

UNITED

PATENT OFFICE

WALL MEMBER

Bloomfield, Ind.

Serial No. 193,668

72-6)

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resistant film to be incorporated directly within  
the concrete and to be so sealed therewithin as  
to prevent loss of that material due to weather  
conditions or temperature changes.

These and many other objects and advantages  
of the invention will become apparent to those  
versed in the art in the following description of  
one particular form of the invention as is illus-  
trated more or less diagrammatically in the ac-  
companying drawing, in which

Fig. 1 is a vertical section through a wall mem-  
ber within a mold;

Fig. 2, a detail on a greatly enlarged scale of a  
section through the inner face portion of the wall  
member on the line 2-2 in Fig. 1; and

Fig. 3, a view in top perspective of a finished  
wall member.

Like characters of reference indicate like parts  
throughout the several views in the drawing.

The invention is most easily carried out by wet  
casting of concrete in horizontally disposed forms  
or molds. The usual concrete consisting of ce-  
ment, aggregate, and water is prepared in the de-  
sired proportions and placed in a flat mold 10 in  
sufficient quantity as to bring the level of the con-  
crete up to within a slight distance below the top  
edge of the walls of the forms, such as from one-  
quarter to one-half inch therebelow. The mold is  
thoroughly vibrated in order to settle the con-  
crete therein so as to bring the upper face of the  
concrete then in the mold into a flat surface on  
a horizontal plane. It is to be noted that the  
concrete is sufficiently wet so as to permit it to be  
vibrated to this level condition as opposed to the  
drier concrete mixture employed in power tamp-  
ing machines.

In the present instance, the wall member 11  
being described is that as employed in a silo  
wherein the thickness would be about two and  
one-half inches and the width about twelve and  
one-half inches with any desired length such as  
two and one-half feet. Preferably the member  
for this application would be provided with a  
groove on one side and a tongue on the other for  
interlocking when the members are placed one  
against the other, edge to edge to form the silo.

In a suitable mixing mill, sand is heated to a  
temperature well above the melting point of the  
material to be employed as the acid resisting  
medium. While it is possible to use a number of  
materials for this purpose, such as asphalt, tars,  
and paraffin wax, the wax is easily handled, is  
sufficiently low in price to permit its economical  
use, and has certain additional qualities as will  
hereinafter become apparent. For the present  
example, the acid resisting medium will be re-  
ferred to as wax. To the heated sand is added  
the melted wax in the desired proportions. This  
will depend somewhat upon the size of the indi-  
vidual grains of sand, but in practice one par-

ticular process of the wax is forced to twelve parts of sand. As the wax is forced through the sand, the wax is forced to self through the sand, and the wax is forced uniformly with the sand. The wax is forced approximately equal to the sand.

The same process is repeated with the wax is then forced through the sand. The wax is forced through the sand, and the wax is forced uniformly with the sand.

The remaining sand is then forced into the mold (10) and the sand is forced to fill the mold to its top edge. The sand is forced to fill the mold, and the sand is forced to fill the mold. The sand is forced to fill the mold, and the sand is forced to fill the mold.

As illustrated in Fig. 2, the sand is forced into the mold (10) and the sand is forced to fill the mold to its top edge. The sand is forced to fill the mold, and the sand is forced to fill the mold. The sand is forced to fill the mold, and the sand is forced to fill the mold.

Since each particle of sand is surrounded by the cement, the sand is forced to fill the mold to its top edge. The sand is forced to fill the mold, and the sand is forced to fill the mold. The sand is forced to fill the mold, and the sand is forced to fill the mold.

again, or when the wall members become warmed by the heat transmitted from the fermenting ensilage, the wax is still there and upon expansion will refill that spacing.

In other words, by reason of the unique manner of introducing the wax into the facing zone of the wall member, the wax is not only placed more deeply into the zone than it would be if it were merely painted or spread on the surface, but the wax is placed there in a permanent fashion without danger of being scraped off, cracked off, or otherwise lost.

