

G. W. BERNAUER.
SHOE TOE DRYING OVEN.
APPLICATION FILED FEB. 9, 1912.

1,045,806.

Patented Dec. 3, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

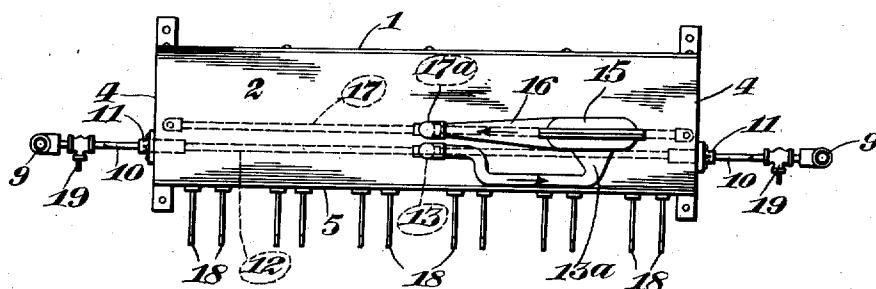
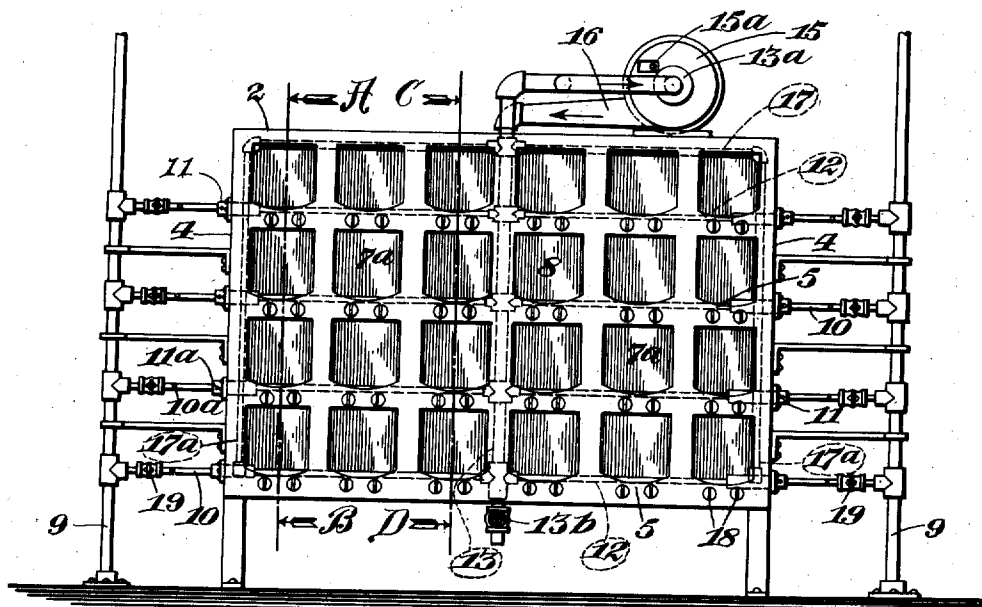


Fig. 2.



WITNESSES:

Chas. A. Becker,
Maybelle Small

INVENTOR.

George W. Bernauer
BY Small & Small
ATTORNEYS.

