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INVENTORS AT THE WORLD'S FAIR.

The invitation to inventors, by the Commissioner of Patents, published below, is taken from the Official Gazette, and is self-explanatory.

This invitation should be generally accepted by inventors, as it enables them to contribute to the success of the fair, and at the same time gives them an opportunity to advertise such as occurs but once in a lifetime. Many inventors cannot afford to make individual exhibits at the fair, but this arrangement for exhibiting models gives them practically the same chance to show their inventions that they would have if exhibiting individually, as each model will be labeled and catalogued.

To the inventors and manufacturers of the United States:

It is the intention of the Patent Office to make at the World's Columbian Exposition at Chicago, in 1893, an exhibit which will show that great advance in the several arts which is due, in large measure, to the encouragement and support afforded by our patent system. This exhibit is to consist of models of patented inventions, which will be carefully selected, to show as far as is possible the inception of each art, the stages through which the art has advanced, and the final development reached at the present time.

The Office collection of models has been seriously impaired by fire, and is further incomplete by reason of the fact that models have not generally been required or received during the last ten years. The Office is not, therefore, in possession of the models of many valuable inventions which might properly be included in such an exhibit, and without which, indeed, the exhibit would be incomplete. The limited appropriation for this exhibit will not permit the Office to make such models. An urgent appeal is therefore made to all inventors and manufacturers to come to the assistance of the Office in this matter, either by loans of models already built or by the construction of such models not in the possession of the Office as should properly be placed in such a collection.

DEFECTIVE BOILERS AND INCOMPETENT ENGINEERS.

The official quarterly report of William S. Powers, Superintendent of Steam Boilers, to Police Commissioner Hayden, of Brooklyn, N. Y., shows that from April 1 to June 30, 667 steam boilers were examined in that city, of which 11 were condemned, removed, and good boilers substituted. It states further that 612 engineers were examined, and of these 51 found incompetent. The report does not state that the incompetent engineers were removed, and able ones substituted; we trust they were, but we cannot help calling attention to the fact that 11 boilers out of 667 is a ratio of only 16 bad boilers per thousand, while 51 incompetent engineers out of 612 is a ratio of 33 incompetent engineers out of a thousand, so that the number of incompetent engineers is more than five times larger than the number of defective boilers.

The comparison of these figures shows that the boiler makers take five times more care in the manufacture and repair of their boilers than do the engineers in trying to learn their trade, who, when once having obtained employment, need looking after, as well as the boilers, in fact, five times more so, according to discovered ratio of capability for duty. In addition to this it must be remembered that boilers, being inanimate objects, are in themselves not subject to blunders, to carelessness, to strikes nor to drunkenness, in fact, possess in this regard reliability equivalent to infallibility compared with the weaknesses and incidental shortcomings of human beings, of which the futility has become proverbial.

If this quarterly report is the average of every three months for the whole year, then there are 44 worthless boilers condemned per year, while the number of engineers proved to be incompetent for the performance of their duties is not less than 482, to which life and property are intrusted. It proves, also, that in regard to the causes of the many boiler explosions reported in the newspapers from time to time, at least five are due to incompetent engineers, against one by incompetence of the boiler itself, of which the practical strength is only equal to the weakest part thereof.

Matters will only grow better in this regard when owners and managers of steam power come to the conviction that it is necessary to place the compensation of steam engineers high enough to make it an object for men of a better class, that means of men having received a more liberal education, than is the case now in the great majority of instances.

We mean by a liberal education such a one as is not confined to understanding the manual treatment of a steam engine in making it go, but who understand the scientific principles which lie at the basis of their calling, such as the laws of expansion of steam at different temperatures, of latent heat, of capacity for heat or specific heat, of combustion and draught, of units of heat, of the comparative value and economy of fuel, the laws of air pressure and the vacuum, etc.

A striking illustration was offered in this respect several years ago, in the explosion of the Staten Island ferryboat Westfield, 1871, while she was lying in her slip. She was crowded with Sunday excursionists, when, a moment before starting, her very large boiler exploded, lifting up her deck, with disastrous result, many persons being killed. At the inquest it was found that the engineer, who was a colored, illiterate man, advanced from being a stoker to the responsible position he occupied, was entirely responsible for the appalling loss of life. The examination at the inquest revealed the fact that he had not the least idea of the air pressure or a vacuum, of which he had never heard, that he supposed that when he kept the boiler entirely full of water it was all right, etc.

Carpet Electricity.

The exact similarity in conditions attending the repetition of experiments is a great element of success. One should be very careful before coming to a conclusion that his premises are correct. A striking example of this was recently presented to my notice.

A dentist came into my laboratory the other day and said:

"See here, I can't, for the life of me, understand what is the matter with me. All my patients complain that when I first put an instrument into their mouths it pains them fearfully. I've thought it all over, and have come to the conclusion that my instruments must be magnetized or bewitched, or I am. I've brought over some of them to have them examined. Just let me show you what I mean. Have you got a sensitive tooth?"

I pointed to a molar then under process of repair. He unwrapped some of his instruments, and selecting one, gently inserted it into my open mouth and touched the filling in my tooth. All I felt was the instrument touching the filling. I experienced no pain.

"Good heavens, man!" said he, "what nerve you have. What fortitude. What—"

"Nonsense," I exclaimed, "I didn't feel anything."

"Well," said he, looking puzzled, "you are the first man that hasn't yelled when I touched his tooth since I moved into my new office. I can't understand it."

I told him I would come around to his office in the afternoon and see if I could find out what was the matter.

Later in the day I called to see him.

"Well, have you got it yet?" he asked, as he walked across the carpet and shook hands with me.

"I hadn't one second ago," I answered, "but I have now. Did you notice what happened when you shook hands with me?"

"Nothing but the electricity."

"That's just it. Every time you walk across the floor to your cabinet for an instrument you get a small charge of electricity in your body, and naturally, as soon as you touch the sensitive tooth of the patient, the delicate nerve received the charge through your instrument—hence the pain. The reason why I felt no shock in the laboratory was simply because there was no carpet for you to rub your feet on before you touched my tooth."

Here we see that merely the want of a carpet on the floor altered entirely the conditions for a successful repetition of an experiment that had apparently no connection with the presence of a carpet.—Julian A. Moses, Electrical Review.

Cart Horse Parade in Regent Park

The seventh annual parade of the Cart Horse Parade Society, London, was held recently in Regent's Park. The entries were larger this year than ever before. Five hundred and forty-two horses, including 384 singles, 56 pairs, 10 "unicorn" teams, and 4 teams of four, were present.