

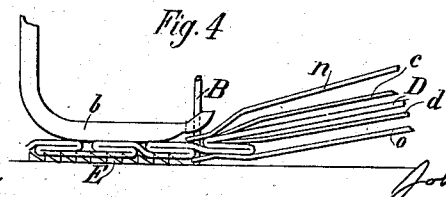
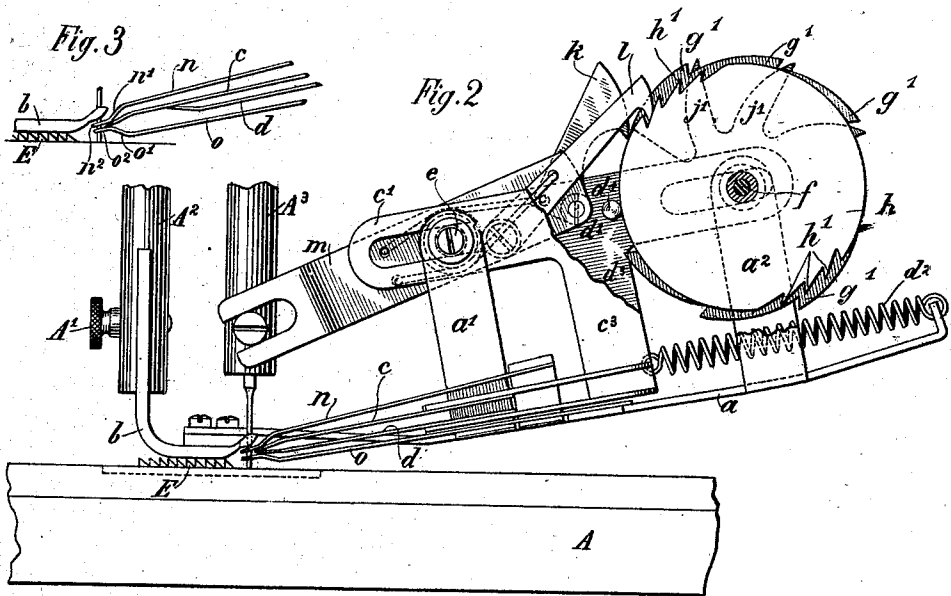
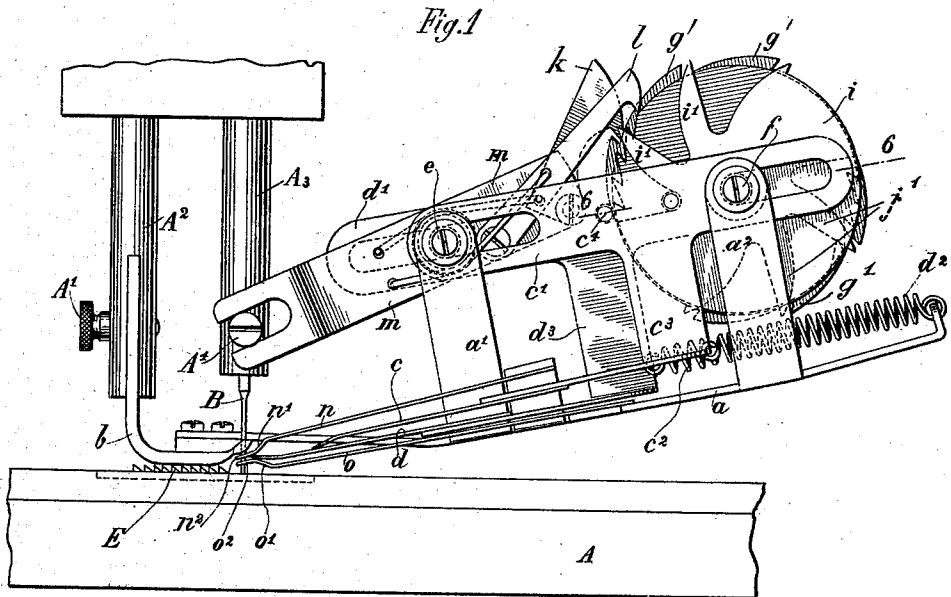
J. F. WILKINSON.

RUFFLER AND GATHERER FOR SEWING MACHINES.

