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C. A. GILBERT.

UPPER DEFLECTOR FOR SHOE SEWING MACHINES.

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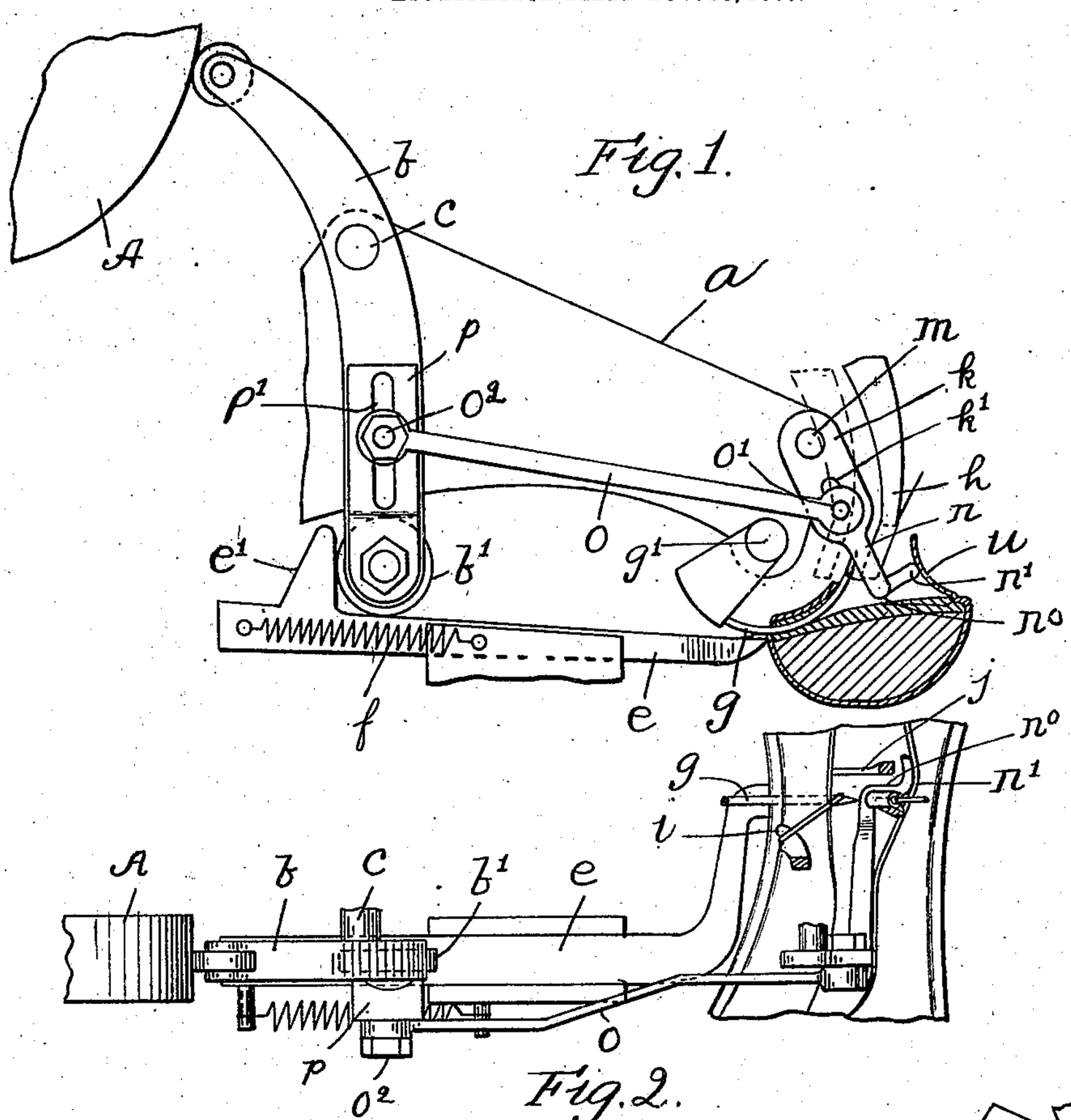

Fig. 1.

Fig. 2.

