

EXPERIMENTS ON THE BRUCK-VIGLIANI METHOD FOR ASPIRATION OF DRILLING DUST IN MINES.
G. MONTESANO, *Med. d. lavoro*. **40**:251 (Oct.) 1949.

The Bruck-Vigliani attachment for a pneumatic drill consists of a special wool filter, through which air is aspirated by means of a Venturi ejector operated by compressed air from the mine supply. Air is drawn from the bottom of the hole being drilled, through the axial channel in the drill steel, which is otherwise used for feeding water.

A comparison was made, by taking thermal precipitator samples of air-borne dust, between dry drilling with the aspiration attachment in operation and wet drilling, with water injected through the hollow steel.

In both cases very much less dust was recorded than is usual when drilling in the absence of suppressive measures. The Bruck-Vigliani appliance was at least as effective as wet drilling in decreasing the production of dust. No indication is given of the lifetime of the filter.

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Accidents and Their Prevention; Protective Equipment

THE USE OF DUST RESPIRATORS IN COAL MINES. S. J. PEARCE, Information Circular 7561, United States Department of Interior, Bureau of Mines, March, 1950.

This circular is intended to answer complaints regarding dust respirators by discussing the various factors relating to the proper use of dust respirators in general and in coal mines in particular. The construction, functioning, choice, fitting and maintenance of dust respirators are discussed. It is pointed out that dust respirators are not to be used as a substitute for dust-control measures.

CONDENSED FROM AUTHOR'S INTRODUCTION AND SUMMARY.

ACHIEVEMENTS IN MINE SAFETY RESEARCH AND PROBLEMS YET TO BE SOLVED. ARNO C. FIELDNER, Information Circular 7573, United States Department of Interior, Bureau of Mines, June 1950.

Fieldner reviews the Bureau of Mines' achievements in mine safety research and outlines the basic problems yet to be solved.

The historical development of the research program is traced. In 1908, at the request of the Technological Branch of the United States Geological Survey, of the Department of the Interior, British, Belgian and German authorities in mine safety practice, surveyed United States coal mines. Recommendations led directly to the creation of the Bureau of Mines on July 1, 1910 and its now 40 year old research program.

The accomplishments and problems yet to be solved are discussed in separate sections of the paper under the subheadings (1) explosives, (2) dust explosions, (3) gas explosions, (4) ventilation, mine air and air-borne dust, (5) oxygen-breathing apparatus, respirators and gas masks, (6) electrical and mechanical equipment and (7) prevention of roof falls.

The use of permissible explosives, the electric cap lamp, adequate ventilation, rock dusting, explosion-proof electrical equipment and roof bolting are prominent among the major safety developments reviewed in this paper. Methods for detection and measurement of toxic and/or explosive gas and dust concentrations are described.

Statistics are presented showing that in the five year period ended in 1910, 394 lives were lost annually per 100,000 men employed in coal mines of the United States, compared with 203 for the five year period ended in 1949. During the last 40 years fatalities from gas and dust explosions and from the handling of explosives have decreased about 80 per cent, those from electrical contacts 56 per cent, those from falls of roof and coal 39 per cent and those from haulage 24 per cent.

Falls, haulage and explosions, accounting for 77 per cent of the fatalities from 1945 to 1949, also present the majority of unsolved problems. The author stresses the fact that the solutions of these problems depend largely on effective safety education for both miners and management and closer contact between mine safety research and field operations.

Twenty-seven technical references are presented.

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