

[54] **APPARATUS FOR PRESSING
TREATMENT OF SHOE UPPERS**

[75] Inventor: **Egon Dreibholz**, 56 Wuppertal-Bar-
men, Germany

[73] Assignee: **Firma Frobana**, 56 Wuppertal-Bar-
men, Germany

[22] Filed: **Sept. 9, 1971**

[21] Appl. No.: **179,038**

[30] **Foreign Application Priority Data**

Sept. 10, 1970 Germany G 70 33 703.0

[52] U.S. Cl. 12/54.2

[51] Int. Cl. A43d 11/00

[58] Field of Search.....12/8.1, 53.5, 54.1,
12/54.2, 54.3

[56] **References Cited**

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Primary Examiner—Patrick D. Lawson
Attorney—Ernest G. Montague

[57] **ABSTRACT**

An apparatus for pressing treatment of a shoe upper mounted on a last, which comprises a housing partly open on the service side and covered with a perforated sheet as well as closed all round and heat-protected on both sides. A movable shoe last includes a drive-and-control-device. A pressing cushion includes drive- and controlmembers, liftable from and lowerable to the shoe last. The shoe last and the pressing cushion are disposed in the housing. A cover plate has an insert opening corresponding with the configuration of the shoe last seen in vertical direction covering the pressing cushion within the range of its rearward end face. An insert device operates in a horizontal plane transmitting the shoe last from a ready position in front of the housing into a working position below the pressing cushion inside of the housing and reversing the same. Electric-pneumatic controls are provided which self-control the lifting movement of the pressing cushion; the driving movement of the insert device and the engagement of the pressing cushion in a timely dependent manner.

4 Claims, 5 Drawing Figures

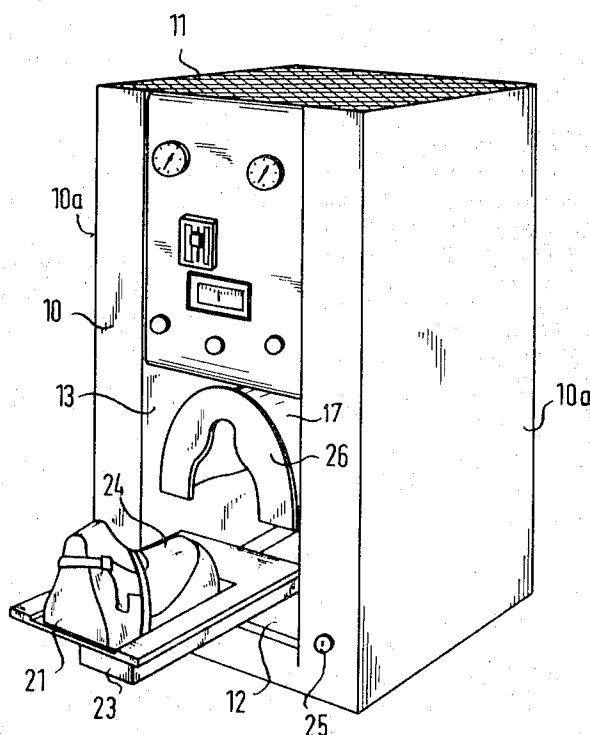
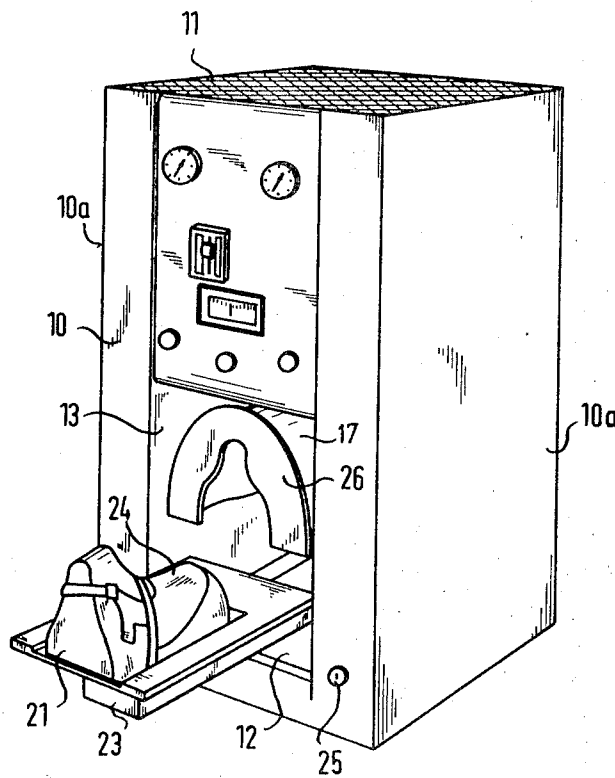


