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J. BECKWITH

METHOD AND APPARATUS FOR TREATING PIPES

Filed Dec. 9, 1925

Fig. 1.

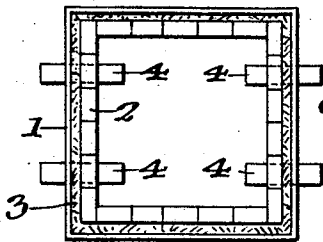
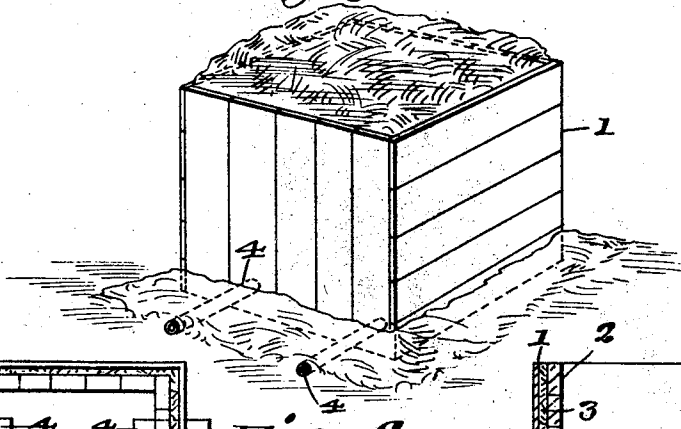


Fig. 2.

Fig. 3.

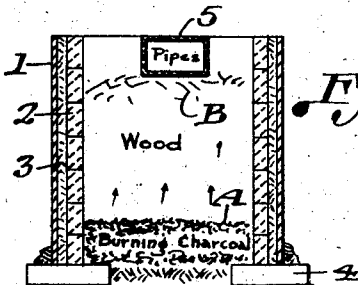
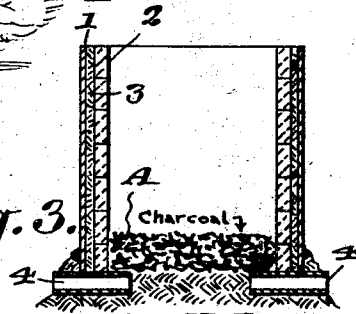


Fig. 4.

Fig. 5.

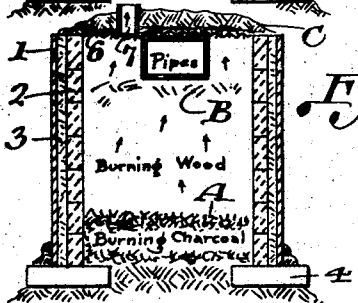
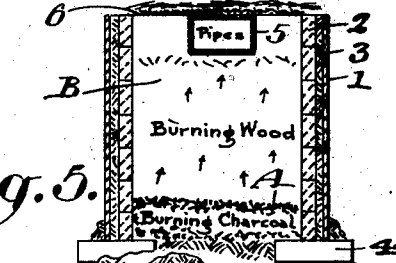
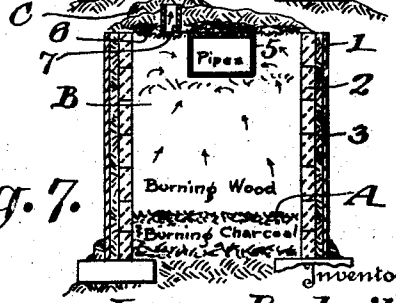


Fig. 6.

Fig. 7.



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METHOD AND APPARATUS FOR TREATING PIPES.

Application filed December 9, 1925. Serial No. 74,347.

This invention is an improvement on my prior application Serial No. 732,729, filed August 18, 1924, and relates to a method and apparatus for treating pipes and similar articles, especially those made of pressed or block meerschaum. The purpose of the treatment is to give the pipes a dark color and to so harden them that they will be very durable and will readily take a high polish.

Pipes have long been made of block meerschaum but prior to applicant's invention it has been impossible to make pipes of pressed meerschaum which could be hardened sufficiently to prevent breakage after relatively short use. By the present invention pipes or similar articles of pressed meerschaum can be hardened so that they will stand long and hard usage.

In the carrying out of this process the pipes are subjected to the smoke, gases, and volatile products arising from the slow carbonization of wood or similar material and certain of the volatile products are absorbed in the first portion of the treatment by the pipes. As the temperature rises not only these volatile products will be driven off, but any volatile constituents of the pipes themselves and ultimately very fine particles of carbon and the like are apparently deposited in the interstices of the material and the whole pipe is hardened. If the articles are treated sufficiently long they will be an intense black. If removed somewhat earlier, various shades may be obtained. They take a very high polish with ease and break with difficulty.

