W. H. JOSLIN & M. H. BENNETT.

LACE FEEDING DEVICE.

APPLICATION FILED APR. 21, 1910.

974,674. Patented Nov. 1, 1910.

Fig. 1

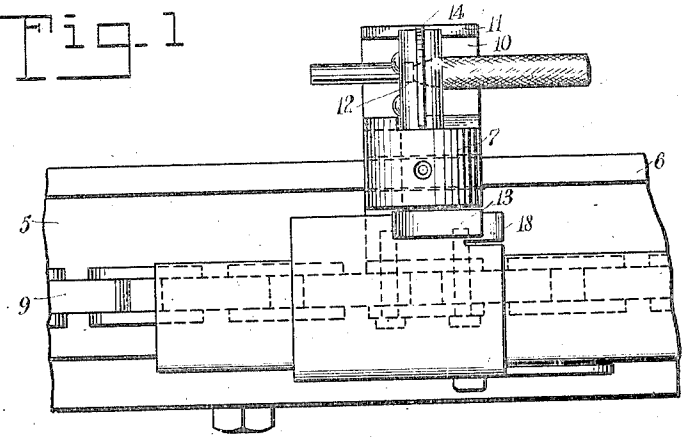


Fig. 2

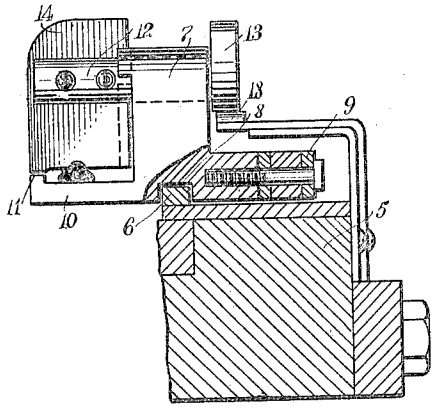


Fig. 3

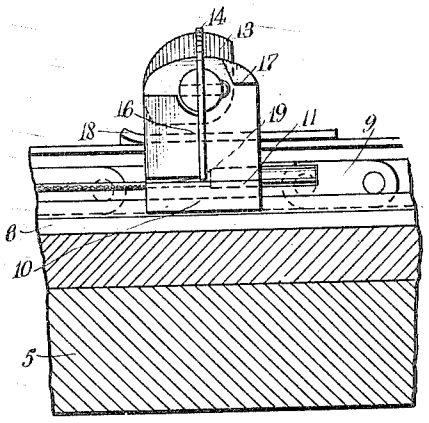
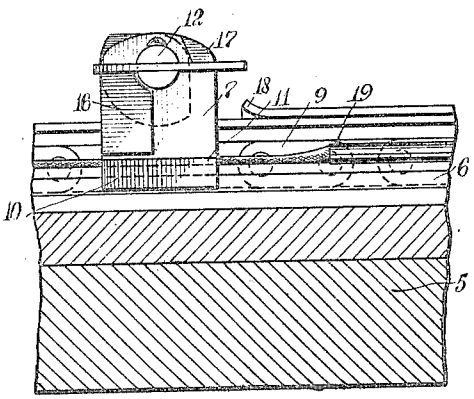


Fig. 4



WITNESSES:

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LACE-FEEDING DEVICE.

974,674. Specification of Letters Patent. Patented Nov. 1, 1910.

Application filed April 21, 1910. Serial No. 556,724.

To all whom it may concern:

Be it known that we, WILLIAM H. JOSLIN and MANFRED H. BENNETT, citizens of the United States, and residents of Scituate, in the county of Providence and State of Rhode Island, have invented a new and Improved Lace-Feeding Device, of which the following is a full, clear, and exact description.

Lace grippers as used in lace-tipping machines for feeding the lacings, are generally unsatisfactory for the reason that at times they damage the lacings, or at least make on them a lasting mark which renders the product less salable. To overcome this objection and to further automatically test the tips to determine if they are securely applied to the lacing, we have devised a lace-feeding device which is designed to engage the shoulder presented by the rear or inner edge of the tip as formed on the length of lacing from which the lacings are made when the applied blank is severed to form two tips.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan of a lace-feeding device constructed in accordance with our invention, showing sufficient of the lace-tipping machine to render the application and operation of the feeding device clear: Fig. 2 is a side view of the same, partly in transverse section; Fig. 3 is an inner face view of the same, showing a portion of the machine in longitudinal section, and with the pulling device in engaging position for the lacing; and Fig. 4 is a like sectional view, with the pulling plate in its inoperative position.

