

COMMONWEALTH OF MASSACHUSETTS

Norfolk, ss.

Superior Court  
Criminal Session

.....

Commonwealth of Massachusetts  
vs  
Nicola Sacco and Bartolomeo Vanzetti  
.....

Affidavit of AUGUSTUS H. GILL  
In support of Fifth Supplemen-  
tary Motion for New Trial.

.....

AUGUSTUS H. GILL, being first duly sworn on oath, says:

THAT he is a graduate of the Institute of Technology and the University of Leipsic and that he holds the degrees of Bachelor of Science, Doctor of Philosophy and Doctor of Science, and that he has made a special study at both the above named institutions of microscopy and microscopic measurements.

THAT he is professor of Technical Chemical Analysis of the Massachusetts Institute of Technology in Cambridge. That he has served as a legal expert in many cases for the last twenty-five years and that he has had occasion frequently to make microscopic measurements. That he has examined on two different occasions the barrel of the automatic pistol, the bullets fired at Lowell therefrom, and the mortal bullet.

THAT the affiant at the request of defendants' counsel in the above entitled cause, has made certain microscopic measurements of the so-called "mortal bullet" in the above entitled cause, bullet No. III (Exhibit 18). also of the so-called "Sacco" Colt automatic pistol, Exhibit 28. Also of the so-called "Lowell" test bullets, Exhibit No. 36.

THAT the said so-called microscopic measurements were made at the studio of one Wilbur F. Turner in the City of Boston, on August 14th, 1923 and at the office of the District Attorney of Norfolk County at Dedham, Massachusetts, on September 25th, 1923.

THAT in making said microscopic measurements the affiant



previous to the making of said measurements and at no time until after the completion of same was advised as to the relationship of any one or more said exhibits to the evidence in the above entitled cause and the objective in taking said measurements.

THAT the microscope and equipment thereof as used on August 14th, 1923 by the affiant was a different microscope and equipment from that used on September 25th, 1923. That the microscope and equipment used by the affiant on August 14th, 1923 was an equipment belonging to Albert H. Hamilton, while the microscope used by the affiant on September 25th, 1923 was from the Massachusetts Institute of Technology.

Inasmuch as the microscopes and equipments on these two dates were different, to draw conclusions, it is necessary to compare the relative relationship of figures as given by the same microscope on the same dates. That is, August and September measurements must not be compared, but August with August and September with September measurements.

The affiant measured each of the lands and grooves on the "Sacco" pistol and the results of such measurements were as follows, to wit:

All Measurements are in Fractions  
of an Inch.

	<u>August 14, 1923.</u>	<u>September 25, 1923</u>
	<u>Inch</u>	<u>Inch</u>
Measurements of lands	0.0500	0.0562
and grooves on Sacco	.1075	.1048
pistol, Ex. 28, #219722.	.0500	.0568
	.1075	.1056
	.0515	.0562
	.1080	.1064
	.0510	.0568
	.1075	.1056
	.0500	.0568
	.1075	.1075
	.0492	.0562
	.1075	.1056
* "Circumference"	0.9472	.9747
		.9733

\* This is really the sum of 12 chords.



The affiant measured the lands and grooves on the so-called "mortal" bullet, Exhibit 18, and the results thereof were as follows, to wit:

	August 14th, 1923.	September 25, 1923.
	inch	inch
Measurements of lands and grooves on the Mortal Bullet, Exhibit 18.	0.0487	0.0507
	.1000	0.0520
	.0500	.1038
	.0975	.1040
	.0500	.0512
	.0987	.1020
	.0487	.1040
	.0987	.0515
	.0500	.0504
	.0962	.1040
	.0492	.0512
	.0962	.1024
*"Circumference"	0.8839	.0512
		.1032
		.0512
		.1040
		.0512
		.1040
		.0512
		.1040
		0.9280
		0.9288

The affiant measured the lands and grooves on one of the Lowell bullets on August 14th, 1923 and the results thereof, were as follows, to wit:

	August 14, 1923.
	inch
Measurements of lands and grooves on the "Lowell" Bullet Exhibit 36.	0.0525
	.1025
	.0500
	.1000
	.0525
	.1025
	.0500
	.1000
	.0500
	.1000
	.0500
	.1000
"Circumference"	0.9100

The affiant measured the lands and grooves on three of the "Lowell" bullets on September 25th, 1923, Exhibit 36, and the results were as follows, to wit:

	September 25th, 1923	
Measurements of lands and grooves on three Lowell Bullets Exhibit 36.	0.0528	0.0528
	.1056	0.0520
	.0528	.1072
	.1040	.1056
	.0528	.0520
	.1040	.1056
	.0520	.0512
	.1056	.1056
	.0528	.1056
	.1040	.0528
	.0528	.1056
	.1056	.1056
	.0528	.0528
	.1056	.1056
"Circumference"	.9448	.9464
		.9488

\*This is really the sum of 12 chords.



Summing up:

	<u>August 14, 1923</u>	<u>September 25, 1923</u>
Inside circumference Sacco pistol barrel	0.9472	0.9740 inch
Circumference Mortal bullet	0.8839	0.9284 "
Circumference bullet fired from Sacco pistol at Lowell	0.9100	0.9466 "
Lowell bullet is larger than mortal bullet by	0.0261	0.0182 "
Average width of grooves on mortal bullet	0.0494	0.0512 "
Average width of grooves on bullet from Sacco pistol	0.0508	0.0524 "
The grooves on the bullet from Sacco pistol are wider than those on the mortal bullet by	0.0014	0.0012 "

This table shows conclusively that the "mortal" bullet never passed through the barrel of Sacco's pistol.

Augustus H. Gies.

Subscribed and sworn to before me, this 27<sup>th</sup> day of September 1923.

George E. Roewe Jr.

My Commission Expires Dec. 20, 1924.



5545-5546.

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