

(No Model.)

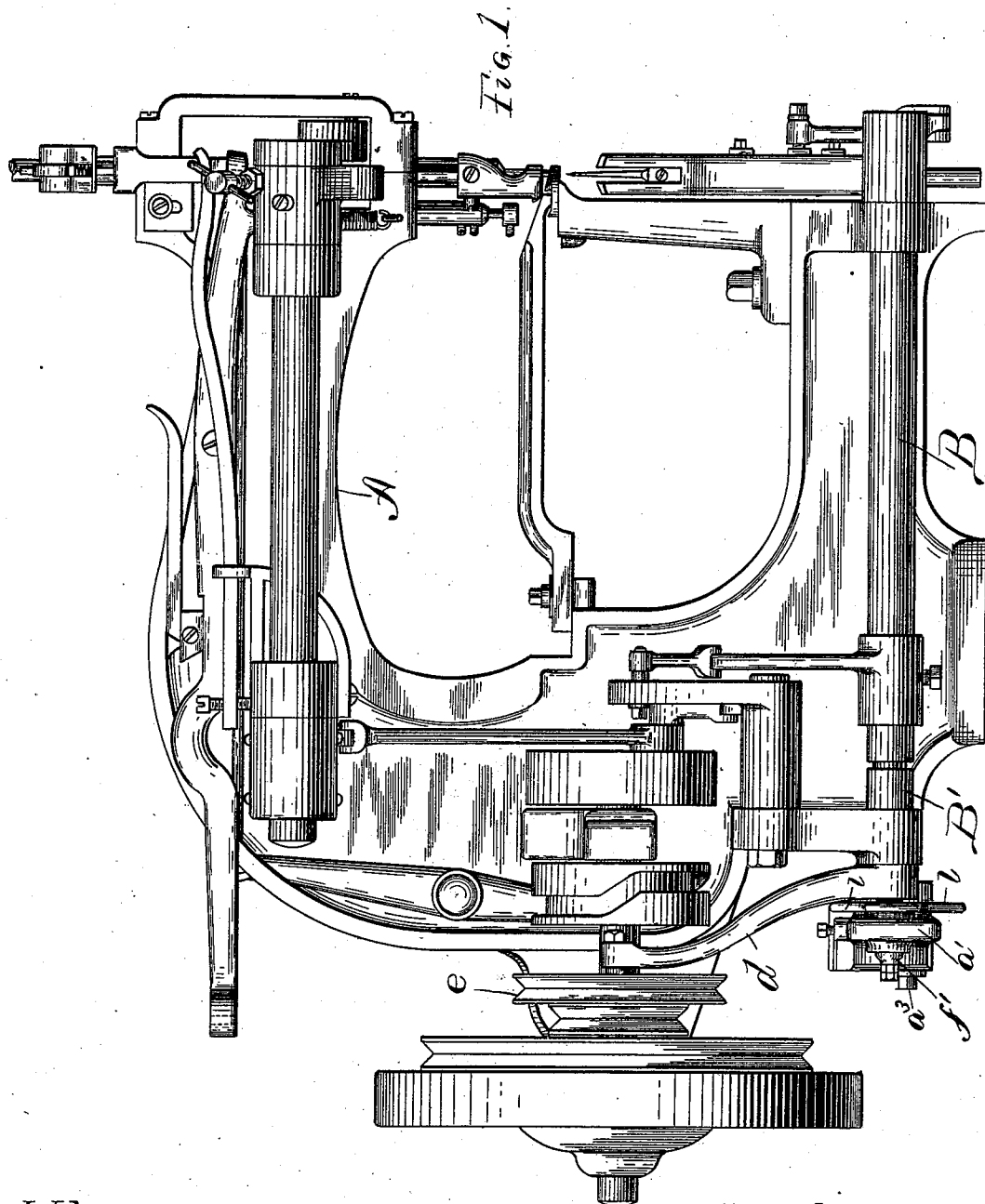
3 Sheets—Sheet 1.

P. L. COX.

FEED ADJUSTING DEVICE FOR SEWING MACHINES.

No. 507,786.

Patented Oct. 31, 1893.



Witnesses:

Arthur F. Randall
Robert Wallace.

Inventor:

Peter L. Cox

By Macleod Calver & Randall
his Attorneys.

(No Model.)

