

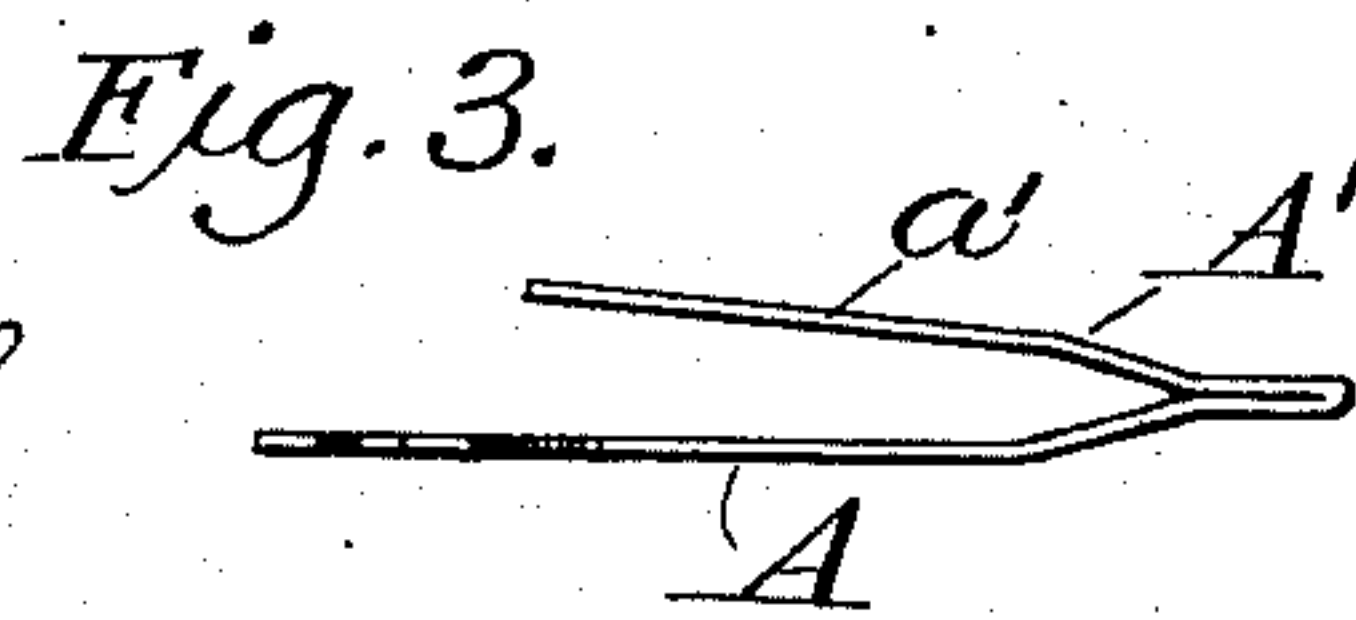
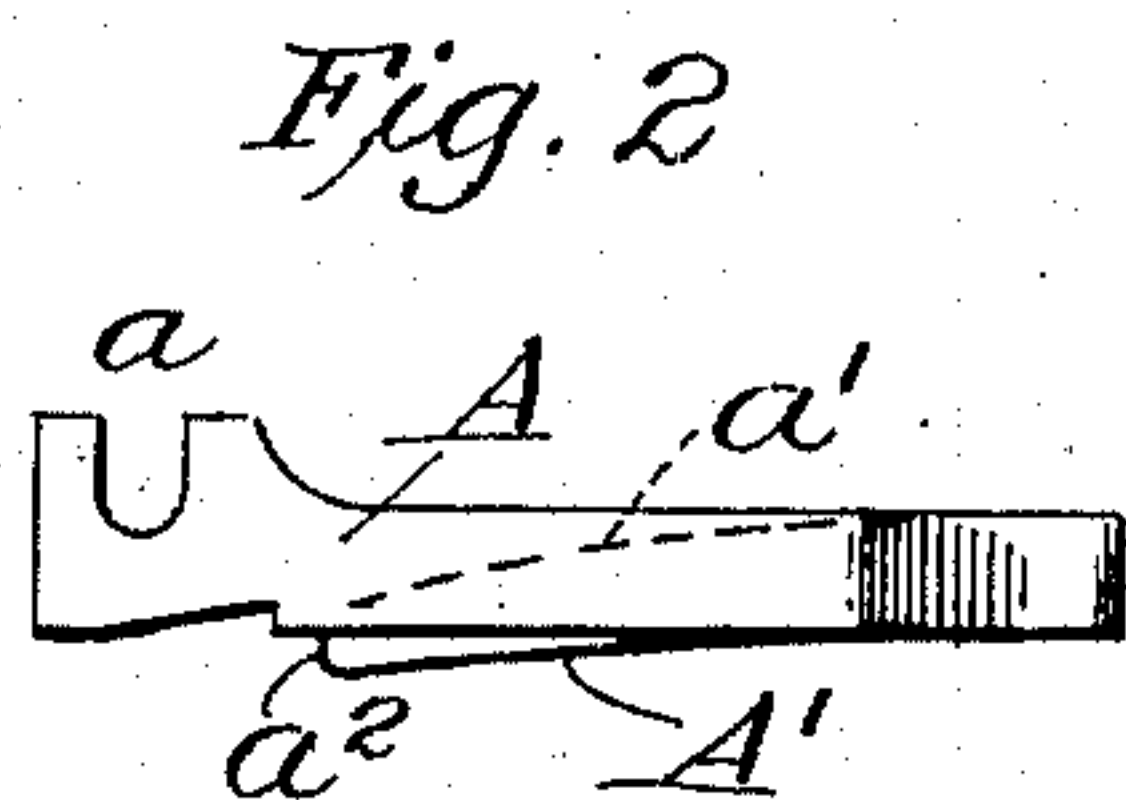
