(No Model.) 2 Sheets—Sheet 1.

F. W. COAN & W. S. EATON.

FEEDING DEVICE FOR SEWING MACHINES.

No. 590,132. Patented Sept. 14, 1897.

Fig. 1.

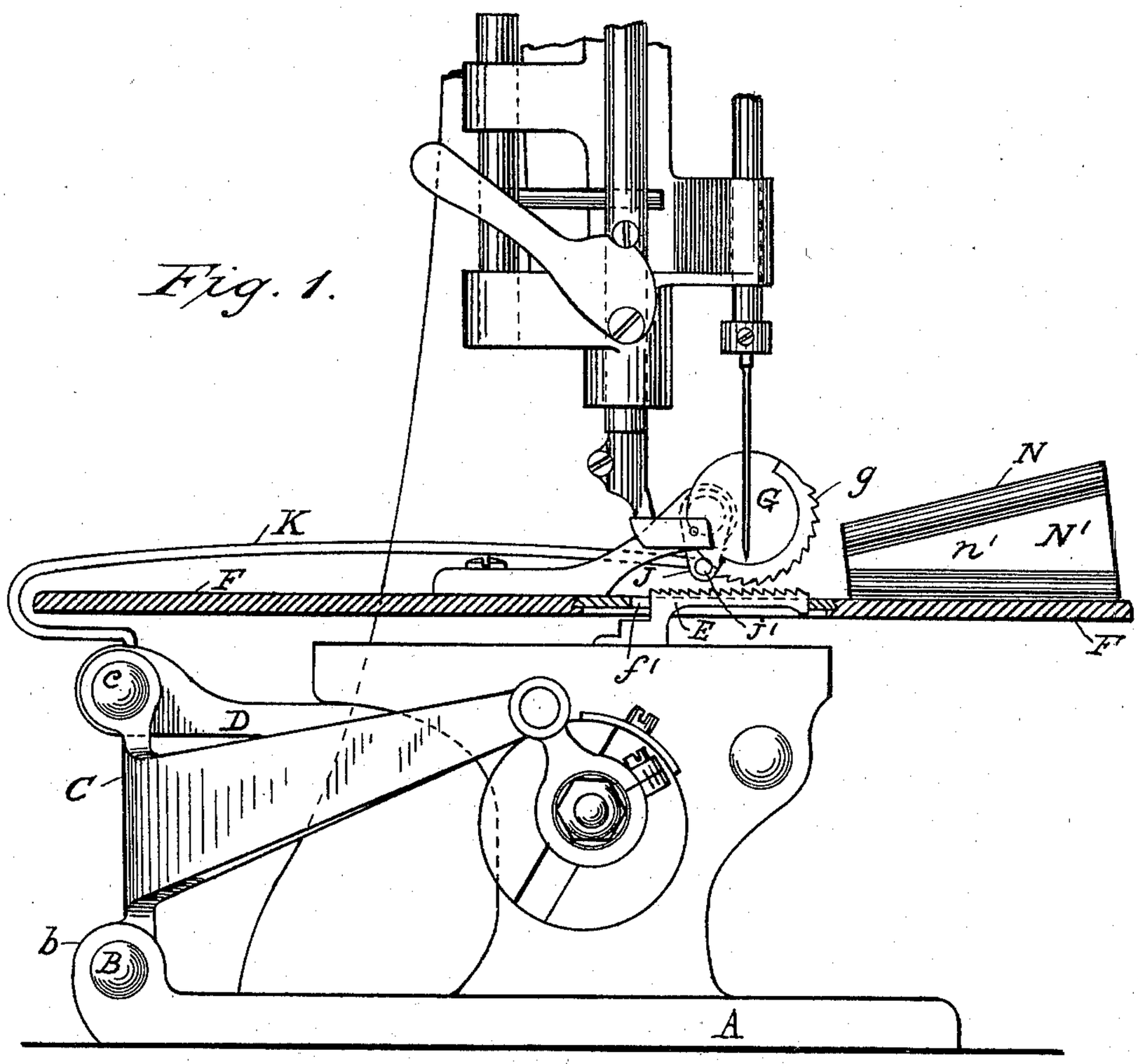


Fig. 2.

