

V	$\Delta I \times R$	$I_2$
0		$2 \times 10^{-6}$
- 4.0	- .30	$- 2 \times 10^{-6}$
+ 4.0	+ .50	$1.2 \times 10^{-5}$

Dec 4 1947

Thurs

I was out due to a cold the experiment immediately above was taken over by Pearson. Any way the experiment worked N.B. 20912 page 75

55472  
W.S.

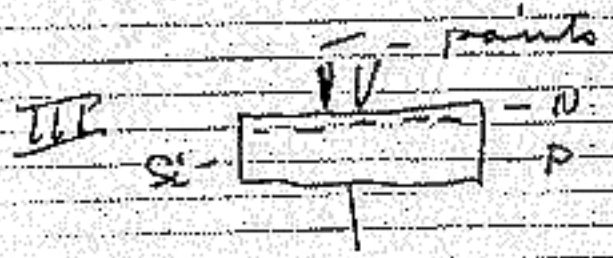
At a conference on Nov 27 or 29 it was decided that all the following combinations should be tried.



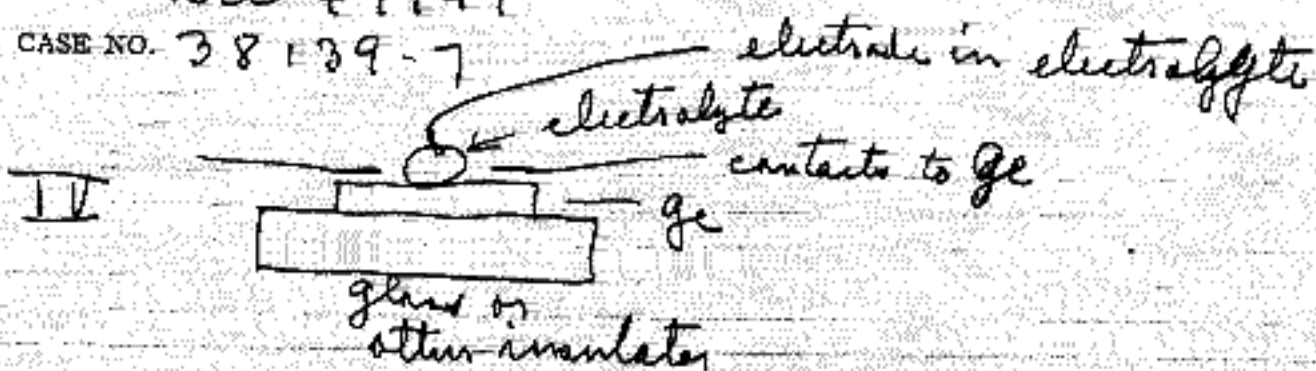
This is the one we have already tried and found