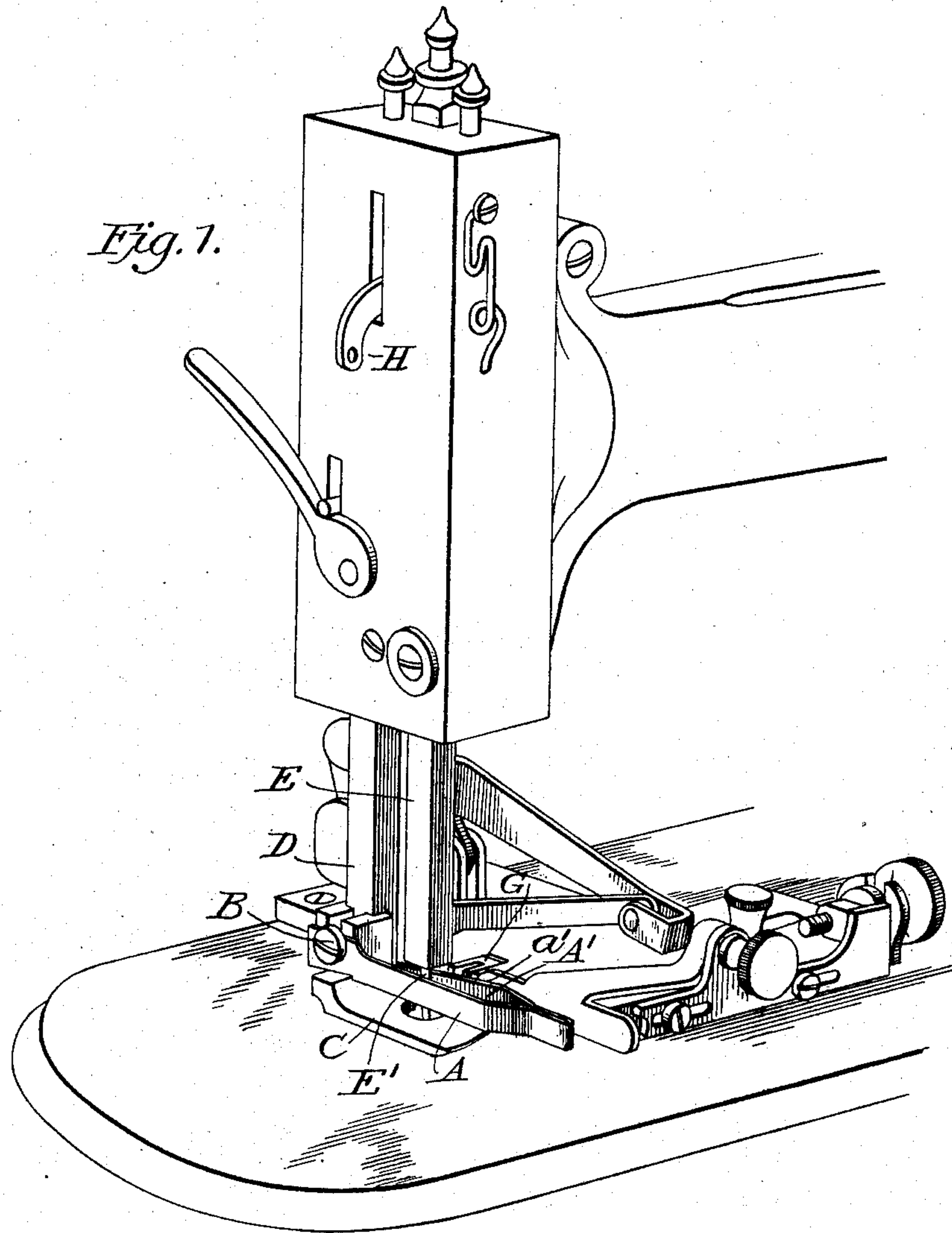
No. 865,321.

