(Model.) 2 Sheets—Sheet 1.

R. M. COX.

PLAITING AND RUFFLING ATTACHMENT FOR SEWING MACHINES.

No. 316,247. Patented Apr. 21, 1885.

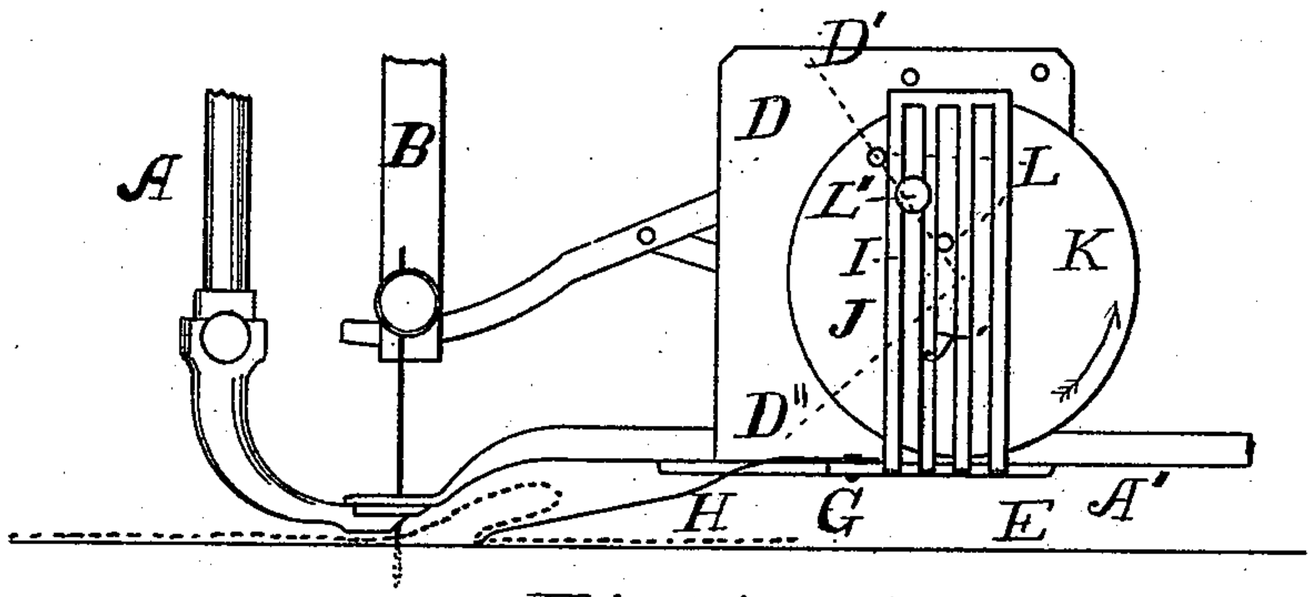

Fig 1.

