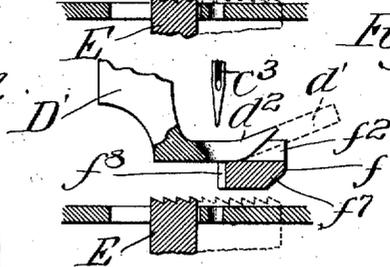
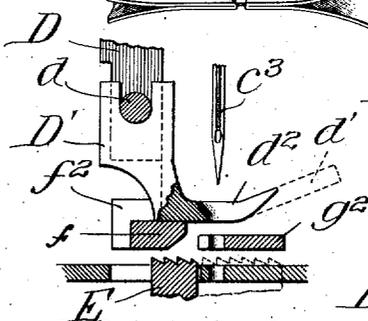
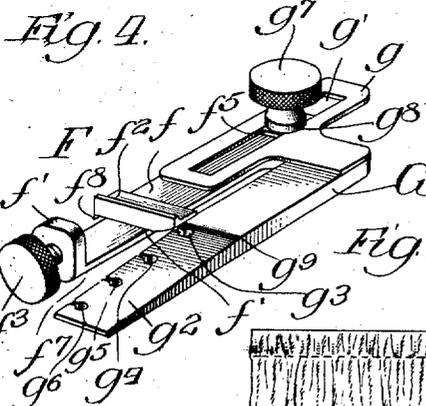
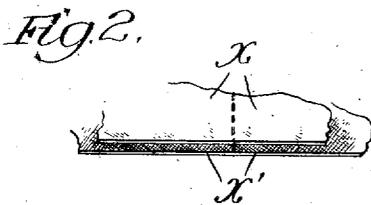
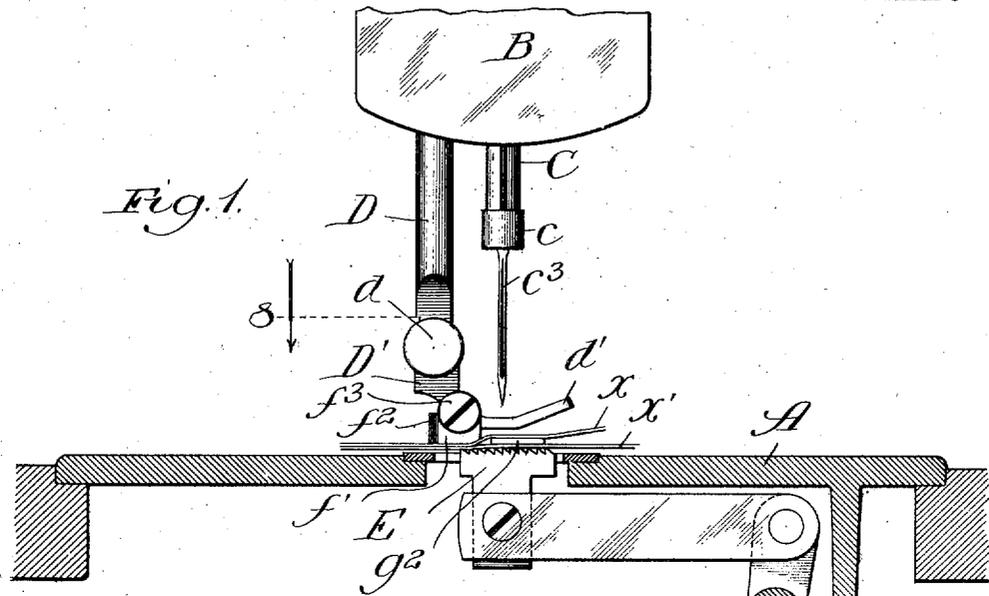


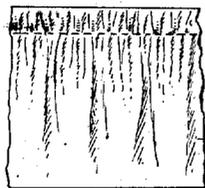
J. H. BOYE.
SEWING MACHINE ATTACHMENT.

