

(Specimens.)

W. BRUENING.
PROCESS OF BLEACHING WAX.

No. 421,904.

Patented Feb. 25, 1890.

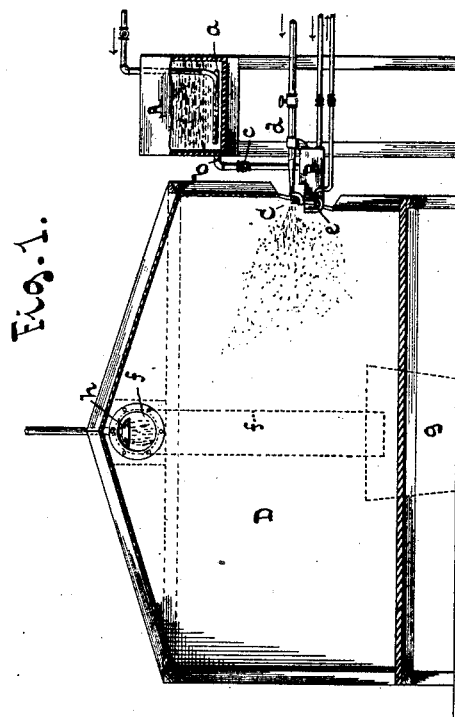


Fig. 2.

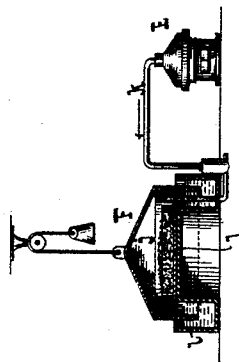
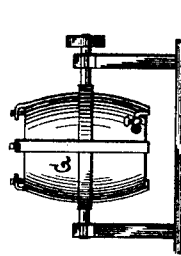


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM BRUENING, OF EAST ORANGE, NEW JERSEY.

PROCESS OF BLEACHING WAX.

SPECIFICATION forming part of Letters Patent No. 421,904, dated February 25, 1890.

Application filed August 3, 1889. Serial No. 319,671. (Specimens.)

To all whom it may concern:

Be it known that I, WILLIAM BRUENING, a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Processes for Bleaching Wax, of which the following is a specification.

For a great number of uses to which wax is appropriated it is necessary that it should be perfectly white. For this end wax has been bleached by exposing fine shreds, strips, or sheets of wax on a bleaching-ground to the action of light, air, and moisture, then remelting it, and repeating the operation of remelting and exposing, so as to make the bleaching complete throughout. Wax has also been bleached by the use of chlorine or by mixing with an emulsion of wax or with molten wax alkaline salts—such as nitrates or chromates—and gradually stirring in sulphuric acid. The repeated reduction of wax into fine shreds or thin strips and sheets involves much time and labor, while in the other methods the wax must be hot or liquid and demands continual attention.

The object of my invention is to save time and labor in the process of bleaching; and for this purpose my invention consists in reducing the wax to a fine powder by atomizing molten wax by steam or air jets, collecting the powder, and exposing the same to some bleaching agent.

In carrying out my invention I use, by preference, apparatus such as illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the atomizing apparatus; Fig. 2, a section of the apparatus for bleaching, and Fig. 3 an elevation of the wash-barrel.

Similar letters indicate corresponding parts.

A, Fig. 1, is a tank or barrel for melting wax; *a*, a steam-coil within the tank; *b*, a pipe leading from the barrel A to a trough B, and provided with a cock *c*. The trough B is provided with a steam-jacket or heated by other suitable means.

C is an atomizer, consisting of a series of parallel steam-nozzles *d* and a series of suc-

tion-pipes *e*, connected to the nozzles and dipping into the molten wax in the trough B.

D is a chamber, the walls of which are formed of muslin supported on a light framework.

f is a pipe or bag leading from the top of the chamber D into a tank *g*.

A water-spray apparatus *h* is placed into the top of the pipe or bag *f*.

Fig. 2 represents the bleaching apparatus.

E is a retort for generating chlorine gas, and F a water-sealed chamber formed by the fixed tank *i* and the suspended top *j*. A pipe *k* leads from the generator E to the upper part of the chamber F.

l is a tray for atomized wax.

G, Fig. 2, is a wash-barrel of the usual construction.

The wax is first melted in the tank A, whence a regulated supply is admitted into the trough B. The steam-jets draw the wax from the trough and atomize it. At the same time the jets draw into the chamber more or less cold air, which reduces the temperature. The air escapes through the walls of the chamber, and the cooling and condensation of the steam are assisted by the spray of water from *h*. The cold air originally contained in the chamber aids in reducing the temperature, and the larger the chamber in proportion to the capacity of the jets the longer the process can be continued without interruption. The atomized wax is removed from time to time, sifted, put on the tray *l*, and placed into the bleaching apparatus, Fig. 2, where it is bleached by exposure to the action of chlorine gas. The bleached wax is repeatedly washed in a barrel, Fig. 3. It is then melted in water and run off into hot water in the usual manner.

I do not restrict myself to the use of the apparatus shown and described, nor to any particular bleaching agent. I have also used compressed air for atomizing in place of steam.

Any kind of chamber may be used with the atomizer, provided it be kept cool enough to prevent melting of the atomized wax.

When compressed air is used for atomiz-

ing, the danger of melting the wax is obvi-
ated; but I prefer steam, which, in connec-
tion with air and light, has a bleaching ef-
fect, so that by repeated atomizing alone the
5 wax is considerably bleached.

The atomized wax may be bleached in the
usual manner by exposure to light, air, and
moisture, or by any other known means, and
the bleaching agent may be introduced into
10 the chamber where the atomized wax is col-
lected.

Having fully described my invention, what
I claim, and desire to secure by Letters Pat-
ent, is—

15 1. The within-described process of bleach-
ing wax, which consists in atomizing the wax,

collecting the resulting powder, and bleach-
ing the same by exposure to light, air, and
moisture, or by any other known bleaching
agent, substantially as described. 20

2. The process of preparing wax for bleach-
ing, which consists in atomizing the same by
a jet of steam or gas, substantially as and for
the purpose specified.

In testimony that I claim the foregoing as
my invention I have signed my name, in pres-
ence of two witnesses, this 31st day of July,
1889. 25

WILLIAM BRUENING.

Witnesses:

H. W. HELFER,

A. FABER DU FAUR.