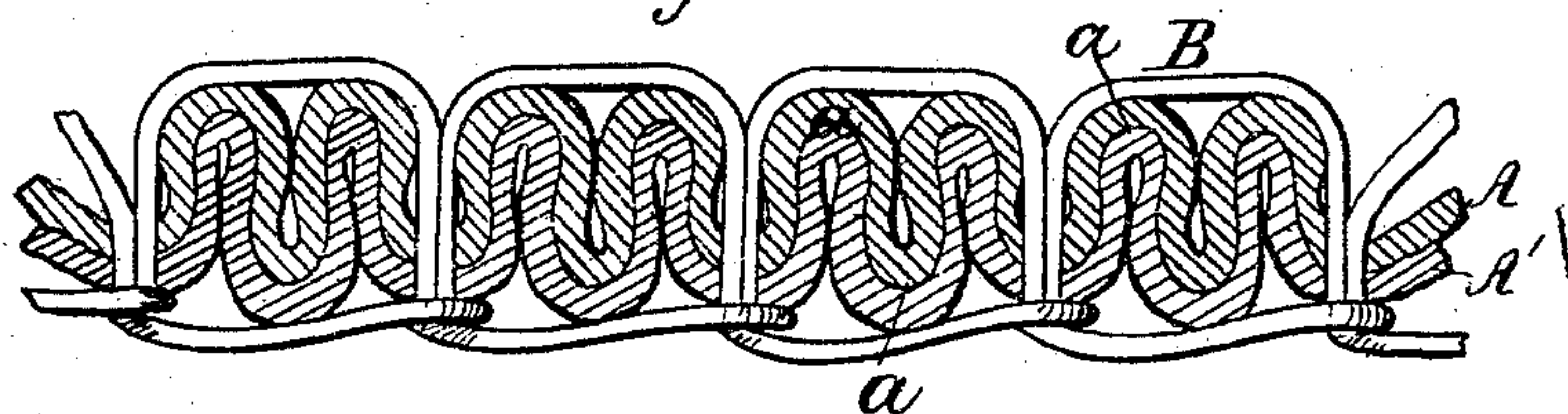


Fig. 2

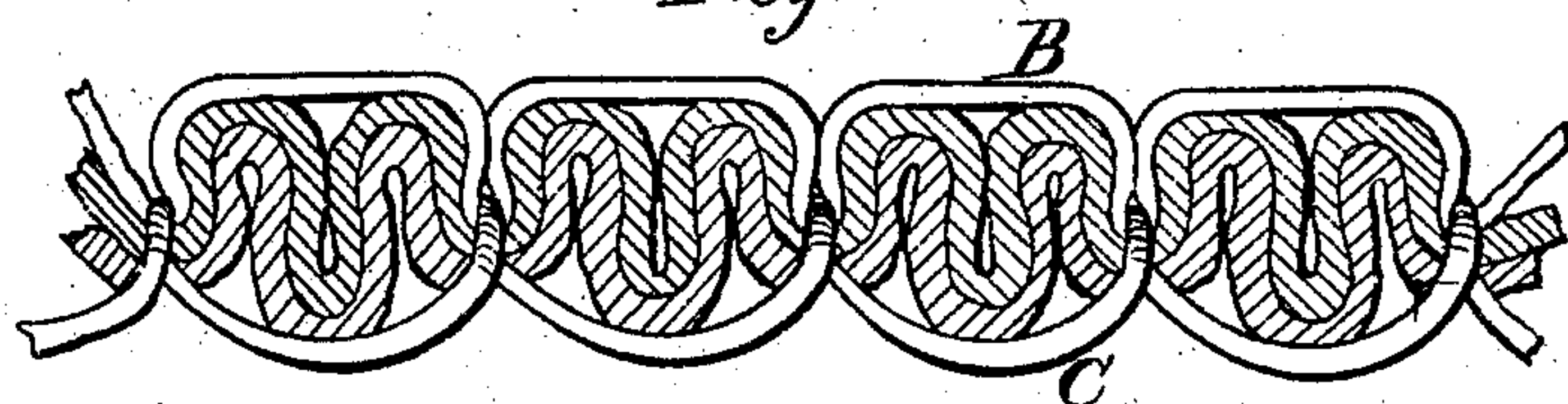
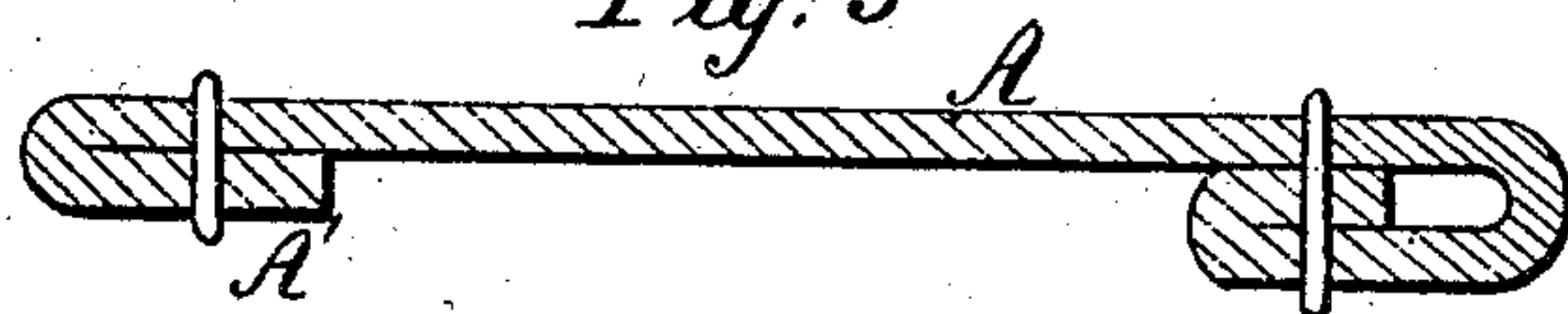