PATENTED SEPT. 3, 1907.

G. J. STEVENS.
ATTACHMENT FOR SEWING MACHINES.

APPLICATION FILED JULY 12, 1902.

2 SHEETS—SHEET 1.



WITNESSES:

James F. Duhamel
L. M. Aldom

INVENTOR

George John Stevens.

BY

Richard B. Stevens
His ATTORNEYS.

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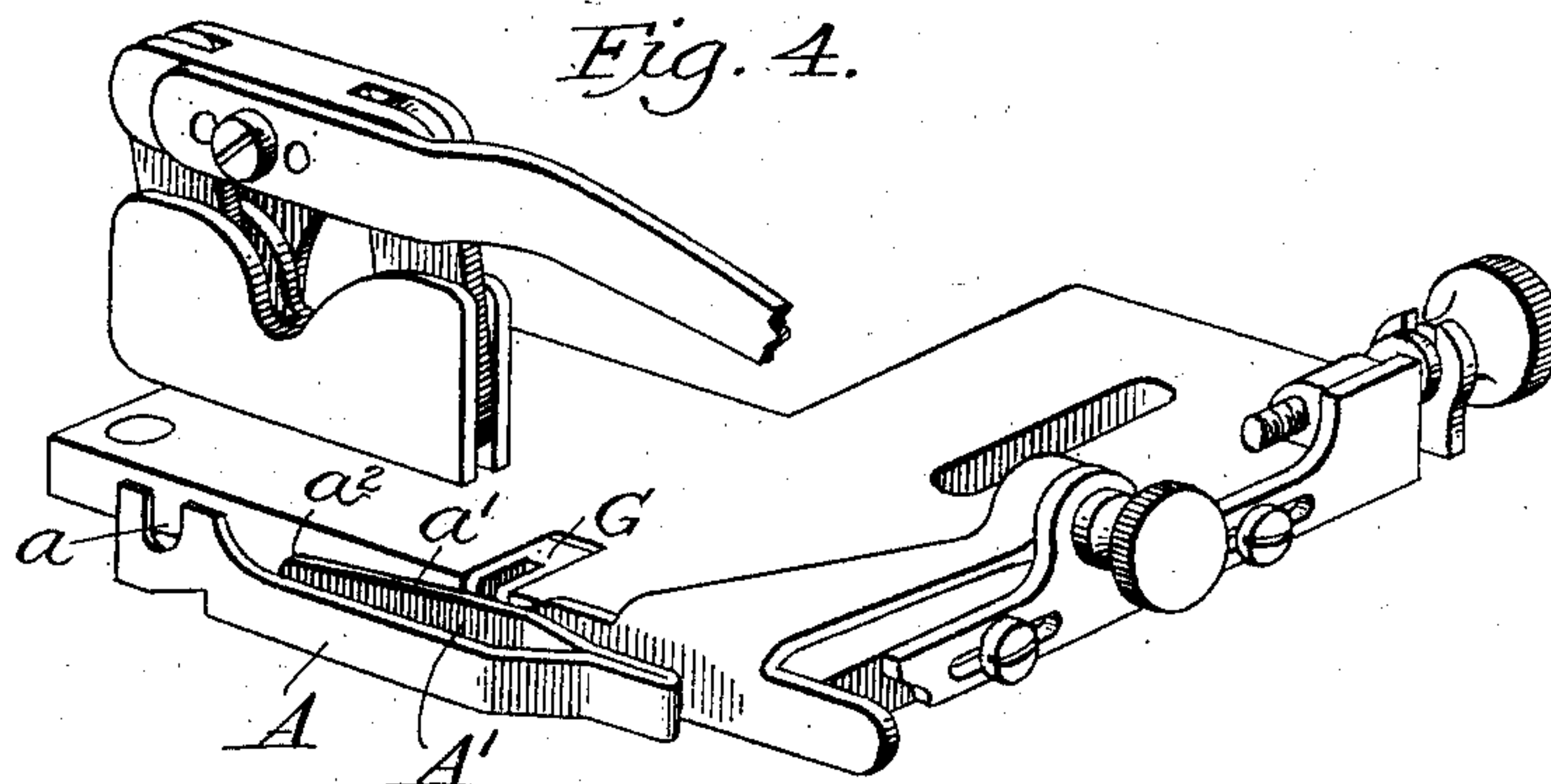


Fig. 5.

