Dec. 18, 1934. H. ROBBINS 1,985,106

PLAITING ATTACHMENT FOR SEWING MACHINES

Filed Jan. 23, 1934 4 Sheets-Sheet 1

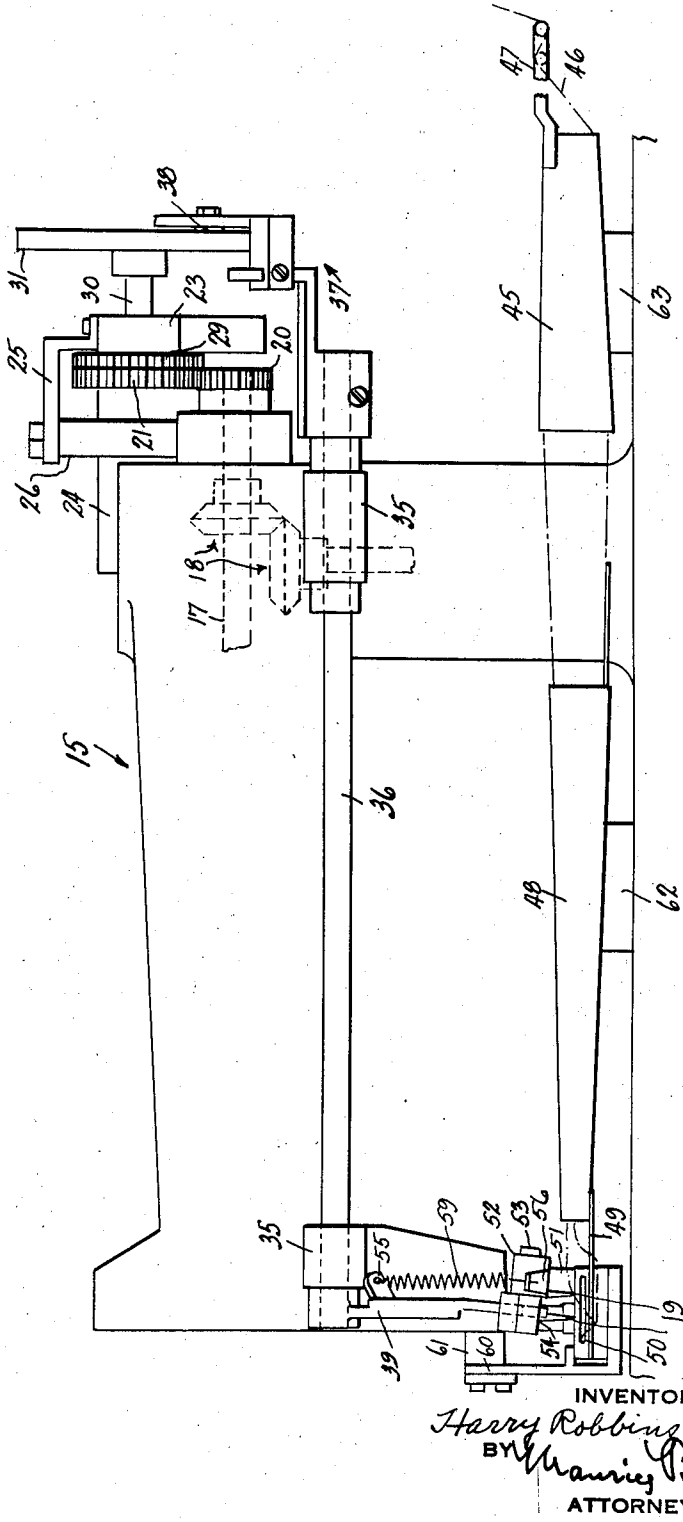


FIG. 1

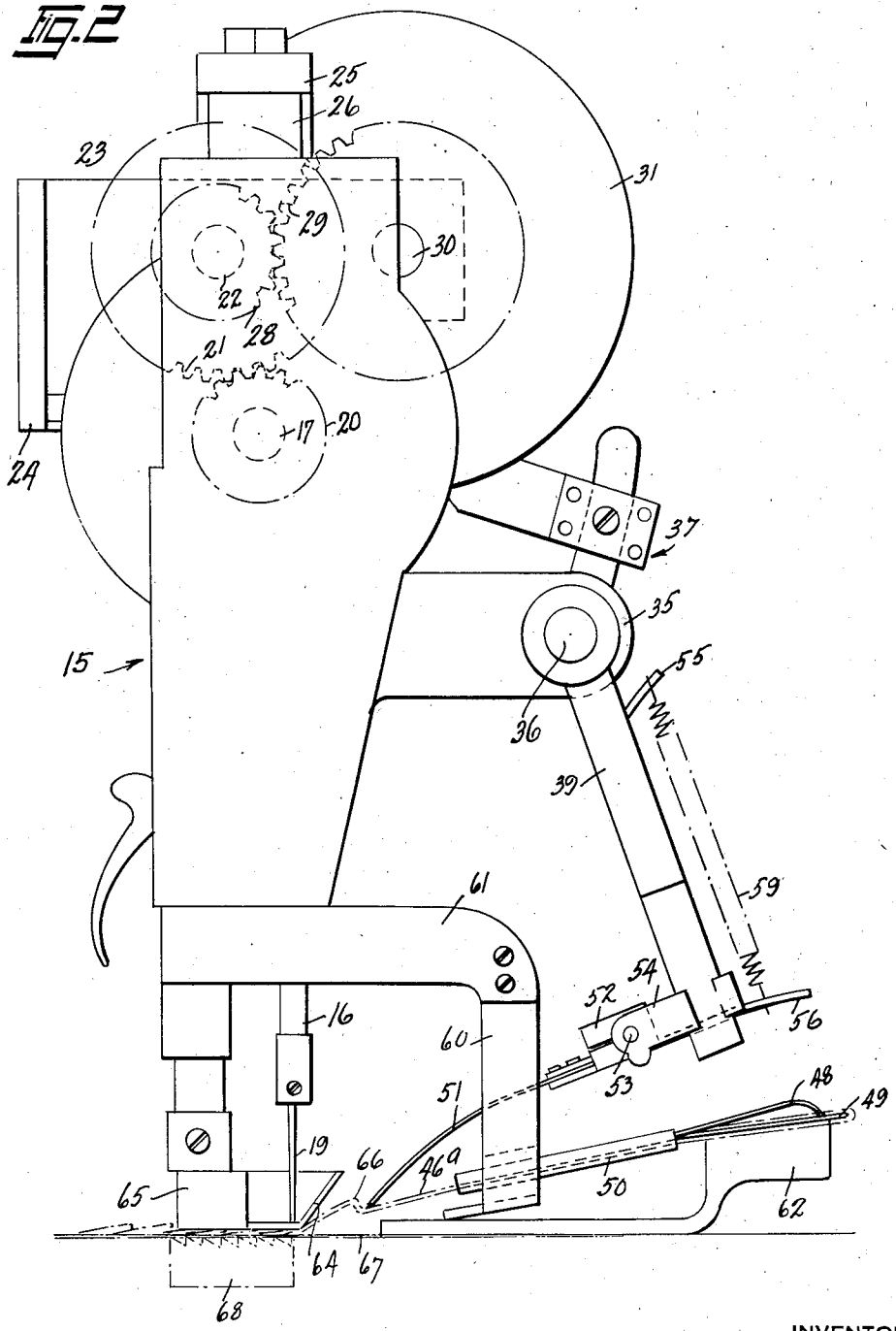
INVENTOR
Harry Robbins
BY Maurice Block
ATTORNEY