Fig. 3



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IMPROVEMENT IN THE MANUFACTURE OF RUFFLES.

Specification forming part of Letters Patent No. 30,111, dated September 25, 1860.

To all whom it may concern:

Be it known that I, GEORGE B. ARNOLD, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Gathered Fabrics known as "Ruffles" or "Flounces;" and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a section through the fabric, showing the position of the gathers and thread when the chain-stitch is used. Fig. 2 is a section through the fabric, showing the position of the gathers and thread when the lock-stitch is used. Fig. 3 is a section taken at right angles to Figs. 1 and 2.

Similar letters of reference indicate like parts in all the drawings.

To enable others skilled in the art to make and use my invention, I will proceed to describe it by the aid of the drawings.

The fabric A is folded as shown by A' in Fig. 3. The thread which holds the gathers is represented by B in Fig. 1 and by B and C in Fig. 2. The stitch may be of any ordinary kind. In Fig. 1 the stitch is a chain-stitch, which I generally prefer. In Fig. 2 it is a lock-stitch, the needle-thread being marked B and the shuttle-thread C.

The gathers in my improved ruffle or flounce may be evenly laid, sharply defined, and rendered very attractive in appearance by the use of mechanism invented by myself, and for which Letters Patent of the United States were issued, dated May 8, 1860, this mechanism being so constructed as to form and hold each gather in place while the thread or threads are passed through and drawn up with a tight tension, forming a tight lock or chain stitch. To produce my new and improved article by the aid of such machine, I insert into the machine the strip of cloth from which it is to be formed, and allow it to be operated on by the two feeding-surfaces and by the needle and thread in the same manner as the lower piece of cloth is operated on in said patent—that is to say, in my patent of May 8, 1860, No. 28,139. The operation of that machine is described when two pieces of cloth are inserted together one upon the other. In the production of my present improved ruffle or flounce by such ma-

chine the operation is identical therewith, except that only one piece of cloth is inserted. Other machines than the one before described may perhaps be used to produce such article—as, for example, the improved sewing-machine patented to G. B. and A. Arnold, of even date herewith—but I prefer the machine first above referred to. In any machine of analogous character it is necessary to introduce but a single piece of cloth and to so adjust the parts of the machine that the gathers will be made of the degree of fullness required either by the action of the parts of the machine alone or by the action of the parts of the machine in combination with the action of the thread, and will be firmly fastened by the thread or threads without being secured to any plain piece of cloth or binding.

The fold A' is given by turning over the edge of the cloth A before it is gathered. This may be done by the employment of what is known as "Chapin's folding-guide" or any analogous device. The fold may in the absence of any such apparatus be made by hand; but I prefer the use of a folding-guide for the purpose.

The cloth being folded before it is gathered, the gathering operation affects both the parts alike, and the result is the production of a fabric gathered on the folded edge, which is very perfect in itself, with no raw edge to be unraveled, and with the gathers so firmly secured in place relatively to each other that it may be passed under the presser of a sewing-machine in the uniting of it to any garment without in the least disturbing the relation of the gathers or impairing the uniformity of the distances of each from the other. My new ruffle or flounce may also be rapidly sewed upon any garment by hand with the overhand or any other stitch without being careful to put a stitch in each gather, and the gathers will keep their places perfectly. For some uses this is a very important quality, as the ruffle or flounce may be removed to be laundered, and be again loosely secured, or, as it is technically termed, "caught on," by very long stitches, and made to serve the purpose with perfection.

The absence of a binding cheapens the ruffle, gives it a better appearance in some situations, and allows it to be applied smoothly and

perfectly to a serrated or otherwise curved edge. This latter property is important, and is not possessed by a ruffle with a binding, because the binding, being plain, cannot be bent edgewise except to a very moderate extent.

