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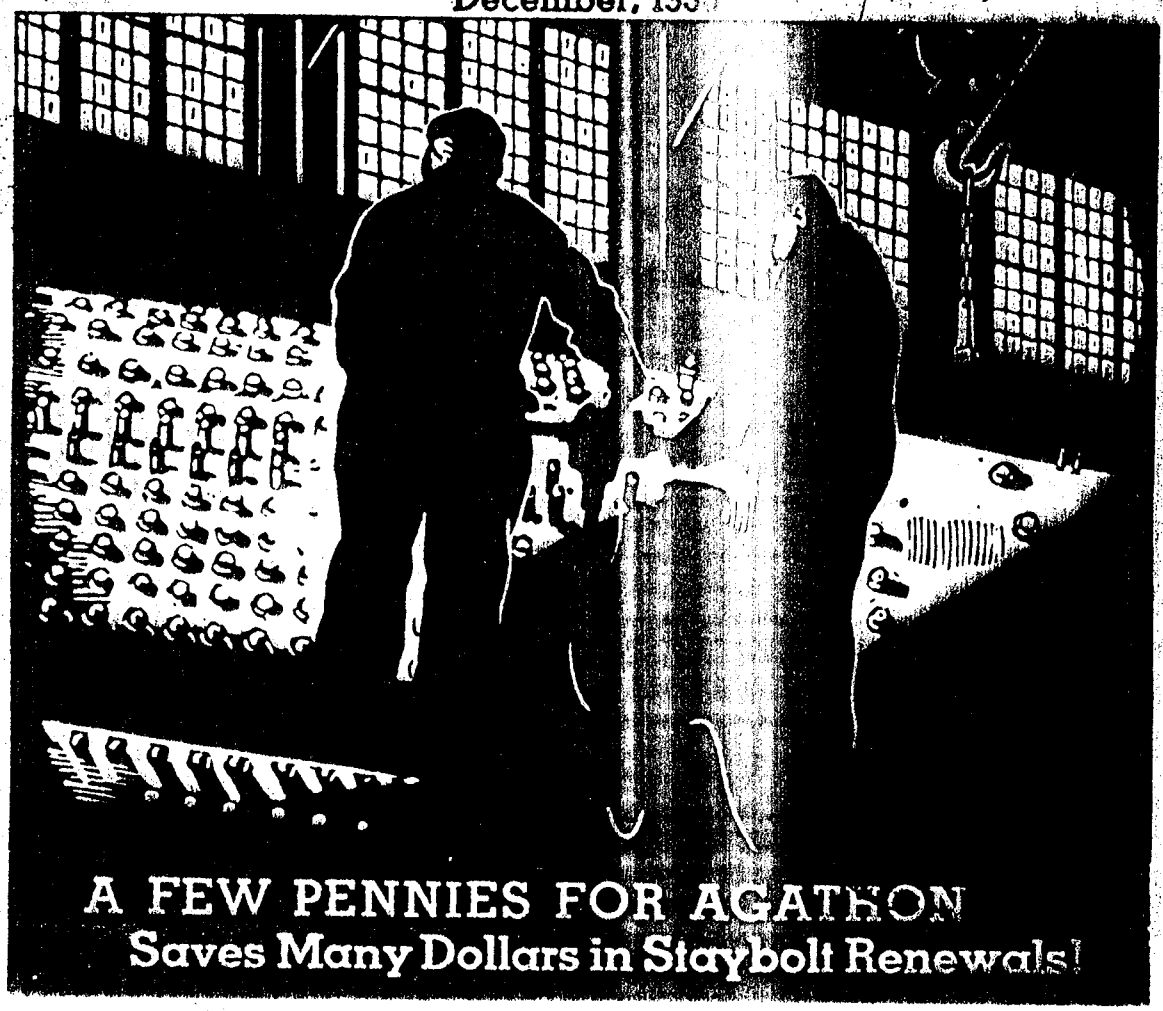
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Railway Mechanical Engineer

December, 193



Staybolt material in the storeroom represents a relatively small cost per bolt. • • • Forged, threaded and applied, as a replacement in a locomotive, it represents more than a dollar in actual cost. • • • In many cases the out-of-service cost for the locomotive must be added to this. • • • Yet between the poorest staybolt material and the best there is a negligible difference in material cost. • • • The use of Agathon Alloy Staybolts keeps renewal costs at a minimum. • • • Agathon Staybolt Steel has high tensile strength, high resistance to fatigue, and high resistance to corrosion. • • • It withstands the high pressures, the constant vibration and weaving of the firebox. It gives longer service at lower costs. • • • Specify Agathon Staybolt Steel for your difficult jobs. Complete details on request. Address Department BM.

