O. HEATH.

ELECTRIC TOE SOFTENER.

APPLICATION FILED JUNE 5, 1917.

1,258,633. Patented Mar. 5, 1918.

Fig. 1.

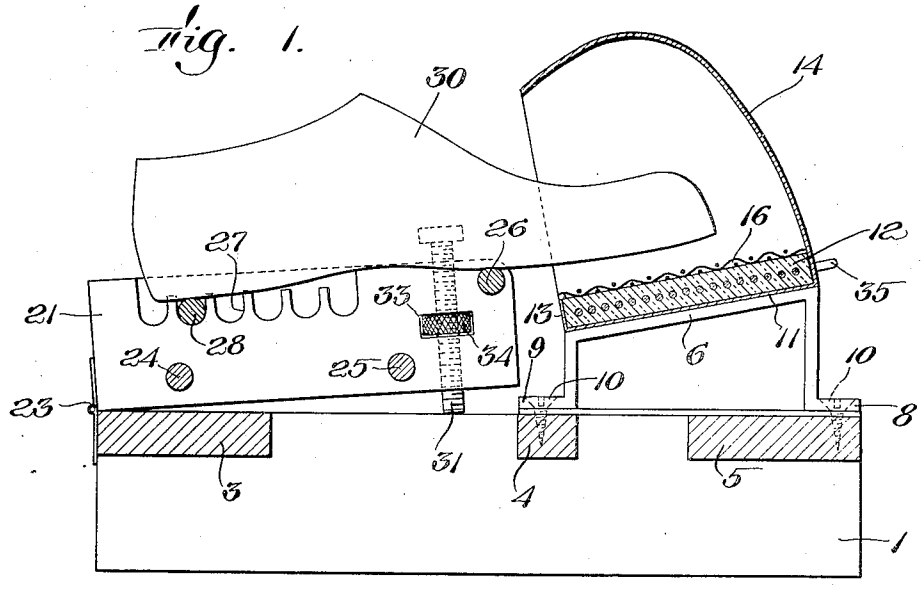
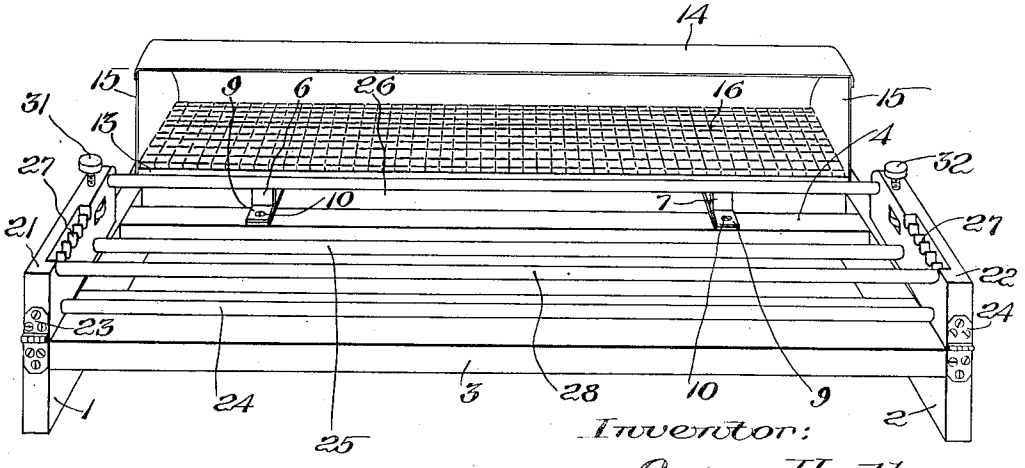


Fig. 2.



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UNITED STATES PATENT OFFICE.

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ELECTRIC TOE-SOFTENER.

1,258,633. Specification of Letters Patent. **Patented Mar. 5, 1918.**

Application filed June 5, 1917. Serial No. 172,877.

To all whom it may concern:

Be it known that I, OSCAR HEATH, a citizen of the United States, and resident of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Electric Toe-Softeners, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention is an improved apparatus for use in softening parts of boots and shoes, and it is intended more particularly to provide such an apparatus capable of using electricity as a heating element.

In the manufacture of boots and shoes it is important to soften certain portions of the shoe, such for example as the toe portion, including the box toes, to put the upper materials, lining, box toe, box toe gum, shellac or the like, in proper temper to complete the lasting operation. A similar softening operation is sometimes desirable for the heel and counter, but is almost always necessary in shoes having box toes. Heretofore it has been necessary to use steam for this work. The use of steam necessitated an expensive steam apparatus, piping, and the like, and also the effect was injurious on parts of the upper materials. I have now discovered that a practicable, serviceable and economical electrical toe softener apparatus can be utilized for this work, and with many advantageous results. My apparatus is light, strong, durable, portable, capable of ready attachment to and detachment from any source of electric supply, produces a desirable degree of heat without injury to the upper materials, and has proven very satisfactory in actual use. Preferably I arrange a covering to conserve the heat produced, and also to protect the box toe while in the machine, and I provide novel and efficient means for adjusting the shoe in the desired position, together with other adjustments for different sizes and styles of shoes to be operated upon.

