S. H. WHORF & C. RICE.

APPLICATION OF SOLES TO BOOTS AND SHOES BY MEANS OF PRESSURE AND GUTTA PERCHA OR OTHER CEMENT.

No. 14,380. **Patented Mar. 4, 1856.**

Fig. 3.

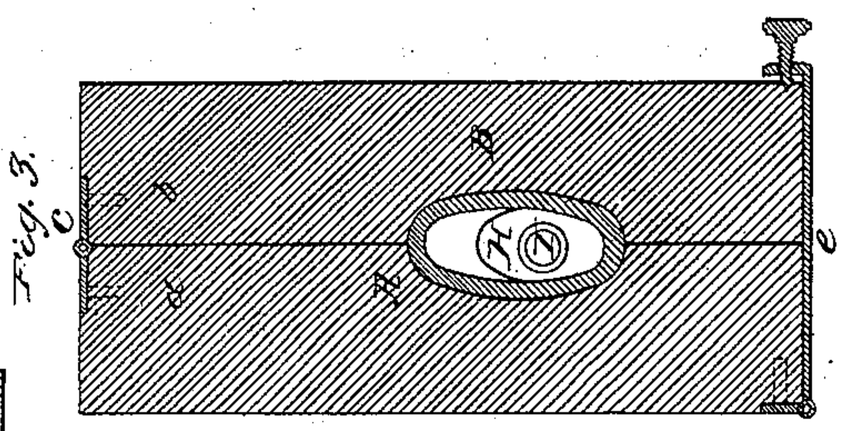
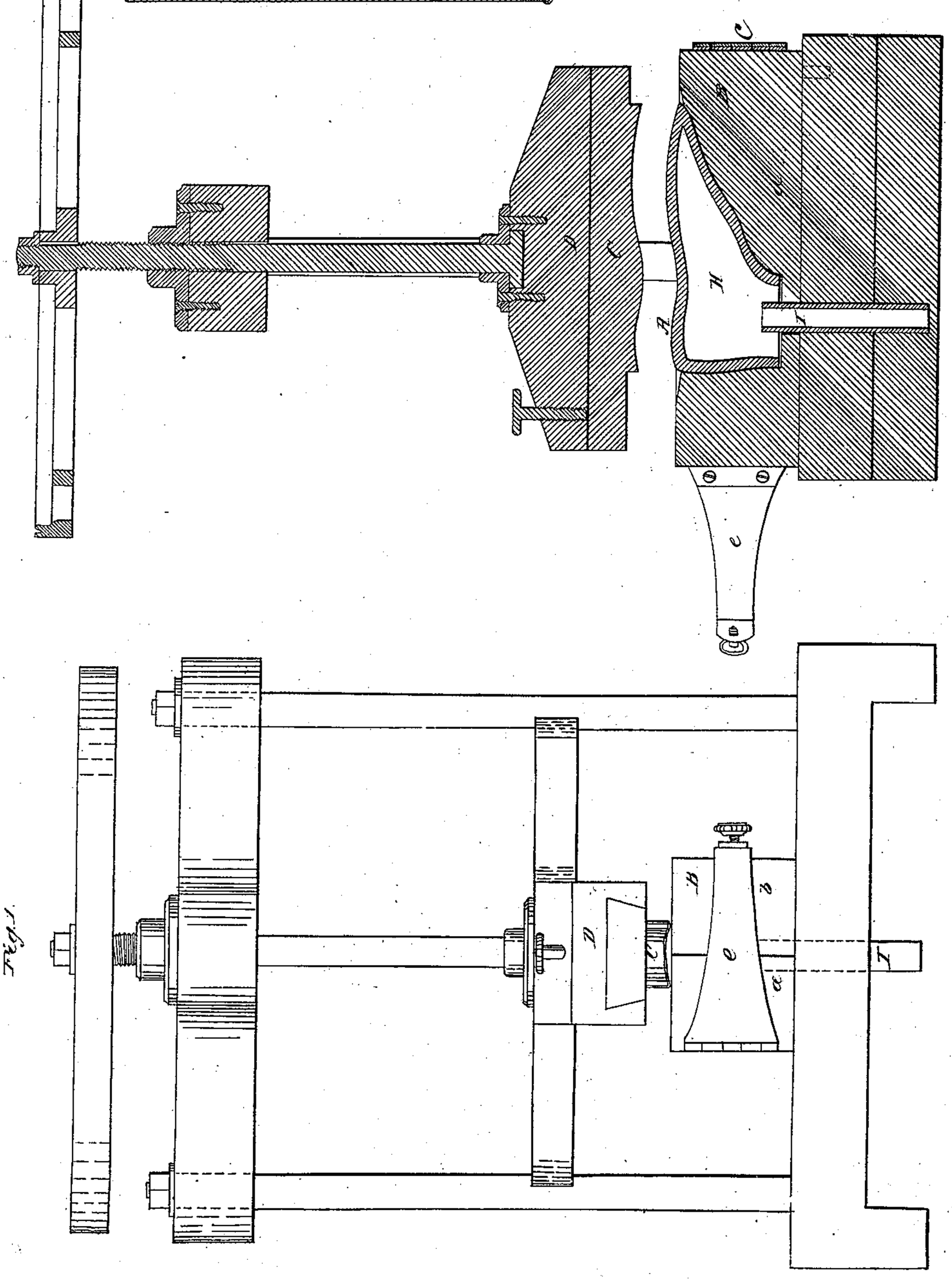


Fig. 2.