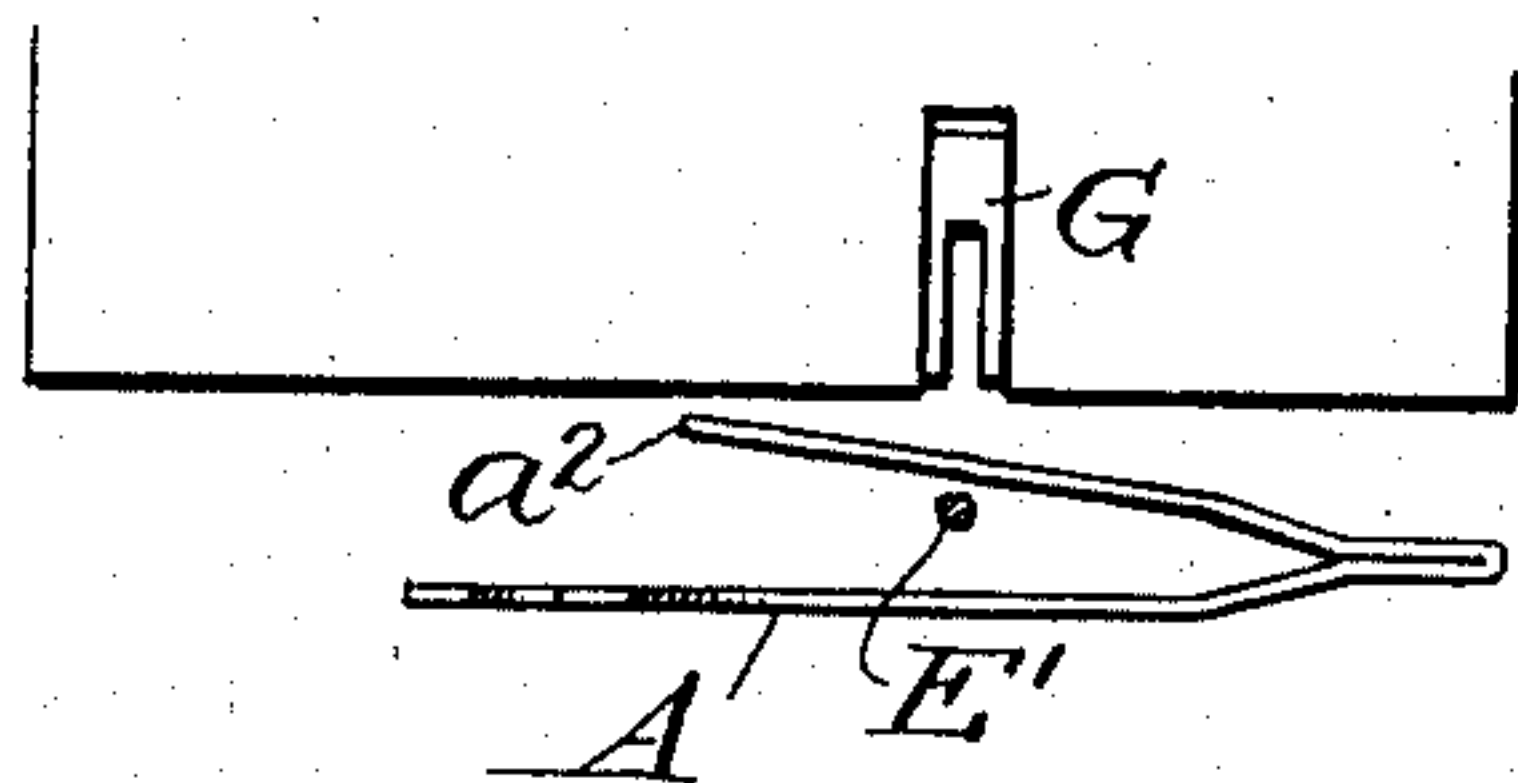