Fig.1



INVENTOR:

BY: *John S. Walsh*
Forrest G. Montague
Attorney

Fig.2

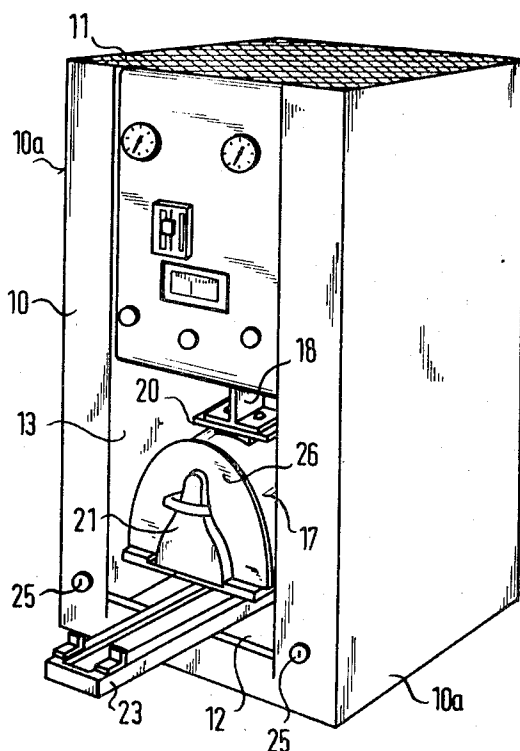
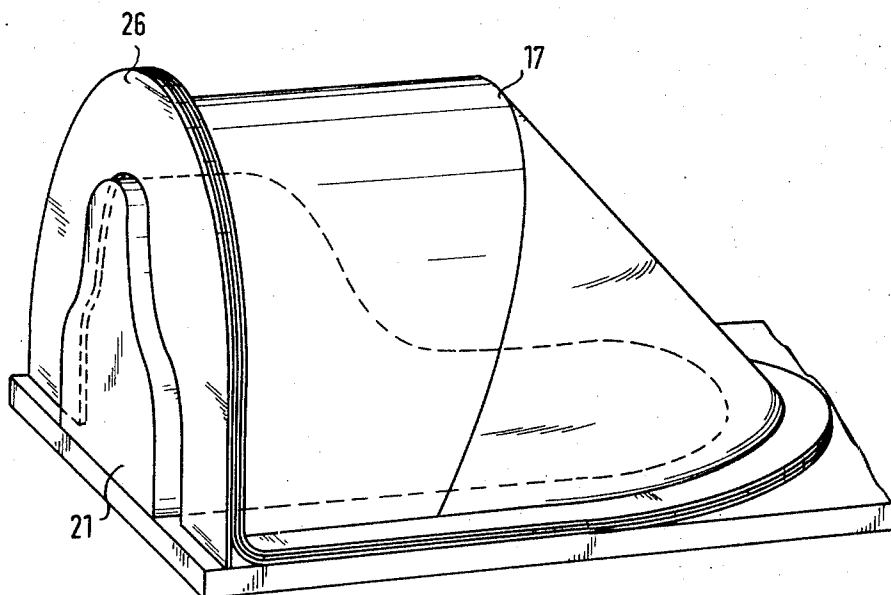


