

# 1881 O MORGAN \$ DENTICLE IMPRESSIONS BY GOLD EAGLE \$10 DIE

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## Introduction

This report treats **denticle space impressions** from a **different denomination die** on a Morgan dollar **reverse die**. These impressions show as **three** and possible a fourth **raised dots** just below the **reverse wreath bow**. It is the **only reported and known example** in the entire Morgan dollar series that shows raised denticle space dots caused by **contact of another denomination working die**. As shown in this report, these denticle space dots were caused by the edge of a **Gold Eagle Liberty Head ten-dollar die**.

A truly **unique, unusual and mind-blowing special denticle space impressions die variety!**

## Initial 1881 O Morgan Dollar Coin Examination

In **July 2017**, **Brian Raines** sent an **AU EDS 1881 O Morgan dollar** that he said had denticle impressions above and to left of mint mark. Upon examination of the coin reverse with a 10X loupe, there were three tiny raised dots in a slightly curved line with equal spacing above and to the left of the O mint-mark. There was also a thin horizontal straight raised line above the O mint mark on the field below the center bottom of the wreath bow. These equally spaced three dots had the appearance of typical denticle impressions, but with slightly smaller dots, found on numerous listed Morgan dollar reverse dies, as shown in the accompanying photograph. It was tentatively assigned and described as a Morgan dollar die variety of **1881 O, VAM 1L**.

As a check on reported raised dots on Morgan dollar coin reverses, this spacing between dots is always measured using a 10X stereo microscope with a **mini-scale** with divisions of 0.005" accurate to 0.001". To my **surprise**, the **spacing between dots** was **0.020"** instead of the standard denticle spacing on Morgan dollars of **0.030"**.

The initial reaction was that these three dots were not denticle impressions but some other die damage. But what could cause three raised dots with equal spacing on a slightly curved line on a hardened Morgan dollar die face? Normal unhardened tools or slightly hardened ones wouldn't produce clearly defined equally spaced raised dots. On the other hand, the three raised dots look remarkably similar to the three wider (0.030") spaced raised dots denticle impressions also above and to the left of the O mint mark of Morgan dollar 1890 O VAM 16B. Another hardened die could have produced these raised dots in a line, but **which die?**

A quick measurement of various actual coin size photographs in some guide books of U.S. coins revealed that Liberty Seated quarters of 1838- 1891 had denticle spacings of 0.020". However, the New Orleans Mint didn't strike any minor coins in 1879- 1881. It also didn't strike Trade dollars or any gold coins these years **except the Gold Eagle Liberty Head ten-dollar coins** in 1879 (1,500 mintage), 1880 (9,200) and 1881 (8,350).

Measurement of **actual size photographs** of the **Gold Eagle Liberty Head ten-dollar coin** in several **guide books** revealed a denticle spacing of **0.020" on the one-inch diameter coin**. This is illustrated in an accompanying photograph showing the mini-scale tool over the photograph of coin denticle space impressions.

Close-up photograph at 30X magnification show the enlarged shapes of the raised dots above the O mint mark. Both the left and right dots show a sharp edge on the left side with sloping upper portions. The center dot is adjacent to the wreath bow cavity. Likely the smaller one-inch diameter eagle ten-dollar gold die impacted the one and on-half inch diameter Morgan reverse die at a **slight angle** with a **slight glancing blow** that cause the raised dots with sloping tops. The thin horizontal raised line above the O mint mark possibly was from the field edge at the denticles.

## Examination of Gold Eagle Liberty Head \$10 Coin

In **July of 2021**, **Robert Whitehead** sent an **AU 53 1881 O Gold Eagle Liberty Head ten-dollar coin** along with other 1881 O Morgan dollars for examination. The gold coin was to render an opinion

whether the denticle spaces impression on the 1881 O VAM 1L came from an 1881 O \$10 gold die. Measurements of the obverse and reverse denticle spacing by the aforementioned mini-scale confirmed that they **were indeed 0.020"** as shown in the accompanying photograph.

