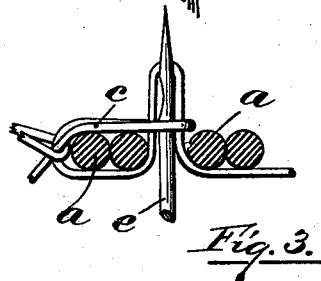
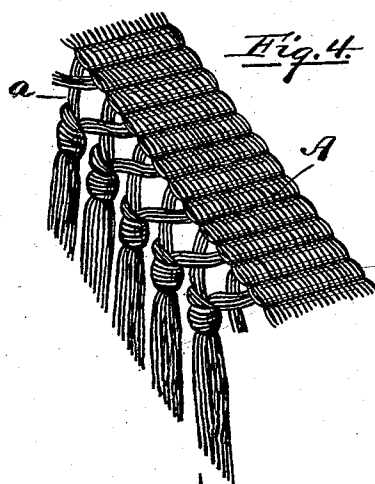
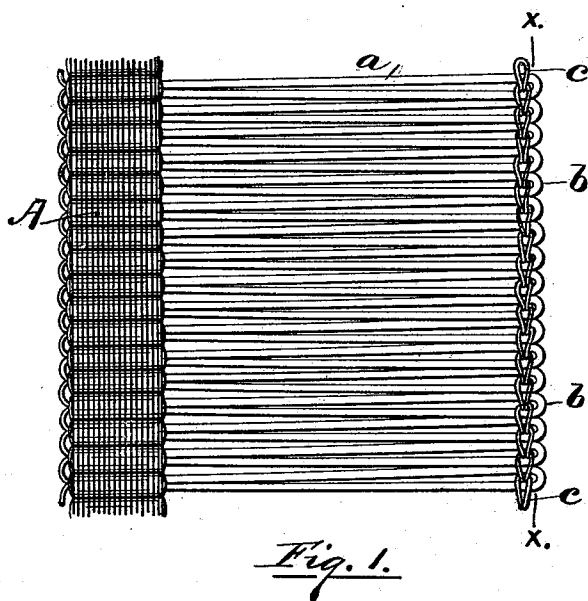


(No Model.)

B. ARNOLD.
PROCESS OF MAKING FRINGES.

No. 505,935.

Patented Oct. 3, 1893.



Witnesses:

Charles Hamrigan.
E. B. Read.

Inventor:

Berry Arnold

UNITED STATES PATENT OFFICE.

BENJAMIN ARNOLD, OF EAST GREENWICH, RHODE ISLAND, ASSIGNOR
TO THE MERIDEN CURTAIN FIXTURE COMPANY, OF MERIDEN, CON-
NECTICUT.

PROCESS OF MAKING FRINGES.

SPECIFICATION forming part of Letters Patent No. 505,935, dated October 3, 1893..

Application filed April 6, 1893. Serial No. 469,296. (No specimens.)

To all whom it may concern:

Be it known that I, BENJAMIN ARNOLD, of East Greenwich, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Processes of Making Fringes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to the progressive steps taken to form a fringe to be applied to goods after they are made. It applies to fringes first woven on a loom and then passed through another machine to tie the knots in the skirt of the fringe, or to otherwise finish it by dyeing without knotting. Its principal feature consists in providing ways in the weaving of the fringe, for keeping the loops of the thread forming the skirt, in regular order, that it may be knotted or dyed, as desired. It is illustrated in the accompanying drawings.

Figure 1, represents the upper surface of the fringe, as it comes from the loom. Fig. 2, shows a section of the loops taken on line *x, x*, Fig. 1, looking toward the left, enlarged. Fig. 3, is a portion of the section represented in Fig. 2, with a needle for forming the chain stitch on the loops. Fig. 4, represents a piece of fringe, finished by knotting.

The process consists in weaving the fringe in a loom, and leaving the loops of the filling *a*, uncut, as shown at *b, b*, Fig. 1, and making with a needle *e*, or other suitable mechanism, a chain stitch of a separate thread *c*, through each loop *b*, at the time that the shuttle makes the loop in putting in the filling. The thread *c*, that makes the chain stitch, passes through the loop *b*, of the fringe skirt, and its own loop *d*, (see Fig. 3,) so as to hold the fringe loop open, as in Fig. 1, and draw the contiguous threads *c*, of two adjacent loops, together, and make a firm edge that will bear handling and keep the fringe loops *b*, open, that they may be readily caught singly and in proper order, by the hook of a knotting machine, such, for instance, as that described in my application

for a United States patent, Serial No. 455,217, tied as shown in Fig. 4, and if the fringe is to be dyed, the thread *c*, will hold the loops separate and prevent their becoming entangled with each other. After knotting or dyeing, the thread *c*, can be removed by cutting it with the loops, or by unraveling it after the usual manner of unraveling chain stitches by drawing on the right end of it.

When fringes are woven in looms and afterward tied by means of separate appliances, it requires a complex and uncertain combination of devices, to properly separate the skirt threads so as to arrange and tie them in the right number and order. This difficulty has led to the combination of the knotting mechanism with the loom, even with the disadvantage of making each machine dependent on the other one being in order, about its running, as any obstruction to the operation of the knotting mechanism, will stop the loom, and vice versa. Another disadvantage is that the speed of the loom has to be reduced to that at which the knots can be tied, and a considerable part of the capacity of the loom to produce, is lost. It is to obviate these disadvantages, that this process or way of making the fringe, has been devised. It is also of advantage in handling the fringe in the process of dyeing and otherwise finishing it without knotting it, as it effectually prevents the entanglement of the threads, that is so troublesome in dyeing fringes made of some kinds of material.

I claim as my invention—

The process of making fringes, consisting in first weaving the fringe without cutting the loops of the filling threads that form the skirt of the fringe, and uniting the outer ends of the loops by forming a succession of chain stitches through them with a separate thread, while weaving, then further treating the product to complete the fringe, and then removing the thread forming the chain stitches, substantially as described.

BENJ. ARNOLD.

Witnesses:

E. B. READ,
JAMES E. ARNOLD.