APPLICATION FILED OCT. 12, 1906.

2 SHEETS—SHEET 1.



Witnesses:
Carl J. Taylor,
Chas. H. Small.



Inventor:
James H. Boye,
By *Dunforth, Dunforth, Lee & Wiles*
Attys.

J. H. BOYE.
SEWING MACHINE ATTACHMENT.
APPLICATION FILED OCT. 12, 1906.

2 SHEETS—SHEET 2.

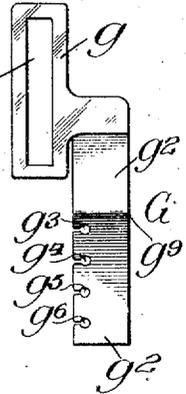
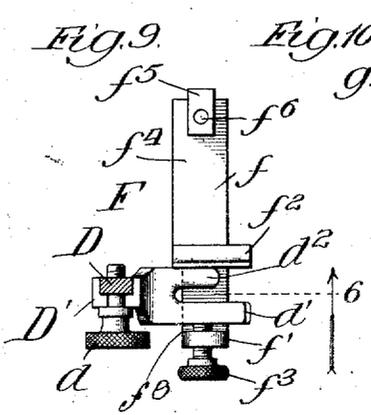
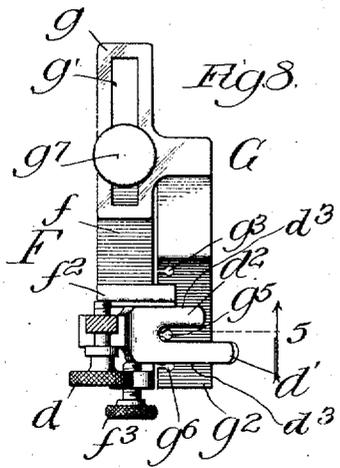


Fig. 11.

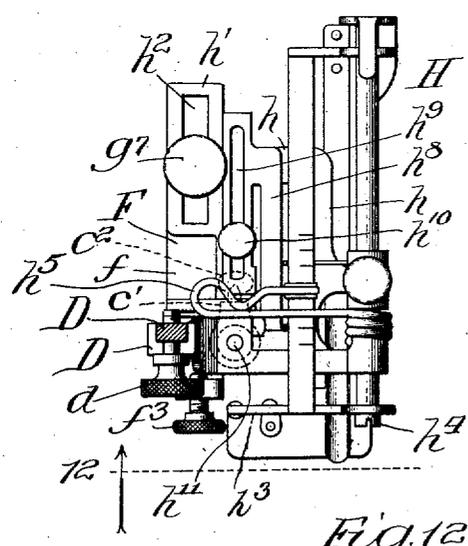


Fig. 13.

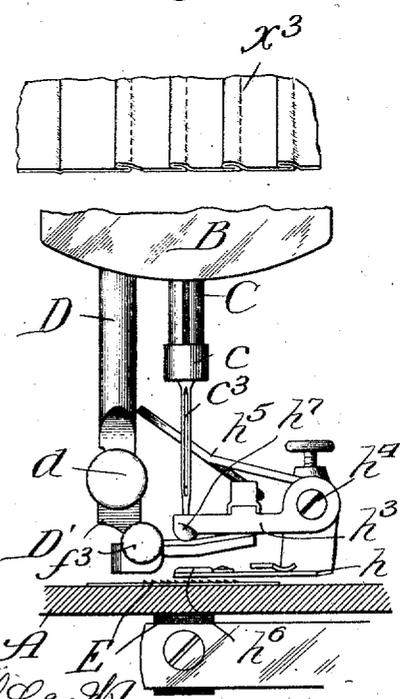


Fig. 12.

Witnesses: *Edw. Taylor, James H. Boye, A. E. Bull*
 Inventor: *James H. Boye*
 By *Dyrenforth, Dyrenforth & Niles*
 Attys

UNITED STATES PATENT OFFICE.