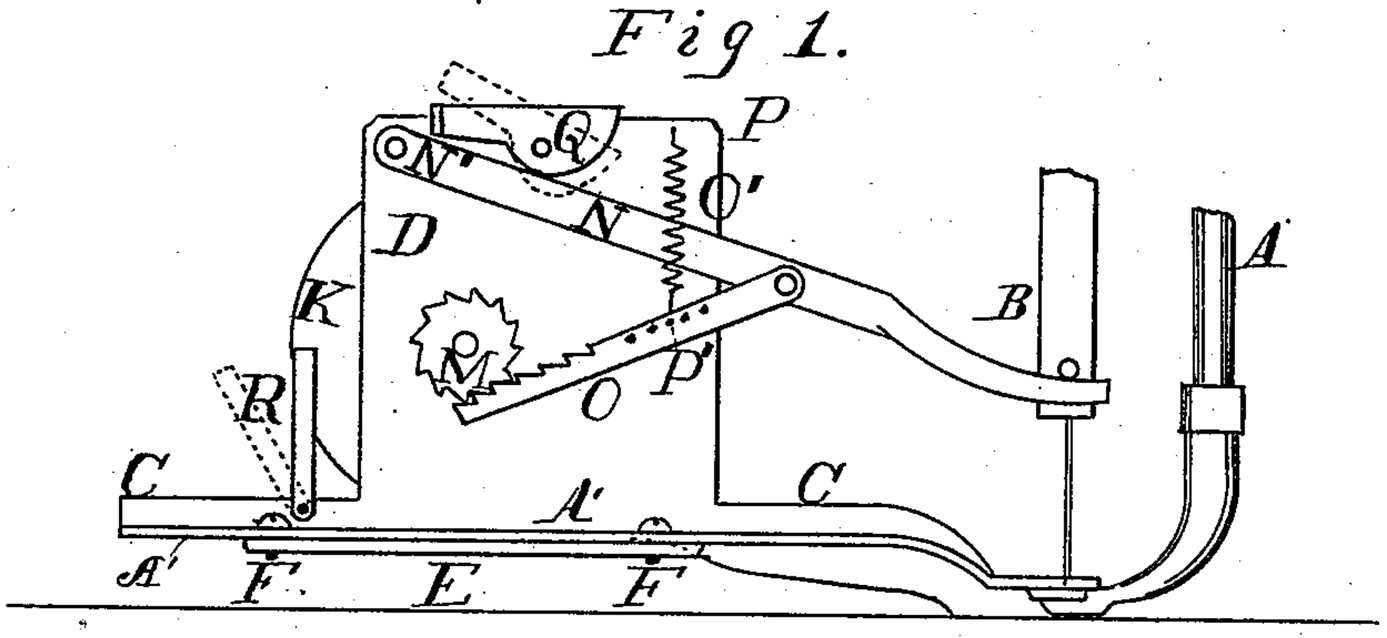

Fig. 2

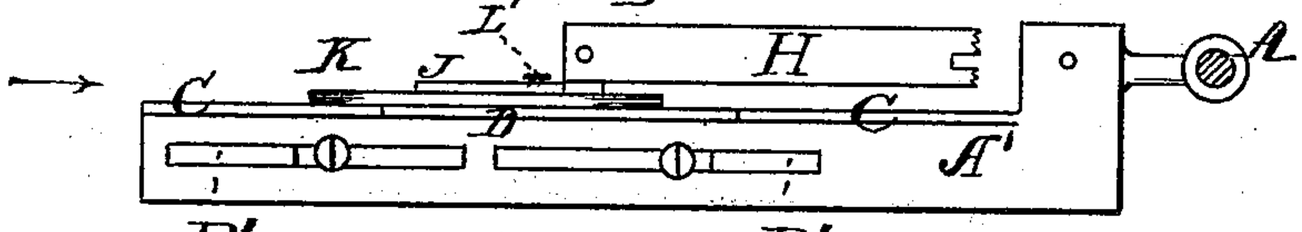

Fig. 3.

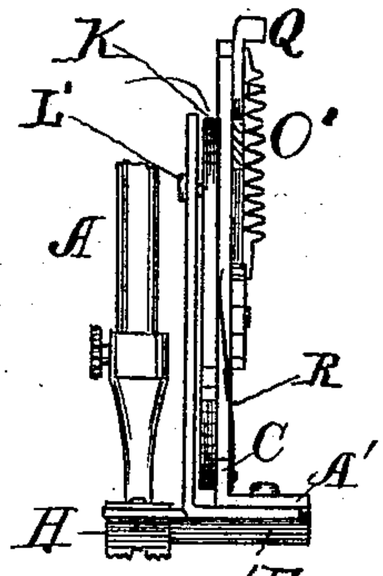

Fig. 4.

WITNESSES:

Robert Kirk

C. D. Zerbe

INVENTOR:

R. M. Cox

By C. D. Zerbe

Attorney.

(Model.) 2 Sheets—Sheet 2.

