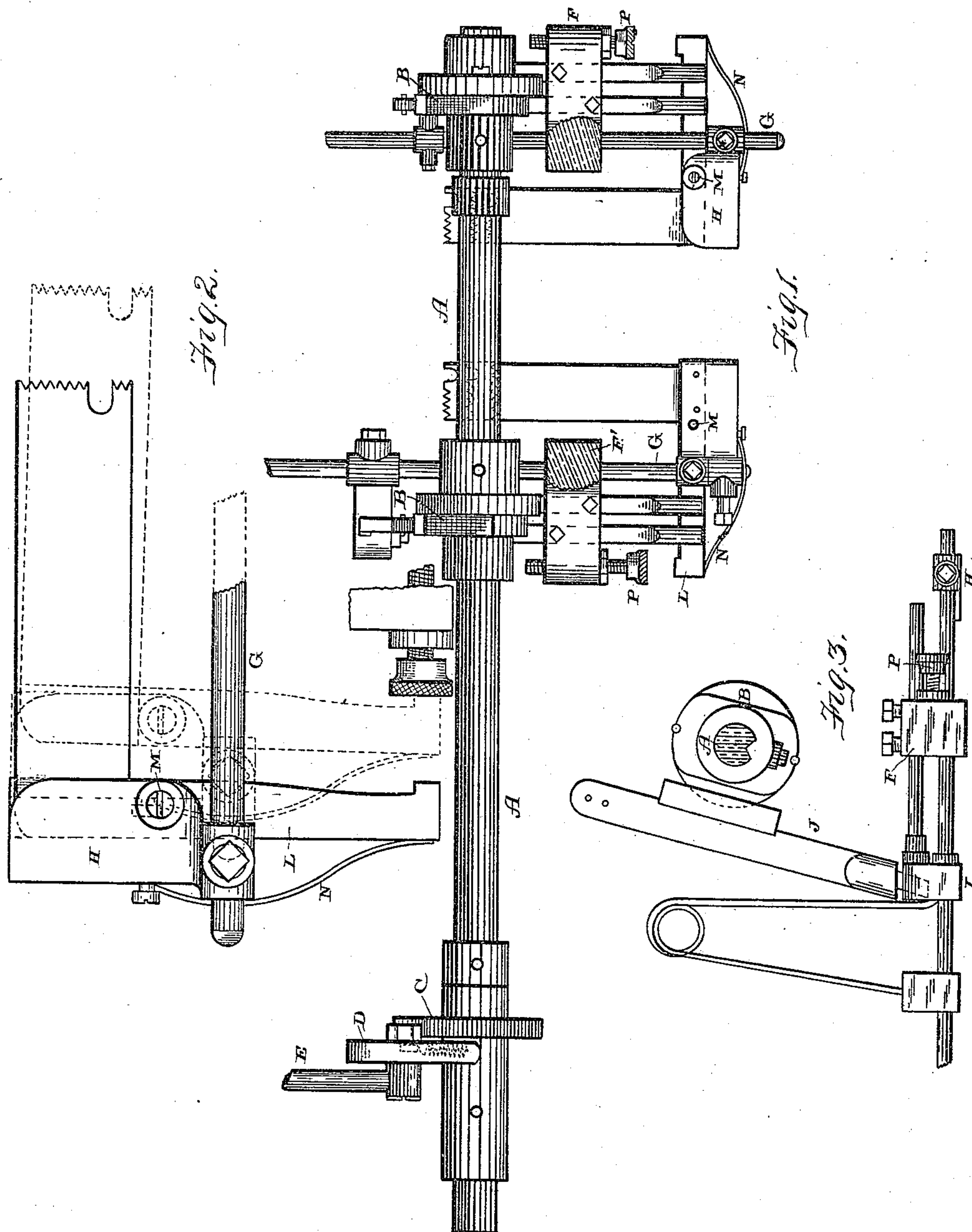


(No Model.)

C. C. EMMONS.  
PLAITING MACHINE.

No. 442,872.

Patented Dec. 16, 1890.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES C. EMMONS, OF PITTSBURG, PENNSYLVANIA.

## PLAITING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,872, dated December 16, 1890.

Application filed June 25, 1890. Serial No. 356,685. (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  
5 new and useful Improvements in Plaiter-Blades for Sewing-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 per-  
10 tains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in plaiting apparatus for sewing-machines; and  
15 it consists in the construction and arrangement of parts, which will be more fully described hereinafter.

The object of my invention is to so construct a plaiter-blade for sewing-machines of  
20 all classes that the forward end of the blade is given an oscillating or vibratory motion at the extreme forward movement of the blade and at the same time allow a longitudinal adjustment thereof and the amount of oscil-  
25 lating movement which is given to the forward end of the blade to be adjusted at will.

Figure 1 is a top plan view of my plaiter-blades and the mechanism for reciprocating them. Fig. 2 is an enlarged top plan view of  
30 one of the blades alone. Fig. 3 is a vertical section of Fig. 1.