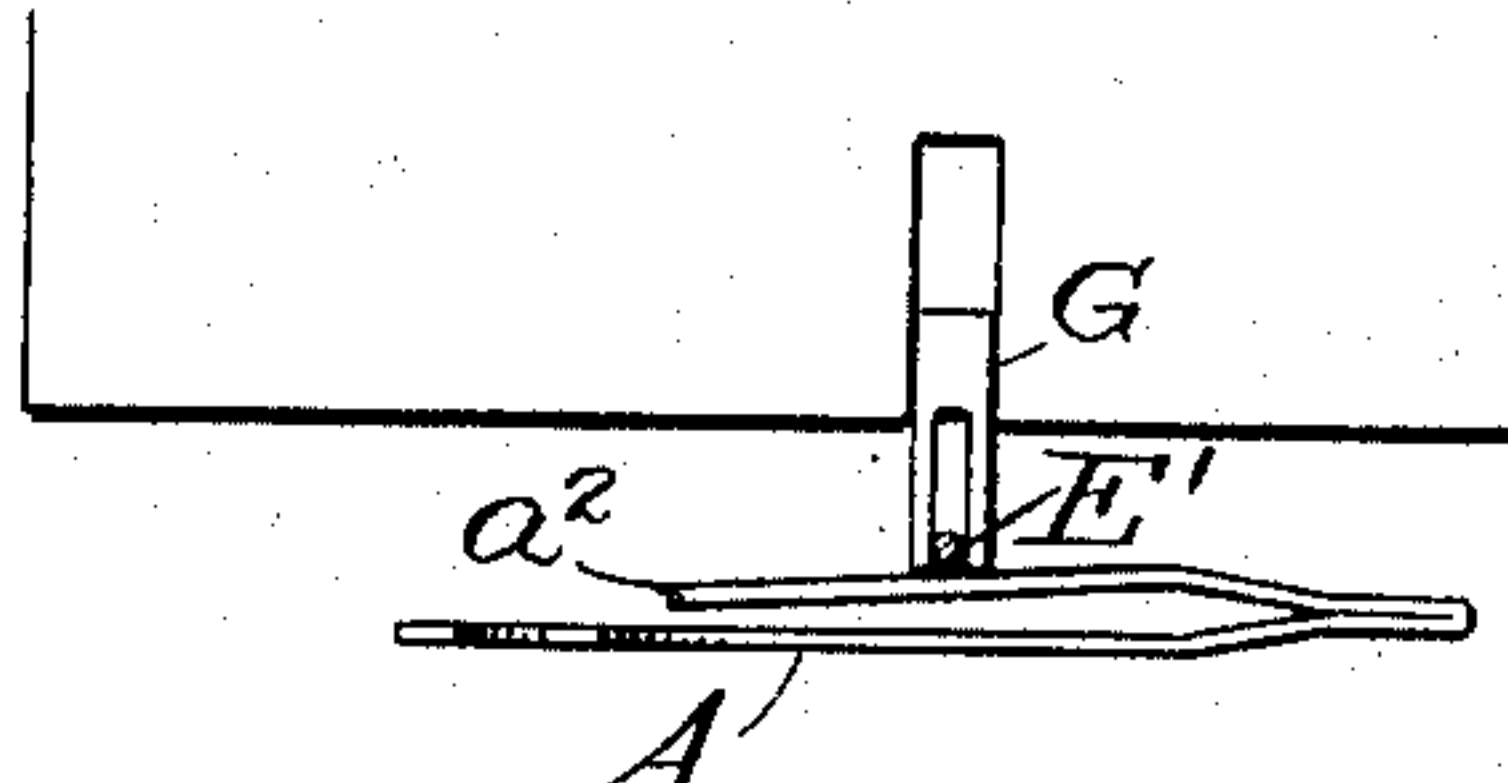