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mittee Reports Dust Control

The report of the preventive engineering committee of the Air Hygiene Foundation, written by Professor Philip Drinker of Harvard, chairman, and other technical specialists on the committee, advises that engineers in the "dusty trades" can and should cut heavy dust concentrations below the present limits warranted by medical knowledge. This action is important, the report explains, not only to further safeguard the health of workmen but to give employers the maximum protection against unjust claims.

Concerning the size of dust particles, the report observes that much has been made of the fact that particles found in autopsied lungs are of the order of 1 micron (1/25000 of an inch)—about like the common bacteria. It is argued, therefore, that the human anatomy and physiology exercises "some phenomenally accurate size grading which excludes larger particles."

The report says "there is no reason whatever to look for any such mysterious explanation. The sizing is done in the air before the dust is breathed and not by the man after it has been breathed." It is pointed out that the larger particles tend to fall from the air by their own weight and that "only those small enough to act as part of the transporting air stream are likely ever to reach the lungs."

"In diseases such as silicosis and asbestosis, particles must reach the alveoli (minute air sacs of the lungs) or no silicosis or asbestosis results. In maladies like hay fever, the harm is done by particles which may be 15-50 microns instead of 1 micron.

"Toxic dusts such as lead and manganese are much more likely to produce ill effects if breathed than if swallowed. The reason for this difference is physiological; it is established and should not be ignored in dust control problems. Again, common-sense tells us that the finer particles of lead are vastly more apt to be breathed than the larger.

"It follows then that dust control for hygienic reasons should be aimed at the fine rather than the coarse particles. Continuing this argument to its logical conclusion, if one could avoid use of 1 micron dusts or less, or exclude them from the dust which passes a 325-mesh screen, nearly all dust diseases would be eliminated. This is not at all an academic idea, for de-dusting processes are not new and are being applied in many industries. If some of the mechanical ingenuity which is now being applied unthinkingly to creating 1 micron dust were directed to ways for avoiding it, probably it would be discovered that dusts which are too large to be breathed would serve many processes just as well as those which are around 1 micron in size."

The report includes a table giving latest available information on the minimum air velocities necessary in certain industries to insure the maintenance of dust concentrations at safe levels.

The preventive engineering committee asserts that many firms have neglected heavy dust concentrations in cases where the dust is of no proven harm, and adds:

"There is no satisfactory medical answer at present to this question, but the engineer is making a bad mistake if he lets men breathe heavy dust concentrations of any material. If no other reason for dust control can be found, then one should read transcripts of some of the recent suits at common law in which fantastic damages for alleged silicosis were granted to men who breathed dust containing little or no silica. The courts and compensation boards are not impressed with subtle distinctions between dusts with 10 percent and 40 percent quartz, especially when medical experts are reluctant to make definite statements as to the comparative significance of such differences.

"It would be well to realize that men working in dusty trades suffer far more from respiratory troubles of all kinds than do men who work in clean air. The evidence that excessive dustiness of any kind is harmful is beyond argument."

The committee attributes the handicap in this general field to the lack of fundamental data and recommends a number of specific engineering researches for the Foundation to undertake in the coming year.

Republic Appoints Special Representative

William Hogenson has been named special representative on Toncan Iron enameling stock, according to an announcement by F. H. Ramage, manager of sales promotion, Republic Steel Corporation. His work will be in conjunction with that department under the new Product Development Division. Mr. Hogenson comes to Republic with a background of technical and business training gained at the universities of Michigan and Chicago, and a close association with the enameling industry through his most recent connection, Chicago Vitreous Enamel Products Company.

Engineering Experiments Bulletins

The Engineering Experimental Station of the University of Illinois has issued recently a series of bulletins dealing with a variety of engineering problems. Bulletin No. 283, written by Frederick G. Straub, deals with "A Study of the Reactions of Various Inorganic and Organic Salts in Preventing Scale in Steam Boilers." Bulletin No. 284, dealing with "Oxidation and Loss of Weight of Clay Bodies during Firing," was written by William R. Morgan. Bulletin No. 285, "Possible Recovery of Coal from Waste at Illinois Mines," was written by Clovde M. Smith and David R. Mitchell. Bulletin No. 286, by Hardy Cross, discusses and describes an "Analysis of Flow in Networks of Conduits or Conductors." Copies of these publications may be obtained without charge upon application to the Engineering Experimental Station, Urbana, Ill., up to March 1, 1937, or until the supply is exhausted.