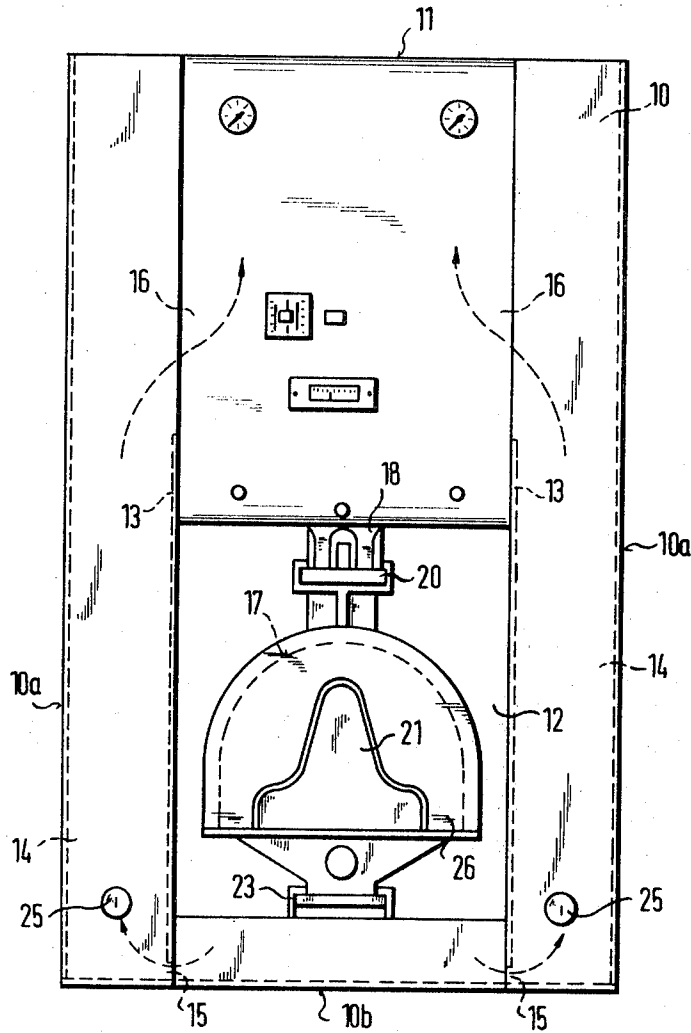
Fig.3



INVENTOR:

BY: *James D. Bialy*
Agent of Inventor
Attorney

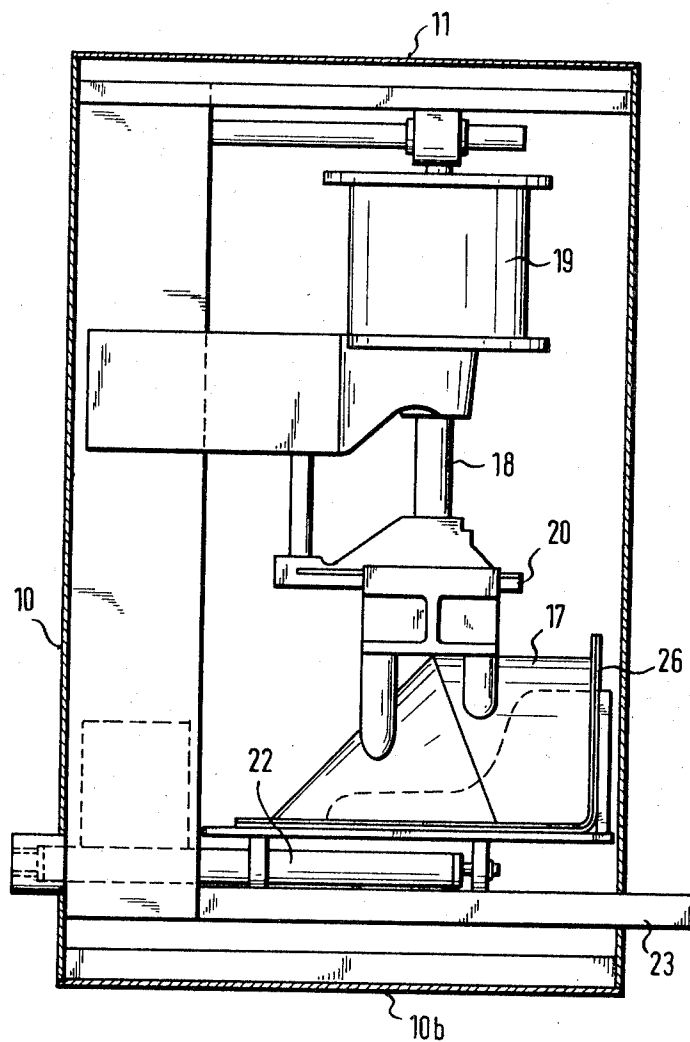
Fig.4



INVENTOR:

BY: *Igor Dreishol*
Ernst Kautzke
attorney

Fig.5



INVENTOR:

BY:

James B. Smith
Ernest J. Montague
attorney

APPARATUS FOR PRESSING TREATMENT OF SHOE UPPERS

The present invention relates to an apparatus for pressing treatment of shoe uppers, in general, and to a pressing cushion, which is lowerable thereupon and capable of being subjected to a pressure medium, in particular.

An apparatus of the above described type, in which a shoe last in an immovable arrangement cooperates with a liftable and lowering pressing cushion disposed thereabove with pneumatic engagement. With this apparatus, the pressing process of and uppers can be simplified, compared with the previous manual work, in which the two parts, to which glue means has been applied, are pressed against each other manually, however, it is of a disadvantage, for example, that the shoe last is disposed immovable below the pressing cushion, so that the pressing cushion has to perform an appreciable lift in a vertical plane, in order that somehow handily the application of shoe uppers to the last can take place, whereby time losses are created.

Accordingly, it is one object of the present invention to provide an apparatus of the type described above which is improved.

