

**COIN COLLECTING:  
I'VE FOUND THE EDGE!  
HOW ABOUT YOU?**

**BY**

**ODAS WAYNE KOGER**

**MADISON COUNTY COIN CLUB**

**17 AUGUST 2021**

# To BEGIN WITH . . .



**PLAIN**



**REEDED**

**IN THE BEGINNING, FOR ME  
THERE WERE *ONLY* PLAIN AND  
REEDED EDGES!**



# BECAUSE IN THE BEGINNING I WAS CLUELESS!

- **YOUNG COLLECTOR: LATE 50's & MID-60's**
- **NARROW FOCUS: US LATE-19<sup>TH</sup> TO MID-20<sup>TH</sup> CENTURY**
- **FROM CIRCULATION; NEVER BOUGHT A COIN**
- **MOST RECENT US COIN WITH A SPECIAL EDGE (LETTERING): 1933 SAINT-GAUDENS DOUBLE EAGLE**
- **NO INTERNET**
- **NO SHOWS**
- **NO ASSOCIATION WITH COLLECTORS, EXCEPT DAD**
- **SO THERE *WERE ONLY* PLAIN AND REEDED EDGES!**

# **MORE THAN 50 YEARS LATER: STILL CLUELESS!**

- **LOST INTEREST IN COIN COLLECTING IN THE LATE 60'S**
- **SEPTEMBER 2016, BEGAN COLLECTING AGAIN—WITH SAME NARROW FOCUS ON LATE-19<sup>TH</sup> TO MID-20<sup>TH</sup> CENTURY US COINS—BUT COULDN'T COLLECT FROM CIRCULATION**
- **HAD TO BUY COINS**
- **INTERNET**
- **NO SHOWS**
- **NO ASSOCIATION WITH COLLECTORS, EXCEPT DAD**

**BY THEN THERE WERE A FEW CIRCULATING (BARELY)  
US \$1 PRESIDENTIAL COINS WITH SPECIAL EDGES  
NARROW FOCUS: WRONG (21<sup>ST</sup>) CENTURY!**



# **TWO YEARS LATER, AFTER GROWING A BIT: A LITTLE BREAKTHROUGH**

- **28NOV17: 1ST MADISON COUNTY COIN CLUB MEETING**
- **APRIL 2018 (AGE 66): 1ST COIN SHOW**
- **REBORN AS A COLLECTOR OF MOSTLY FOREIGN CIRCULATING COINS**
- ***STILL ONLY* PLAIN AND REEDED EDGES—FOR A WHILE**
- **BREAKTHROUGH SEPTEMBER 2018: RESEARCHING DIFFERENCE IN “MILLED” AND “REEDED” LED TO DISCOVERING MANY SPECIAL EDGE TREATMENTS EXIST**
- **BUT IT’S JUST NOT EASY TO FIND THOSE EDGES**

# **EDGES HAVE LITTLE ROOM TO SHINE: MODERN US DOLLAR COINS**

- **ALL MODERN US DOLLAR COINS ARE 26.5MM IN DIAMETER AND 2MM THICK**
- **26.5 MM DIAMETER = 551.55 SQUARE MM EACH FOR OBYERSE AND REVERSE**
- **551.55 X 2 = 1103.10 MM TOTAL AREA COMBINED**
- **C = 83.25MM**
- **2 MM THICK**
- **EDGE AREA:**
- **83.25 X 2 = 166.50 SQUARE MM**
- **1103.10 + 166.50 = 1269.60 SQ. MM**
- **166.50 / 1269.60 =**
- **13.11% OF TOTAL SURFACE AREA IS EDGE**



# **MORE ROOM TO SHINE: LATE 20<sup>TH</sup> CENTURY UK POUND COIN**

- **THESE UK POUND COINS ARE 22.5MM IN DIAMETER AND 3.15MM THICK**
- **22.5 MM DIAMETER = 397.6 SQUARE MM EACH FOR OBYERSE AND REVERSE**
- **397.6 X 2 = 795.2 MM TOTAL AREA COMBINED**
- **C = 70.7MM**
- **3.15 MM THICK**
- **EDGE AREA:**
- **70.7 X 3.15 = 222.7 SQUARE MM**
- **795.2 + 222.7 = 1018 SQ. MM**
- **222.7 / 795.2 =**
- **28% OF TOTAL SURFACE AREA IS EDGE**

