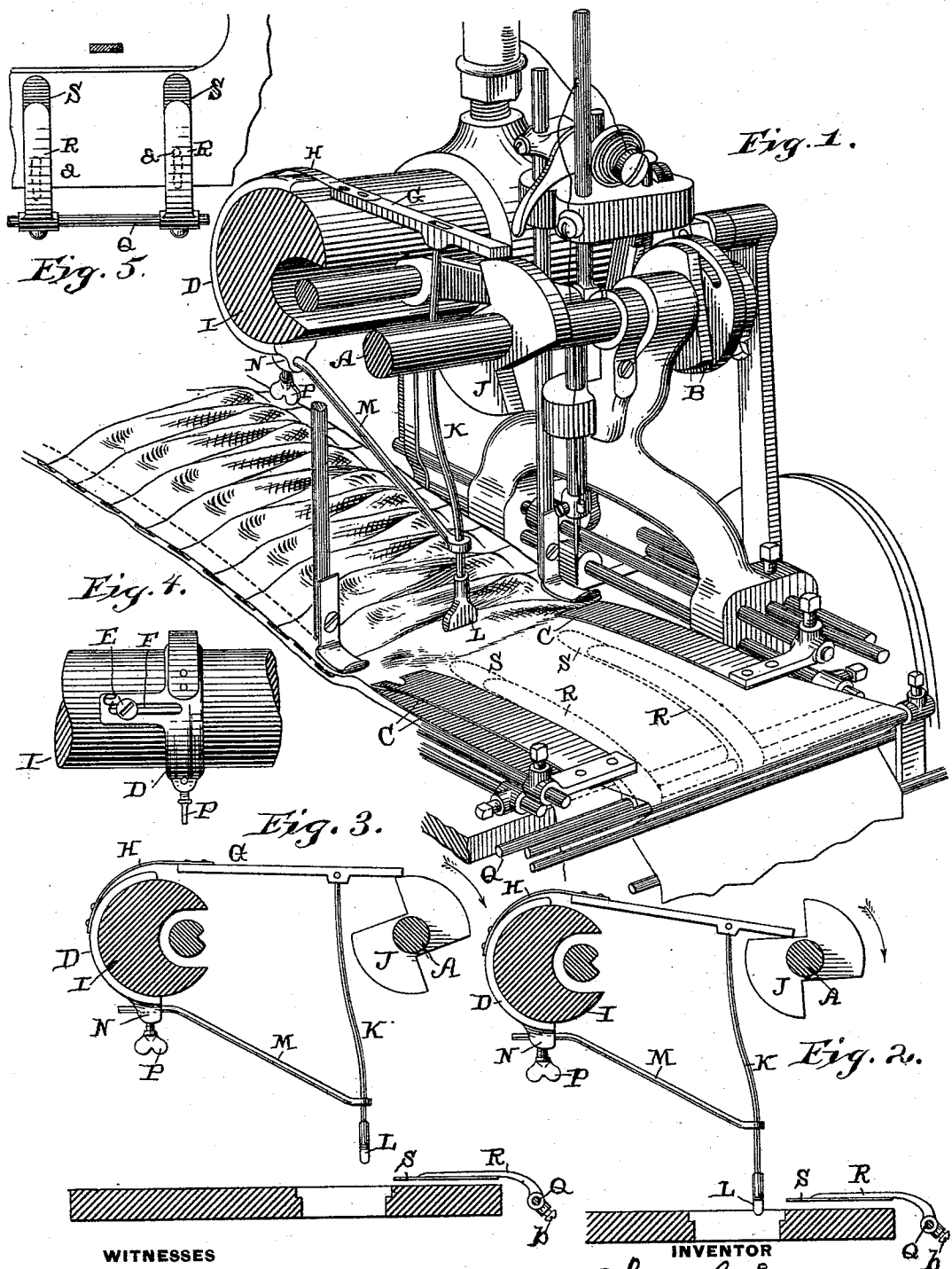


(No Model.)

C. C. EMMONS.
PLAITING MACHINE.

No. 498,637.

Patented May 30, 1893.



WITNESSES

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CHARLES C. EMMONS, OF PITTSBURG, PENNSYLVANIA.

PLAITING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 498,637, dated May 30, 1893.

Application filed August 30, 1892. Serial No. 444,529. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. EMMONS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Plaiting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in plaiting machines; and it consists in the construction and arrangement of parts which will be fully described hereinafter and particularly referred to in the claims.

The primary object of my present invention is to provide a plaiting machine with an automatically acting device for holding the goods while the plaiter blades are moving forward, which materially assists in the correct formation of a puff, which is thrown up by the plaiter blades when making a number of box plaits, and to automatically move out of the way when the goods are fed forward to the stitching mechanism.

Another object of my invention, is to provide inwardly extending fingers which are under the goods being operated upon, and near enough to the holding device to form a break or bend in the goods at this point, whereby the plaiter blades are materially assisted in forming a perfect plait.

In the accompanying drawings:—Figure 1 is a perspective view of my invention complete, showing it in connection with a plaiting mechanism. Fig. 2 is a cross section of my invention showing it in a holding position. Fig. 3 is a similar view showing the holding device in a released position to allow the goods to move to the stitching mechanism. Fig. 4 is a detached view of a laterally adjustable yoke to which a supporting connection of the holding device is fastened. Fig. 5 is a detached plan view of the fingers and a portion of their supporting rod.

My present invention is intended to be applied to and operated in connection with a plaiting machine fully shown and described in Patent No. 422,215, dated February 25, 1890. In Fig. 1 the right hand plaiting mechanism shown in said patent is illustrated, as also the

stitching mechanism therefor, the left hand presser foot, and the left hand plaiter blades, but the mechanism for operating the latter is omitted.