UNITED STATES PATENT OFFICE.

S. H. WHORF, OF ROXBURY, AND CHAS. RICE, OF BOSTON, MASSACHUSETTS.

APPLICATION OF SOLES TO BOOTS AND SHOES BY MEANS OF PRESSURE AND GUTTA-PERCHA OR OTHER CEMENT.

Specification of Letters Patent No. 14,380, dated March 4, 1856.

To all whom it may concern:

Be it known that we, SYLVANUS H. WHORF, of Roxbury, in the county of Norfolk, and CHARLES RICE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Application of Soles to Shoes by Means of Pressure and Gutta-Percha or other Cement; and we do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, is a front elevation of a press used in the manufacture of shoes by our improved process. Fig. 2, is a vertical and transverse section of the same taken longitudinally through the last of said press or machine. Fig. 3, a horizontal section of the last and its holder or clasp.

The said machine is intended for lasting a shoe and applying the soles to its upper by means of gutta percha or gutta percha cement or such cement as requires to be softened by the application of heat before it can be rendered adhesive. Of late the practice of manufacturing shoes by cementing their soles to their uppers instead of sewing them together in the old way, has become a very important improvement in the cordwainers' art. In so manufacturing shoes we prepare sheets of leather for the inner and outer soles by covering their surfaces with a coating of gutta percha the same being rolled on in the manner in which it is customary to cover cloth with a coating of india rubber. From these sheets we cut the outer and inner soles, one surface of each being thus covered with a composition or material which by the application of heat is rendered adhesive.

The machine which is used in the process consists of a last A, a bed or last holder B, (which is formed the reverse of the last and made to encompass it on all sides with the exception of its sole) and a platen C, shaped to fit the sole of the last and provided with a press D, by which it may be forced down upon or toward the last. The bed or last holder is constructed in two parts *a*, *b*, hinged together as seen at *c*, in Fig. 3, and provided with a clasp or confining device *e*, by which they may be held together upon the last. The last is to be of metal or other suitable material and constructed hollow or with a chamber H, within it a pipe I, for the purpose of introducing steam into it so as to heat the last. The upper of the shoe properly prepared is first to be placed on the last, or in other words the last is to be inserted in it. Next the last holder is to be brought up and clasped around the last and upper the insole subsequently being placed on the last. Next, the upper is to be turned over and cemented to the insole by gutta percha cement or its equivalent; next the outer sole is to be laid on the upper and insole or within the platen and with its cemented surface, or that covered with gutta percha downward. In this state of things the platen is to be depressed so as to force the outer sole firmly upon the lasted upper and insole, in consequence of the last being heated the gutta percha soon becomes softened and adhesive, and besides this the heat of the last operates to smooth and finish the upper, particularly when it is made from cloth. On removing the last from the press and the shoe from the last the soles when the gutta percha may have become cooled will have been firmly cemented together and to the upper.

We are aware that a gutta percha sole has been applied to a shoe by melting gutta percha in a mold and subsequently pressing the shoe therein. We therefore do not claim such. We are also aware that in bookbinders' presses, and in smoothing irons, the platen of the one and the body of the other has been provided with a spare chamber for the reception of either steam, heated air or other means of heating. We therefore do not claim such, as I use heat not for either drying or smoothing alone but for a different purpose and in a process of manufacture wherein it has not been before applied to my knowledge in the way in which I employ it, it being used by me for softening or melting gutta percha after it has been applied to a last as specified, and

Therefore we claim—

Our improvement in the process of manufacturing and finishing shoes with either gutta percha soles or soles formed of leather or other material and united to the upper and insole by means of gutta percha or its equivalent, and through the agency of pressing mechanism as specified, our improvement consisting in applying heat

within a last by means of a chamber and pipe and steam or means of heating said last the same not only enabling the gutta percha of the sole to be softened or rendered adhesive while it is being pressed upon the insole and upper, but also serving to smooth and finish the upper as described.

In testimony whereof we have hereunto set our signatures this nineteenth day of December A D 1855.

SYLVANUS H. WHORF.
CHARLES RICE.

Witnesses:
R. H. EDDY,
F. P. HALE, Jr.