# REAL ESTATE

**UK LATE 20<sup>TH</sup> CENTURY POUND VS. MODERN US DOLLAR**



# **SO IT SEEMS THE EDGE GOT THE RAW END OF THE DEAL**

- **WINNERS DON'T CHOOSE EDGES!**
  - **HEADS? YES!**
  - **TAILS? YES!**
  - **EDGES? NO TAKERS!**
  - **JEFFERSON NICKLE: 1 / 6000 TO LAND ON EDGE**
  - **U TUBE VIDEO**
- **EASY TO SEE THE SLENDER EDGE GOT PUSHED TO THE SIDE BY IT'S TWO PORTLY, FLASHY SIBLINGS**

# **BUT LOOK AT THE EDGE AGAIN . . .**

- **WHAT IF THE EDGE *WASN'T* PUSHED INTO ITS SLINDER ROLE BY IT'S SIBLINGS—WHAT IF IT *WENT WILLINGLY*?**
- **WHY, BECAUSE THE EDGE WANTED TO RULE!**
- **COINS WOULDN'T BE MUCH WITHOUT AN EDGE:**
  - **TWO DIMENSIONAL**
  - **NO REAL SUBSTANCE**
  - **OBVERSES AND REVERSES WANDERING AROUND LOOKING FOR A HOOKUP**
  - **ONLY ~HALF OF THE COINS IN THE WORLD WOULD BE WORTH ANYTHING: ONLY ONE SIDE TYPICALLY HAS A DENOMINATION**