Referring again to the method forming the individual member, the cast member is left in the mold until it is hardened sufficiently that it may be removed without damage. The removed member is then cured in the usual manner. Incidentally by reason of the presence of the facing surface zone, the water does not evaporate from the member as quickly as it would otherwise and, therefore, good curing conditions are extended in a very beneficial manner.

When it is desirable to employ less water than required in the above indicated procedure, the facing mixture of sand-wax-cement may be "dry-mixed," that is, mixed with a minimum amount of water, and then this "dry-mix" may be placed first in the mold on its pallet or floor and then vibrated at a sufficiently high frequency to level it. Thereafter, the main body of concrete of the usual "wet-mix" may be added to fill the mold, the mold vibrated for a brief period, and then the surface of the concrete smoothed off to complete the casting. This procedure forms the face side down instead of on top as in the procedure first explained.

Also it is to be noted that there is an actual saving of labor in preparing the wall member in the manner stated in that the wax may be introduced into the wall member as described with less labor than it could be by first putting the member through a heating operation and then immersing it in molten wax so that the wax may penetrate the pores or capillaries of the member, as has been done heretofore. While the process has been described in reference to a silo wall member, it is, of course, well adapted to other concrete members such as building blocks and the like where a water resistant surface zone is desirable as well as an acid resisting zone.

While I have herein shown and described my invention in the one particular form, it is entirely obvious that structural changes and method changes may be employed without departing from the spirit of the invention and I, therefore, do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claim.

I claim:

A structural concrete member having a body of cement bonded aggregate normally susceptible to acid and water penetration, and a cement bonded facing zone integrally a part of the member having finely divided aggregate particles each separately embedded in a paraffin wax film, said particles being closely spaced to have a thin envelop of bonding cement therebetween outside of said films, the capillaries of said bonding cement causing spreading of said films under favorable temperature conditions therethrough from one particle to another.

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CONCRETE WALL MEMBER  
Filed March 3, 1938

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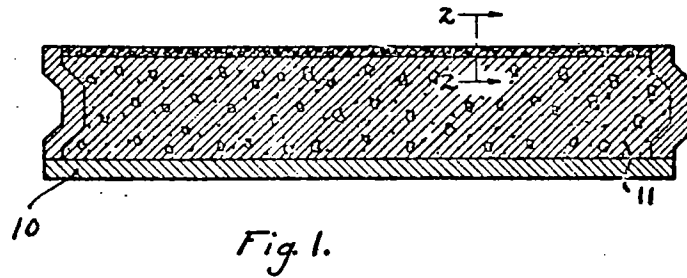


Fig. 1.

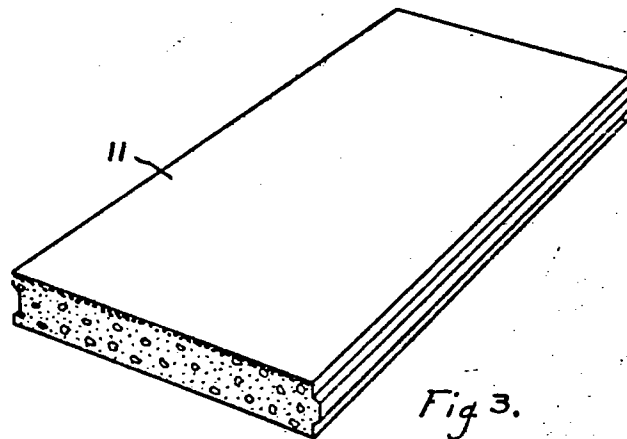


Fig. 3.

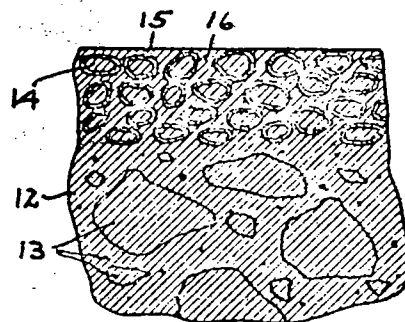


Fig. 2.

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