Dec. 18, 1934. H. ROBBINS 1,985,106

PLAITING ATTACHMENT FOR SEWING MACHINES

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Fig. 2



INVENTOR
Harry Robbins
BY Maurice Block
ATTORNEY

Dec. 18, 1934. H. ROBBINS 1,985,106

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Fig. 3

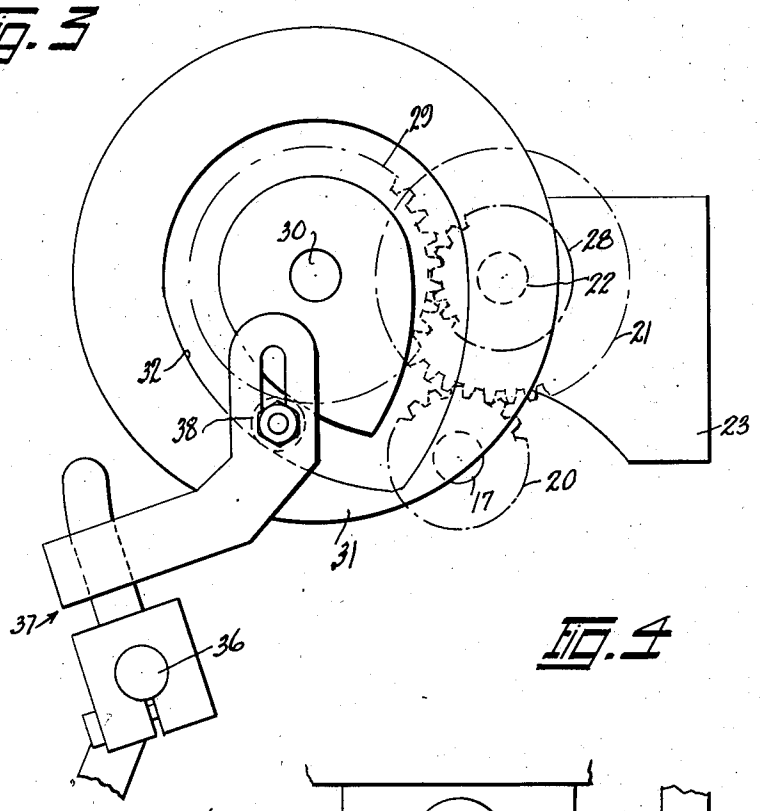
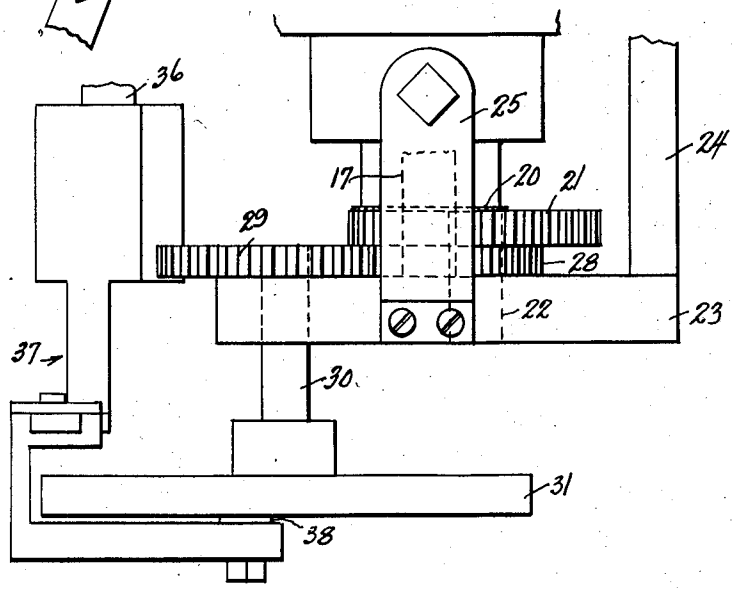


Fig. 4



INVENTOR
Harry Robbins
BY Manning Block
ATTORNEY

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PLAITING ATTACHMENT FOR SEWING MACHINES

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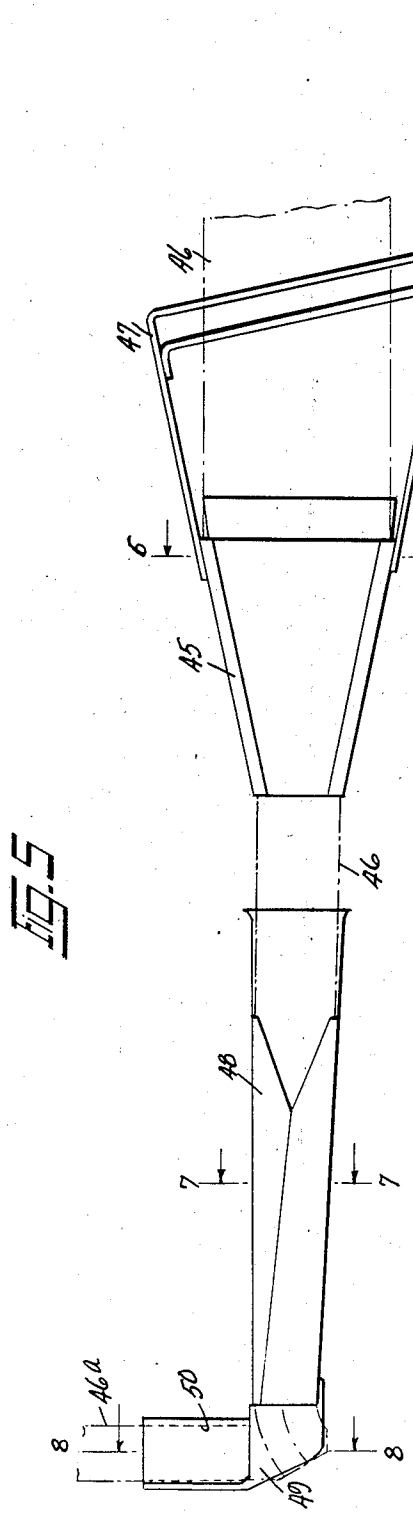