(Application filed Jan. 23, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
Karl Ketter
Edward Ray

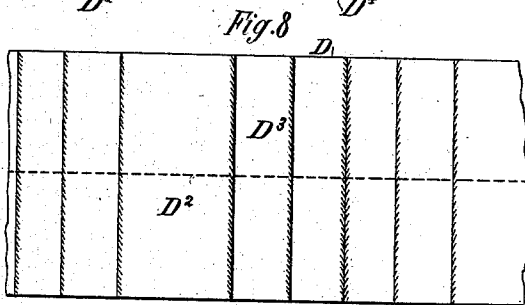
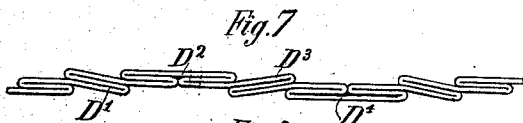
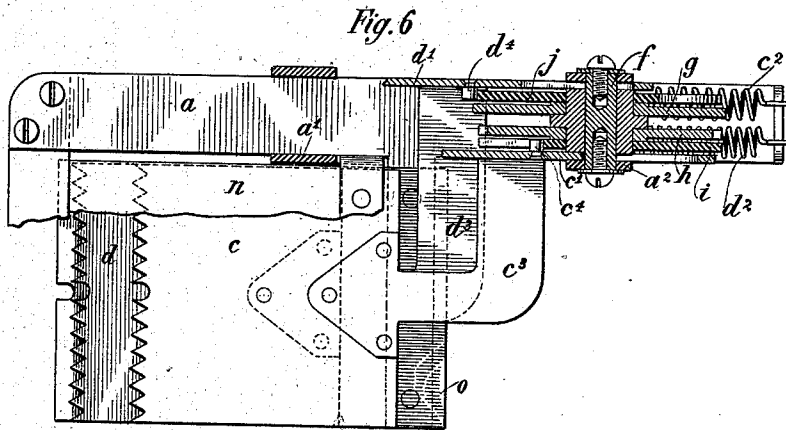
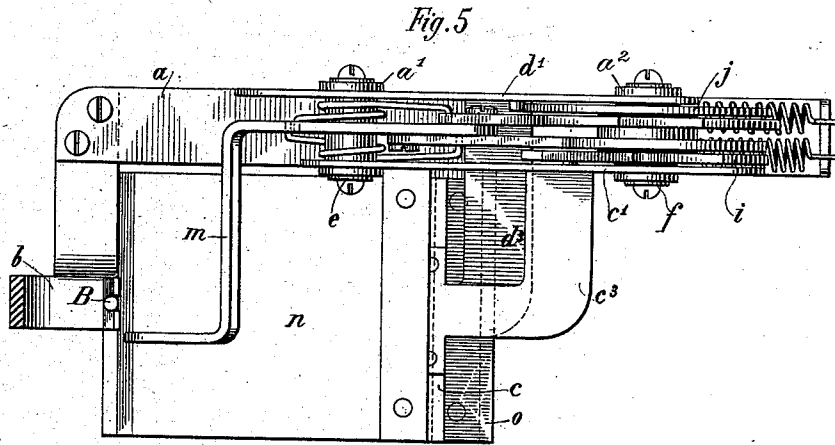
Inventor,
John Franklin Wilkinson
 by *Roeder & Bensen Att'ys*

J. F. WILKINSON.
RUFFLER AND GATHERER FOR SEWING MACHINES.

(Application filed Jan. 23, 1902.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
Raphael Heller
Edward Ray

Inventor,
John Franklin Wilkinson
 by *Roeder & Mieren Att'ys*

UNITED STATES PATENT OFFICE.

JOHN FRANKLIN WILKINSON, OF BOSTON, MASSACHUSETTS.

RUFFLER AND GATHERER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 716,159, dated December 16, 1902.

Application filed January 23, 1902. Serial No. 90,864. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANKLIN WILKINSON, a citizen of the United States, and a resident of Boston, Massachusetts, have invented certain new and useful Improvements in Plaiting Attachments for Sewing-Machines, of which the following is a specification.

This invention relates to a plaiting attachment for sewing-machines which is so constructed that it may be readily connected to a sewing-machine of any desired construction. By my invention I am thus enabled to form box-plaits by any of the ordinary types of sewing-machines now on the market, while heretofore it was necessary to construct specially-designed machines that made box-plaits only.

In the accompanying drawings, Figure 1 is a side elevation of my improved box-plaiting attachment, showing the upper plaiting-blade partly retracted; Fig. 2, a similar view, partly in section, showing the position of the plaiting-blades when the box of the plait is being formed; Fig. 3, a side view of the forward ends of the plaiting-blades, showing the lower blade retracted; Fig. 4, a detail showing the formation of the plaits by the blades; Fig. 5, a plan, partly in section, of the attachment; Fig. 6, a section on line 6-6, Fig. 1, with some of the parts removed; Fig. 7, an end view of the plait formed by the attachment, and Fig. 8 a face view thereof.

The letter *a* represents the open frame of the attachment, adapted to be removably secured in an inclined position to the bed-plate *A* of the sewing-machine. To effect the connection between the attachment and the machine, I permanently secure the presser-foot *b* to plate *a*, so that the clamp-screw *A'*, which connects the presser-foot to the presser-foot bar *A*², serves to also connect the attachment to the machine.