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Fig. 5

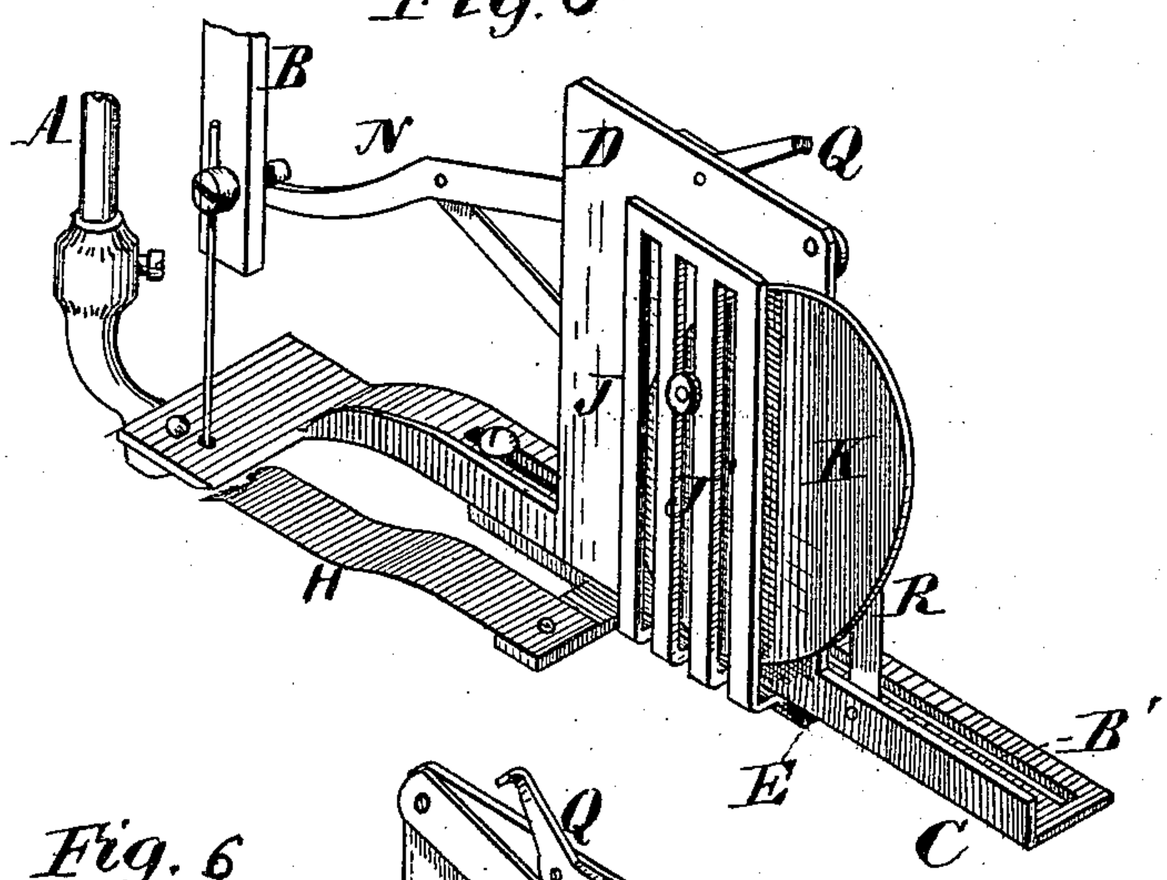
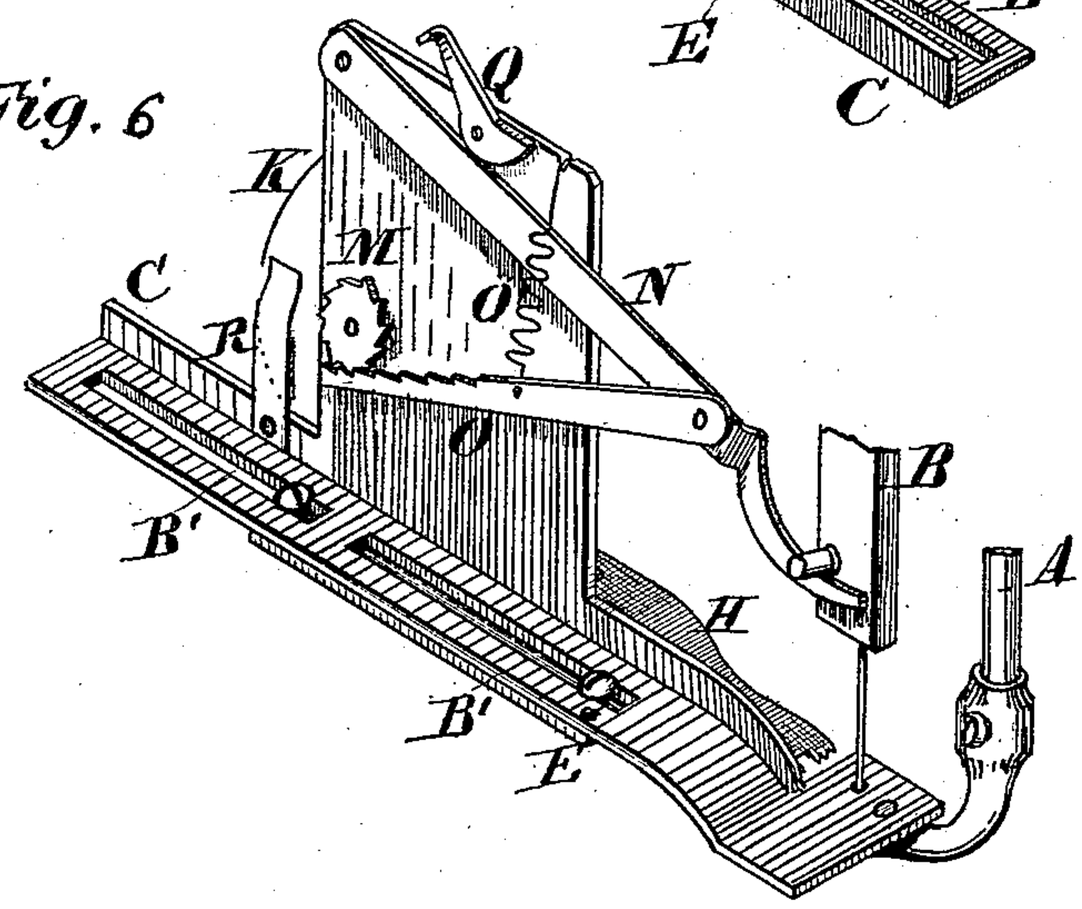