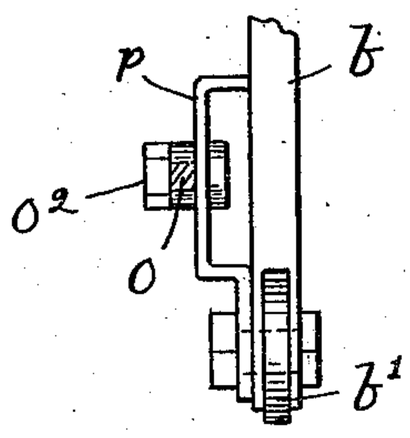

Fig. 4

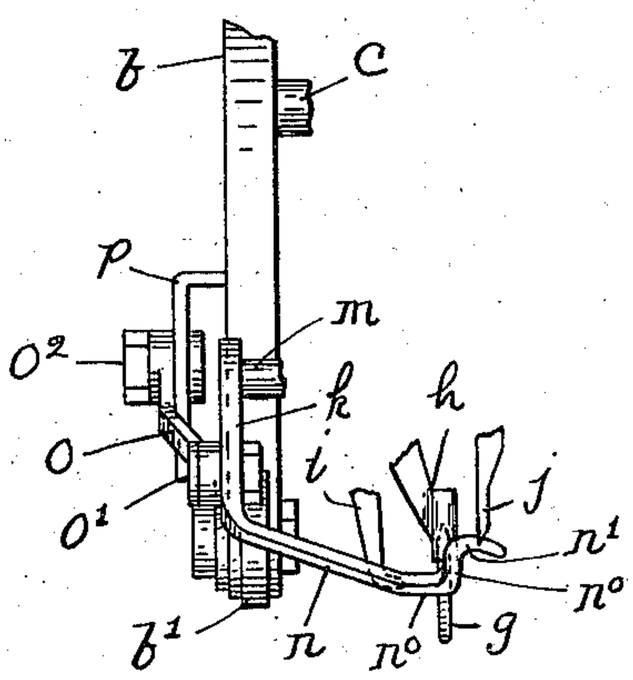

Fig. 3.

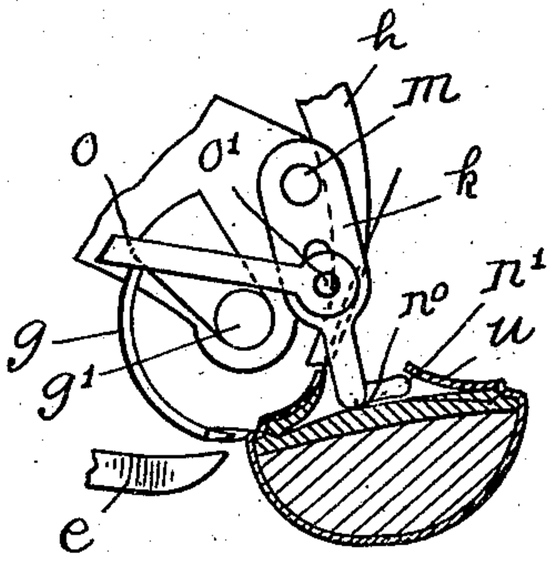

Fig. 5

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UPPER-DEFLECTOR FOR SHOE-SEWING MACHINES.

No. 881,569. Specification of Letters Patent. Patented March 10, 1908.

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To all whom it may concern:

Be it known that I, CHARLES A. GILBERT, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in Upper-Deflectors for Shoe-Sewing Machines, of which the following is a specification.

In the manufacture of turned or welted shoes the uppers are usually cut so that the edge portions thereof adjacent the shank project for some distance beyond the point where they are held to the sole. When a shank is narrow, these projecting portions of the upper, at the opposite sides of the shank, meet, or nearly meet, so that, in sewing the shoe through the shank, with the ordinary hooked needle, chain-stitch sewing machine, the projecting portion of the upper at the opposite side of the shank from that which is being sewed, often lies over the point of the needle, or is pressed against the needle by the looper, so that the latter is prevented from laying the thread in the needle hook, thereby causing the machine to skip the stitch. To prevent the projecting upper at one side of the shank from interfering with the sewing of the shank at the other side, it has been customary, previous to sewing, to trim said portions of the upper close to the lasting tacks, but, even when this has been done, it often happens that the upper still interferes with the sewing operation. The cost of labor for trimming the edge portions of the upper, as above described, is an item of expense which it is desirable to eliminate, as well as the occasional skipping of the stitches even though the upper has been trimmed.

The object of my invention is to provide a chain-stitch, shoe-sewing machine with certain improvements in means for preventing interference of the opposite edge portion of the upper with the action of the looper at the same point so that trimming of the upper in the shank previous to sewing is rendered unnecessary. I accomplish this object by providing the machine with an upper-deflecting device which moves transversely of the feed close to the shoe and forces and holds the edge portion of the upper, opposite that which is being operated upon, away from the stitch forming mechanism, during the threading operation of the looper.

The particular means which I employ is illustrated in the accompanying drawing, in which,

Figure 1 is a side elevation of the stitch forming mechanism of a chain-stitch shoe-sewing machine provided with my invention. Fig. 2 is a plan view, and Fig. 3 is a front view thereof. Fig. 4 is a detail view of the link connecting clip, and Fig. 5 is a view similar to Fig. 1, showing the parts in a different position.

In the drawing, *a* indicates a portion of the frame of a chain-stitch, shoe-sewing machine of the general character shown in Patent #696,872, to which the back gage operating lever *b* is pivoted at *c*, said lever being adapted to be operated by a cam A. The back gage *e* is slidably mounted in the frame and a spring *f* is arranged to draw the same forwardly into engagement with the work, while the lever *b* is adapted to engage a projection *e'* thereon, through the medium of the roll *b'*, to withdraw it from the work.

g indicates the curved, hooked needle, adapted to oscillate about the pivot *g'*, *h* the looper, *i* the thread finger and *j* the feed awl, all of the parts thus far referred to being constructed and operated in the usual well-known manner, so that further description of their functions and modes of operation is unnecessary.

