to take care of large bowl liners, mantles and dippers would require a terrifically large volume of air, and even then might not be effective because the heads on some of these castings might be several feet above the floor.

Welding: Repair welding in the cleaning room is, of course, done in enclosed booths as far as possible, some of which are provided with Ruemelin units. As you probably know, they consist of a small exhaust fan connected by a flexible pipe to a hood which can be moved around by the welder and which will remain in any position he places it. If the hood is brought up close to the work, it does a good job. We have not, however, been able to convince the welders to use this equipment and usually find it pushed back against the wall. I would be interested in knowing whether any of you have had this same experience, and if so, how you have overcome it.

Grinding: Silica dust resulting from our grinding operations could be minimized if we could maintain close control of sand and other foundry conditions to the point where sand would not be burned into the surface of the casting. Unfortunately, that is an ideal condition that we strive for but cannot always reach. In order to get the sand off the castings before they were ground, we installed a Hydro-Blast system in 1943 at Chicago Heights. The layout of our cleaning room with three adjacent crane bays is such that it is almost impossible to install dust control equipment at each grinder and it was felt that the Hydro-Blast would at least minimize the silica content of the dust. Although it did reduce it considerably, the total dust count, mostly iron oxide, is still well above the safe level.

Aside from portable hand grinders, which we have not considered exhausting, we have four basic types of grinders in use. They are: stand grinders, swing grinders, end grinders and stiff shaft grinders. The stand grinder presents no particular problem since the wheel can be hooded and it is a simple matter to exhaust at the source.

Swing grinders can be well handled in the conventional booth, but we have found that solution rather hard to apply to existing equipment. We do, however, have two types of installations in operation, both of which are doing a good job. Our Denver cleaning room building has a leanto on the side with the swing grinders hung from the crane runway beam. The back end of the grinder extends into the leanto and the wheel, of course, is out in the main bay under the crane. By bringing a sheet metal curtain down along the column line to within about three feet of the floor and installing similar baffles all the way to the floor across the leanto, the section of the leanto directly behind the grinder was turned into a plunum chamber. An exhaust fan was then installed on the roof of the leanto, all air being taken in from the main bay close to the floor. This resulted in an effect similar to that obtained from the conventional swing grinder booth and dropped the dust count from 15 million particles per cubic foot to 2.5 million. These installations, incidentally, cost only about $700.00 per grinder, but are only feasible where the building design is suitable. At Los Angeles, we have recently completed an entirely different type of installation on two swing grinders, consisting of hoods mounted on the frames of the grinders directly behind the wheels. No dust counts have as yet been taken, but the men who use the machines as well as the management are most enthusiastic. That type of installation happens to work out at that plant where much of their work consists of flat castings. A similar arrangement tried several years ago at Chicago Heights did not pan out very well because the castings were so varied that the hoods interfered with the operation.