Fig. 6



WITNESSES:

Robert Kirk.

C. Sugenheimer.

INVENTOR:

R. M. Cox,

By J. L. Ford Attorney.

UNITED STATES PATENT OFFICE.

ROBERT M. COX, OF PRAIRIE CITY, ILLINOIS.

PLAITING AND RUFFLING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 316,247, dated April 21, 1885.

Application filed April 5, 1883. Renewed November 17, 1884. (Model.)

To all whom it may concern:

Be it known that I, ROBERT M. COX, of Prairie City, in the county of McDonough and State of Illinois, have invented a new and useful Improvement in Plaiting and Ruffling Attachments for Sewing-Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side view of my plaiting and ruffling attachment. Fig. 2 is a reverse view. Fig. 3 is a plan view of the slotted bar A′, the ruffler-blade, the disk K, and a section through the pressure-bar. Fig. 4 is a rear view of Fig. 3, looking in the direction of the arrow. Fig. 5 is a perspective view of one side of the device, showing all of the parts in their operative positions. Fig. 6 shows the opposite side of the device.

The object of my invention is to provide a plaiting and ruffling attachment for sewing-machines, whereby the goods are moved forward toward the needle while the needle is down.

In the drawings, A is the presser-bar and B the needle-bar.

A horizontal bar, A′, extends backward from and is securely fastened to the upper side of the presser-foot. The body of the bar is parallel with the machine-table and slightly elevated above the same to the rear of the presser-foot. The front side is turned up slightly at C, which keeps the bar more rigid. The bar is also provided with slots B′ B′. The rib or upturned side C has a vertical extension, D, centrally formed of the same piece as the longitudinal bar which composes the support for the mechanism of the device.

On the under side of the horizontal bar A′ is the movable plate E, secured to the said bar by means of screws F F, working in the slots B′ B′.

A horizontal arm, G, extends from the sliding plate E, carrying the feed-finger H, which is riveted to its upper face. This finger projects forward and downward with its forward end resting on the goods to be plaited.

The plate E is turned up vertically at I, forming a yoke by the side of the supporting-piece D, which yoke has one or more vertical slots J.

Placed between the slotted yoke-piece I and the vertical piece D, and having on its face a series of holes, L, to receive the thumb-screw crank-wrist L′, working in the vertical slots J, is a disk, K.