Further, an enlarged photograph of the 1881 O VAM 1L three raised dots is shown with an enlarged overlay photograph of the 1881 O \$10 gold coin denticles. The denticle spacing of the photograph above the three raised dots was adjusted to match the coin dot spacing. Also, the curved edge of the photograph just below the denticles was cut on the photograph bottom to match the denticles bottom edges. Thus, this overlay photograph clearly shows that the **denticle bottom edge curvature matches the curvature of the three raised dots** and possible fourth dot segment to the right.

This shows that the **1881 O \$10 gold coin denticle spacing and rim with denticles** of the one-inch diameter both **match the denticle impressions spacing and curvature** on the Morgan 1881 O dollar VAM 1L coin. This **pretty much proves** that the 1881 O VAM 1L with three and possibly a faint fourth denticle space impressions in a curved line **was caused by an 1881 O Gold Eagle Liberty Head \$10 gold die rim denticle spaces.**

#### **Possible Scenario of Eagle Gold Liberty Head \$10 Die Impacting Morgan \$ Die**

A remaining question is what were the circumstances of the smaller Eagle \$10 gold die impacting the larger reverse Morgan dollar die face. A possible scenario is that it **happened during the installation and removal of dies in a coining press.** Since the 1881 O Morgan dollar coin is an early die state, the reverse die was likely **already installed** at the lower die position in the coining press. When the upper or hammer eagle \$10 gold die was **being removed it lightly contacted the Morgan dollar lower die with a slight glancing blow** in the confined space of the coining press. An accompanying sketch illustrates this possible die contact. The eagle \$10 gold die dimensions were scaled up from an actual quarter die of the author with 0.95" die face diameter to the eagle \$10 gold die face diameter of one inch. It was assumed that the \$10 gold die had a similar shape and dimensions as the quarter die.

#### **Conclusions**

These **denticle space impressions from another coin series die are unique** for the Morgan dollar series. An **amazing die variety with denticle space impressions by an Eagle \$10 gold coin die.** By a strange coincidence, the only other 1881 O denticle space impression known is the VAM 18A (same reverse as 43, 1B, & 49) with the **strongest known die edge impressions curved line and greatest number of six denticle space impressions in a curved line above the die edge line.** It would be of further confirmation to examine another example of the Morgan \$ 1881 O VAM 1L coin with the same three raised dots from contact with the denticle spaces of the 1881 O \$10 gold die.

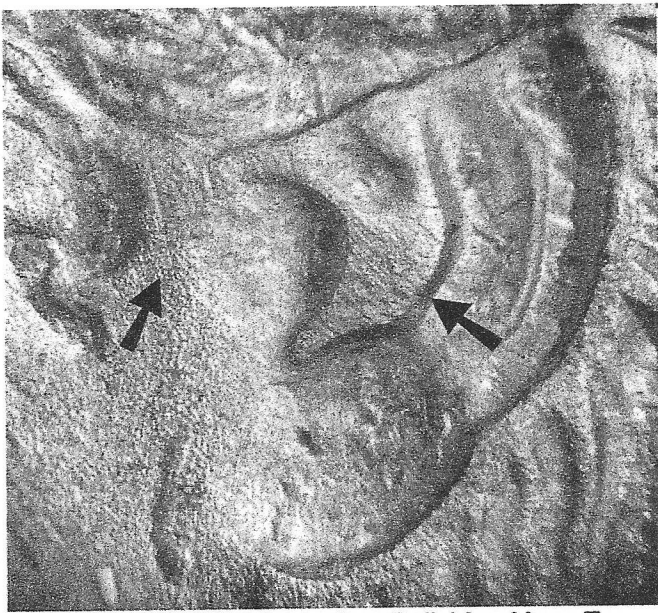
The following is the description of this very special Morgan \$ die variety:

#### **1881 O**

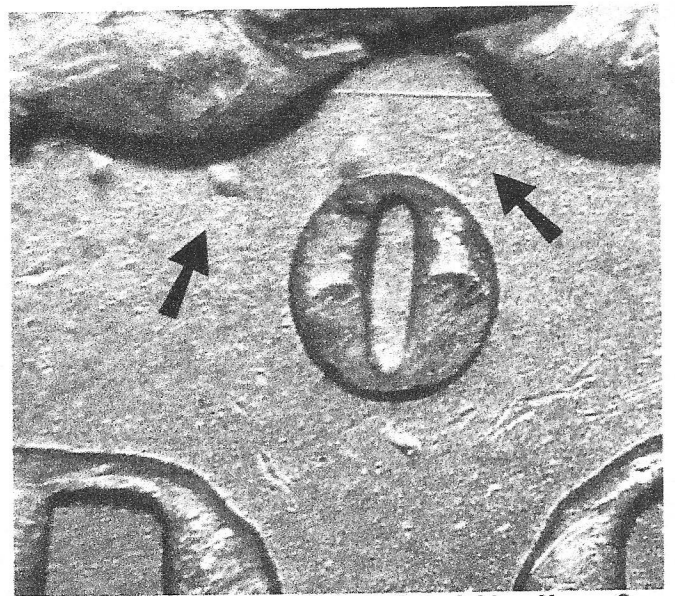
**1L (revised) III<sup>2</sup>1 • C<sup>3</sup>a (Three Denticle Impression Dots Above O Mint Mark by Eagle \$10 Gold Die) (183) I-5 R-6**

**Obverse III<sup>2</sup>1--** Very fine raised dots on Liberty head. *Die marker-* Die polishing lines inside and to left of Liberty head ear.

**Reverse C<sup>3</sup>a--** Very fine raised dots on eagle. Three raised dots at top left and horizontal polishing line above O mint mark with spacing of 0.020" instead of 0.030" of Morgan dollar denticle spacing. Likely from denticle space impressions of an 1881 O Gold Eagle Liberty Head \$10 gold die that was in production at New Orleans Mint that year. It had denticle spacing of 0.020" and a diameter of one inch that matches the curvature of the three denticle impressions on the 1881 O Morgan \$ die.



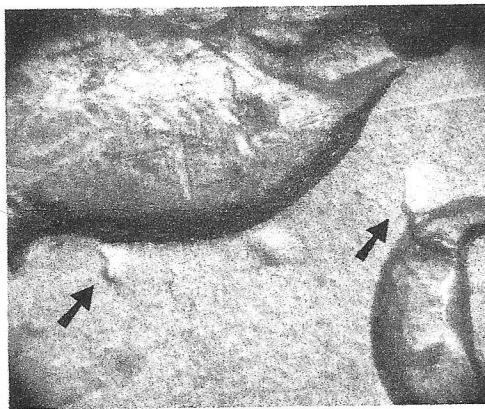
1881 O VAM 1L Die marker- Polishing Lines Ear