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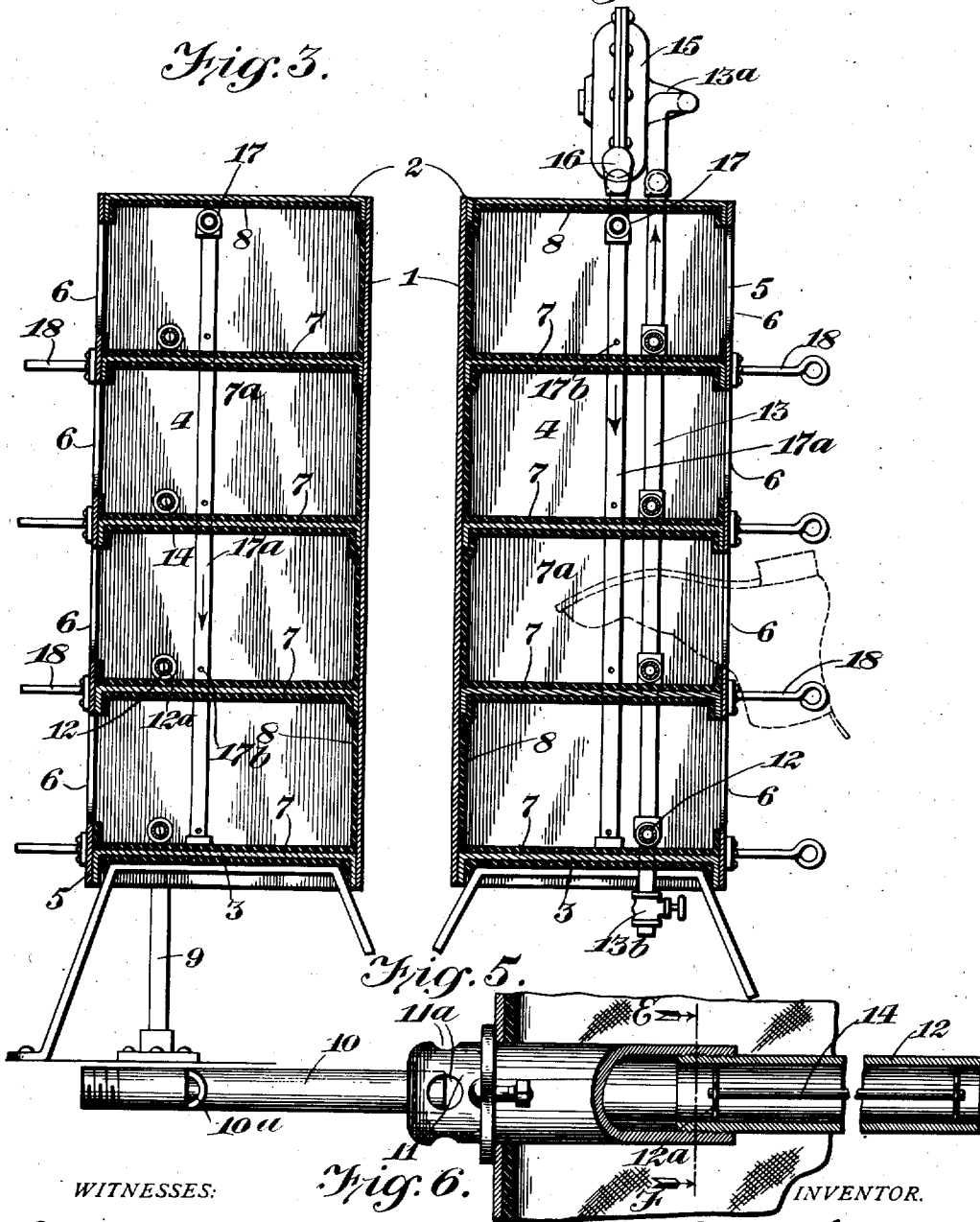
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2 SHEETS—SHEET 2.

Fig. 4.

Fig. 3.



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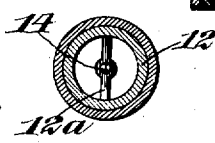


Fig. 6.

George W. Bernauer
BY Small & Small
ATTORNEYS.

UNITED STATES PATENT OFFICE

GEORGE W. BERNAUER, OF ST. CHARLES, MISSOURI.

SHOE-TOE-DRYING OVEN.

1,045,806.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed February 9, 1912. Serial No. 676,549.

To all whom it may concern:

Be it known that I, GEORGE W. BERNAUER, citizen of the United States, residing at St. Charles, in the county of St. Charles and State of Missouri, have invented certain new and useful Improvements in Shoe-Toe-Drying Ovens, of which the following is a specification.

My invention relates to improvements in the means of drying the toes of shoes after they have been treated with a liquid preparation during a certain stage in their manufacture.

Among others, the objects of this invention are (a) to provide a simple, inexpensive and highly efficient device for the purpose described, and (b) to provide such a device whose cost of operation is exceptionally low.

Other objects and advantages may be noted in the following parts of this specification and the appended claims.

Like numerals refer to like parts throughout the accompanying drawings, in which—
Figure 1 is a top plan view of the complete oven; Fig. 2 a front elevation of the device of Fig. 1; Fig. 3 a sectional elevation along line A—B of Fig. 2; Fig. 4 a sectional elevation along line C—D of Fig. 2; Fig. 5 a detail view, on enlarged scale, illustrating the construction and arrangement of certain important elements of my invention; and Fig. 6 a cross-section along line E—F of Fig. 5.

