lbs. pressure, it contains a certain number of heat units per cubic foot. If you take that steam and bring it down to 2 lbs. per sq. inch it still contains the same number of heat units, but spread over a larger volume. You have not lost any heat units. The engine takes that steam and converts same into mechanical power, but I do not think that experience will bear out the statement made a little while ago that only 10 per cent. is used in the engine. Why, if this is so, the steam engine must be the most uneconomical thing we have. If for every 100 lbs. of coal consumed we are only using 10 lbs. we must be actually losing 90 per cent. of our heat, but the amount lost or used in the engine is not still available for heating the building.

Where live steam is used, the steam goes through a reducing valve, and we are told that power is used up in forcing it through the reducing valve. What you really do is to allow a certain amount of steam to go through the reducing valve, when it expands into a larger volume. We are told that before passing through the reducing valve it contains a certain number of heat units, but after passing through it contains a smaller number. This is not so; the only thing that has happened is that it is expanded into a larger volume. Whatever may be our ideas derived from experience only, we say, and I am speaking from cases where this has been put to very careful test, that you cannot get something for nothing: that as a matter of fact the cost of fuel used is practically the same whether exhaust or live steam is used.

The writer has said that he did not include the cost of depreciation, insurance, etc., in the figures he gave us on the cost of operation of steam plants. To my mind these figures which have been omitted form a very great proportion of the total cost, and I would certainly like to ask the reader of the paper why he should leave that right out. I have made numerous tests along that line. I made one a few years ago in a large plant. The cost of coal was \$3.00 per ton, and it was a pretty good grade of coal. The boilers were Babcock boilers, and we used a Ransome high speed engine, Holmes dynamos. I think anyone acquainted with English plants will agree that we had a good plant to work on. The plant was new and had only been running a year and was carrying a steady 10-hour load, yet the very best price we could get out of that plant under the most favorable conditions was a little under 3c. per K.W. hour, and I may say that I think if any engineer here is able to get his plant to produce power at that figure he has got something to be proud of.