

Hopper lattice feeds are largely used with opening machines; the hopper lips are about 3 feet 6 inches above floor level. Much dust is produced in shovel-feeding as it is difficult to avoid scattering at the lip. An enclosed lattice, fed at or just below floor level, with localised exhaust applied to the enclosure is more satisfactory.

Single disintegrators, or two or three machines in series are used for breaking up textile or other asbestos waste, more rarely for opening crushed asbestos. Present arrangements for preliminary hand sorting of waste are unsatisfactory; it should be accomplished at a covered bench, suitably exhausted. Whereas in some cases, the indraught at the disintegrator feed openings caused by the rapid rotation of the rotor is not sufficient to remove dust, and because, at any rate, as soon as it is stopped, escape of dust may result from reversed air currents, exhaust should be applied here also.

Disintegrated material is blown into chambers, a blower fan being in some cases connected to the delivery of the machine to create a stronger draught. Air pressure in the chamber is relieved in different ways, the sides may be covered with sacking, allowing much dust to escape, a "relief balloon" connected, or exhaust applied. Chambers connected with disintegrating and teasing machines vary in size, some are little more than a large box, others are more roomy. Some, but not all, are separated from the workroom. They are entered for emptying, the material being filled into sacks or skips by hand after the machine is stopped or the flow of material diverted to another chamber. Work in chambers is very dusty and its elimination is most desirable. (See page 28.)

*Carding.*—Considerable developments have taken place in recent years. One or two important new cardrooms have been started. Many new machines, including some of foreign construction, have been installed.

The machines, of large overall dimensions, are of the roller and clearer type. Modern cards are of high class construction and fitted with two doffer cylinders supported on a carriage, which can be racked into or out of position. For fine yarns, a breaker and a finisher, constituting a set, is used, connected by lattices, lap sliver from the former being automatically fed to the finisher card. In cases where the sliver is collected in cans, a Derby doubler is used for preparing laps for finisher cards.

Single machines and breaker cards are equipped with hopper lattice feeds supplied from skips or sacks, handfuls being dropped in, and shaken apart as fed, or the sack emptied into the hopper. The asbestos falls intermittently upon a creeper feed which conveys it to the "licker-in" feed rollers, between which point and the doffer the material is under enclosed conditions.

The material is combed from the open doffers of finisher cards, as a web or "sheet", the sheets from the two doffers usually being combined at a condenser, and the resulting sliver yarn wound into spools. Occasionally, combed web is collected without being condensed, the condenser carriage being withdrawn. In other carding, the sliver may be obtained as a lap.

Admixture with cotton is usually accomplished by carding the two materials together, a cotton lap being mounted above the creeper feed, and the cotton fed through the feed rollers with the asbestos.

The evolution of dust at cards is inevitable and a fine dust cloud may be observed in most cardrooms. Suppression of dust cannot be realised unless machines are maintained clean and in satisfactory repair, and there is effective enclosure of various parts. Above all, localised exhaust must be applied at well-defined points of dust emission, and improved stripping arrangements provided. Wide spacing of machines is also desirable.

The upper parts of modern machines are usually provided with well made wooden covers and the lower parts are enclosed below in metal. The frames are well enclosed at the sides. A hinged metal cover, fitted in some cases, prevents escape of dust produced by movements of the feed lattice. A curtain of fabric is less satisfactory. In older types, particularly, the wooden covers may not fit satisfactorily, the cylinders may not be truly aligned with the frame and other defects may account for side escape of dust, not controllable by exhaust. Such defects should be remedied. Creeper feeds, doffers and condensers and connecting lattices between breaker and finisher cards are not enclosed. Dust is evolved at doffer combs and at creeper feeds.