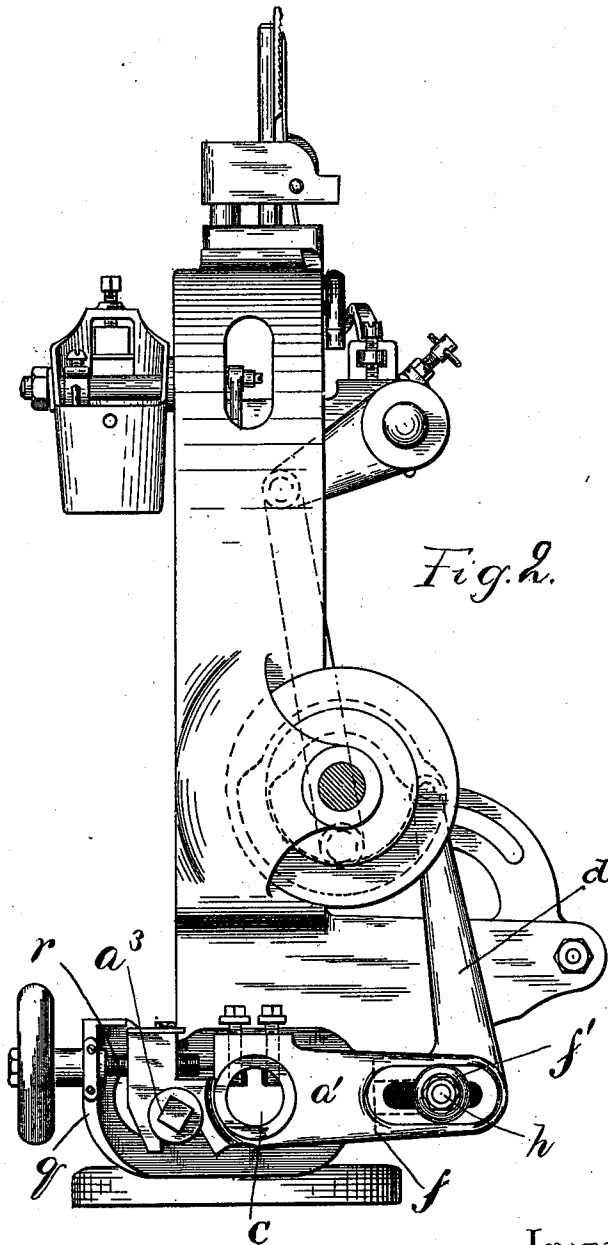
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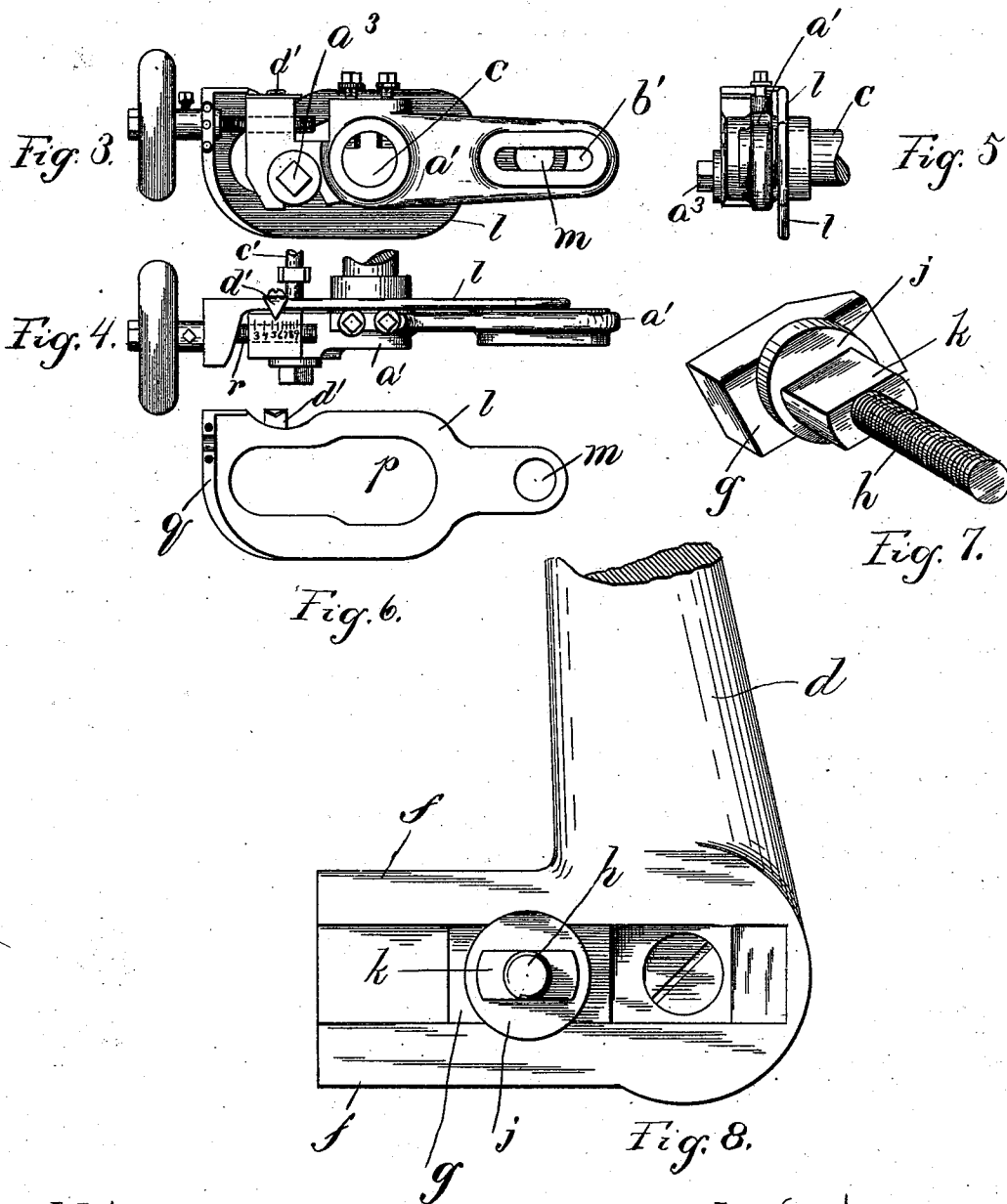
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P. L. COX.