**BUT EDGES DON'T GET NO RESPECT!  
EVEN COIN COLLECTORS TREAT EDGES  
LIKE 3<sup>RD</sup> CLASS (SIDE) CITIZENS . . .**

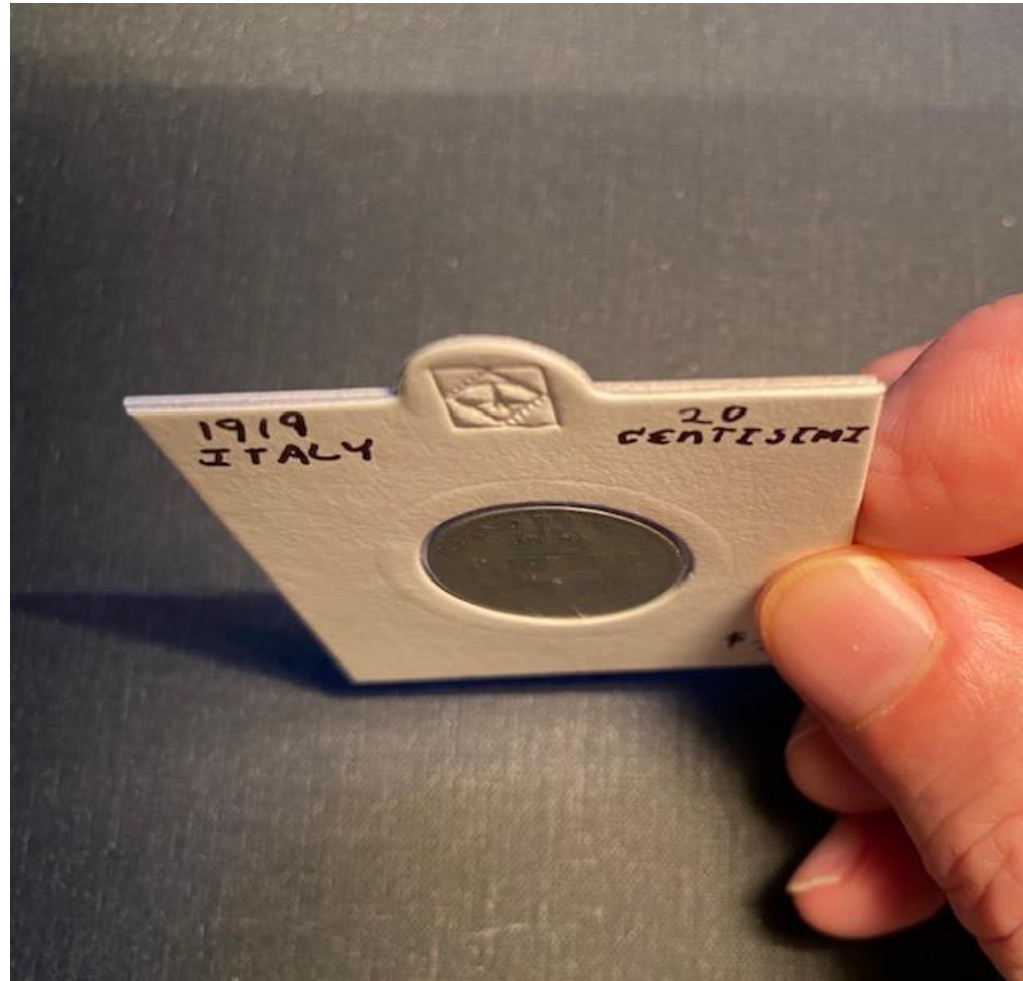


# LOOKING FOR EDGES TO RESPECT? (AND NO, THESE ARE *NOT* MINE!)





# EDGE? WHAT EDGE? 2X2 HOLDERS DON'T HELP!



# EDGE? WHAT EDGE? THE MINTS DON'T HELP!





# EDGE? WHAT EDGE? THE BANKS DON'T HELP!



# EDGE? WHAT EDGE? GRADED SLABS DON'T HELP!



# **NUMISTA.COM**

## **IS THE MOST HELP I'VE FOUND!**

- **I WANT (PERHAPS NEED 😊) TO DOCUMENT ATTRIBUTIONS AND OTHER INTERESTING ASPECTS OF COINS I COLLECT**
- **“CATALOGING” (A STORY FOR ANOTHER DAY!)**
- **ONE-STOP SHOPPING: 171,698 COINS FROM 3,598 ISSUERS, INCLUDING 305 COUNTRIES**
- **VAST INFORMATION ON JUST ABOUT ANY COIN**
- **TENS OF THOUSANDS OF ENTRIES NOTE THE EDGE TYPE**
- **~5% OF MY FOREIGN COINS HAVE SPECIAL EDGES**
- **ALL PICTURES HERE ARE FROM MY COLLECTION; THE SPECIAL EDGE ON EACH WAS UNKNOWN WHEN PURCHASED!**

# **SO WHAT'S THE REAL REASON FOR SPECIAL EDGES?**

- **“DECUS ET TUTAMEN”**
- **“AN ORNAMENT AND A SAFEGUARD”**
- **SAFEGUARDING WAS INITIAL DRIVER:**
  - **CLIPPING, SHAVING & FILING SILVER & GOLD**
- **ORNAMENTATION SINCE MID-60'S:**
  - **BASE METALS**

# PEOPLE ONCE PAID ATTENTION TO EDGES SINCE MID-60's, THIS IS ABOUT IT!



# UK LATE 20<sup>TH</sup> CENTURY POUND: 3% COUNTERFEIT!



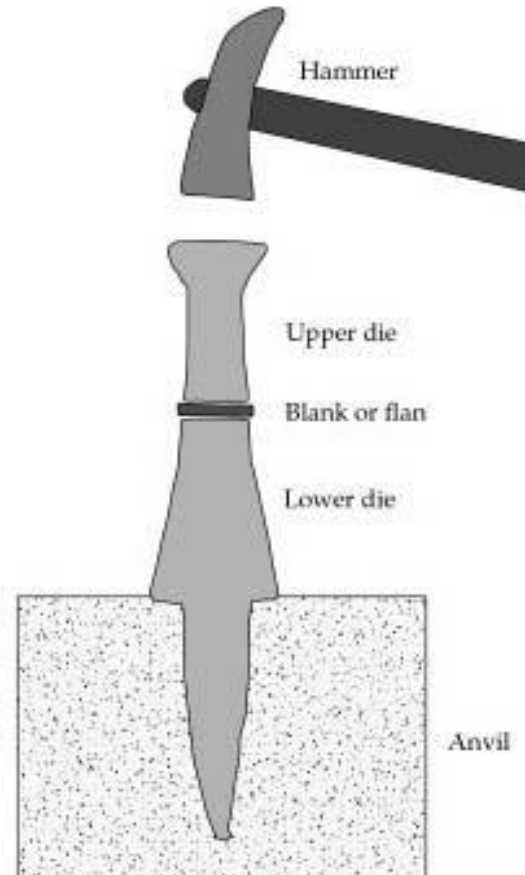
# **IN THE BEGINNING, COINS JUST GOT HAMMERED**

**EDGES, AS WE KNOW THEM ON CONTEMPORARY COINS,  
SIMPLY DIDN'T COME CLOSE TO EXISTING UNTIL THE 17<sup>TH</sup>  
CENTURY**