It is another object of the present invention to provide an apparatus for pressing treatment of shoe uppers, wherein the liftable and lowerable pressing cushion together with its driving and control elements as well as the driving - and control-means of a displaceable shoe last are disposed within a housing, which is partly open towards the serving side and covered with a perforation sheet, closed all around and at least on both sides protected against heat rays, so that on the other hand the pressing cushion is covered within the range of its rearward end face by a cover plate leaving an inserting opening merely corresponding with the configuration of the last seen in vertical direction, that furthermore, the shoe last is provided on an insert device operating in a horizontal plane for the transformation from a ready position in front of the housing into a working position below the pressing cushion in the housing and to be reversed and, that finally the lifting movement of the pressing cushion, the driving movement of the insert device and the engagement of the pressing cushion are controlled in a timely depending manner electronically-pneumatically self observing.

A first advantage of the present invention can be seen at first in the proposed closed housing structure, in which all required elements are provided in a joint housing. A second advantage resides also in the heat ray protected arrangement of the housing, so that the pressing cushion, on the one hand, as well as a shoe last, on the other hand, are protectively received relative to heat rays. This is of importance so much more, as due to the pretreatment of the shoe shaft in addition to such pressing treatment apparatus, a thermally working activating device must be provided for the preparation of the glue on the wigan and the uppers. The heat reflecting from the activating device can thus not influence the pressing apparatus. Furthermore, in the housing according to the present invention also a continuous air circulation inside is provided for, which prevails between the double arrangement of the side wall parts of the housing, so that a continuous natural cooling is present.

A third advantage of the present invention resides also in the rear covering of a pneumatically applicable pressing cushion with a covering plate, which has an insert opening corresponding with the configuration of the shoe last in height direction. This covering plate offers the advantage that during the working phase, that means, during the application of the pressing cushion the elastic cushion working material is retained by the covering plate, to squeeze out rearwardly passed the shoe last. By this arrangement, the entire pressure force during the shoe last is concentrated exclusively onto the shoe last. Furthermore, also by the all around support of the pressing cushion the danger is removed, that the cushion bursts during the application. One can operate even with highest pressures.

Furthermore, a fourth advantage is seen in the fact that the shoe last is provided on an insert device movable in a horizontal plane, so that thereby the application of the shoe last and the removal again of the pressed shoe upper in front of the device and not until now, inside of the device must be performed inside of the device under difficult presumptions below the pressing cushion. Furthermore, the horizontal removability of the shoe last has the advantage that the pressing cushion itself has to perform merely a small lift in vertical direction, in order to be able to lift the treated shoe upper from the last. By this arrangement idling time periods, which were unavoidable until now, are eliminated.

Last but not least, the apparatus designed in accordance with the present invention is further characterized by the fact, that all movements of the elements required for the pressing treatment of the shoe upper are performed by a self observing electronically-pneumatically operating control device depending relative to each other. By this arrangement a handling of this new apparatus is simple, because merely a safety- and two hand switchings at the front side of the apparatus are required by the operating person, whereby then the process runs automatically.

A heat ray protected housing design is brought about in a practical realization of the subject matter of the present invention suitably such, that at least the side wall parts of the housing are formed as a double arrangement with a formation of ventilation shafts extending at least from the housing bottom over part of the height of the housing.

The arrangement can be chosen thereby such, that the ventilation shafts are formed towards the inside of the housing by blend sheets disposed laterally next to the pressing cushion, which extends over the entire cushion height, project thereby to nearly the housing bottom with a remaining air circulation slot and terminate with some distance with a remaining large air escape remote from the housing cover.

An insert device for the shoe last can be designed in the frame work of the present invention such, that it is received on a rail guided slide having its own pressure means drive.

In summary, it has been achieved with the present invention, to provide an apparatus for the pressing treatment of shoe uppers, which shoe shafts have a series of appreciable advantages, which render the apparatus of the present invention to a highly usable solution for the practice with a high use value. The apparatus designed in accordance with the present invention is characterized not only by an absolutely compact and enclosed

building structure of the function elements, rather ofers also to the operator the necessary security and is easily and simply to be operated or served. Also seen from the effect, it fulfills all requirements since a most meticulous pressing process can be performed.

With these and other objects in view which will become apparent in the following detailed description, the present invention, which is shown by example only, will be clearly understood in connection with the accompanying drawings, in which:

FIG. 1 is a perspective front view of the apparatus designed in accordance with the present invention with the shoe last in the ready position in front of the housing;

FIG. 2 is a perspective side view of the apparatus shown in FIG. 1 with the shoe last in the working position below the pressing cushion;

FIG. 3 is a perspective side view of the pressing cushion and of the shoe last without the remaining elements;

FIG. 4 is a front elevation of the apparatus shown in FIG. 1; and

FIG. 5 is a side elevation with removed lateral cover, whereby merely the essential parts for the present apparatus are indicated.