FEED ADJUSTING DEVICE FOR SEWING MACHINES.

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Patented Oct. 31, 1893.



Witnesses:
Arthur F. Raudall.
Robert Wallace.

Inventor:
Peter L. Cox
By Macleod Calvin Raudall
his Attorney.

UNITED STATES PATENT OFFICE.

PETER L. COX, OF BOSTON, MASSACHUSETTS.

FEED-ADJUSTING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 507,786, dated October 31, 1893.

Application filed December 5, 1892. Serial No. 454,026. (No model.)

To all whom it may concern:

Be it known that I, PETER L. COX, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object an improvement in sewing machines and it relates to the mechanism employed for varying the length of the stitch.

My invention consists in a device constructed and arranged as hereinafter set forth by means of which the length of the stitch may be very finely and accurately adjusted even although the machine is in operation.

The novel features of my invention are set forth in the claims which are appended hereto. In the drawings which accompany this specification I have shown my device in the best form now known to me and in the following description will refer thereto.

In said drawings, Figure 1 is a side elevation of a well-known form of wax-thread sewing machine showing my invention applied thereto. Fig. 2 is an end view of the machine partly broken away to show more clearly my device. Fig. 3 is a side elevation of my improvement detached. Fig. 4 is a plan view thereof. Fig. 5 is an end view thereof. Fig. 6 is a detail. Figs. 7 and 8 are enlarged details which will be hereinafter referred to.

I will describe my present invention in the following specification and will refer therein only to such of the adjacent parts of the machine as I deem necessary to a full understanding of my invention.

A represents the frame of the machine which is of the well-known goose-neck form.

B is a rock-shaft journaled in the lower part of the main frame and employed to move the needle vertically. The shaft B is journaled at one end in the short shaft B' from which the shaft c is operated. The shaft c reciprocates the needle post horizontally in the well known manner. The shaft B' is rocked by means of an arm d, the upper end of which is provided with a cam-truck which moves in a path cut in the face of the band wheel e. At the lower end of the arm d where it is fast