JAMES H. BOYE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE BOYE NEEDLE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SEWING-MACHINE ATTACHMENT.

No. 870,219.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed October 12, 1906. Serial No. 338,622.

To all whom it may concern:

Be it known that I, JAMES H. BOYE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sewing-Machine Attachments, of which the following is a specification.

My invention relates particularly to attachments serving to adapt sewing machines for various kinds of work, such as hemstitching, shirring, tucking, ruffling, etc.

My primary object is to provide universal attaching means for the various devices indicated, whereby a single attaching means may serve for securing various devices to one machine, or may serve for securing the same device to any one of numerous types of machines.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a broken sectional view of a sewing-machine equipped with my improved device as employed for attaching a hemstitcher to the presser-foot of the machine; Fig. 2, a broken view illustrating the spacing of the cloth for hemstitching purposes in a manner now well understood; Fig. 3, a view illustrating the hemstitching done by the use of the mechanism, as shown in Fig. 1; Fig. 4, a perspective view showing my attaching device with a hemstitching device of improved construction combined therewith; Fig. 5, a broken sectional view of the mechanism shown in Fig. 1, the section being taken as indicated at line 5 of Fig. 8; Fig. 6, a similar section showing my improved device used as illustrated in Fig. 9 for shirring purposes, the section being taken as indicated at line 6 of Fig. 9; Fig. 7, a view illustrating the nature of the work done by the mechanism arranged as shown in Figs. 6 and 9; Fig. 8, a plan sectional view taken as indicated at line 8 of Fig. 1; Fig. 9, a plan section showing my improved device employed in connection with the presser-foot of the sewing machine for shirring purposes; Fig. 10, a plan view of the hemstitcher adapted to be carried by the member shown applied to the presser-foot in Fig. 9; Fig. 11, a plan sectional view showing the member carried by the presser-foot in Fig. 9 adjusted to a different position with relation to the presser-foot and equipped with a tucker of well-known construction; Fig. 12, a view taken as indicated at line 12 of Fig. 11; and Fig. 13, a view illustrating tucking performed by the mechanism illustrated in Figs. 11 and 12.

Referring to Figs. 1 to 10, inclusive, A represents the bed-plate of the head of the sewing machine; B, the arm of the machine; C, the needle-bar; D, the presser-foot bar, carrying the usual presser-foot, D'; E, a cloth-feeding device of well-known construction and opera-

tion; F, a shirring attachment adjustably connected with the presser-foot D', and serving also as an attachment-attaching device; and G, a hemstitcher attachment adjustably connected with the attachment F.

The regular parts of the sewing machine are of well-known construction and operation and need not be described in detail. It may be stated, however, that the needle-bar is equipped with a collar *c* having a lug *c*¹, as shown in Fig. 11, fitted with a set screw *c*² which serves in securing the needle in the usual manner. The presser-foot D' is applied to the presser-foot bar by means of a set screw *d*, in a well understood manner. The presser-foot has the usual prongs *d*¹, *d*² which are provided with substantially parallel outside surfaces *d*³. The feed device E comprises a toothed reciprocating member which moves rearwardly while in the elevated position and which is depressed during its return movement to enable it to take a fresh hold upon the cloth in the usual manner.

The member F, which constitutes both a shirring attachment and an attachment-attaching device, comprises a horizontally disposed transversely extending bar *f* equipped at one end with an up-turned flange *f*¹ and at a distance from said flange and on the upper side of the bar, with a guide or flange *f*² opposed to the flange *f*¹. Through the flange or lug *f*¹ passes a set screw *f*³. The flange *f*² is at right-angles to the bar *f* and preferably projects somewhat past the front and rear edges of the bar to facilitate the adjustments hereinafter mentioned. The flange *f*² is adapted to engage the short member *d*² of the presser-foot, while the set screw *f*³ serves to engage the long member *d*¹ of the presser-foot, so that the member *f* may be clampingly applied to the presser-foot and may be adjusted forwardly or rearwardly with relation to the presser-foot. The presser-foot-receiving channel between the flanges *f*¹ and *f*² is open-topped and open-ended to permit a wide range of adjustment. The portion of the bar *f* projecting beyond the flange *f*² constitutes a shank *f*⁴ which is fitted upon its upper side with a longitudinal guide-block *f*⁵ provided with a threaded opening *f*⁶.