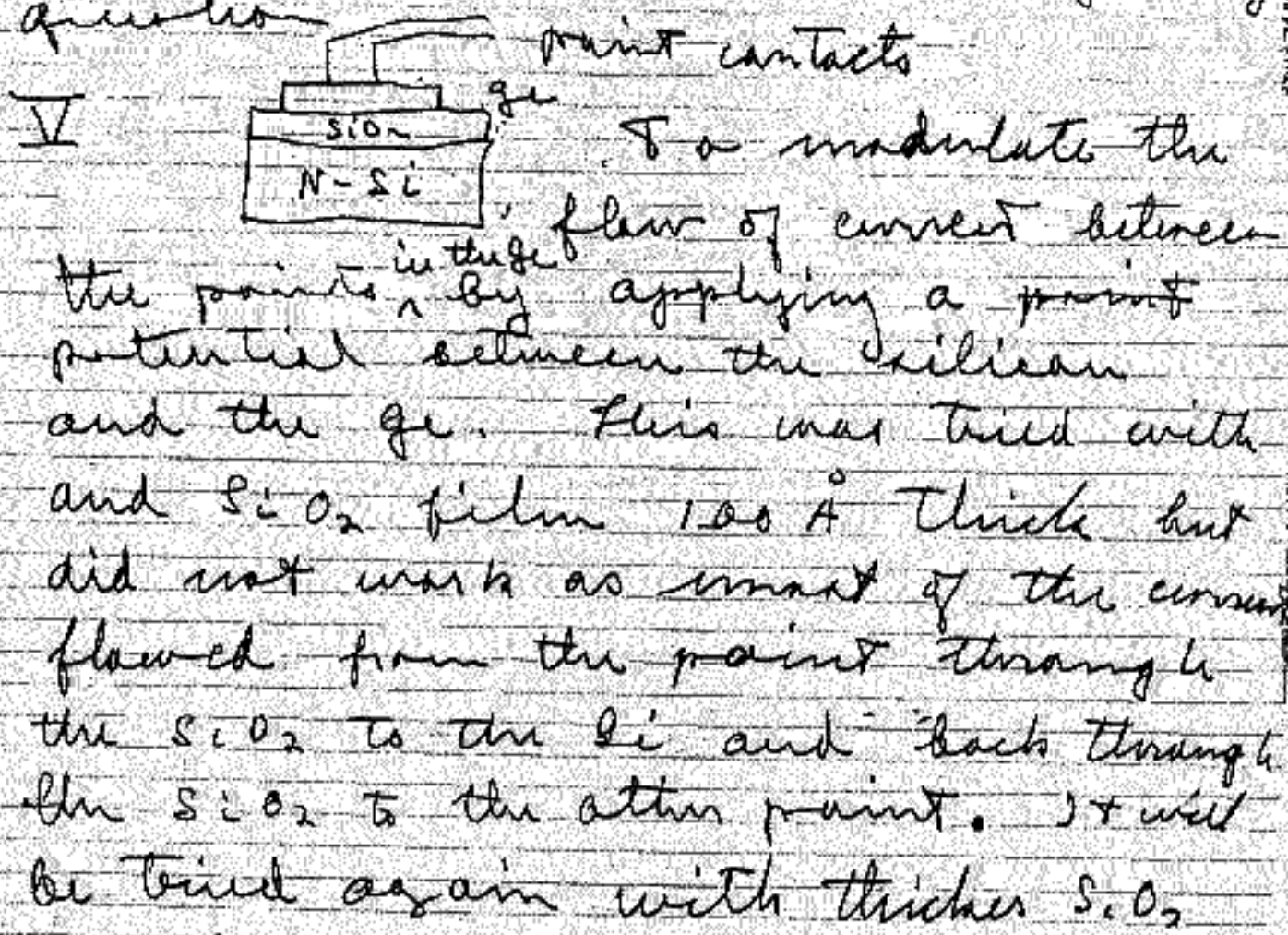
This is the one we tried on page 168



Two points close together the potential on one point to modulate this current flowing from the other point to the silicon



To modulate the current flowing in Ge film by potentials applied to the electrolyte. This has been tried by Pearson and some of the old Ge films the effect was positive but small, due to geometry question.



To modulate the flow of current between the points <sup>in the Ge</sup> by applying a point potential between the silicon and the Ge. This was tried with and SiO<sub>2</sub> film 100 Å thick but did not work as most of the current flowed from the point through the SiO<sub>2</sub> to the Si and back through the SiO<sub>2</sub> to the other point. It will be tried again with thicker SiO<sub>2</sub>.