Referring now to the drawings, the apparatus comprises a substantially rectangular housing 10, which is covered at the upper end by a perforated sheet 11, which has at the front side an opening 12 and otherwise is designed all around in a closed structure. This housing 10 is designed within the range of its side wall part 10a as a double arrangement, blend-sheets 13 being provided at a distance to the side wall parts 10a inside of the housing, which sheets 13 leave between the latter and the outer side wall parts 10a air ventilation shafts 14. These sheets 13 extend nearly to the bottom 10b of the housing, yet leave an air entrance passage 15 and are guided in vertical direction in the direction towards the cover 11 of the housing, however, only so far, that between the cover and the upper edge of the sheets an air escape opening 16 each remains.

Inside of the housing is furthermore provided a pressing cushion 17, which can be engaged by a pressure medium, which cushion 17 sits adjustable as to its height at the end of a piston rod 18 of a pressure medium unit 19 and is arranged settable as to its length on a carrier plate 20.

In a plane below the pressing cushion 17 is provided a shoe last 21, which is movably received on an pneumatically controlled insert device 22 in a horizontal plane. This insert device 22 is guided on a rail 23.

The shoe uppers 24 emerge from an activating device (not shown), and are applied to the shoe last 21 in its ready position, in front of the housing 10 in a manner shown in FIG. 1. The treatment phase is released such that the operator operates simultaneously two switches 25, so that the shoe last 21 is transmitted into the working position, shown in FIG. 2. Simultaneously by an electronic control the pressing cushion 17 is lowered and engaged. A rear cover plate 26 on the pressing cushion 17 prevents during the application of the pressing cushion 17 which is surrounded by a supporting member, that the elastic cushion working material is squeezed out rearwardly.

After a preselectable treatment duration, the pressing cushion 17 is released, the shoe last 21 is transmitted again into the position shown in FIG. 1 and can be

applied again. The total treatment process including the treatment duration is controlled electronically self observing.

In order that the pressing cushion 17 is not influenced from the outside by heat rays of the activating device disposed next to the apparatus (not shown) by the natural air circulation, in particular within the range of the side wall parts 10a, a type of cooling takes place in the shafts 14. The air can enter from the open side into the housing, passing through the slot 15, rising then in the shaft 14 and can escape at 16 above the pressing cushion through the perforated sheets and the cover of the apparatus.

It is to be understood, not last by itself, that the shown and described embodiment is to be seen as one possible example for the practical realization of the present invention, that, however, it should not be limited thereto, rather within the frame work of the present invention still some other embodiments are possible preferably concerning the structural design of the housing, as well as the control of the treatment elements, which, however, as much as a natural self-airing of the housing on the one hand, as well as a self-watching working cycle on the other hand can be obtained, which is part of the present invention.

While I have disclosed one embodiment of the present invention, it is to be understood that this embodiment is shown by example only and not in a limiting sense.

I claim:

1. An apparatus for pressing treatment of a shoe upper mounted on a last, comprising
 - a housing partly open on the service side and covered with a perforated sheet, as well as closed all around and heat-protected on both sides,
 - a movable shoe last including drive-and control-means,
 - a pressing cushion including drive-and control-members, liftable from and lowerable to said shoe last,
 - said shoe last and said pressing cushion being disposed in said housing,
 - a cover plate having an insert opening corresponding with the configuration of said shoe last seen in vertical direction covering said pressing cushion within the range of its rearward end face,
 - an insert device operating in a horizontal plane transmitting said shoe last from a ready position in front of said housing into a working position below said pressing cushion inside of said housing and reversing the same, and
 - electronic-pneumatic control means self-controlling the lifting movement of said pressing cushion, the driving movement of said insert device and the engagement of said pressing cushion in timely-dependent manner.
2. The apparatus, as set forth in claim 1 wherein said housing includes lateral wall parts extending at least spaced apart from the bottom of said housing up to a part of the height of said housing to define ventilation shafts in a double wall arrangement.
3. The apparatus, as set forth in claim 2, wherein said ventilation shafts include sheets disposed laterally adjacent said pressing-cushion and extending over the entire height of said cushion close to the bottom of said housing, defining an air circulation

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slot and terminating at a distance from the top of the housing for a larger air escape.

4. The apparatus, as set forth in claim 1, which includes

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a slide having its own pressure means drive, a rail guiding said slide, and the latter supporting said shoe last.

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