FIG. 5

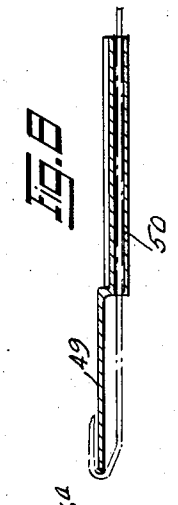


FIG. 8

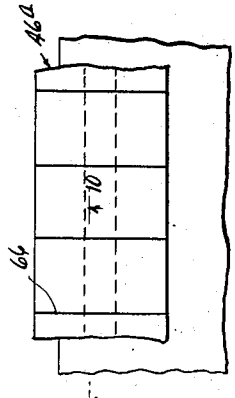


FIG. 9

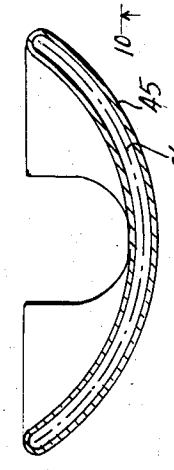


FIG. 6

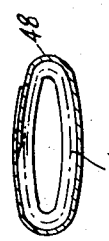


FIG. 7

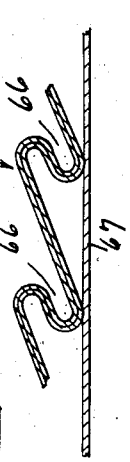


FIG. 10

INVENTOR
Harry Robbins
BY Maurice Peloubet
ATTORNEY

Patented Dec. 18, 1934 1,985,106

UNITED STATES PATENT OFFICE

1,985,106

PLAITING ATTACHMENT FOR SEWING MACHINES

Harry Robbins, New York, N. Y., assignor to International Flouncing Co. Inc., New York, N. Y., a corporation of New York

Application January 23, 1934, Serial No. 707,905

4 Claims. (Cl. 112—134)

This invention relates to means or attachments adapted to be secured to sewing machines for producing or forming plaited strips of fabric to be sewed to curtains or other articles.

One object of the invention is to produce such a device which may be affixed to any sewing machine without altering the working parts of the said machine.

Another object of the invention is to produce a plaiting device which will form a flat folded over tubular fabric structure out of a single play fabric which is plaited and sewed to a second fabric strip.

Another object is to produce a device of the character described in which the maximum simplicity of construction and operation is secured.

Other objects and advantages will appear as the nature of the improvements is better understood, the invention consisting substantially in the novel arrangement and co-relation of parts herein fully described, and illustrated in the accompanying drawings, wherein similar reference characters are used to describe corresponding parts throughout the several views, and then finally pointed out and specifically defined and indicated in the appended claims.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter, therefore, is to be understood from an illustrative, rather than a restrictive standpoint.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which, for the purpose of illustration, is shown in the accompanying drawings, in which

Fig. 1 is a side view of a sewing machine showing my improved plaiting device affixed thereto.

Fig. 2 is an end view thereof looking from the left of Fig. 1.

Fig. 3 is a fragmental end view looking from the right of Fig. 1 showing the pleat forming cam and gearing associated therewith.

Fig. 4 is a top plan view thereof.

Fig. 5 is a top plan view of the folding or tube forming means.

Fig. 6 is a sectional view taken on line 6—6 Fig. 5.

Fig. 7 is a sectional view taken on line 7—7 Fig. 5.

Fig. 8 is a sectional view taken on line 8—8 Fig. 5.

Fig. 9 is a fragmental top plan view of the plaited strip sewn to a second strip of material and

Fig. 10 is an enlarged sectional view thereof taken on line 10—10 Fig. 9.

Referring to the drawings in detail 15 indicates a sewing machine having a needle bar 16 operated in the well known manner by a shaft 17 driven from a main drive shaft not shown by gearing 18 or other means. The needle bar 16 in the present instance carries a pair of needles 19.