We obtained the following A. C. values at 1000 cycles

$$E_g = .015 \text{ R.M.S. volts} \quad E_p = 1.5 \text{ R.M.S. volts}$$

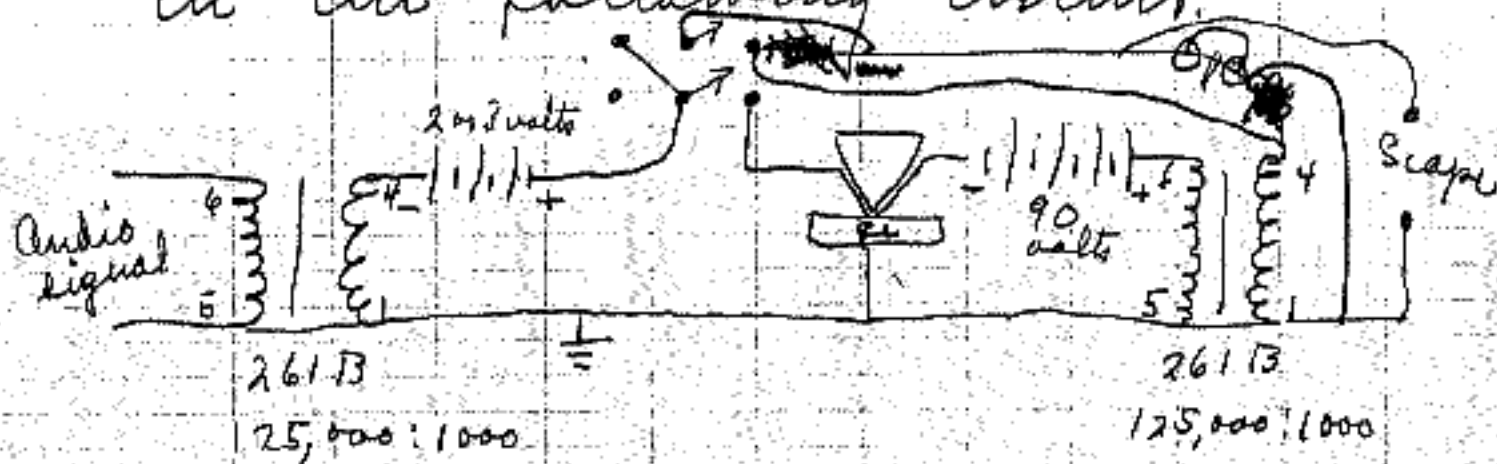
$$P_g = \cancel{6 \times 10^{-8}} \text{ w} \quad P_p = 2.25 \times 10^{-5} \text{ watts}$$