On the opposite end of the journal carrying the disk K is the ratchet M, Fig. 2, fixed securely to the journal. The lever N, which is pivoted at N′ to supporting-piece D, projects forward and works under a spur or set-screw on the needle-bar. The vertical motion of the needle-bar works the lever N as far as the cam-lever Q, hereinafter described, will allow. By reference to Fig. 1 it will be observed that, during the travel of the wrist-pin L′ from the angle shown by dotted line D′ to the angle shown by dotted line D″, the backward movement of the finger H is very small, thereby preventing the goods from being smoothed out again before the needle pierces the plait.

On the side of the lever N is the ratchet-lever O, with the spiral spring O′, having the upper end attached to the top of the side piece, D, at P, and fastened to the lever O at P′. Midway between the ends of the lever N the forward end of the ratchet-lever O is hinged. The lever O may have one or more holes at P′ for fastening the spiral spring thereto, in order to give more or less tension to the lever against the ratchet-wheel.

Over the lever N and near the top of the vertical piece D is pivoted the cam-lever Q in such a position that the lever N acts against the cam, which enables the lever N to have a greater or less vertical sweep, as desired. Instead of this lever a thumb-screw may be substituted to serve the same purpose, by means of which the number of stitches to the plait is gaged—that is, either twelve, six, four, or three, &c. The lever Q operates as an adjustable stop to determine the length of strokes of the ruffler-blades H. It is obvious that the backward strokes are given to blade H by the descent of the needle-bar acting through the parts N O M K, crank-pin L, and the slotted yoke.

Fastened to the side of the upturned flange or rib C, and acting on the disk K as a brake, is a spring-finger, R, which can be turned from the disk, if necessary. The object of this spring or friction-brake is to prevent the

disk K and its ratchet-wheel from turning backward when the needle-bar rises.

In operating this device, the downward motion of the needle-bar forces down the lever N and causes the ratchet-lever O to act on the ratchet-wheel M, turning the disk K. The crank-wrist L′, moving in one of the slots J, acts on the vertical piece I, which in turn actuates the piece E, which moves in the slots B′ B′ and communicates motion to the ruffler-blade H. The upward motion of the needle-bar releases the lever N, which returns to its original position by the action of the coil-spring O′. The cam-lever Q, placed over the lever N, serves as a stop for the highest limit of the travel of the lever.

When it is desired to give the ruffler-blade H a slower movement, the cam-lever Q is turned up, forcing the cam down upon the lever N, causing less movement on the ratchet-wheel M.

It is obvious that by removing the crank-pin or set-screw it can be adjusted in any one of the vertical slots J in the plate I, which is secured to the sliding piece E, for giving longer or shorter strokes to the ruffler-plate.

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

1. The combination, in a plaiting and ruffling attachment for sewing-machines, of a supporting-frame, a single ruffler-blade, H, secured to a slide, E, a plate, I, having a series of vertical slots, secured to slide E, and a crank-pin adapted to work in either one of said slots and fixed into the face of a disk, K, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of the supporting-frame, the reciprocating ruffler-blade, the slide under said frame, the vertically-slotted yoke I, a wrist-pin on disk K, working in one of the slots of said plate, a ratchet-wheel, M, on the shaft of the disk, a ratchet-lever, O, a vertically-vibrating lever, a needle-bar and a spring for actuating this lever, and an adjustable stop therefor, substantially as and for the purposes described.

3. The combination, with a supporting-frame, of a slide bearing a ruffler-blade, and a vertically-slotted plate or yoke, a disk having an actuating wrist-pin for said yoke, a ratchet-wheel on the shaft of the disk, a ratchet-bar, a lever to which this bar is pivoted, a needle-bar, and a retracting-spring, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. The combination of the frame A′, having the vertical plate D, bearing a journal, the disk on this journal having a crank-pin, L, a ratchet-wheel on this journal, a slide bearing a ruffler-blade, H, and a vertically-slotted plate, the pivoted lever N, the ratchet-bar O, spring O′, and a spring friction-brake, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of March, 1883, in the presence of witnesses.

ROBERT M. COX.

Witnesses:
A. MEAD,
J. W. DAVIS.