Fig. 6.



WITNESSES:

James F. Duhamel
Edw. W. Aldon

INVENTOR

George John Stevens

BY

Richard A. [Signature]

His ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE JOHN STEVENS, OF LONDON, ENGLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
AMERICAN ATTACHMENT COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

ATTACHMENT FOR SEWING-MACHINES.

No. 865,321.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed July 12, 1902. Serial No. 115,375.

To all whom it may concern:

Be it known that I, GEORGE JOHN STEVENS, mechanical engineer, residing at 25 East Lake road, Loughborough Junction, London, S. W., England, have invented a certain new and useful Attachment for Sewing-Machines for Producing Cat-Stitching, (or Open-Work Sewing,) Broad Stitching, and the Like, of which I hereby declare the following to be a full, clear, and exact specification.

The object of my invention is to provide an attachment for sewing machines, which shall be so automatic in its action that any operator, whether skilled or not, may be able to produce what is known as cat-stitching, or open-work sewing, broad or band stitching, and the like, upon any ordinary sewing machine; to make the attachment extremely simple in construction, inexpensive to manufacture, and so that it will be readily applied and easily operated upon the sewing machine. I accomplish this object by certain novel features of construction and operation which are fully described in this specification, the particular features of novelty constituting my invention being pointed out in the claims annexed thereto.

In the drawings, which form a part of this specification, and in which similar letters of reference indicate corresponding parts, wherever they occur: Figure 1, is a perspective view of a portion of the head of a sewing machine showing my attachment mounted upon the presser-bar of the machine. Fig. 2, is a side elevation of the attachment by itself. Fig. 3, is a plan view of the attachment. Fig. 4, is a perspective view of the attachment showing also a felling attachment with which it is adapted to work. Figs. 5 and 6 are detail views illustrating the operation of the attachment by the pusher of the felling attachment.