In the practice of my invention I provide a box-like receptacle embracing a rear-wall 1, a top 2, a floor or bottom 3, and side walls 4. Secured to the edges of said walls is a plate 5 which is subdivided into a plurality of apertures 6, the same communicating directly with the several compartments into which said receptacle is divided through the provision of shelves 7. Preferably the whole interior of the oven is lined with asbestos, as indicated by numeral 8, whereby the distribution of heat from one to another of compartments 7^a is largely prevented and a uniformity of temperature maintained throughout the oven.

To fuel-supply pipes 9 are connected burners 10 (preferably consisting of a short tube provided with an aperture 10^a) one extremity of which is projected within the open end of a combustion chamber 11, the same provided with a plurality of apertures 11^a. The opposite extremity of the

pipe carrying chamber 11 is detachably secured to a tube 12 which is connected with a suction-pipe 13, and disposed within each of tubes 12, by means of spiders 12^a or other suitable contrivance, is a copper or other similar wire 14. Disposed upon the top of the oven is a motor-driven fan 15, of any well-known type, with the casing of which pipes 13^a and 16 are connected. Pipe 13^a is merely an angular extension of what has been termed suction-pipe 13, while pipe 16 is an extension of a tube 17 extending from side to side of the oven within the uppermost of compartments 7^a and communicating with pipes 17^a, the latter arranged parallel and adjacent the side walls of the oven and provided with a series of apertures 17^b which are, preferably, disposed in a plane parallel with tubes 12.

Upon the face of plate 5 are secured wire arms 18, or other suitable members, designed to lie on either side of the upper of a shoe (as illustrated) to support the same.

The operation of the device is as follows. Cocks 19 being opened, the gas or other heating medium is admitted to burners 10, mixed with the outer air through the agency of apertures 10^a, 11^a, and ignited in combustion chamber 11. Fan 15 having been started, the ignited mixture is drawn far into tubes 12 and the heated air carried to the fan by way of suction pipe 13. From this point the heated air is blown into pipe 16, forced thence along pipe 17 and into laterals 17^a, whence it issues from apertures 17^b to be re-heated through contact with the external surface of tubes 12 and circulate through each of compartments 7^a.

Obviously, the disposition of copper wires 14 within tubes 12 serves not only to raise the temperature thereof very rapidly but effects this desideratum and maintains a high temperature with a remarkably low consumption of fuel, each full size oven of the type now in operation using only about three-quarters ($\frac{3}{4}$) of a foot of gas per minute.

It will be noted that suction-pipe 13 is provided with a cock 13^b, while the casing of fan 15 is provided with a sliding door 15^a, the use of these members serving to control the temperature of tubes 12.

Though the preferred form of the device is herein described, the right is reserved of making such change in the size, arrangement and construction of the various parts

as may, from time to time, prove expedient or desirable and without departing from the spirit of my invention as defined by the following claims.

5 What I claim as new and desire to secure by Letters-Patent is:—

1. An article of the character described comprising a receptacle having a perforate wall, a system of pipes arranged therein, means for heating said pipes, mechanism adapted to draw the outer air through said pipes, and devices adapted to re-distribute said air throughout said receptacle.

2. An article of the character described comprising a receptacle having a system of pipes arranged therein, and members disposed within certain of said pipes, means for heating said pipes, mechanism adapted to draw the outer air through said pipes, and devices adapted to re-distribute said air

throughout said receptacle, said members adapted to increase the efficacy of the pipe-heating medium.

3. An article of the character described comprising a receptacle having a perforate wall, a system of pipes arranged therein, and members disposed within certain of said pipes, means for heating said pipes, mechanism adapted to draw the outer air through said pipes, and devices adapted to re-distribute said air throughout said receptacles, said members adapted to increase the efficacy of the pipe-heating medium.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. BERNAUER.

Witnesses:

PERCY ALEXANDER,
A. D. MUDD.

Correction in Letters Patent No. 1,045,806.

It is hereby certified that in Letters Patent No. 1,045,806, granted December 3, 1912, upon the application of George W. Bernauer, of St. Charles, Missouri, for an improvement in "Shoe-Toe-Drying Ovens," an error appears in the printed specification requiring correction as follows: Page 2, lines 31-32, for the word "receptacles" read *receptacle*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of August, A. D., 1913.

[SEAL.]

E. B. MOORE,

Commissioner of Patents.

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