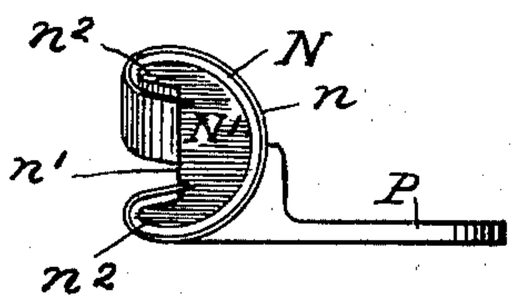
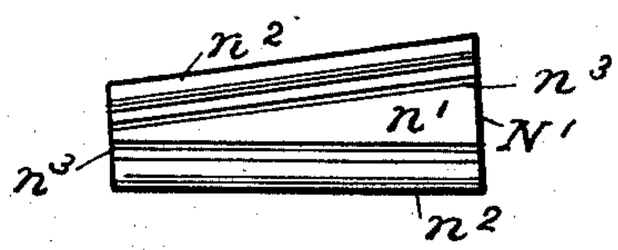


Fig. 3.



Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

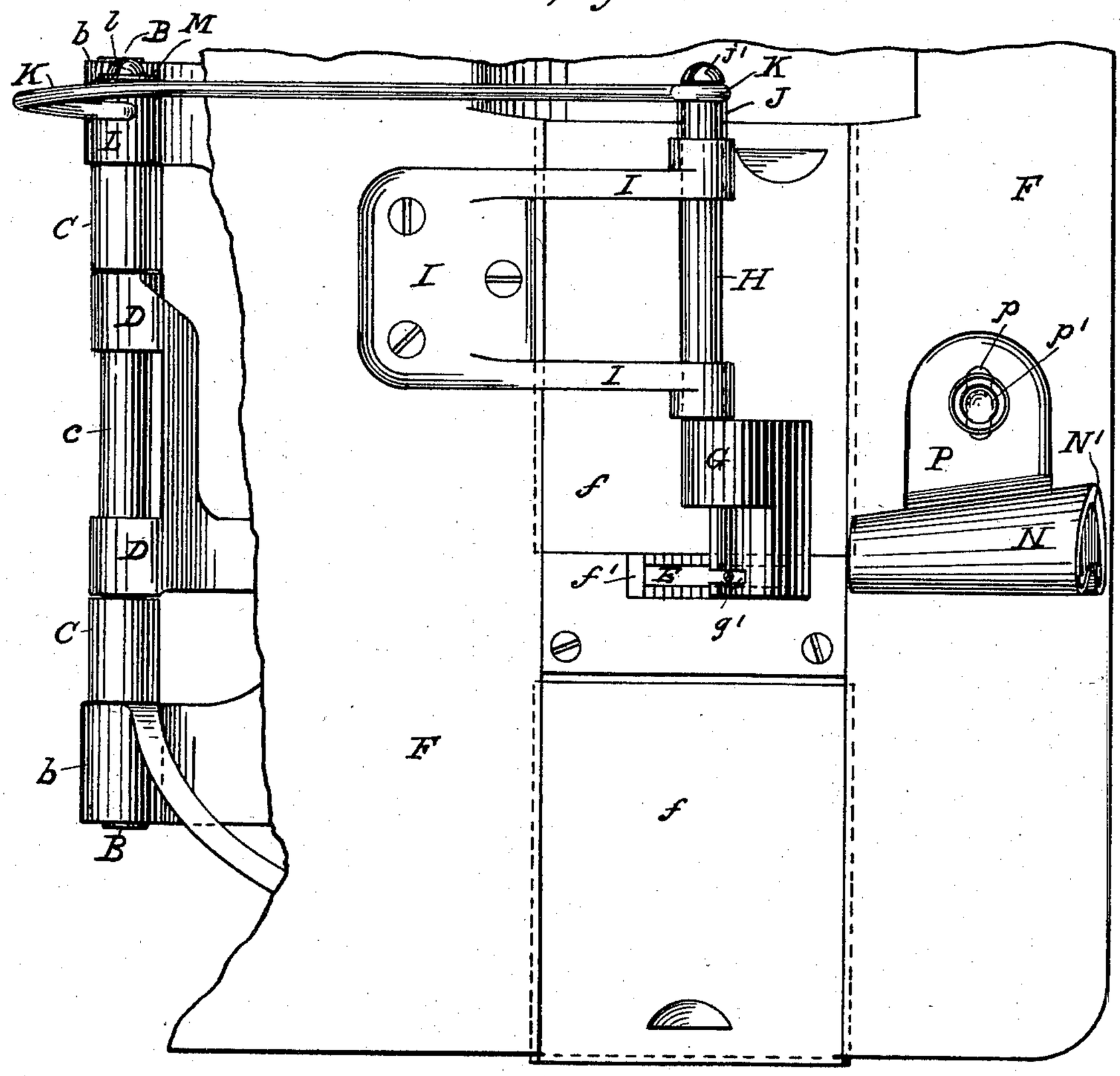


Fig. 5.