The attachment, the object of my present invention is intended for use in combination with such a felling attachment as is described in my application for patent Serial Number 77088 filed September 30th, 1901, in which a reciprocating pusher pushes the cloth away from the needle at every alternate downstroke of the needle-bar.

The essential feature of my present invention is the interposition of a resisting element between the needle and the take-up of a sewing machine in such manner as to prevent the take-up from taking up as much of the thread as usual, which thread, by means of my invention, is carried into the stitches as they are formed, thus producing a very wide stitch, which may be either a cat-stitch, or open work stitch, or a broad, band-like stitch, or the like. To produce this result it is necessary that the needle shall stitch first upon one side and then upon the other side of the resisting element so as to form a loop of thread upon the latter which the take-up of the machine cannot remove,

and therefore my attachment may assume either one of two forms; if an alternating needle-bar be used the attachment may be fixed and rigid, as in this case the alternating needle-bar will cause the needle to form a stitch first upon one side and then upon the other side of the resisting element, or, if a fixed needle-bar is used, as is always the case in ordinary sewing machines, then the resisting element must be flexible, or capable of being oscillated, and must be carried first to one side and then to the other side of the path of the needle, so that the successive loops of thread will be formed upon the resisting element as hereinbefore described. Either and both of these forms are within the spirit and limits of my invention.

I will now proceed to describe that form of my invention which is intended for use upon ordinary sewing machines, having a rigid needle-bar, and in conjunction with such a felling attachment as I have hereinbefore mentioned. In this form of my invention I form the attachment preferably of thin, flat, spring steel, of V shape, and with two arms, A, A¹. I form a slot *a* in the outer extremity of the arm A, so that this arm A may be passed behind the screw B, which holds the presser-foot C, to the presser-bar D, the arm A, and consequently the entire attachment, being held in position by this screw B. This V shaped attachment extends from the presser-bar D, horizontally toward the front of the machine, and to some distance beyond the needle-bar E, the acute angle of the attachment being its forward end. The free arm A¹ of the attachment extends backwardly from the acute angle of the attachment to a point a little beyond the needle-bar E, and as the two arms A, A¹ are normally somewhat separated, when the attachment is in its normal position the arm A passes along outside of the needle E of the machine, while the arm A¹ passes back on the other or inside of the needle E¹. The arm A¹ is sloped or cut away on its top face *a*¹, from a point near the acute angle of the attachment to the end of the arm, and the end of the arm A¹, as well as its top face, is slightly rounded, so that it will not cut or abrade the thread, when it is looped and drawn over this arm in the process of stitching. When this attachment is in place upon the presser-bar D, and a felling attachment, such as is described in my before mentioned application, is used in conjunction with it the operation is as follows: Two pieces of cloth are laid the one upon the other, care being exercised to see that the edges of the cloth are even, the cloth then being placed under the presser-foot C in the usual manner. Assuming then that the pusher G of the felling attachment is retracted (see Fig. 6), when the needle E¹ makes its first down stroke the pusher G will be extended, and first striking the arm A¹ of the attachment it will push it, and the cloth, outside the path of the needle E¹, and to

ward the arm A, so that a stitch will be made outside of the cloth and on the inside of the arm A¹ (see Fig. 5). As the needle-bar E and needle E¹ makes its following upstroke the pusher G is retracted and the arm A¹ and the cloth resume their normal positions. At the next downstroke of the needle E¹, the pusher G remains retracted, and the arm A¹ and the cloth remain in their normal positions, so that the needle E¹ passes down between the arms A and A¹, and makes a stitch on the other, or outside of the arm A¹, leaving a loop of thread on the arm A¹, which arm prevents the take-up H of the machine from drawing up the thread forming the loop. This cycle of operations is repeated during the entire stitching, a succession of loops of thread being formed on the arm A¹ of the attachment. As the feed of the sewing machine feeds the work forward, the loops, one after another will drop off the end a² of the arm A¹, and when the cloth has been completely stitched it will be found that the edges of the two pieces of cloth, while they are securely stitched together may be separated a distance in proportion to the length of the thread contained in the loop, and that a true cat-stitching, or open-work stitching has been produced.