A portion of the machine frame 5, as generally extends along the front, is shown to be provided with a guide rail or rib 6, with which our improved lace-feeding device engages, the block or body 7 of the latter having a slot 8 cut in its under side for this purpose and is attached to a chain carrier 9, ordinarily of endless construction. The block or body 7 of the feeding device has a laterally-extending lacing support 10 near the bottom, which is provided with a longitudinal guard flange 11 at its outer edge to prevent the lacing from sliding off. In the upper portion of the block is journaled a shaft 12, which, at its outer end, has an attached cam 13, and at its inner end a pulling member or plate 14, the arrangement of the shaft being such that the plate is adapted to swing longitudinally of the chain carrier to and from the supporting plate 10. The pulling member or plate when in its upright operative position, shown in Figs. 1, 2 and 3, standing a distance from the lace supporting plate 10 sufficient to allow the lacing to slide therebetween before engaging the shoulder presented by the inner edge of the tip. The pulling plate or member is preferably assembled with the shaft 12 by bifurcating or slotting the latter to receive the plate and securing the same by screws or other suitable devices, as shown. The block or body 7 of the feeding device has stops 16 and 17 suitably arranged to prevent the pulling plate from swinging farther rearwardly after passing to a position at approximately right-angles to the lace support 10, as shown in Fig. 3, or from swinging upwardly from the supporting plate beyond a position approximately parallel thereto, as shown in Fig. 4.

The operation of the pulling member or plate is performed by the cam 13, in connection with the trip fingers or projections 18, one of these projections being shown, which is arranged to engage the cam and swing the plate from the inoperative position shown in Fig. 4 to the operative position shown in Figs. 1, 2 and 3, in position to engage the shoulder 19, presented by the inner edge of the tip which has been applied to the length of lacing from which the lacings are cut. For this purpose the cam is constructed with two adjoining flattened or slightly curved sides, with which the tripping projections successively engage, the other tripping projection engaging the cam on the return movement of the feeding device and moving the pulling member or plate from the position shown in Figs. 1 to 3 to the position shown in Fig. 4, thus releasing the finished lacing.

The lace-feeding device not only does not injure or mar the lace, but automatically tests the tips. If a tip is insecurely applied it is pulled from the lacing by the feeding device, accordingly insuring the consumer a properly tipped string.

While we have described the preferred embodiment of our invention in detail, we nevertheless regard a lace-feeding device

which engages the shoulder presented by the lacing tip to be original with us, and we accordingly claim the same broadly.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In a lace-feeding device for a tipped length of lacing, a carrier, and a lace-pulling member carried by the carrier, the pulling member having oppositely-arranged engaging portions, said portions when in operative position spaced apart sufficiently to permit of the lacing freely passing therebetween but close enough together when in said position to engage and prevent the passage of the tip.

2. In a lace-feeding device for a tipped length of lacing, a carrier, a lace-supporting member carried by the carrier, and a lace-pulling member driven by the carrier and having lace-engaging portions relatively movable to and from each other, the said portions when brought to operative position standing apart sufficiently to allow the lacing to pass freely therebetween and close enough together to engage and prevent the passage of the lacing tip.

3. In a lace-feeding device for a tipped length of lacing, a carrier, a lace-supporting member carried by the carrier, and a lace-pulling member pivotally supported to swing to and from the lace-supporting member, and arranged when in its innermost position sufficiently spaced from the lace-supporting member to permit of the lacing freely passing therebetween, yet close enough to the lace-supporting member to engage the shoulder presented by the inner edge of tip and cause the lacing to be drawn forwardly with the carrier.

4. In a lace-feeding device for a tipped length of lacing, a carrier, a block attached to the carrier, having a laterally-extended lace support, and a lace-pulling plate pivotally supported on the block to swing to and from the lace support and arranged when in its operative position sufficiently spaced from the support to permit of the lacing sliding therebetween, yet sufficiently close to prevent the passage of the tip.

5. In a lace-feeding device for a tipped length of lacing, a lace carrier, a lace-supporting member carried by and extending laterally of the carrier in an approximately horizontal position, the said member having an upwardly-projecting guard flange adjacent to its outer edge, and a pulling member movable to and from the supporting member and arranged when in its operative position close to the guard flange and sufficiently spaced from the supporting member to allow the lacing to pass freely therebetween, yet engage and prevent the passage of the tip.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM H. JOSLIN.
MANFRED H. BENNETT.

Witnesses:
WATTER A. LONGFELLOW,
EDITH T. COOMBS.