

letter which you will find in
 "The Engineer" of next Friday, perhaps
 to the last part of it, you
 will see what he says about
 "absolute efficiency" tests in the
 fall from the test cylinder
 temperature to that of the condenser
 &c.

Just now I am over head
 and ears busy, as I have to
 fit out a big steam yacht
 with high efficiency engines. I
 have acted as superintending Engineer
 for the owner for 6 years past,
 and now he wants her all ready
 indeed almost at a moment's
 notice, so for the present I shall
 be unable to continue a
 discussion with you, which
 has proved at once interesting
 amusing and I hope, instructive.
 Let me add one line.

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My dear Sir,

Yours 2 hands, I
 shall have a wish I
 have expressed submitted in
 part, you say I ought to
 write a Thermodynamic's by
 my own, well, I can't do
 this but I will, the moment
 I get time and shall publish
 an article on Standards of
 efficiency in steam engines, but
 this you shall judge is much
 as you like so long as you
 don't call names, or talk of
 "fools" "Idiot's" and such like.

Meanwhile let me
 call your attention to Drey's

You are quite in error if you
 assume that syringes draw
 up the effluent of a boiler and
 syringe. They are ^{not} quite
 destitute, cannot ^{draw} ^{up} ^{the} ^{liquid}
 takes them together because
 the boiler is in his cylinder. You
 are also in error if you
 fancy that all syringes, at all
 times, estimate effluent in
 terms of horse power.

In reply to your question
 @ Inter. I asked you
 how you could deal with the
 effluent of the steam in the
 high pressure cylinder, which
 actually does twice as much
 work as the indicator accounts
 for, because of course the

4

The boiler pressure;

Frederick Green

Amended

Perham, Fitz Gerald

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ps' / by his way. I fancy you will have more of
 "The syringe" than the others. I shall venture to send
 you a copy. You can read Henry's letter, and
 form the rest.

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To measure things in
 Terms of $T-t$ at all,
 My standard T is Doubtless
 Correct, and the very
 able way in which you
 show that the Nature of
 the working substance must
 be taken into account only
 strengthens the conclusion
 I have long held, that no
 true or proper comparison
 can be made between a
 "Rapid" Engine and a Steam
 Engine, However, a great
 many Engineers will insist

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on doing it just as Kennedy
did, see page 244-5 of
Transactions of Inst Mech
Engineers, and for such
purposes it is essential to
fix on the meaning of "effort"
and the place where the
temperatures are to be taken.

Nothing I think can bring
into clearer light the uncer-
tains of the whole thing than
the two diagrams on page
4. When the words "temp"
of Temperature is the same
in both and the "effort"
quite different.

You seem to have
let hold of the expanding

Idea that an expanding
substance can do work without
losing heat. (I don't mean
Temperature) surely I must
have failed to catch your
true meaning, page 2 of
your letter "certainly, people
at talks of the "work done by
a gas expanding for thrust," but
as they talk of the work done by
an engine, but neither the
gas nor the engine does work
in the sense that the gas does
when it expands adiabatically
I would be well that
this point should be cleared
up between us, so far as I
see, almost the whole issue
is one of definition. I'm talking
of one thing when I talk of
motion and vice versa

Yours truly
P. M. FitzGerald