A is the shaft carrying the cams B for operating the right hand plaiter blades, and this same shaft also carries cams, as shown in the said patent for operating the left hand plaiter blades. The plaiter blade operating mechanisms however do not form any part of my present invention, and do not therefore need any specific description, more than already given.

Coming now to my invention, D represents a yoke which is provided with a lateral projection E having a slot F, through which a clamping screw *e* passes into the arm or beam I of the machine, whereby the said yoke is capable of longitudinal adjustment thereon for a purpose to be fully described farther on. Secured at one end to the yoke D is a depressing spring H, which has its opposite end secured to the inner end of an arm G, the outer end of said arm being in the path traveled by a cam J, secured to the shaft A, and by means of which the said arm is raised at its outer end, and allowed to be depressed when it comes to a cut away portion of the cam, as will be readily understood.

The holding device L is attached to the lower end of a rod K, the upper end of said rod being suitably connected with the arm G. In order to hold the rod K to which the holder is attached, and prevent it from having any movement other than a vertical one, a brace rod M has one end provided with an opening through which the rod K passes, and its opposite end extending into a socket N at the lower end of the yoke, and clamped by means of a set screw P. As shown, the upper end of the rod K is preferably pivotally connected with the arm G, whereby the lower end of the rod K can be adjusted in and out by means of the adjustable brace rod M, for a purpose to be fully described presently.

The operation of this holding device is as follows:—The cam J is placed in such relation to the cams B for moving the plaiter blades, that the holder is allowed to be depressed upon the goods by its spring H when the plaiter blades are moving forward toward the stitching mechanism, whereby it holds the goods and assists in forming a perfect puff, as

the plaits are being formed. After the plait is formed, the holding device is raised by its cam, and the plaits formed are then sewed by the machine. For the purpose of still further assisting the plaiter blades in forming a perfect plait, I provide inwardly extending fingers R which are connected at their outer ends to a supporting rod Q and clamped thereto by means of a screw b. These fingers are made extensible by means of pieces S placed under them, which are held by set screws which pass through slots a, made in either the extension S or the finger R as may be found expedient. The fingers are capable of vertical movement at their inner ends by being turned upon their supporting rod and clamped, and are made adjustable lengthwise by means of the movable pieces S. These fingers are placed under the goods as illustrated in Fig. 1 by dotted lines, and have their inner ends sufficiently near the holding device when it is depressed, to form a break or bend in the goods at the proper point for a plait, whereby the formation of the plait in proper form by the blades is facilitated. These fingers are also adjustable upon the supporting rod Q, whereby they can be brought nearer together, or separated, according to the distance between the two plaiting mechanisms, as provided for in the said patent. So also owing to the construction of the yoke, the holding device is capable of adjustment across the goods for the same purpose.

From the above description, it will be seen, that the holding device is capable of two adjustments, one lengthwise the goods, and one across the goods, which enables it to be placed at any desired point to best carry out the purpose for which it is intended. The adjustment sidewise is to adapt it to different widths of goods being plaited, and the adjustment back and forth or in a line with the length of the goods is to adapt it to the width of the plait being made. The adjustment of the fingers sidewise upon the rods is to adapt them to any desired width of goods, and the adjustment endwise is to adapt them to the desired width of plait, and the adjustment vertically is to give a deep or shallow bend to the goods when engaged by the holding device.

It will be understood that the end of the rod K could be made to serve the purpose without any holding device L connected thereto. I also desire it understood that I do not limit myself to any particular means for moving the holding device, for this may be varied at will without departing from the spirit of my invention, which is to provide an automatically acting holding device, which holds the goods while a plait is being formed, and then releases them to be fed to the stitching mechanism.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the arm of a sewing

machine, of a plaiting mechanism comprising plaiting blades, a shaft elevated above the bed of the machine and at one side of the said arm, a cam carried by said shaft, a vertically moving arm extending transverse the said shaft and sewing machine arm, one end of the vertically moving arm supported by the sewing machine arm and its opposite end engaging said cam, and a holding and releasing rod operated by the said transverse arm the parts operated for the purpose described.

2. The combination with a plaiting mechanism, of a vertically moving arm, a cam for moving it, a support for said arm, a holding and releasing rod, loosely connected at its upper end to said vertically moving arm, and a brace rod for the lower end of said holding and releasing rod.

3. The combination with a plaiting mechanism, of an arm, a support therefor, a cam for moving the arm vertically, a holding and releasing rod loosely connected at its upper end to said arm, and an adjustable brace rod for the lower portion of said holding and releasing rod.

4. The combination with a plaiting mechanism, of a transversely adjustable yoke, a support therefor a vertically moving holding and releasing rod connected with the yoke at its upper end, a cam for moving the rod vertically and a brace rod for the lower end of said holding and releasing rod.

5. The combination of a plaiting mechanism, of a yoke, a support therefor a vertically moving holding and releasing rod connected at its upper end with the yoke, a cam for moving the rod vertically, and a brace rod having one end connected with the said yoke and its opposite end supporting the lower portion of the holding and releasing rod.

6. The combination with a plaiting mechanism including plaiter blades, of a vertically moving holding and releasing device, a support for the upper end having an adjustment transverse the movement of the plaiter blades, and a support for its lower end having an adjustment longitudinal the movement of the plaiter blades.

7. The combination with a plaiting mechanism, of a rod, an extensible goods support laterally adjustable upon said rod, and a vertically moving holding rod adjacent to the inner end of said support.

8. The combination with two plaiting mechanisms, and two stitching mechanisms of a holding and releasing device for the goods being operated upon, the said device being situated between the blades of the two plaiting mechanisms, and between their inner ends and the stitching mechanisms.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES C. EMMONS.

Witnesses:

H. C. AVERY,
JNO. HENRY.