when compared with 2,545, the B.T.U. value equivalent to 1-H.P., gives the efficiency of the whole plant including the mechanical efficiency of the engine as 19.35%. If the losses in this case be divided up according to the usual proportion of loss in the different parts of the suction producer power plant they will be as follows, out of 13,256, the B.T.U. value of the fuel used, 2,651 are lost in ashes, radiation, cooling of gas, etc., 4,445 in exhaust and 3,166 in cooling the cylinder; the remaining 2,994 are converted into power; the efficiency of the engine being 85%, 2,545 of these are converted into B.H.P.

In comparing these two plants, the efficiency of the steam plant being 8.7%, and that of the gas plant being 19.35%, we find a saving of 55% in favor of the suction producer power plant. In neither of these cases has allowance been made for standby losses, which favor the steam plant.

Regarding fuel required per H.P., manufacturers make numerous claims, many of which have been substantiated. The claims average about one pound of anthracite per H.P. per hour, and vary from 0.6 to 1½ pounds per B.H.P. per hour. The 0.6 figure is pretty low, but numerous tests have shown a consumption as low as .8 pounds anthracite per B.H.P. per hour.

Considering the high thermal efficiency and the many other points of advantage about a producer gas power plant, its outlook for the future is very bright. It has passed the experimental stage and has become a formidable competitor of all classes of power. Its field of usefulness will doubtless be widened greatly and already it is being considered as a means of propelling vessels, driving traction engines and for developing power under many other conditions.

The following slides were exhibited showing a few of the suction producer gas plants.

SLIDES.

No. 3. American-Crossley Suction Gas Plant.
No. 4. Cross Section of The Weber Suction Gas Plant.
No. 5. Outside view of The Weber Suction Gas Plant.
No. 6. Suction Gas Power Plant.
No. 7. Fairbanks-Morse Suction Producer Power Plant.
No. 8. Weber, 450 h.p. Suction Gas Engine.
No. 9. Diagram showing heat losses in a modern steam power plant.

Chairman,—

I am sure we have all been very much interested in this paper. I certainly have been myself. When you take into consideration that Mr. Armer is not out selling gas producers,