By reference to Figs. 1 and 2 it will be seen that it is not necessary to pass the thread through the different folds, as shown in my patent dated May 8, 1860, numbered 28,244. In practice the fabric is almost universally plaited, as shown in Figs. 1 and 2, the folds or plaits lying between and not opposite the points at which the thread penetrates the cloth.

For some purposes I make my new ruffle or flounce without the folded edge A', employing the same means as above described to gather and retain the other part, A. The form of my invention now referred to is identical with that shown in the figures, except that the folded part A' is absent. The purposes to which this form of the goods is best adapted are those in which the ruffle is secured to or between the edges of a double fabric. For example, a collar, when made double, is composed of two pieces of cloth similar in size and form each to the other, with their edges coinciding each with the other in position, and turned or folded inward, so as to conceal the raw edges. In applying a ruffle to such a garment my single ruffle, without the fold A', is preferable, as it may be inserted between the two portions of the cloth, and its raw edge will be better concealed than if folded over in the manner shown by A'. It will also make a thinner seam by reason of its adding a single in lieu of a double thickness of gathered cloth thereto. It differs from the ruffle or flounce secured to me by Letters Patent dated May 8, 1860, in that it has no binding or plain piece of cloth to which the gathers are secured. In this my present invention the gathers are held in place by the thread or threads directly and alone in lieu of being held by such thread or threads upon a binding, and depending on the binding to preserve their position. In this my present invention the thread is applied closely to the gathers on each side of the fabric, and holds the gathers or plaits in place by the interlooping of the stitches if a chain-stitch is used, or by the mutual bending of both threads, and interlocking within the limits of the thickness of the goods, if the lock-stitch is used.

When gathers are held by means of a single gathering-thread run in by hand, and on which the gathers are strung like beads, they are free to slip or traverse longitudinally on the gathering-thread. They are almost certain to do so when the gathers are passed under the presser of a sewing-machine in order to sew the gathered fabric upon another piece, because the contact with the presser opposes a considerable resistance to the passage of a gather, which resistance the friction of the gathering-thread on a single gather is not able to overcome. The gather therefore stops, while

the body of the cloth is moved forward until more gathers arrive and press against it, when at length the friction becomes sufficient and the whole collection of gathers pass under the presser in close contact each with the other.

Gathers are sometimes made by using a lock-stitch sewing-machine making long stitches with light tension, and afterward partially drawing out one of the threads, so as to compress the cloth thereon. In gathered fabrics thus made, the gathers are also at liberty to slip longitudinally on such thread, as in gathered fabrics made by hand, and this effect does result to quite a serious degree. Gathers held by threads arranged in the manner employed in my invention do not in practice so slip, and from the position of the threads they cannot do so. If the lock-stitch is employed to secure them, as shown in Fig. 2, each thread is tightly embraced and bent by the other thread. Neither lies straight, but each is drawn more or less into the cloth. Any force applied to the gathers by the presser of the machine by obstructing the motion pulls up or thickens the cloth and thereby tightens the contact of the threads B and C each with the other and increases the security of their confinement. If the chain-stitch is employed in lieu of the lock-stitch, as shown in Fig. 1, any movement of the gathers is opposed by an amount of friction still more forbidding than that already described.

The better to show the difference between my improved gathered fabric and any before known, I have prepared the diagrams marked M, N, O, and P, which appear at the bottom of my sheet of drawings. These diagrams do not show my invention or any part thereof; but, on the contrary, show the means of holding gathers which were previously known. M shows gathers run by hand. N shows the same after being sewed upon other goods by a sewing-machine, the thread by which it is thus sewed not being represented. O shows gathers made by the use of a lock-stitch sewing-machine with slack tension, one of the threads being afterward drawn straight and the cloth compressed into gathers thereon. P shows the same after being sewed upon other goods by a sewing-machine, the thread by which it is thus sewed not being represented.

It will be observed that there is a straight thread in each of these gathered fabrics, and that the friction on such straight thread is all that holds the gathers to prevent their slipping longitudinally like beads loosely strung. In my improvement, on the contrary, the gathers are each firmly locked.

I do not in this application claim a ruffle or flounce in which the gathers or plaits are secured by stitching them upon an ordinary or other plain piece of cloth by a single row of machine-stitches, that being already secured to me by Letters Patent dated May 8, 1860, No. 28,244; but,

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

As a new article of manufacture, the ruffle or plaited fabric made as above described—that is to say, the fabric to be plaited or ruffled being operated upon so as to be ruffled by the feeding device, and fastened by the

stitching apparatus of a sewing-machine at one and the same operation when no binding or foundation fabric is employed.

GEO. B. ARNOLD.

Witnesses:

THOMAS D. STETSON,
A. SNYDER.