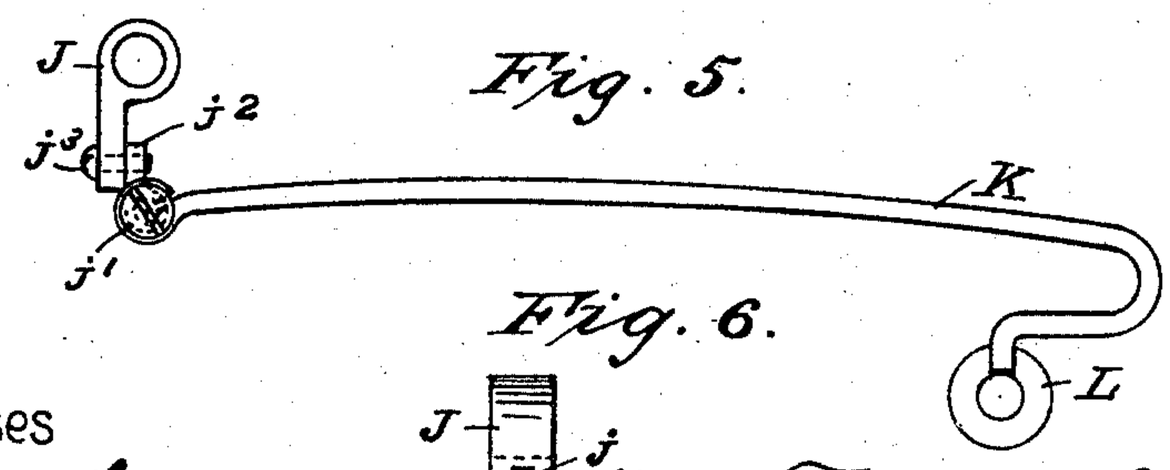
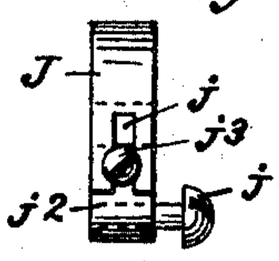


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRED W. COAN AND WALTER S. EATON, OF MANCHESTER, NEW HAMPSHIRE.

FEEDING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 590,132, dated September 14, 1897.

Application filed April 29, 1896. Serial No. 589,596. (No model.)

To all whom it may concern:

Be it known that we, FRED W. COAN and WALTER S. EATON, citizens of the United States, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Feeding Devices for Sewing-Machines; and we 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 appertains to make and use the same.

This invention is designed more especially for application to sewing-machines upon which underwear is finished, but it may be applied to any machines where similar bindings are required, the object of the invention being to prepare and apply all necessary button-stays, trousers-bands, or bindings wholly by machine.

The invention will be fully set forth and described in the following specification and claims, and clearly illustrated in the accompanying drawings, forming a part of the same, of which—

Figure 1 represents a broken elevation of a sewing-machine to which our improvements are applied, Fig. 2 being a detached end view of our folder. Fig. 3 is a detail showing a side elevation of the interior of the folder or form which converts the strip of goods which is to constitute the button-stay, trousers-band, or binding as fast as it is rolled off from a spool or other holder into the properly-folded binding. Fig. 4 is a broken plan view of a machine provided with our improvements, Fig. 5 being a detail showing the mechanism by which our improved top feed is made to operate in unison with the regular feed of the machine. Fig. 6 is a detail showing an adjustable crank by means of which our improved top feed may be made to move from a short to a long stroke, and vice versa, as may be desired.

Similar reference-letters designate corresponding parts throughout the various views.

In our improved method the cloth used for bindings is drawn from a spool by the feed-dog of the sewing-machine, aided by our improved top feed, through our folder, and the result is a binding of even width, evenly stitched, and lapped evenly upon the edge of the article to be bound without depending upon any skill on the part of the operator.

