

Phil. Trans. You shall have  
a copy as soon as it comes  
out - In it I refer to a mode  
of recording successive shocks all  
in the same direction, by sending  
them into a leaky condenser in  
connection with the electrometer.  
This shortens the time of charge, but  
renders a higher P.D. necessary.

With regard to data -  
The capacity of the electrometer used  
for the telephone curves was about  
0.55 M.F. and the length of  
excursion on the plate was 10 mm  
for 0.013 volt - about 77 cms  
per volt, and the velocity of the  
image about 1500 cms per volt per sec.  
so far as I remember - I have  
not my note-book here - At  
any rate these figures are within  
the mark - The "equivalent  
resistance" of the electrometer I

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21 Northam Pl

Oxford

29/8/96

Dear Prof. Fitzgerald

I have just returned from  
a few days in the country &  
find I owe you no less than  
three letters - I expected  
Preece would answer as he  
has done - The capillary telegraph  
would be more troublesome to work  
than the ordinary receivers, and  
I expect would only pay on very  
long lines or cables that have more  
work than they can get through  
- that is, supposing it could be  
applied - I had some thoughts  
of writing to Lord Kelvin, who  
has seen the apparatus in its  
earlier stages - Do you think it  
would be a good plan?

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I have no friends connected with telegraphy, & doubt if it would be much use for an outsider to take it up - Many thanks for your offer in regard to the artificial cable - I have never visited Dublin, and should have much liked to come over myself and try it, but the vacation is too far advanced, and I should not be able to get my preparations ready in time to do anything

Hlevisides idea of electromagnetic waves seems to me to be an extremely good one, I remember looking through his paper, but did not read it minutely, and have somehow lost the reference.

I noted it as one of those things I meant to examine further, & then forgot it in the pressure of other work

- was it in The Electrician?

In this connection you will be interested to know that I have several times, in photographing induction shocks, got oscillating curves, the cause of which I am investigating - I fancy they are due in part to oscillations of the discharge - possibly some chance resonance in the circuit - The period is not always the same when a different induction apparatus is used - Some cases were quite slow ('003) and others less than '0001 - The form is generally

or even

These results occurred incidentally, and the conditions of the circuit were too complex to found an opinion on these observations

There is a paper on Malapterura electricus by Gotch and myself in process of publication in the

way, but at present the  
pendulum machine is in so  
much demand for physiological  
work that I cannot use it  
- we are setting up another  
one, and I shall then  
go farther into the matter -

I should imagine that  
a combination of Heaviside's  
cables with my electrometer  
would be patentable, because  
it would involve a principle  
not contemplated by Wheatstone

I don't remember his patent  
but will look up the Proc.  
Roy. Soc. as soon as the Library  
reopens - I was under the  
impression that reading a paper  
there was "publication" and that  
they did not take papers on

patented things -

I am having a small  
edition of the paper printed  
in pamphlet form - the  
manner in which the illustrations  
have been reproduced is  
hardly good enough to serve  
for a book

Later on, I hope to write  
a book about it

Yours faithfully  
George J. Burch

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did not take, but judging  
from other similar instruments  
it would be about 100,000  
ohms - That is to say, an  
addition of an ordinary 100,000  
ohm coil to the circuit would  
lower the velocity to half its  
normal value - You will note  
that this takes no account of  
the self-induction of the coil  
- when I made the experiments  
on resistance I had no means  
of using non-inductive resistances  
But in our work on Multiplex  
I found that it makes a  
considerable difference whether  
the condenser is shunted by a  
coil or a non-inductive resistance  
A 1000 ohm coil as a shunt has  
very little effect on rapid changes  
I have some hopes of being able  
to measure inductance in this

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