The width of the cat-stitching may be varied by raising or lowering the attachment upon the presser-bar D, for the higher that the arm A¹ is from the base-plate of the sewing machine the longer will be the loop, and consequently the width of the stitching produced, and conversely, the nearer the arm A¹ is to the base-plate of the machine the shorter will be the thread in the loop and the narrower the cat-stitching. The slot a in the arm A permits of this adjustability. I may also make the attachments with arms of varying heights to increase the range of the length of stitching. This attachment also makes a broad, band like stitching which I believe to be entirely new. A piece of cloth being simply folded is fed to the machine with the fold of the cloth underneath the presser-foot, and so that with the aid of the felling attachment an over-cast stitch will be formed along the fold, the guide of the felling attachment being set so that a deep stitch will be taken. The operation of the stitching is precisely the same as that described for cat-stitching.

When the cloth has been stitched and is opened out, it will be found that the thread which formed the loops will lie upon the face of the cloth forming a broad band or stripe when the stitches are close together, which is particularly effective in fancy and ornamental work on ladies' blouses, shirts, etc., etc.

In using my attachment the tensions of the machine should be loosened so that a liberal quantity of thread may be drawn from the spool and shuttle at each stitch.

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

1. In combination in an overseaming attachment an arm having resilience to return to normal position when moved therefrom, said arm being arranged to cross the path of movement of the needle, to receive the thread thereon in the form of loops and means for acting on the cloth at every alternate stroke of the needle bar at a point adjacent the needle said means contacting with the flexible arm to move it aside, substantially as described.

2. In combination in a sewing machine, a needle bar and a needle, a flexible arm mounted upon a sewing machine and interposed between the needle and the take-up, means for moving the said arm in a plane crossing the path of the needle at every alternate stitch so that the needle will stitch alternately upon the two sides of the arm and form loops of thread upon the arm, and means for regulating the length of the thread forming the loop, substantially as shown and described.

3. In combination in a sewing machine, a needle and needle bar, two arms one of which is attached to the presser-bar of the machine and projects forward past the needle, the other arm of which is flexible and projects backwardly from its junction with the first arm to a point back of the needle, and means for moving the flexible arm in a plane across the path of the needle at every alternate stitch, so that a loop of thread will be formed upon the flexible arm, substantially as shown and described.

4. In combination in a sewing machine, a needle and a needle bar, two arms one of which is attached to the presser-bar of the machine and projects forward past the needle, the other arm of which is flexible and projects backwardly from its junction with the first arm to a point back of the needle means for moving the flexible arm in a plane across the path of the needle at every alternate stitch, so that a loop of thread will be formed upon the flexible arm, and means for adjusting the attachment upon the presser-bar in order to regulate the length of the stitch.

5. In combination in a sewing machine, a needle bar and needle, a take up, a resisting element arranged to prevent the take up from taking up the thread between stitches and a pusher acting against the cloth and controlling the resisting element to cause the needle to form a stitch first upon one side and then upon the other of said resisting element, substantially as described.

6. In combination in a sewing machine for overseaming a needle bar a take up, a pusher to act on the cloth and push the same away from the needle for overseaming and an arm movable across the path of the needle and against which the pusher acts, said arm receiving the thread thereon and resisting the taking up action of the take up, substantially as described.

7. In combination in a sewing machine for overseaming, a needle bar, a resilient arm, and a pusher to act on the cloth, said pusher acting also against the resilient arm to change its position in relation to the needle to lie first on one side of the needle path and then on the other, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORGE JOHN STEVENS.

Witnesses:

W. M. HARRIS,
JOSEPH LUKE.