CONNELL APPARATUS

Mch 9/39

Dear Dr Apgar:

We have evidently been grinding in the shunt valves too tight & without the right lubricant. The lubricant we have now found, ~~a~~ boilingwater proof, soda lime proof lubricant used in packing marine propellers & water pumps. We will send you a box & fix up your "Stat..." for good & all. The new piston installed by Puritan may leak, for each must be lap fitted (only not so tight). The status of inter coupling is to make a sparkless high resistance cuff by a couple of winds ~~on part~~ of No 22 gauge on patients arm & anesthetist wrists & onto the knobs of these clip on ~~rubber~~ bulldog clip, connect to insulated wire that ... from the machine. This is OK at 15% of ~~room~~ humidity. If your long bandage is OK at 30% room humidity.

I have done a great deal of work in starting "explosions", i.e. ignition, Oxy acetylene. Never has the gauze given an igniting spark. The self generated static walks thru the metallic ...

high resistors of Prof Hoilon of the M.I.T. as tho nobody was home & ignite gas every time.

Another unique finding is that with a high charge of static on myself, I can polarize a small metal body insulated from myself or can polarize the wet surface of rubber & get a spark to the "machine" + cause ignition! This then was the source of your spark, for disagreeing with Dr Williams, I do not think that dry rubber surface (unless laboratory dried) has the generating capacity to make & hold an igniting spark. Whereas a damp bag interior can be polarized & spark O.K. just like a Leyden jar.

What I want especially from you.

(X) 1st Was there a metal neck on the Headbirds bag which blew. If so the spark is easy to explain i.e. charged from the anesthetist

(Y) Or if there was rubber to metal, & the anesthetist hand was distant from the bag & well insulated by the ~~metal~~ apparatus then we can best assume a polarization of wet bag interior to yield the fairly substantial spark necessary to ignite.

I have not been able to ignite with mere glows or St Elmo's fire, or phosphorescent (in the dark) discharges.

Sincerely
Karl Connell

Please answer (X) & (Y)