In carrying out my invention I provide an arm *k*, arranged to swing on a pivot *m* in the frame, in a vertical plane about an axis parallel to the axis of the needle, said arm being extended transversely to the right to provide an upper engaging finger *n*. The end portion of said finger is formed to provide a horizontal portion *n°*, which extends approximately parallel to the pivot *m* at a level a short distance above the lowest point in the path of the needle, and at approximately right angles forwardly or away from the needle, as indicated at *n°*, and then transversely and slightly inwardly to provide a rounded upper engaging portion *n'*. Said engaging portion *n'* is disposed approximately in the plane of the path of the needle and adjacent and in front of the path of the looper. A link *o* is pivotally mounted on a bolt *o'* which is clamped thereto in a slot *k'* in the arm *k*, so that it may be adjusted towards and from the pivot *m*, and the opposite end of said link *o* is pivotally connected

to the lever b by means of a clip p, which is mounted thereon and a pivot o^2 which extends through a slot p' in said clip, said slot permitting adjustment of said pivot longitudinally of the lever b.

In operation, the back gage is withdrawn from engagement with the shoe by lever b after the feed awl has entered the work, and while it is feeding the shoe along for the next stitch, and, after the shoe has been fed, the lever b is swung forwardly, so that spring f moves the gage forward into engagement with the work again. As the arm m is connected to the lever b by means of the link o it will be apparent that the finger n will be swung back and forward about pivot m as a center, in unison with the movement of the lever b, and back gage e.

In the rearward position of the finger n, which it is moved to when the back-gage is withdrawn, the right angularly bent end portion n°, n' of said finger lies close to and approximately parallel with the surface of the sole of the shoe, when held in position to be sewed, as shown in Fig. 5. As the back gage is advanced and the finger n swung forwardly, the end portion n°, n' thereof is swung upwardly, as well as forwardly, with the result that said portion is moved to the oblique position of Fig. 1, in which position it is at the opposite side of the looper from the needle.

As the shank portion of the shoe is fed into engagement with the stitch forming mechanism, the end portion n' of the finger passes beneath the projecting portion u of the upper opposite that which is then being sewed, and as the finger is swung to the position of Fig. 1, the upper is lifted and turned back from the sole and forwardly away from the needle and path of the looper, as shown in Fig. 1, so that the looper, in moving about the needle to lay the thread in the needle hook, will pass close to, and at the opposite side of the engaging portion n' of the finger n from the upper. The edge portion u of the upper will thus be forced entirely free of the path of the looper, so that the action of the latter will not be prevented or interfered with. As the finger n is moved rearwardly away from the portion of the upper with which it has been in engagement, at the time the shoe is fed, it is thus prevented from interfering with the free feeding of the shoe, and moreover, the upper is only pressed outwardly, at the time of the threading of the needle, at the particular point at which such action is necessary in order to prevent interference with the looper. The length and location of the path of the upper engaging portion of the finger n may be varied by adjusting the link o at each end. While in Fig. 1 the parts are shown as adjusted so as to move the end of the finger above the level of the end of the looper, this is not essential, as the upper may be sufficiently deflected if the end portion n' is not lifted to this level, it being only necessary that said end portion be moved or held during the threading operation out of, and from beneath the path of the looper.

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

1. The combination in a shoe sewing machine, of the stitch forming mechanism and means for feeding the shoe, a finger, and means for moving the same transversely of the feed to move the opposite edge portion of the upper away from the stitch forming mechanism, substantially as described.

2. In combination with a shoe-sewing machine having feeding mechanism, a looper and a hooked needle movable to and from the looper, an upper deflecting device located adjacent the end of the looper and means for moving said device transversely of the feed towards and from the looper at the opposite side thereof from the needle, as and for the purpose specified.

3. In combination with a shoe-sewing machine having a looper, a hooked needle movable to and from the looper, a feed-awl, a back-gage, and means for normally holding the same in engagement with the work, and for moving the same out of engagement therewith in time with the feeding of the shoe, an upper deflecting finger movable transversely of the feed towards and from the looper at the opposite side thereof from the needle, said finger being timed to move towards the looper as the back gage is withdrawn from the work and away therefrom as the back gage is advanced, substantially as described.

4. In combination with a shoe-sewing machine having feeding means, a looper and a hooked needle movable to and from the looper, an upper deflecting finger disposed adjacent the end of the looper and means for moving said finger transversely of the feed obliquely upward away from the looper and the needle, substantially as described.

5. In combination with a shoe-sewing machine having intermittently operating feeding means a looper and a hooked needle movable to and from the looper, an upper deflecting finger disposed adjacent the end of the looper and means for moving said finger transversely of the feed away from the needle and looper between each feeding operation, substantially as described.

6. In combination with a shoe-sewing machine having feeding means a looper and a hooked needle movable to and from the looper, an upper deflecting finger disposed

adjacent the end of the looper, means for moving said finger transversely of the feed to and from the needle and looper to move the opposite projecting upper-portion away therefrom, and means for varying the length of the path of said finger, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CHARLES A. GILBERT.

Witnesses:
L. H. HARRIMAN,
H. B. DAVIS.