The member G comprises a guide-portion or shank *g* adapted to rest upon the shank *f*⁴ and having a slot *g*¹ receiving the guide *f*²; and a tapering bar *g*² carried by said shank and extending substantially parallel with and in front of the bar *f*, the member *g*² being equipped at its rear edge with needle-guides or perforations *g*³, *g*⁴, *g*⁵, *g*⁶. The shank *g* is secured on the shank *f*⁴ by a screw *g*⁷ having a threaded extremity entering the threaded opening *f*⁶ and having a shoulder *g*⁸ bearing upon the upper surface of the shank *g* and serving to clamp the parts together. It will be under-

stood that the device G may be adjusted longitudinally of the bar *f* to bring any one of the series of needle-guides, or openings, into registration with the needle. Also, the member F may be adjusted forwardly and rearwardly with relation to the presser-foot bar for the same purpose. The lower surface of the bar *g*² is horizontal and lies in the same plane as the lower surface of the bar *f*. The bar *g*² has its upper surface beveled from a point *g*⁰ to the extremity of the bar, so that a greater or less thickness of the bar will be presented between the layers of fabric *x*, *x*¹ at the point where the sewing is effected, according to the adjustment of the member G with relation to the member F.

By reference to Figs. 1, 2 and 3, it readily will be understood that the width of the hemstitch depends upon the thickness of the bar interposed between the strips of cloth. The bar *f* is preferably beveled somewhat on its under side at its front edge, as indicated at *f*¹ in Fig. 4; to facilitate the passing of the cloth between the bars *g*² and *f* at the meeting edges thereof. It is understood, of course, that the presser-foot bar D may be lowered in the usual manner, so that the lower surfaces of the bars *f* and *g*² would be opposed to the feeding device E in the operation of the machine.

When the hemstitching device G is employed in connection with the attachment-attaching device F, the part F is adjusted with relation to the presser-foot in the manner illustrated in Figs. 1 and 8, being secured to the rear portion of the presser-foot. When it is desired to employ the device F for shirring purposes, however, it is connected with the front portion of the presser-foot in the manner illustrated in Figs. 6 and 9. In this position, the needle *c*¹ will pass in the rear of the bar *f*; the rear edge of the bar being cut away somewhat, as indicated at *f*⁰, to facilitate the passage of the needle. In this position of adjustment the bar *f* is opposed, in the operation of the machine, to the front portion of the feeding device, and will operate in the usual manner to enable shirring of the cloth to be effected as the sewing progresses. In Fig. 7, *x*² represents a piece of cloth shirred in the manner described.

Referring to Figs. 11 and 12, the parts of the sewing machine are designated in the manner already described. Here, the attachment F is applied to the presser-foot in the same manner as illustrated in Fig. 8. The hemstitcher G is removed, however, and a tucker H, operating in a well-known manner, is adjustably mounted on the attachment F. The tucker H is of the usual construction, except that its frame *h* is provided with a shank *h*¹ equipped with a slot *h*² adapted to fit upon the guide *f*⁰ of the bar *f*. The usual shank for attachment directly to the presser-foot bar is omitted. In the attachment H there is the usual marker *h*³ supported on a pivot *h*⁴ and actuated by an arm *h*⁵ adapted to be engaged by the projection *c*¹ of the needle-clamping collar *c*. There is the usual anvil *h*⁶ carried by the frame *h* and upon which the extremity *h*⁷ of the marker operates to crease the cloth; and there is the usual-cloth guide *h*⁸ which is provided with a slot *h*⁹ and clampingly connected by a screw *h*¹⁰ with the frame *h*, so that the guide may be adjusted with relation to the frame to vary the width of the tuck. It will be understood by those skilled in the art that the arm *h*⁵ is struck by the projection *c*¹ of the needle-

clamping collar as the needle-bar descends, and the marker is thereby operated.