The treatment appears to have the effect of cementing together the shavings and fragments of which pressed meerschaum is made so that the resulting articles break with difficulty and will stand hard usage as pipes for a long time.

This process may be carried out in various forms of apparatus, for example such as the one described in my prior application. It has also been found possible to build a trough or channel of brick of suitable length, fill the same with wood, place a chimney at one end of the trough and near this the pipes or other articles. The fire is started at the other end of the trough and burns slowly toward the end having the chimney and toward the pipes.

However, I have found that the pipes or other articles may be treated somewhat more rapidly and more cheaply with equally good

results by an apparatus such as described in this application. More detail objects of the invention will be apparent from the following description and will be covered by the appended claims.

In the drawings:—

Figure 1 is a perspective view of a completed kiln as it appears during the execution of the process.

Figure 2 is a horizontal section thereof.

Figures 3 to 7 inclusive are all similar vertical sections illustrative of successive stages of the process and will be more particularly described hereinafter.

In constructing the kiln herein disclosed there is employed a wooden box 1 open at top and bottom within which is placed a brick lining 2 at a slight distance from the box, this space being filled with earth 3. At each of two opposite sides of the box at the bottom there are provided two vents 4. As illustrated in Figure 4 earth may be piled around the bottom of the box sufficiently to prevent ready access of air to the interior thereof.

In the beginning there is placed in the bottom of the box a layer A of charcoal and on top of this after it has been fired, wood B is placed, which substantially fills the box. A small perforated box member 5 or similar container in which are placed the pipes is placed on top of the wood so that the top thereof lies level with the top of the box. The wood is also placed around this container 5 until it is level with the top of the box.

A screen 6 is placed over the open top and upon this is piled straw covered by earth C. A vent 7 extends upward through this earth during the preliminary part of the process. After the wood is well burning the top of the vent is closed, as shown in Figure 7.

The box 1 may be made of any convenient size but excellent results have been obtained from one about three feet square and three feet in height. Only a relatively small amount of wood is required to fill this and if the process is properly carried out it takes about eight hours to complete the burning and to give the pipes or other articles in the container 5 a hard black finish. It has been found that if any of the earth placed upon the top comes in contact with the pipes while they are being heated that it takes the color out of the pipe. It is therefore found advisable to employ the screen 6 in order to

prevent this result. As in the previous case the exact color obtained may be varied by a variation in the length of time during which the pipes are exposed to the burning gases.

5 It has been found, however, especially in the case of pressed meerschaum that it is advisable to continue the process until the pipes attain a dark color.

10 It is obvious that the process is adapted for the treatment of other articles than pipes, although it is particularly adapted thereto. It is found that a pressed meerschaum pipe subjected to such treatment is practically indistinguishable from one made from block
15 meerschaum and it is very durable.

It is obvious that the precise structure of the kiln may be varied in many ways without appreciably multiplying the process itself. It is also obvious that the process itself may be somewhat varied as to the time and other conditions without in any way departing from the spirit of the invention. Furthermore while the process is particularly adapted to pipes or articles constructed
20 of pressed meerschaum and has its greatest value in connection with such articles, it is in no way limited thereto for its application. In general it may be said that the invention is to be regarded as limited only
25 by the scope of the appended claims.

I claim as my invention:—

1. A process for the treatment of pressed meerschaum pipes which comprises subjecting them for a relatively long time to the
35 smoke and volatile products arising in the production of charcoal and for a relatively short time to a temperature high enough to drive off the volatile constituents from the pressed meerschaum and deposit fine parti-

cles of carbon in the interstices thereof, 40 thereby binding together the component parts of the pressed meerschaum, coloring the pipe, and rendering it durable.

2. As an article of manufacture, a pressed meerschaum pipe having its component
45 parts bound together by the action of heat and the deposition of finely divided carbon in the interstices thereof whereby the same is rendered more homogenous, is hardened, given a high color, and rendered susceptible
50 of taking a high polish.

3. A kiln for the treatment of articles which comprises a receptacle adapted to be filled with wood, a perforated container for the articles placed near the top of the kiln
55 near the wood, and a screen overlying the top of the kiln and adapted to have straw and earth placed thereon.

4. A kiln for the treatment of articles which comprises a receptacle adapted to be filled with wood, a perforated container for the articles placed near the top of the kiln
60 on the wood, a screen overlying the top of the kiln and adapted to have straw and earth placed thereon, and means at the bottom of the receptacle for the entrance of air.
65

5. A kiln for the treatment of articles which comprises a receptacle adapted to be filled with wood, a perforated container for the articles placed near the top of the kiln
70 on the wood, a screen overlying the top of the kiln and adapted to have straw and earth placed thereon, means at the bottom for the entrance of air, and a vent at the top for the exit of smoke and volatile products.
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In testimony whereof, I have hereunto subscribed my name.

JAMES BECKWITH.