1881 O VAM 1L Three Raised Dots & Line Above O



1881 O VAM 1L Denticle Impressions & Mini-scale 0.020"



1881 O VAM 1L Denticle Rough Edges, 30X



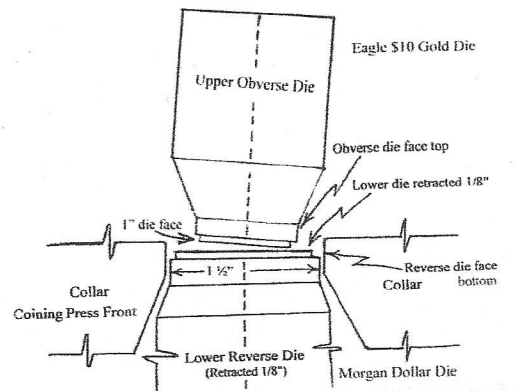
Mini-scale for Microscopes



1881 O Liberty Head Eagle \$10 Gold Coin  
(1" diameter)  
(0.020" denticle spacing)

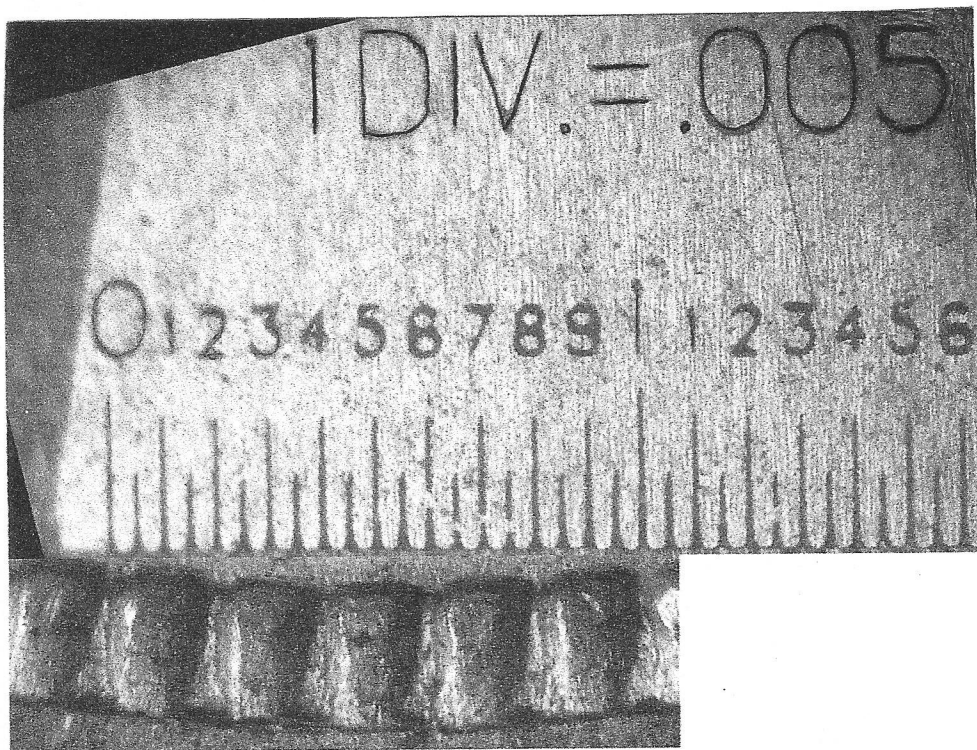


1881 O Liberty Head Eagle \$10 Gold Coin  
(1" diameter)  
(0.020" denticle spacing)

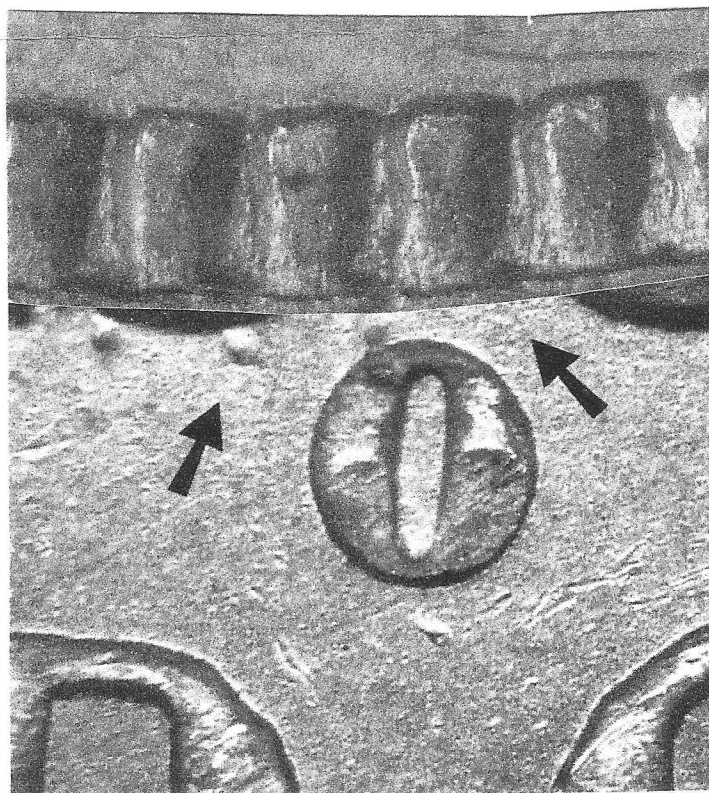


Eagle \$10 Gold Die Denticle Contact on Morgan Die





1881 O Liberty Head \$10 Gold Obverse  
Denticle Spacing 0.020"



1881 O VAM 1L Three Raised Dots Above O  
1881 O Liberty Head \$10 Gold Obverse  
Denticle Spacing 0.020" & Die Edge Curvature