

L. HEILBRUNN & F. FRIESE.
ARRANGEMENT FOR BINDING UPPERS ON THE LAST.
APPLICATION FILED DEC. 12, 1911.

1,051,954.

Patented Feb. 4, 1913.

Fig. 1.

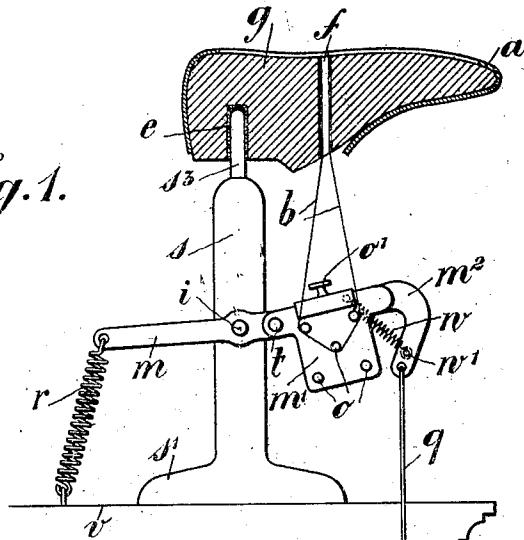
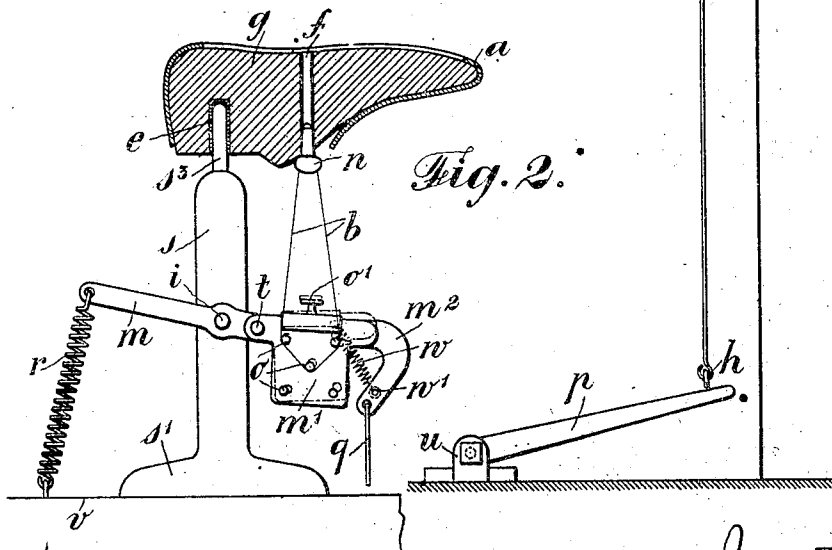


Fig. 2.



Witnesses:
Edw. C. C. C.
Edw. C. C. C.

Inventors:
Ludwig Heilbrunn
Fritz Friese
J. B. Singer

UNITED STATES PATENT OFFICE.

LUDWIG HEILBRUNN AND FRITZ FRIESE, OF FRANKFORT-ON-THE-MAIN, GERMANY,
ASSIGNORS TO THE FIRM OF GOLDSCHMIDT & LOEWENICK, OF FRANKFORT-ON-THE-
MAIN, GERMANY.

ARRANGEMENT FOR BINDING UPPERS ON THE LAST.

1,051,954.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed December 12, 1911. Serial No. 685,317.

To all whom it may concern:

Be it known that we, LUDWIG HEILBRUNN and FRITZ FRIESE, subjects of the German Emperor, and residing at Mainzerlandstrasse 225/227, Frankfort-on-the-Main, in the German Empire, have invented certain new and useful improvements in Arrangements for Binding Uppers on the Last, of which the following is a specification.

The present invention consists in means by which the ends of a string, serving to bind the upper on the last, are passed through a zig-zag stitching on the edge of the upper and then carried from the sole side to the ridge of the span, or through the last, and be pulled taut.

In the accompanying drawing Figure 1 shows the device before the ends of the string have been pulled taut, and Fig. 2 shows the device after the ends of the string have been pulled taut.