In the drawings, A represents the base-plate of a sewing-machine, and *b b* are bearings carrying a shaft B, upon which is mounted a rocker-frame C, a function of which is to operate the feed-dog E, which is connected to the frame D.

F represents the plate upon which the work rests, and *f f* are slides which cover the usual openings in the said plate, through which the various working parts of the machine are reached, and *f'* is an opening through which the feed-dog E rises.

G is our improved top feed, consisting of a segment of a cylinder having formed at one end an integral disk which is provided with an eccentrically-projecting shaft H, mounted in a bracket or frame I, which is screwed to the plate F, said shaft H being provided with a crank J, to which is connected one end of a rod K, the opposite end of said rod reaching over the back of the work-plate F to a point underneath the same, where it is connected in any convenient manner to the rocker-frame C, by which the top feed G is given a rotary motion coinciding in direction with the forward and backward movement of the feed-dog E.

A simple method for connecting the rod K with the rocker-frame C is shown in the drawings, which comprises a collar or sleeve L, loosely mounted upon the shaft *c* of said rocker-frame C, said sleeve having a perforation to receive the bent end of the rod K, and a screw *l*, threaded to end of the shaft *c*, the head of said screw *l* or a washer M being sufficient to hold the sleeve from working off the shaft.

The rotary motion of the top feed G may be varied by providing an adjustable crank-pin for the crank J. In the drawings this is accomplished by slotting the crank at *j* and securing the crank-pin *j'* to a block j^2, which may be firmly secured at any desired point in the slot *j* of said crank by a screw j^3.

The top feed G has its outer surface serrated, as at *g*, and is provided in one of its edges with a slot *g'*, formed sufficiently long to receive and permit the vertical movement

of the machine-needle X during the operation of the top feed.

By having the circumference of the feed eccentric with the shaft it can be readily adjusted high or low or run as close to the work as may be wished, and also the feed may be given a longer or shorter stroke than the under feed by properly setting the crank J upon the shaft *c*.

Our folder comprises a shell or case N, inclosing a form N′, and the shell is provided with a base P, having an elongated opening *p*, through which a screw *p′* may be passed and threaded to the work-plate F for adjustably fastening the folder to the work-plate.

The die or form N′ is made tapering from end to end and is curved or rounded on one side, as at *n*, the opposite side being flat, as at *n′*, with the rounded portion extending beyond on each side in the form of flanges n^2, and near each flange and in the flat portion *n′* is a groove n^3 to receive either edge of the shell N, where they may be firmly secured by soldering.

Our experiments during the development of this invention were confined to the device for folding the material which was to form the button-stays or trousers-bands; but all attempts to utilize this with the ordinary single feed of a machine resulted in failure until we conceived the idea of adding our improved top feed, as the presser-foot would crowd back the upper folded edge of the button-stay or trousers-band and thus defeat one of the objects of our invention—viz., to apply the said button-stays or trousers-bands by machine evenly without causing one edge to be stretched and the other fulled—but by adding the upper feeding device all was changed and the evenness of the work assured.

Having described our invention, what we claim is—

1. As a means of evenly feeding the upper and under edges of button-stays or trousers-bands for machine-made underwear, a top feed comprising an externally-serrated segment of a cylinder, a shaft projecting eccentrically therefrom and mounted on the work-plate of said machine, a crank upon said shaft provided with an adjustable crank-pin, and means for connecting said crank with the regular feed-operating mechanism of said machine.

2. As a means of evenly feeding the upper and under edges of bindings in machine-made garments, a top feed comprising an externally-serrated segment of a cylinder provided with a slot through which the needle works, a shaft projecting eccentrically from said feed, a crank on said shaft, and a rod connecting the shaft with the regular feed-operating mechanism of a sewing-machine.

3. A top feed for sewing-machines comprising a rotative segment of a cylinder externally serrated and having a slot through which the needle works, a shaft projecting eccentrically from said feed, a crank upon said shaft, a rod connecting the shaft with the regular feed-operating mechanism of a sewing-machine, and means for varying the rotative movement of the top feed with relation to the under feed.

In testimony whereof we affix our signatures in presence of two witnesses.

FRED W. COAN.
WALTER S. EATON.

Witnesses:
J. B. THURSTON,
HENRY E. BURNHAM.