Secured to the shaft 17 there is a pinion 20 in mesh with a gear 21 on a stud 22 journalled in a plate 23 which is secured to the machine 15 by means of a second plate 24 and a bracket 25 carried on a stud or post 26. The stud 22 carries a pinion 28 which is in mesh with a gear 29 secured to a short shaft 30 journalled in the plate 23 and carries a cam 31 having a cam groove 32 cut in one surface thereof.

The machine is provided with a pair of lugs 35 in which there is mounted a shaft 36 which at the rear end thereof carries an adjustable lever 37 to which there is adjustably secured a roller 38 which operates in the cam slot 32 to rock a lever 39 secured to the front end of the shaft 36.

To preform the material which is to be plaited into a folded over or tubular strip, I provide a folding, bending or tube forming structure comprising a double walled U shaped trough like tapering die or curling section 45 through which the leading end edge of the material 46 to be plaited is drawn. Suitable means 47 for guiding the material is provided at the rear of the said section 45. From the section 45 the material passes into a tapering conduit 48 which is oval in cross section as shown in Fig. 7, within which the material is formed into a tubular oval shaped structure or strip. Upon leaving the conduit 48 the tubular strip is folded over a ledge or shelf 49 and passes underneath thereof into and through a flat passageway 50 which runs at right angles to the conduit 48. The passing of the material from the top of the shelf 49 to the bottom thereof causes the overlapping or seam portion of the tubular strip 46*a* to be on the bottom where it is not visible when sewn to the curtain or other object.

As the flattened multiplied strip 46*a* leaves the passageway 50 it is plaited in a manner shortly to be described, by means of a preferably resilient finger or strip 51 which is carried on a block or bracket 52 pivotally mounted on a pin 53 in a bracket or clamp 54 supported on the arm 39. The finger 51 is maintained in normal position by means of a coiled spring 59 which is anchored

at one end on an ear 55 and secured at its opposite end on a projection 56, extending from the member 52. This arrangement produces a resilient mounting for the plaiting finger and enhances the operation thereof.

The conduit 48 is suitably supported at the front thereof on an arm 60, secured to a bracket 61 carried at the front of the sewing machine, and is further supported intermediate its ends on a bracket 62 secured to the bed plate of the machine. The section 45 may be supported on a similar bracket 63.

The plaiting operation is performed by the cam slot 32 which through its connections 37 and 38 rocks the shaft 36 to swing the finger 51 downwardly and inwardly and push the strip 46*a* against the bevelled edge 64 of the presser foot 65 to form a plait 66 and also aids in bringing same underneath the presser foot to be sewed down by the needles 19 to the curtain material 67. Both the curtain material and plaited strip are advanced simultaneously by the usual feed bar 68 partly shown in dot and dash lines Fig. 2. One revolution of the cam shaft swings the finger 51 inwardly and outwardly to form a plait 66.

From the foregoing it will be seen that I have provided simple yet efficient means for forming a multiplied strip out of a single strip of material and then plaiting same while it is being sewed to a curtain or the like. It will also be understood that due to the pre-shaping of the material into a tubular structure very flimsy material such as net or the like may be used and a very attractive and finished article produced.

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

1. In a sewing machine, a folding and plaiting device therefor comprising a pair of sections for folding the material to be plaited into a tubular strip, a driven shaft on the machine, suitable gearing driven from the said shaft, a cam driven by the said gearing, a cam groove in the said cam, a rock shaft, a lever at one end of the rock shaft, a roller on the lever in operative engagement with the cam groove, a finger at the other end of the said rock shaft to plait the tubular strip after it leaves the folding sections, and a presser foot on the machine having an inclined surface against which the plait is formed.

2. A material pre-forming device adapted for use in connection with a plaiting device of a sewing machine, the said pre-forming device comprising a curling portion through which the material to be plaited passes, the said curling portion being tapered and transversely arcuate and a tube forming conduit in alinement therewith.

3. A material pre-forming device adapted for use in connection with a plaiting device of a sewing machine, the said pre-forming device comprising a curling portion through which the material to be plaited passes, the said curling portion being tapered and transversely arcuate, a tube forming conduit in alinement therewith, a shelf at the end of the conduit over which the formed tube passes and a flattening passageway carried below the said shelf and at right angles to the conduit.

4. In a sewing machine, a material preforming and plaiting device comprising a tapering and transversely arcuate curling portion through which the material to be plaited passes, a tube forming conduit in alinement therewith, a tube flattening passageway at right angles to the conduit, a finger and means for operating the finger to form plaits in the flattened tube.

HARRY ROBBINS.