On a work supporting pillar s , having a foot s^1 , is pivoted on a pin i a double armed lever m , adapted to be held in the position shown in Fig. 1, by means of a spring r , secured to the workbench v . At its hook-shaped end m^2 , the lever is coupled to a rod g , the other end of which is linked at h , to a treadle p , which is journaled in a bearing u , fitted to the workbench. On a pin t , in the lever m , is pivoted a saddle m^1 , which is provided with knobs o , o^1 . This saddle m^1 is under the action of a spring w , which is secured with its other end w^1 , to the part m^2 of lever m . This spring w will hold the saddle m^1 close down against the back of lever m .

The last g , is fitted with the socket e , on the stem s^2 , of the support s . Over the last is drawn the upper a , and the pulling string b , which is strung through the stitching at the edge of the upper, is passed through the bore f in the last. For tightening the string, and thereby binding the upper a on the last, the string b is caught around the knobs o , o^1 , corresponding to the respective length of the string loop. If for instance, the string, is of the length as shown in the drawing, it is caught around the three upper knobs o . When the treadle is pressed down, the rod g will be likewise moved downwardly, and the lever m will be moved into the position shown in Fig. 2. The spring r will be tensioned. In consequence of the

movement of lever m , the string b will be likewise pulled downwardly, and the edge of the upper will be lipped over the last, so that the upper itself will be drawn, at all points, smoothly over the last. At such taut position of the string, Fig. 2, a plug n is introduced into the bore f on the ridge of the last, so that the string b can not slacken. When the treadle is released by the operator, the levers m , m^1 , m^2 will return under action of spring r , into their initial positions, Fig. 1, the strings will be disengaged from the knobs o , o^1 or may be taken off from them, the last is taken off the stem s^2 , and the shoe can be finished in the usual manner. In order to prevent the string from being broken, if the treadle should be suddenly and forcibly pressed down, a spring w is interposed between the movable part m^1 and the arm m^2 or lever m . If a sudden pull is now exerted, the saddle m^1 will, as shown in Fig. 2 by dot-and-dash lines, lift from the lever m , stretching the spring w so as to avoid breaking the string b .

We claim:

1. The combination with a last having an opening therethrough for the passage of a draw string for the upper, of a support for the last, a lever mounted on the support, and means movably mounted on the lever and adapted for connection with the draw string, and a yielding connection between said means and lever, substantially as and for the purpose set forth.

2. The combination of a last having an opening therethrough for the passage of the draw string of the upper, of a support for the last, a lever mounted on the support, a saddle pivoted on said lever and adapted for connection with the draw string, and a spring yieldingly connecting said saddle with the lever, substantially as and for the purposes set forth.

3. In a device for binding uppers on the last by drawing the binding string through said last, the combination with a standard adapted to receive the last, of a lever fulcrumed on said standard; another lever fulcrumed on said first lever and adapted to be oscillated parallel to the same; projections extending laterally from said other lever and adapted to receive the string employed in binding the upper on the last; means for operating the said first levers, and means

for returning them automatically to their position of rest.

4. In a device for binding uppers on the last by drawing the binding string through said last, the combination with a standard adapted to receive on its top the last with the upper and the string projecting from the bore in or near the ridge of the span of the last, of a lever fulcrumed on said standard; another fulcrumed on said first lever and adapted to be oscillated parallel to the same; a plurality of knobs extending laterally from the said other lever at various distances from the last and adapted to hold and stretch the string; means for operating the said first lever, and means for returning it automatically to its position of rest.

5. In a device for binding uppers on the last by drawing the binding string through said last, the combination with a standard adapted to receive on its top the last with the upper and the string, of a lever fulcrumed on said standard; a downwardly di-

rected extension at the front end of this lever; another lever fulcrumed on said first lever and adapted to be oscillated parallel to the same; an upper lateral projection forming part of said other lever and extending over the first so as to limit the downward motion of said other lever; a spring attached to one end of the last mentioned lever and at the other end to the extension of the said first lever; a plurality of knobs extending laterally from the said second lever at various distances from the last and adapted to hold and stretch the string; means for operating the said first lever, and means for returning it automatically to its position of rest.

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

LUDWIG HEILBRUNN.
FRITZ FRIESE.

Witnesses:

JEAN GRUND,
BERNHARD REISER.