Referring to the drawings illustrating a preferred embodiment of my improved electrical toe softener,

Figure 1 is a side view partly in cross section, showing the apparatus with a shoe in position;

Fig. 2 is a perspective view illustrating the apparatus:

I prefer to make this apparatus in a portable form, and to this end, provide a light framework of wood or other suitable material consisting in a pair of side frames 1 and 2, adapted to rest upon a bench, to which are fitted cross members 3, 4 and 5. To the cross supports 4 and 5 are secured brackets 6 and 7, each bracket having flanges 8 and 9 resting on the bars 5 and 4 respectively, to which they are secured by screws 10, 10, as shown in the drawings. These brackets carry a combined support and hood, the latter having its lower portion 11 of suitable length and width to receive and hold an electrical heater 12, said support having an end flange 13 and a back and cover 14, together with ends 15, 15. This support and cover is preferably of thin metal and in a form substantially as shown in the drawings. The electrical heater 12 is covered with a layer of asbestos 16, and if desired, a wire netting or covering therefor so that the shoe may rest directly thereon. This arrangement conserves the heat, practically rendering the same uniform entirely around the portion of the shoe within the top 14, equalizing the effect and rendering the box toe gum and upper materials sufficiently pliable and in temper to enable the lasting to be readily effected and the box to again set in final shape. The apparatus is also desirable in drying, treeing and repairing, especially where patent leather shoes are being made, owing to the dry heat;—a feature which was impossible with prior steaming devices.

In order to hold and adjust the shoe or shoes to be treated in any desired relative position, I provide a simple and novel arrangement consisting in a pair of leaves 21 and 22 hinged at 23 and 24 respectively to the end portions of the sides 1 and 2. Connecting these members 21 and 22 are a plurality of rods 24, 25 and 26, the latter connecting the forward ends of said members and being in close proximity to the heater 12 which constitutes a rest for the forepart of the shoe. I prefer to form the top of the members 21 and 22 with a plurality of notches or grooves, as indicated at 27, 27, in which a movable rod 28 may rest, which rod may be shifted from one groove to an-

other to afford an adjustable support for the shoe 30 to rest thereon. It will be understood that at the time of the toe softening operation the shoe 30 is usually in merely pulled-over or partially lasted condition, and is usually without the heel thereon, or substantially as illustrated in outline in Fig. 1.

To afford a still further adjustment and give a capacity for close and accurate movement of the toe portion of the shoe toward or from the heater 16, I supply two threaded adjusting screws 31 and 32 through the members 21 and 22 respectively. These adjusting screws may extend through bored recesses of slightly greater diameter than that of the screws, and rest on the top of the bottom supports as clearly shown in Fig. 1. To operate these adjusting screws, I provide slots as shown at 33 in Fig. 1, fitting a thumb nut 34 which is threaded upon the stem of the adjusting screw and projects through and beyond the slot 33, permitting the operator to rotate said nut 34 and raise or lower the member to which it is attached on its hinge, thus raising or lowering the shoe 30 in its position relatively with the heater. My electric heater or toe softener, will be preferably made of sufficient length to receive two or four pairs of shoes, although a greater length can be employed where necessary. The operator may position a pair or more of shoes at a time, having first adjusted the movable rod 28 in a suitable position to maintain the toe portion of the shoes in substantially proper proximity to the surface of the heater 12. After the shoes are in position, the operator may, if desired, raise or lower the hinged members 21 and 22 by manipulation of the thumb nuts 34 as above described, thus affording a further adjustment to hold the shoes in proper position. To supply electric current to the heater a usual pair of connectors indicated at 35, are provided, which may be attached to a cord connected to a suitable source of supply, and with a rheostat interposed to regulate the heat in a usual manner. My improved apparatus is economical to build, durable, and efficient in use, and is capable of transporting in compact form and after it is set up and in use may be quickly moved from one place to another about the shoe factory. Since my apparatus supplies a dry heat, it can be employed for many other uses than toe softening, and is useful in many instances where a toe steamer supplying moisture would be impractical.

My invention is further described and defined in the form of claims as follows:

1. An apparatus of the kind described, comprising a heater-carrying support, a heater therefor, a pivoted shoe carrier secured to said support, a movable adjustable support for the heel portion of a shoe, a fixed support for the fore portion of a shoe and means to adjust the entire shoe carrying supports toward and from the heater.

2. Apparatus of the kind described, including a support, an electric heater secured to one end of said support, a shoe carrier hinged to the other end of said support and comprising a pair of side frames, cross rods uniting them, and an adjusting screw to hold the shoe carrier at an angular position, on the support.

3. Apparatus of the kind described, including a support, an electrical heater carried at one end of said support, a cover inclosing said heater and partially inclosing the predetermined portion of a shoe held in position over said heater, said cover having a convex form adapted to radiate heat downwardly on said shoe portion, a shoe carrier attached to the other end of said support and adapted to be folded over upon said support, together with adjusting means to hold the shoe carrier at a predetermined angle with the support capable of adjustment while carrying a shoe, to move the projecting portion of said shoe toward or away from the electrical heater.

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

OSCAR HEATH.

Witnesses:
JAMES R. HODDER,
DUNCAN L. MACINTYRE.