$$5.4 \times 10^{-7} \text{ watts}$$

Voltage gain 100 Power gain 40

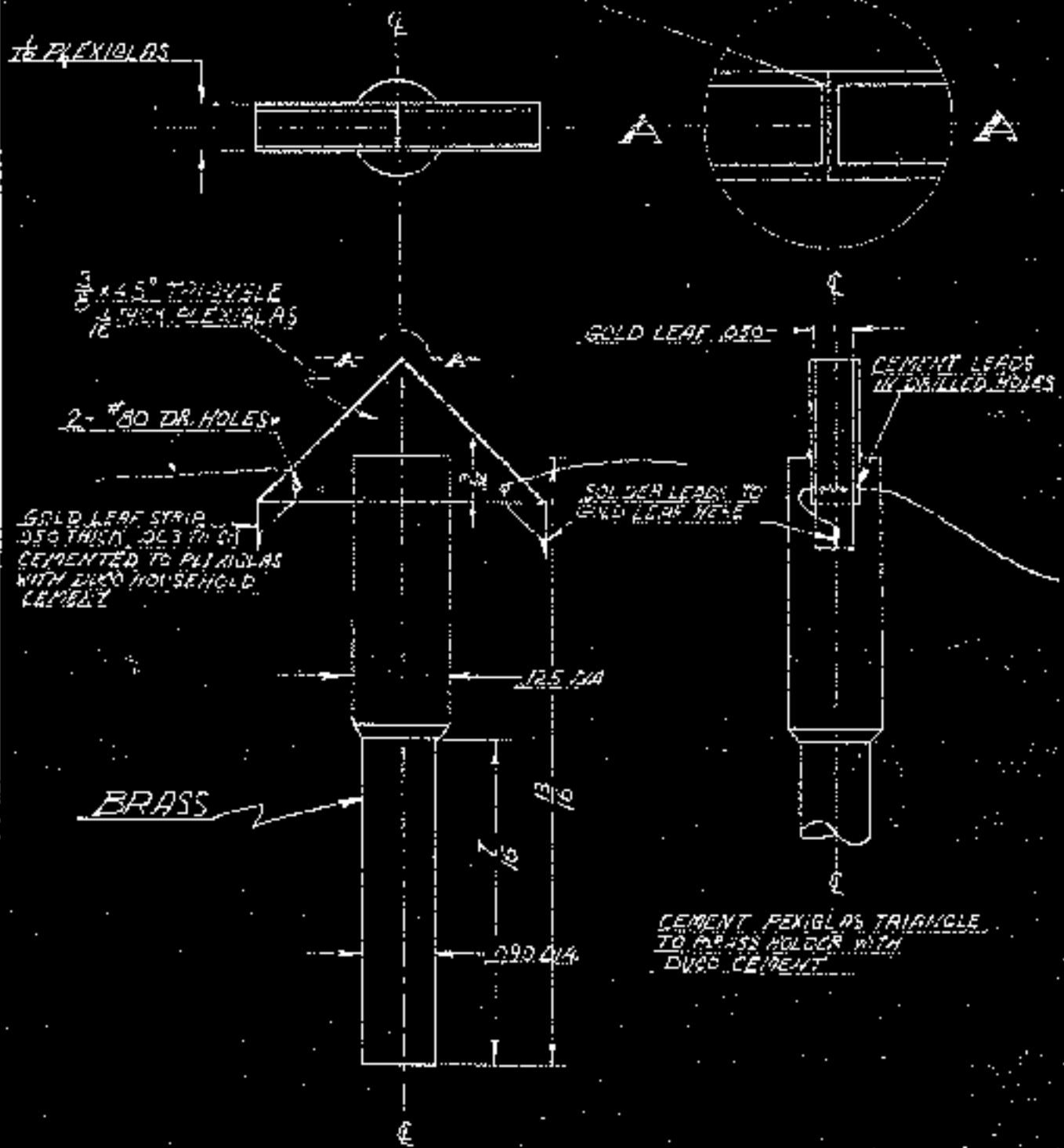
Current loss  $\frac{1}{2.5}$

This unit was then connected in the following circuit.



This circuit was actually spoken over and by switching ~~to~~ the device in and out a distinct gain in speech level could be heard and seen on the scope presentation with no noticeable change in ~~power~~ quality. By measurements at a fixed frequency

CO<sub>2</sub> SEPARATION BETWEEN  
GOLD LEAF - EQUALLY SPACED AT VERTEN



PRINTED IN U. S. A.

LA-11-11-1  
13-11-47

APPROVED	DATE
BY	
BY	
BY	

GOLD LEAF PROD

SCALE 5:1

BELL TELEPHONE LABORATORIES  
INCORPORATED, NEW YORK

LA-

NO. OF SHEETS PER SET / SEE ANNOT. 1

3A-240026

INDEX

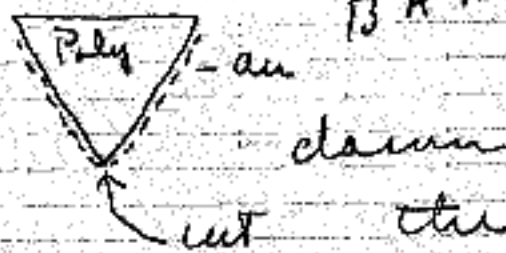
12 DATE Dec 15 1947

CASE NO. 38139-7

very close to getting  $g_{\text{out}}$  voltage  
amp about 2 out not power  
amp. This voltage amplification  
was independent of freq. 10 to 10,000 cycles

Dec 16 1947 Constructed a  
device to make two point contacts  
to Ge close together (Doubler constructed  
it.) The device is as follows: a  
poly polyethylene wedge with gold  
tape cemented on the edge of  
the wedge

Sketch #  
B A 240026



after the gold  
was cemented  
it was cut at  
apex and the cut was filled  
with wax. Using this double  
point contact contact was made  
to a Ge surface that had been  
anodized to 90 volts, electrolyte  
was led off in  $H_2O$  and then  
had some gold spots evaporated  
on it. The gold contacts were

in it was determined that the power gain was the order of factors of 18 or greater. Various people witnessed this test and listened (were present) of whom some were the following R. D. Gibney, H. P. Moore, J. Bardeen, G. L. Pearson, W. Shockley, H. Fletcher, R. Brown. Mr. H. P. Moore assisted in setting up the circuit and the demonstration occurred on the afternoon of Dec 23 1947

Read & understood by  
G. L. Pearson Dec 24, 1947  
H. P. Moore Dec 24, 1947

Dec 24 1947

This morning H. P. Moore changed the circuit on page 7 as follows

