

On account of these well-known troubles and the known properties of wood, in so far as their various properties are known, the use of wood for flooring has become more or less standardized—that is, maple for indoor floors where the wear is great and as long life as possible, with a good appearance, is required, irrespective of first cost. Oak, ash and chestnut in residences and ordinary offices, where there is no heavy traffic and pine for heavy traffic or where it may be necessary to offer more than usual resistance to dampness or other weather conditions. It would be impossible to cover the different variations in the kind of wood used for floors according to individual whim or special conditions, for there are as many exceptions as there are rules on the subject, each of the above kinds of wood, however, seeming to have more or less of a peculiar applicability to the work required, and proving in its cost of maintenance or replacement, expensive or otherwise, according to the knowledge of conditions possessed by those responsible for laying each floor.

Maple is naturally first in favor and most frequently used. It is, however, also most expensive, and in some respects the most unsatisfactory floor. The average quality of maple being used for flooring to-day is not as good wood as the maple that was used twenty years ago, and there are now maple floors that have been down for twenty years which are in better condition than floors that have been down only a few years. Irrespective of quality, however, maple is desirable for indoor floors chiefly on account of its good appearance, long wearing and non-splintering qualities, due to the close fibre of the wood, this close fibre at the same time seeming to be the reason for most of the trouble with maple floors, as on that account it holds moisture longer, and, unless it has been treated in some proper fashion, will in from two to five years buckle, many times even to such an extent that tongue and groove separate, nail heads pull through, and the floor becomes unsightly and unsafe for traffic. Maple also seems to be peculiarly subject to rot where it is in contact with artificial heat supplied from radiators or steam pipes. It is on account of this extreme sensibility to dampness that maple is seldom used for outside flooring.

Ash, oak and chestnut will all quickly splinter, if subjected to any heavy wear.

Pine, second only to maple in the extent of its use for floors, is perhaps the cheapest and least expensive to maintain, and can be used where traffic is heavy, and as it rarely becomes buckled, offering better resistance to weather conditions, can, aside from the matter of appearance, be used for floors where none of the other woods would do so well.

Pine, however, will splinter, and after commencing the splintering advances rapidly, making the cleaning of the floor almost impossible, and very quickly rendering it unsafe for traffic.

In floors, all of these woods are just as subject to rot as they are when used for other purpose, and there does not appear to be any peculiarity in the way rot starts in a floor, the conditions and results being much the same in flooring as in any other wood, and the most expensive economy practiced is to lay a new floor over an old one that is dry or rotted, the rot from the old floor simply penetrating the new floor with a greater degree of rapidity, and seemingly also after an old floor is covered with a new one without the old floor being taken up, the rot penetrates the rafters and beams more quickly.

The desirability of treatment for floors to prevent splintering, rotting and buckling has, of course, been recognized, and different ways have from time to time been tried, and in my experience most of these different ways have been not only unsuccessful, but many of them positively injurious, one very prevalent way being the application of boiled linseed or cottonseed oil when the floors are laid. This idea is all

right as far as it goes, but I have never found that it was permanent. It does not seem to penetrate the fibre, but, remaining on the surface, hardens, and then the traffic soon causes it to scale off in a light yellow powder, leaving the floor no better able to resist rot and splintering than before application. A combination of linseed or cottonseed oil with turpentine and wax is in the same class, the turpentine only penetrating the wood, but that soon evaporates, and the traffic then causes this to scale off in the form of a dark brown powder. Paraffine wax oil seems to be more or less injurious, as this apparently destroys the life of the floor, causing a rot of a peculiar character, noticeable by small pieces of wood breaking off under wear.

Creosote and similar real preservative materials are not practical for the great majority of indoor floors for obvious reasons, and it would seem, if this field is to be covered, that it can only be through the medium of a material that is an actual preservative, that will cause the floor to which it is applied to resist dampness and splintering, and that can be applied to the floor either after it is laid or at least applied to the flooring of the building or the place where it is to be laid.

Statistics are not obtainable as to the amount of wood flooring annually consumed, but the quantity is so great that any practical way, at a cost that would be commercially practicable, to add to the usefulness and the life of wood flooring is well worth careful attention, and the concrete and composition flooring has not proven so universally satisfactory under any and all conditions, but that wood flooring will be well able to hold its own in competition with these other materials, if the ordinary trouble of a wood floor could be materially modified or overcome.

TIMBER FOR CREOSOTED BLOCK PAVING.

By Harry C. Davis.*

The success of a wood block pavement depends upon four fundamental principals. These are:

First. The quality of wood from which it is manufactured.

Second. The character of the oil used for preserving the wood from decay.

Third. The method and manner in which the blocks are treated.

Fourth. The excellence of the construction of the pavement.

While it is probably true that all of the first three of these principals are of equal importance, and the fourth of major importance, this paper has to deal only with the first, or the quality of the wood selected for the pavement. No matter how proper may be the selection of the wood, the oil or the manner of treatment, the pavement will be a failure unless the construction work is properly done.

Failures of street pavements of all kinds are frequently attributed to causes which have nothing to do with that failure. For instance, the writer is familiar with a certain street in the city of Chicago where black gum was used and the timber condemned and stricken from the specifications because of defects appearing, which were attributed, probably without the slightest reason, to the wood itself.

It is also equally true that faults sometimes exist in one of these fundamental principals which are not directly charged to it. Take, for instance, "weeping" or "bleeding." This has universally been attributed to the nature of the oil used in impregnating the blocks, and but few engineers have attempted to charge it to any other cause.

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