Byers Appoints New Manager of Sales Promotion

M. J. Czarniecki, vice-president in charge of sales, A. M. Byers Company, Pittsburgh, announces the following appointments that were made effective November 2, 1936:

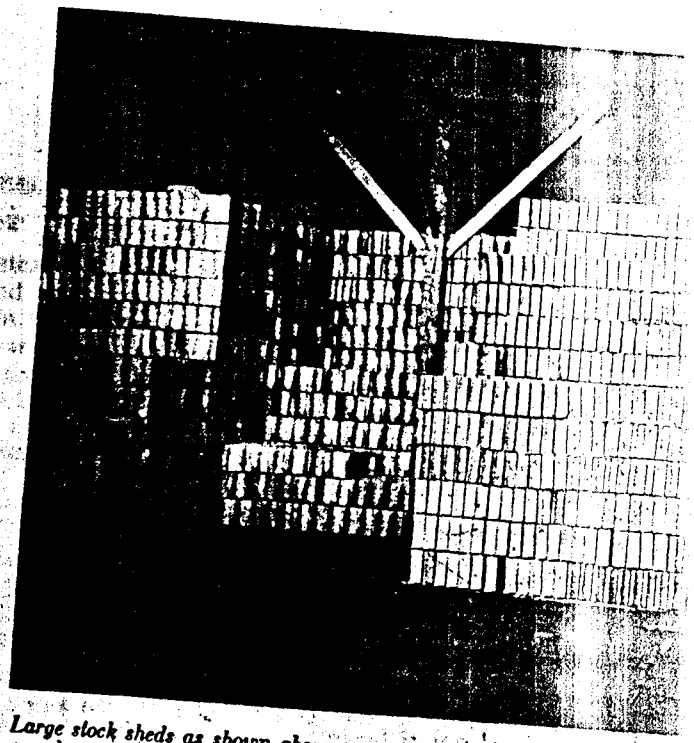
George B. Cushing as manager of sales promotion. Mr. Cushing came with A. M. Byers Company in 1928 to organize and head the present advertising department. Subsequently in 1931 he organized a technical promotion group now known as the Engineering Service Department.

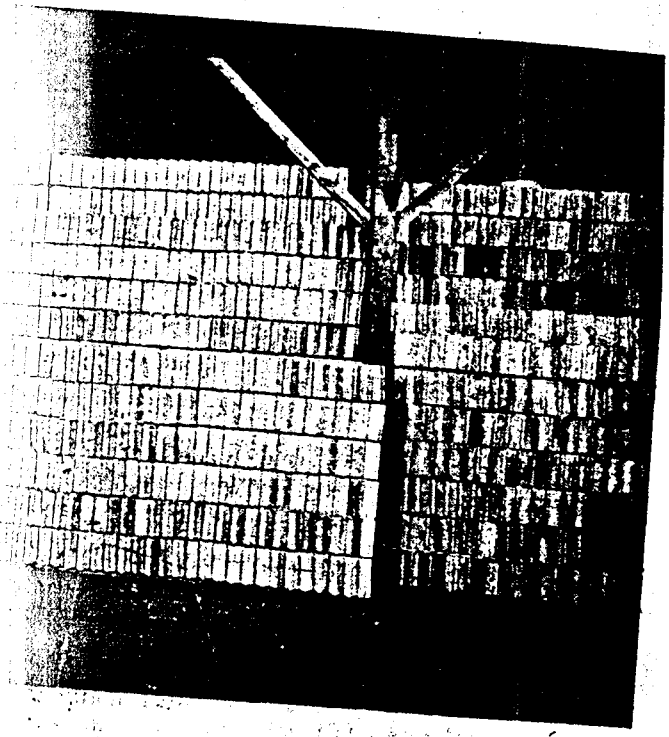
B. D. Landes, who has been in the technical group since its inception, has been appointed manager of the Engineering Service Department.

T. C. Winans, who has been in the advertising department since 1930, has been appointed advertising manager.

Both the manager of the engineering service department and the advertising manager become a part of the

and finally . . .
THE SERVI[illegible] OF SUPPLY





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Arch Brick supply i[illegible]e of the most important items for economical locomotiv[illegible]peration.

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Stock sheds carrying a[illegible]le stocks ready for immediate shipment safeguard against[illegible]elay.

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This facilitates locom[illegible]ve arch maintenance and aids in maintaining maximum [illegible]l economy.

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