The mechanism here shown for reciprocating the plaiter-blades is similar to that shown in Patent No. 422,215, granted February 25,  
35 1890, to C. M. Hine, and which consists of a horizontal shaft A, carrying two cams B and a ratchet-wheel C, which is acted upon by a pivoted spring-actuated pawl D, to which pawl is pivotally connected a connecting-rod  
40 E, the opposite end of which is loosely connected with the sewing mechanism, and by which the pawl is operated in the manner shown in the said patent. I here show the ratchet-wheel connected to one end of the  
45 shaft instead of between the two cams, as shown in the patent above referred to. This, however, forms no part of my invention, and may be secured to the shaft in any desired relation to the cams.

50 Moving or sliding in suitable standards F F', which rise from the machine bed-plate, are the plaiter-blade rods G, to which the

hangers H are adjustably secured. Also secured in any desired manner to these rods G are the sockets I, with which the lower ends  
55 of the levers J engage, and which levers are pivoted at their upper ends in suitable supports and are engaged by the cams upon the shaft as the shaft is made to revolve. Through the medium of this mechanism just described,  
60 all of which is substantially the same as shown in the patent herein referred to, the rods G are reciprocated and carry the plaiter-blades back and forth with them. The standard F' and the adjacent cam B are both longitudi-  
65 nally adjustable upon the shaft A, thus regulating the distance between the mechanism supported by the standard F' farther from or nearer to the standard F and the mechanism supported thereby, so as to accommodate the  
70 machine to operate upon different widths of material.

My improvement relates to the construction of the plaiter-blades, which, instead of being attached directly to the hangers H, as shown  
75 in the said patent, are connected at their outer ends to the inner end of a lever or lateral arm L, which is pivoted between its ends at any suitable point to the hangers by means of a  
80 pivotal bolt or screw M. The opposite end of this lever, from which the plaiter-blades are connected, extends outward beyond the socket of the hanger any desired distance, and is engaged by a suitable spring N, which has its op-  
85 posite end connected to the hanger. By means of this spring the plaiter-blades are normally held at right angles to the shaft A or parallel to each other, as shown in solid lines in the drawings.

Passing into the standards F and F' are the  
90 adjustable screws P, with which the outer ends of the levers L engage when the plaiter-blades have moved inward to the extreme limit of their inward movement. This screw P (or other suitable stop) is made adjustable in re-  
95 lation to the movement of the levers L, for the purpose hereinafter described.

When the plaiter-blades are forced inward by means of the cams and the levers J and reach the extreme of their inward movement,  
100 the outer ends of the levers L engage the adjustable stops P, which causes the levers L to oscillate or vibrate, thus throwing the inner ends of the plaiter-blades from each other, as



shown in dotted lines in Fig. 2. This oscillating movement of the inner ends of the plaiter-blades draw the material tight and smooth between the two stitching mechanisms, and which, by smoothing the material and causing it to travel in a direct line without becoming folded, loose, or flabby between the two stitching mechanisms, hold the plaits and assist very materially in their formation. By giving the inner ends of the plaiter-blades this oscillating movement the plaits of the material, while being sewed to a stiff backing, are held firmly in their place and drawn tight between the two lines of stitching. The stops P being made adjustable, the oscillation of the inner end of the blade can be increased or diminished at the pleasure of the operator or in accordance with the quality of the goods being operated upon. When the blades are forced forward in forming the plaits, they move in a direct straight line, and the set-screws or adjustable stops P are so adjusted that just as the needle descends the blades stretch the goods by their oscillating movement, and immediately after the needle rises the blades resume their original position by means of the spring N and return in a direct line backward ready to be again forced directly forward for the purpose of forming another plait.

Having thus described my invention, I claim—

1. The combination, with a sewing-machine, of a reciprocating pivoted plaiter-blade having a lateral projection upon one side of its pivotal point and a stop upon the machine near the limit of the inner movement of the blade and in the path traveled by the said lateral projection, whereby the blade is given a lateral movement at its inner end at the end of its inner reciprocating movement, substantially as shown and described.

2. The combination, with a sewing-machine having a stop, of a pivoted plaiter-blade having a lateral projection which engages the stop and a spring for returning the blade to position, substantially as described.

3. The combination, with a sewing-machine having a stop, of a plaiter-blade having a laterally-extending arm which is provided with a bearing between its ends, and a spring which engages the said arm, substantially as specified.

4. The combination, with a sewing-machine having a stop, of a plaiter-blade hanger, a plaiter-blade pivoted thereto, having a laterally-extending arm which engages the said stop, and a spring which has one end engaging the hanger and its opposite end engaging the said arm, substantially as described.

5. The combination, with a sewing-machine having two stitching mechanisms, of a plaiter-blade hanger for each mechanism, a plaiter-blade pivoted to each hanger, each blade having an arm which extends therefrom, and an adjustable stop for each arm, which is secured to the machine in the line traveled by the outer ends of the arms, whereby the inner ends of the plaiter-blades are given any desired amount of lateral movement, substantially as shown.

6. The combination, with a sewing-machine having an adjustable stop, of a pivoted plaiter-blade having a laterally-extending arm which engages the adjustable stop, whereby the inner end of the blade is given a lateral movement, and means for returning the blade to its first position, substantially as shown.

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

CHAS. C. EMMONS.

Witnesses:

H. C. AVERY,  
W. T. MASON.