to the rock-shaft B' a short arm projects horizontally, and is indicated by dotted lines at f Fig. 2 and shown more clearly in Fig. 8. This short arm f is preferably cast integral with the arm d and forms a part of said arm. The throw of the arm f as the shaft B' rocks is communicated by means of my device which is hereinafter described to the rock shaft c which moves the needle post horizontally and as the length of the stitch depends upon the horizontal movement of the needle it will be clear that it may be increased or diminished as the rock shaft c rocks to a greater or less extent. For the purpose of governing this movement accurately and getting a fine adjustment, I have invented the following device: I provide the arm f with a lengthwise slot in which I place a block g, Fig. 7, which is adapted to slide in said slot. In the block g is secured a screw-bolt h which is free to turn in said block; the bolt h is provided, adjacent to the face of the said block g, with a disk-shaped piece j and in front of the disk-shaped piece is a block k from which extends the threaded bolt h, as will be clear from Fig. 7. The bolt h, block k and disk j are all rigidly connected but are free to rock relatively to the block g. A sliding plate l, of the shape shown in Fig. 6, is provided at one end with a hole m which receives the disk j, and is also provided with a slot p through which the rock shaft c projects and which permits the plate l to be moved horizontally relatively to said shaft c. The plate l is flanged at one end as shown at q and an adjusting screw r, provided with a hand-wheel by means of which it may be turned, is set through the flange c and passes through one end of an arm a', as shown in Figs. 3 and 4, said screw extending in the direction of the length of said arm. The arm a' is fast on the shaft c and is provided with a slot b' at one end which receives the block k. The other end of the arm a' is slotted to receive a bolt c' which is set in an adjacent part of the machine and which projects from said frame through the narrower portion of the slot p in the plate l, and through a slot in the arm a', as shown. This bolt serves to adjust the alignment of the needle and awl; that is, by turning the nut a^s the rock shaft c is moved lengthwise of the frame

of the machine. The top of this end of the arm *a'* is preferably graduated, as shown, Fig. 4, and a pointer *d'* is secured on the plate *l* and projects over the graduated portion of the arm *a'*. By this means the extent to which the plate *l* is moved relatively to the arm *a'*, by means of the adjusting screw *r*, may be readily seen. It will be clear that the extent to which the rock shaft *c* is rocked by this device, and the consequent length of the stitch, will depend upon the extent to which the throw of the arm *f* is communicated to the arm *a'*; and it will be clear that this will depend upon the position of the block *g* in the slot in said arm *f*. By turning the adjusting screw *r* the position of the block *g* in the arm *f* may be varied, that is, the block *g* may be slid in its slot in the arm *f* either toward or from the shaft *B* on which the said arm *f* is set. By turning the adjusting screw *r* to the left the plate *l* is moved and the block *g* is slid toward the end of the arm *f*, thus increasing the length of the movement of the arm *a'* and consequently rocking the shaft *c* to a greater extent. As the adjusting screw *r* is provided with a fine thread a very delicate and direct screw adjustment may be obtained, while the pointer *d'* and graduated surface of the arm *a'* insures accuracy of adjustment. It will also be clear that the adjustment may be effected while the machine is in operation. The nut *f'* is placed on the screw-bolt *h* for the purpose, as will be obvious, of holding the bolt in position.

35 What I claim is—

1. In a sewing machine, the combination with the lower rock-shaft *c* provided at its forward end with a needle-post and at its rear end with the operating arm *a'*, of the rocking arm *d* having the arm or portion *f*, an adjustable bolt extending from one to the other of the said arms *f* and *a'*, a sliding part, as plate *l*, to move said adjustable bolt, and a screw engaging said sliding part and by the turn-

ing of which said sliding part may be moved 45 by a direct screw adjustment.

2. In a sewing machine, the combination with the lower rock-shaft *c* provided at its forward end with a needle-post and at its rear end with the arm *a'*, of the rocking arm *d* having the arm or portion *f*, an adjustable bolt *h* extending from one to the other of the said arms *a'* and *f*, the sliding plate *l* one end of which engages said adjustable bolt, a screw *r* engaging the other end of said plate, said screw being arranged lengthwise of said arm and tapped in a portion thereof, so that by turning said screw a direct screw-adjustment of said connection is obtained, and one of said parts *l* or *a'* being provided with an index or pointer and the other with a graduated scale, whereby the movement of one relative to the other may be accurately determined.

3. In a sewing machine, the combination with the lower rock-shaft *c* provided at its forward end with a needle post and at its rear end with the slotted arm *a'*, of the rocking arm *d* having the slotted arm or portion *f*, the block *g* adapted to slide in the said slotted arm *f*, the bolt *h* adapted to rock in the said block *g* and carrying the disk *j*, and the block *k*, the latter adapted to slide in the said slotted arm *a'*, the sliding plate *l* having the opening *m* to receive the said disk *j*, the screw *r* engaging the outer end of said sliding plate and provided with a hand wheel by which it may be turned, the said screw being tapped in a portion of the said arm *a'* so that by turning the same a direct sliding screw adjustment of the connection between the said slotted arms *f* and *a'* may be secured.

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

PETER L. COX.

Witnesses:

WM. A. MACLEOD,
ROBERT WALLACE.