

Answer to Affidavit of Albert H. Hamilton.

In reference to the statement of Hamilton on page 4 of his affidavit that the five Vanzetti cartridges were taken from the original package within less than four years of the present time, based apparently on his finding less corrosion in the indentations of the letters than appear to the lay eye on the body of the shells, my opinion is that this conclusion is merely guess work. The appearance of age either on the body of a shell or in the lettering, so far as it is based on the appearance of corrosion, is not significant and cannot be significant because corrosion depends entirely on the extent of the dampness to which the shells have been submitted, and also on the control which the oil present on all shells has exerted on such corrosion. In this case, if there was oil, as is usually the case in the indentations of the lettering, corrosion wouldn't proceed as rapidly in such indentations as it would on the body of the shells. The only scientific determination which can be made as to the age and discoloration is to ascertain when last any of those particular shells were manufactured. On one of the Remington shells appear the letters "S. H." which means solid head, and it can be determined when last shells were made with the "S. H." appearing on them. This of course will not affect a determination of the time when such shell or shells were last taken from the original package because it is perfectly conceivable that these shells, long after manufacture, were allowed to remain in the original package. In so far, however, as the time of removal from the package is dependent on the appearance of the shells with respect to corros-

ion, as I above stated, this time must be entirely a matter of guess work.

(It is of course a matter of guess work and purely a surmise when Hamilton states that to the ordinary lay eye the discoloration of the brass on these shells would show considerable age.)

I have observed such discoloration on cartridges made within one year, a discoloration evidently due to the condition surrounding the cartridge and more specifically due to what is probably the action of acid exuding from the pores of the skin of the person handling the cartridge. The oil above referred to is lubricating oil which must be present during certain operations in the manufacture of the cartridge case, particularly in the drawing.

In reference to paragraph 2, page 5, there is no way of determining from the discoloration of shells or appearance of corrosion on shells or in the lettering how recently such shells have been taken from the original package. In so far as Hamilton states that the middle bullet on page one of the album is a bullet of soft lead (a "soft head"), if he is relying on the "S. H." on the cartridge, that means Solid Head and not Soft Head.

In reference to paragraph 2, page 5, it is to be noted that Hamilton does not state the width of the land cut which he found on bullet "X", nor does he state the corresponding width of the land on the Vanzetti revolver. He confines himself to stating a conclusion without giving in detail and with exactness the basis of his conclusion. As a matter of fact there is a mark on bullet "X", one of the so called Ripley bullets, which apparently was

caused by said bullet at some time being inserted in the muzzle or breech (?) of some firearm. There were five marks on the bullet, rather indistinct, "lightly registered", which would indicate that the bullet had been inserted in some barrel having five lands. I carefully measured the width of the land cuts on this bullet and found that they measured, in the order in which I examined them, .080, .082, .082, .089, and .089 of an inch. I then measured a land of the so-called Vanzetti revolver at the muzzle and found it to measure at its widest point, which occurs at the base of the land, .103, and at the top surface of the land .098, showing by these measurements and from the appearance under the microscope that one side of the land has a pronounced slope as herein shown by a sketch. These measurements prove that the Ripley bullet was not inserted in the muzzle of the Vanzetti revolver.

I then measured two lands in the so-called Ripley revolver and found them to measure .0927 and .0919 of an inch. The walls of these lands are practically perpendicular with reference to the axis of the bore and equal in appearance on both sides. It is to be noted therefore that the land cuts on the Ripley bullet more nearly correspond with the land width in the Ripley revolver than with the land width in the Vanzetti revolver. Lands and grooves, which constitute the rifling in the barrel of a revolver, are made by the same grooving tool and therefore the width of land and groove throughout the barrel must be very nearly uniform. The markings on the Ripley bullet were so slight that it is impossible to determine the pitch of the rifling which caused the markings.

A Harrington & Richardson revolver is a relatively cheap revolver and the shop standards as to width of land and groove are

not maintained uniformly in the various revolvers manufactured by that company. So far as the standard width of land and grooves is concerned the Smith & Wesson and Iver Johnson Companies each make revolvers with five lands and five grooves of approximately the same standard width as the Harrington & Richardson.

The width of lead zone between the crimping of the shell on the bullet and the point of the bullet has no significance and is of no assistance in determining the age of the bullet because that width of zone in a given cartridge is dependent on the depth to which that bullet is seated in the shell. The depth to which a bullet is seated in a shell can readily vary by .020 of an inch among shells manufactured by the same company at the same time. An accurate determination of variation within the bullet itself, exclusive of the cartridge shell, can be made only by extracting the bullet and measuring it separately. On all the Vanzetti and Ripley bullets there are scores, bruises, cuts and scratches such as are very common indeed to the exposed portions of lead bullets. Such mutilations occur in manufacture and are present to some extent on cartridges that are being freshly packed at the factory. The further handling of cartridges incident to shipping and storage in warehouses and sporting goods stores, as well as the tumbling in usage which they are subjected to by the customer, is an experience which is well known to cause any amount of bruising, cutting, and so forth as mentioned as being present in the cartridges submitted. There is no mark on any of the Ripley or Vanzetti bullets which can be said to be a scratch of a finger nail to the exclusion of any other means, cause or instrument.

In this type of a cartridge, 38 S. & W. there has been de-

signed for the S. & W. Company a metal point bullet so called which is designed specifically to prevent mutilating and marring of bullets with a view to preserving their accuracy, all of which is a recognition of the mutilation which the lead exposure of cartridges must undergo in common handling.

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