The box-plaiting is formed by means of a pair of plaiting-blades *c* and *d*, which are so constructed that first one blade reciprocates for a given number of times to form, say, the right plaits, then both blades are arrested and the fabric is spread out between them to form the box or plain section of the plait, and then the other blade reciprocates for a given number of times to form the left plait. The

blades *c d* receive intermittent reciprocating movement from the needle-bar *A*³ of the machine in the following manner.

From the frame *a* project two pairs of uprights *a'* *a*², that form the bearings, respectively, for a front shaft *e* and a rear shaft *f*. These shafts constitute the guides for a pair of slotted slides *c' d'*, influenced by retracting-springs *c*² *d*² and connected to the blades *c d* by arms *c*³ *d*³. Upon the rear shaft are mounted two ratchet-wheels *g h* and two cam-disks *i j*, all joined, so as to rotate together. The two cam-disks *i j* have cam edges *i'* *j'* at diametrically opposite points and in number corresponding to the number of plaits to be laid. The drawings show the disk *i* to have three such cam edges *i'*, and the disk *j* has also three cam edges *j'*, the edges *i'* being located diametrically opposite the edges *j'*, Fig. 1. The slides *c' d'* are provided with pins *c*⁴ *d*⁴, placed in the paths of the cam-surfaces *i' j'*, respectively, so that as the cams rotate each cam-surface will push its slide inward until the pin has cleared the surface, when the slide will be retracted by means of its spring. Between the last tooth or cam-surface of one cam-disk and the first tooth of the other disk there is a plain or mutilated section on both disks, and while the disks move through this section neither slide will be reciprocated. Thus the plaiting-blades will remain idle between the last stroke of one blade and the first stroke of the other blade to form the plain section or "box" of the plaiting.

The ratchet-wheels *g h* are designed to rotate the cam-wheels at variable speeds, the feed being increased at the cam-surfaces and diminished intermediate such surfaces. The wheel *g* has to this effect a number of large ratchet-teeth *g'*, side by side with the cam edges *i'* and also with the cam edges *j'*. The wheel *h* has a number of smaller teeth *h'* between the last cam-surface of one cam and the first cam-surface of the other cam. The ratchet-wheels *g* and *h* are engaged, respectively, by a short spring-pawl *k* and a long spring-pawl *l*, both fulcrumed to a lever *m*, that turns on the front shaft *e*. The forward end of lever *m* is slotted and engages a screw *A*⁴ on the needle-bar *A*³ of the sewing-machine. As the needle-bar reciprocates the

pawls *k* and *l* will thus drive the cam-disks rapidly while they move the slides and slowly while the slides are at rest.

The blades *c* and *d* reciprocate between a pair of spring-jaws *n o*, supported at their rear ends by the frame *a*. The free front ends of the jaws converge and are first bent inward to form abutments *n' o'* and then outward to form lips *n² o²*. These lips are perforated for the passage of the needle B, by which the plaits are sewed down.

The fabric D to be plaited is passed between the blades *c* and *d*, its front end being grasped by the feed-dog E of the sewing-machine. While the upper blade *c* reciprocates, it lays the three successive right plaits D', Fig. 7. These plaits are formed against the abutment *n'*, and after each plait is formed it is drawn out between the opening-lips *n² o²* by means of the dog E and is sewed down. As the blade *c* ceases to act and before the blade *d* commences to move, the upper box D² is formed, drawn out by the feed-dog and stitched down. In like manner the lower blade *d* will form the left plaits D³, while between the movements of the parts *d* and *c* the lower box D⁴ is made.

It will be seen that by my attachment box-plaiting can thus be readily made by means of any sewing-machine and without in any way changing the construction of such machine. If the attachment is to be used for making side plaitings, one of the cam-disks must be removed.

By connecting the attachment to the presser-foot bar of the sewing-machine the device is suspended at a distance above the bed-plate

A in such a manner that a clearance is formed between the bed-plate and the plaiting attachment. Through this clearance goods of any width may be fed simultaneously with the feeding of the strip D between the blades *c d*. In this way the strip may be plaited and may be sewed to the body of the goods along any line desired by one and the same operation.

I claim—

1. A plaiting attachment composed of a frame, a pair of plaiting-blades carried thereby, means for transmitting motion from the sewing-machine to the blades, and spring-jaws having abutments and embracing the blades, substantially as specified.

2. A plaiting attachment composed of a pair of plaiting-blades, means for transmitting intermittent reciprocating motion from the sewing-machine to said blades, and jaws having abutments and surrounding the blades, substantially as specified.

3. In a plaiting attachment for sewing-machines, the combination of a pair of plaiting-blades with slides connected thereto, a pair of cam-disks having diametrically-arranged cam-surfaces and adapted to actuate the slides, a pair of ratchet-wheels, and a pair of pawls adapted to impart a variable rotating motion from the needle-bar to the cam-disks, substantially as specified.

Signed by me at Boston, Massachusetts, this 21st day of January, 1902.

JOHN FRANKLIN WILKINSON.

Witnesses:

LIZZIE M. WATTS,
F. H. PALMER.