RESEARCH NOTES

SPECIAL FLOORING FOR SELF-EMPTYING PARCHMENT COFFEE BIN DRIERS

A sheet of proprietary[1] bin flooring was examined for use in self-emptying parchment coffee bin driers. For the purpose intended it was found necessary to increase the width of the openings to $\frac{9}{64}$ inch and the fan power to $\frac{5}{6}$ hp. per 9.25 square feet of drying bed floor. With these modifications, 350 pounds of market coffee were discharged in 19 minutes. The floor layout developed finally for testing is shown in figure 1.

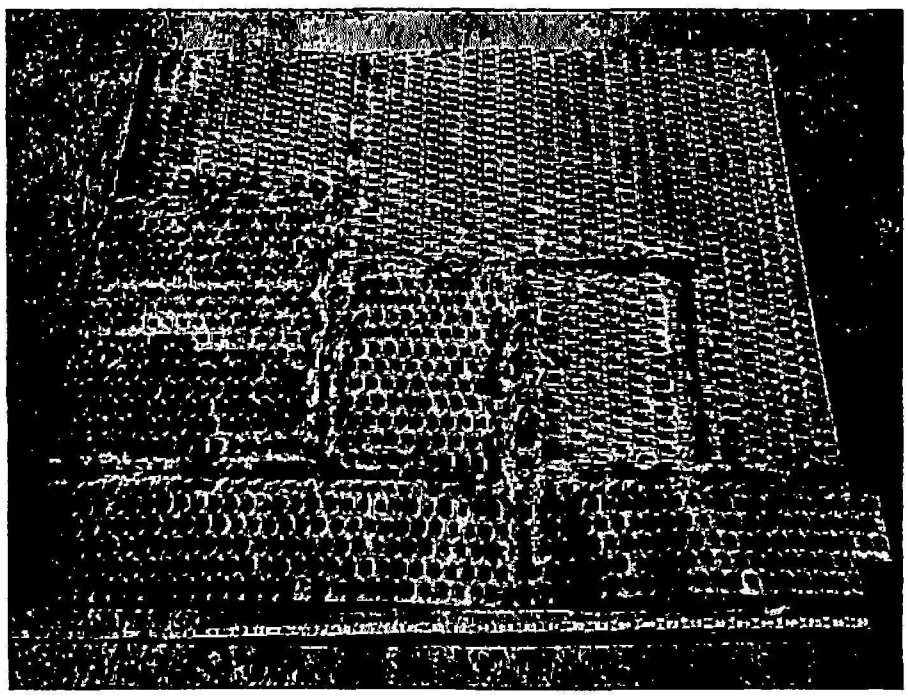

FIG. 1.—The modified flooring used to self-empty the laboratory drier.

Beans up to approximately 20 percent moisture content, wet basis, were handled by this method. When a severe moisture gradient existed in the dried bed, it was necessary to mix the beans discharged in the first and final phases, and to store them for a time sufficient to obtain a more uniform moisture content. Beans discharged in the second of the three unloading phases from the different layers were mixed well. Trial samples from batches processed in this way rated the highest market classification.

The use of this type of flooring in parchment coffee bin driers obviates need for either stirring arms or manual shoveling.

[1] "Airsweep" by Crittall Silos Limited, Witham, Essex, England. This product is mentioned solely for information purposes and does not imply endorsement.

The mechanism of discharge appears to be a combination of flotation of parchment beans at the floor level displaced by saltation, followed by an avalanche of single parchment beans immediately above. To create conditions necessary for producing this flow, it seems essential to use slot openings of a dimension approaching the height of individual beans.

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