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WHAT IS THE BEST INSULATION?

What is the best insulation for voltaic arc lighting wires? is an all-important question just now. It might even be called a serious one. There are, it is true, electricians who think, and indeed have publicly avowed, that the wires in their present condition do not threaten life, if only proper care is used in their distribution. Others, whose opinions are quite as worthy of attention, insist that with the present means of insulation and the present strength of currents, these wires are a constant menace. The public, it seems not unfair to assume, is as a unit with these latter, and though it might be said, perhaps with truth, that the public is as unfamiliar with the question as it is easily alarmed, the fact that there is a general lack of confidence in the protection afforded by the present means of insulation ought to be, and indeed is, enough to urge the projectors of this system of lighting to bestir themselves.

At the recent meeting of electric lighting men, the committee long since appointed to inquire into this question of insulation admitted through its chairman, Mr. Elihu Thomson, their inability to make a report. The disappointment thereof was good circumstantial evidence, if such were wanting, to prove how sincere is the desire of the companies to improve their insulation, some members of the association coming from distant parts with the single purpose of listening to this report and profiting by the information which, because of the *personnel* of the committee, there was reasonable hope it would contain.

The reasons for the unusual reticence on the part of this committee are not far to seek; but whether or no they are satisfactory, each interested person must determine for himself, the question being one on both sides of which much may be said. Here are the bare facts gleaned from what was admitted at the convention.

Being practical men, the committee not only examined the relative values of the known kinds of insulation from a laboratory standpoint, but sought information from station superintendents. In both directions the evidence was meager and conflicting. If the name were given of the device which acquitted itself best in the laboratory, it might lead many to adopt a system more certain in small, carefully guarded tests than in general employment, while if the evidence of those who might be interested was accepted, certain manufactures might be praised above their merits and given an undeserved prominence above their rivals.

It might be urged against this that if the committee is afraid to name a manufacture, even if the best of the evidence collected is in its favor, no benefit may be hoped for from its exertions, and all its learning and skill but discover for it a path by which it may depart from its purpose. On the other hand, it seems immediately obvious that it would be hazardous as well as unfair to come to a decision in so difficult a question as this, where reliable evidence is hard to find, and where that which may be had conflicts with experiments made by disinterested hands.

ADDITIONAL POSTAL FACILITIES NEEDED.

We pride ourselves upon being an enterprising nation of liberal and progressive ideas, considerably in advance of our neighbors, especially those of Europe. But in some respects this pride of ours has no basis except self-conceit.

Take for example the matter of postal facilities. We plume ourselves upon the progress we have made. But it required the teachings and example of England and the Continent for nearly half a generation before the Americans opened their eyes and understandings to the success and immense advantages of cheap letter postage.

We have at last got the idea into our heads, and at the present time our people may transmit their letters as cheaply as do the English.

But there is still one branch of the postal service to which we remain blind, although it is of the greatest importance to the public and of enormous value to our postal revenues. We allude to the parcels post, which has long been in successful operation abroad.

The dull Germans have been working the parcels post for several years with great satisfaction. Merchandise of almost any description may be forwarded by mail in Germany, and the public convenience is promoted thereby in a wonderful manner. The rate charged is a little over one cent per pound. Packages of 110 lb. can be sent for \$1.20. In 1885 almost seventy millions of packages were transported by mail, the average weight of each being 9 lb., or over six hundred millions of pounds, a quantity greatly in excess of the entire American mails, and fifty times more than the weight carried by our present puny and expensive little package post system.

The postage yielded by the German parcels, for the year mentioned, was \$7,776,272.

For many years past, the expenses of the American Postal Department have exceeded the revenues. For the year 1885, the deficiency was \$8,318,696. For the present fiscal year, the shortage will be much less. It is evident if a parcels system something like the German were established, the receipts of the department would always be in excess of the expenditures.

One of our great political parties lately adopted as a plank in its platform the idea of a general one cent letter postage. As the chief portion of the revenue of the postal department is derived from letters, the immediate effect of such a reduction would be to knock down the revenues and increase the deficiency. But if we were to add [the parcels post, then the receipts would be so much increased that the one cent letter rate could be easily sustained.

Independently, however, of its financial success, the parcels post system would be of extraordinary advantage to the country in promoting internal commerce. It is true we have admirable and effective means for transportation of parcels through the express companies; but they are only a drop in the bucket compared with the requirements of our great country. We have now over 55,000 post offices and 400,000 miles of mail routes; of the latter, less than one-third are traversed by railways.

The great need of the day is the extension of the parcels post system so as to render its benefits available wherever a mail route exists.

It behooves our legislators to cast an occasional glance at the proceedings of other nations and promptly adopt the latest improvements. In regard to mail facilities and war vessels we are greatly behind the age. We originate little in these branches of the public service; we only copy from Europe, and in doing this we are very tardy.

Report of the Commissioner of Patents for the Fiscal Year 1887-88.

Commissioner of Patents Benton J. Hall in his financial report to the Secretary of the Interior, under date of August 31, 1888, renews the recommendation contained in the report of 1886-'87 relative to the legislation needful in amending sections 4,885, 4,887, 4,898, and 4,930 of the Revised Statutes.

He also calls attention to the urgent need of increased facilities for the conduct of the business by providing additional room. This is a matter becoming more and more serious each succeeding year, as the work increases in consequence of the advancement of every branch of industry. The present space allotted to the bureau in this building is wholly inadequate to secure a prompt dispatch of the business. The importance of providing more room cannot be overestimated, if the business of this bureau is to be conducted as successful commercial men conduct theirs.

The following statements exhibit in detail the business of the office for the fiscal year ending June 30, 1888:

Number of applications for patents.....	34,570
Number of applications for design patents.....	1,068
Number of applications for reissue patents.....	140
Number of applications for registration of trade marks.....	1,309
Number of applications for registration of labels.....	682
Number of caveats.....	2,408
Total.....	40,277

Number of patents granted, including reissues and designs.....	20,653
Number of trade marks registered.....	1,083
Number of labels registered.....	365
Total.....	22,101

Number of patents withheld for non-payment of final fees.....	2,957
Number of patents expired.....	11,611

Receipts and Expenditures.

Receipts from all sources.....	\$1,122,994 83
Expenditures (including printing and binding and contingent expenses).....	953,730 14
Surplus.....	\$169,264 69

On July 1, 1888, there were 7,227 applications on file still awaiting action on the part of the patent office.

The Eucalyptus for Boilers.

In their official report to Rear-Admiral Gherardi, commandant of the navy yard, a board of naval engineers stated they considered the use of the eucalyptus boiler scale preventive of great advantage in lessening the deposit of scale and in rendering what is deposited soft and easily removable, preventing as it does the scale from adhering to the surface of the boilers. The test had been employed in the steaming boilers of the Richmond for over a year, and the interior surfaces had been kept free from scale without the use of scaling tools, it being only necessary to wash the boilers out with a strong jet of water from the steam hose. In distilling boilers the deposit of scale was also lessened. The interior surfaces of the boilers, these officers reported, show no sign of pitting or corrosion.

THE Hudson River tunnel is about to be completed by British capitalists and by British engineers, viz., Sir J. Fowler and Mr. B. Baker. In a report on the subject the latter state that the work already done is substantial and well designed. They estimate that remaining to be done can be completed in about eight months, at an expense of 190,000*l.* for the north tunnel and 250,000*l.* for the south tunnel.