The frame *h* has the opening *h*¹¹ for the passage of the needle. It will be understood that the member F may be adjusted forwardly or backwardly on the presser-foot and the tucker H may be adjusted longitudinally on the bar *f* to bring the perforation *h*¹¹ into registration with the needle. In Fig. 13, *x*³ represents a piece of cloth which has been tucked by the use of the improved mechanism.

It will be obvious to those skilled in the art that the shirring attachment F, which serves also as a general attachment-attaching device, may be employed in connection with various forms of attachments for securing said attachments to the presser-foot of a sewing machine, so that by the aid of the device F, universal attachments may be employed, whereby any attachment may be applied to different kinds of machines or different kinds of attachments may be applied to the same machine.

The foregoing detailed description has been given for clearness of understanding only, and no undue limitation is to be understood therefrom.

What I regard as new, and desire to secure by Letters Patent, is—

1. The combination with a presser-foot of a sewing machine, of a combination shirring and attachment-attaching bar extending transversely beneath the presser-foot and equipped on its upper side with flanges and a clamping screw constructed and arranged to permit adjustment of said bar to a position in front of the needle for shirring purposes and in the rear of the needle to accommodate a second attachment, said bar having an extension at one end equipped with means for adjustably mounting a second attachment thereon.

2. A device of the character set forth, comprising a bar having its upper surface provided near one end with an open-topped and open-ended presser-foot channel, extending transversely of said bar, the opposite end of said bar having a guide extending longitudinally of the bar for adjustably mounting another attachment, and a clamping screw extending longitudinally of said bar into said presser-foot channel, for the purpose set forth.

3. The combination with a presser-foot of a sewing machine, of a transversely extending bar passing beneath the presser-foot and clampingly secured thereto, and a substantially parallel hem-stitcher bar carried by and adjustable longitudinally with relation to said first-named bar, said hem-stitcher bar having a tapering extremity adapted to vary the space between layers of cloth in the hem-stitching operation, according to the adjustment of the hem-stitcher bar with relation to the first-named bar.

4. In false hem-stitching means, an adjustable attaching shank and a tapering bar projecting therefrom and equipped with a series of needle openings.

5. The combination with the presser-foot bar of a sewing machine, of a tapering longitudinally adjustable bar-form member adapted to lie between plies of cloth and separate the same in a greater or less degree, according to the adjustment of said member.

6. The combination with a presser-foot and needle of a sewing machine, of a combination shirring and attachment-attaching member adjustably clamped thereon and constructed and arranged to permit adjustment to a position either in the front or in the rear of the position of the needle, and an attachment carried by said first-named member and adjustable with relation thereto at right-angles to the first-named adjustment.

7. The combination of a bar equipped with means for clampingly securing it at right angles to a presser-foot, and a second tapering bar carried by and adjustable

longitudinally with relation to said first-named bar, for the purpose set forth.

8. The combination with a bar equipped near one end on its upper side with a transverse open-topped and open-ended channel with a clamping-screw projecting thereinto, and equipped near the other end with a guide, and a parallel bar having its rear edge adjacent to the front edge of said first-named bar and equipped with a shank provided with a guide engaging said first-named guide.

9. The combination with a presser-foot, of a bar equipped on its upper surface at one end thereof with flanges, one of said flanges projecting past an edge of the bar, a set screw carried by the other flange, and a longitudinal guide carried by the opposite end portion of said bar.

JAMES H. BOYE.

In presence of—

A. U. THORIEN.
C. W. WASHBURN.