**ABOUT 650 BC, THE FIRST “ROUND” COINS ARE STRUCK  
BY MALLET ON DIE, IN THE KINGDOM OF LYDIA IN THE  
WESTERN PART OF ASIA MINOR (WESTERN TURKEY)**



# STRIKING BY HAND





# **HOW CAN YOU TELL IF A COIN IS HAMMERED?**

- IRREGULAR IN SHAPE AND SIZE**
- FADED OR MISSING INSCRIPTIONS**
- DAMAGED OR 'CLIPPED' EDGES**
- OBSCURED PORTRATES**
- POORLY-STAMPED LETTERS**
- (BUT THEY CAN BE LOVELY COINS!)**

# 1618 SPANISH 8 MARAVEDIS ABSOLUTELY HAMMERED!



# **MILLED COINS CAME 'ROUND**

**HAND HAMMERED COIN MANUFACTURING REMAINED LARGELY UNALTERED FOR MORE THAN 2,000 YEARS!**

**~ 1550: THE STARS ALIGNED ON 3 MECHANICAL PROCESSES:**  
**1) ROLLING BULLION TO THE REQUIRED THICKNESS,**  
**2) CUTTING BLANKS FROM THE ROLLED METAL, AND**  
**3) STRIKING COINS FROM THE BLANKS**

**COINS WERE FINALLY TRULY ROUND!**

**“MILLED” = MACHINE STRUCK**



# SCREW PRESS

## FIRST MECHANICAL MEANS OF STRIKING

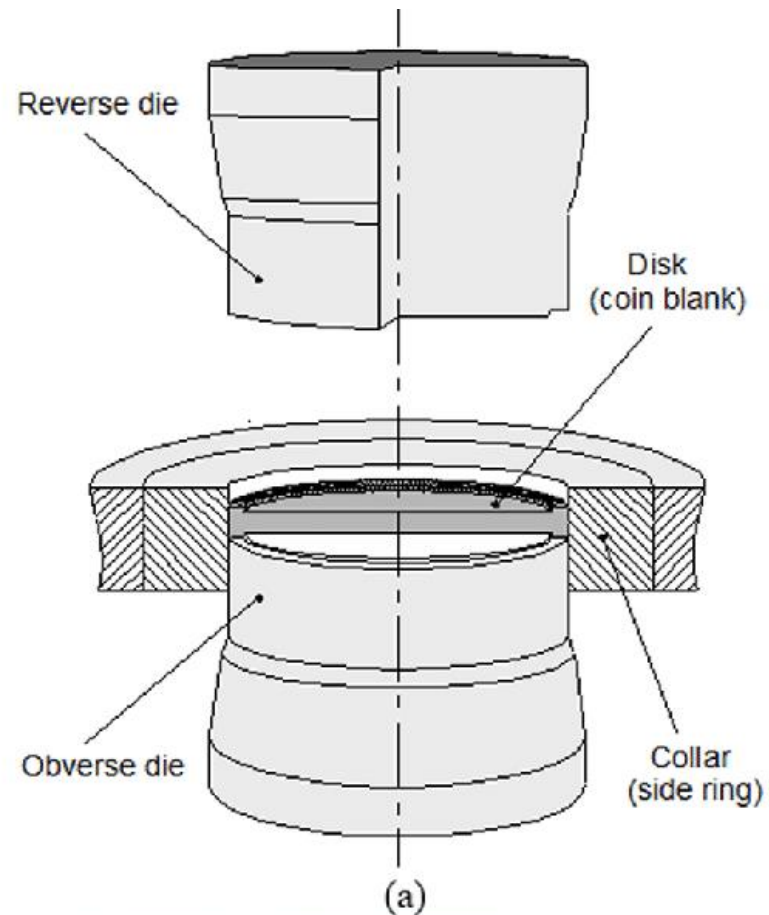


# COLLARED!

- When [Aubin Olivier](#) introduced [milled coinage](#) to France, he also developed a method of marking the edges with lettering which would make it possible to detect if metal had been shaved from the edge.
- This method involved using a “collar,” into which the metal flowed from the pressure of the press.
- This technique was slower and more costly than later methods: use of these collars resulted in machine and die damage.
- France abandoned milled coinage in favor of hammering in 1585.

# COLLAR

## SIMPLE COLLAR WORKED FOR REEDS

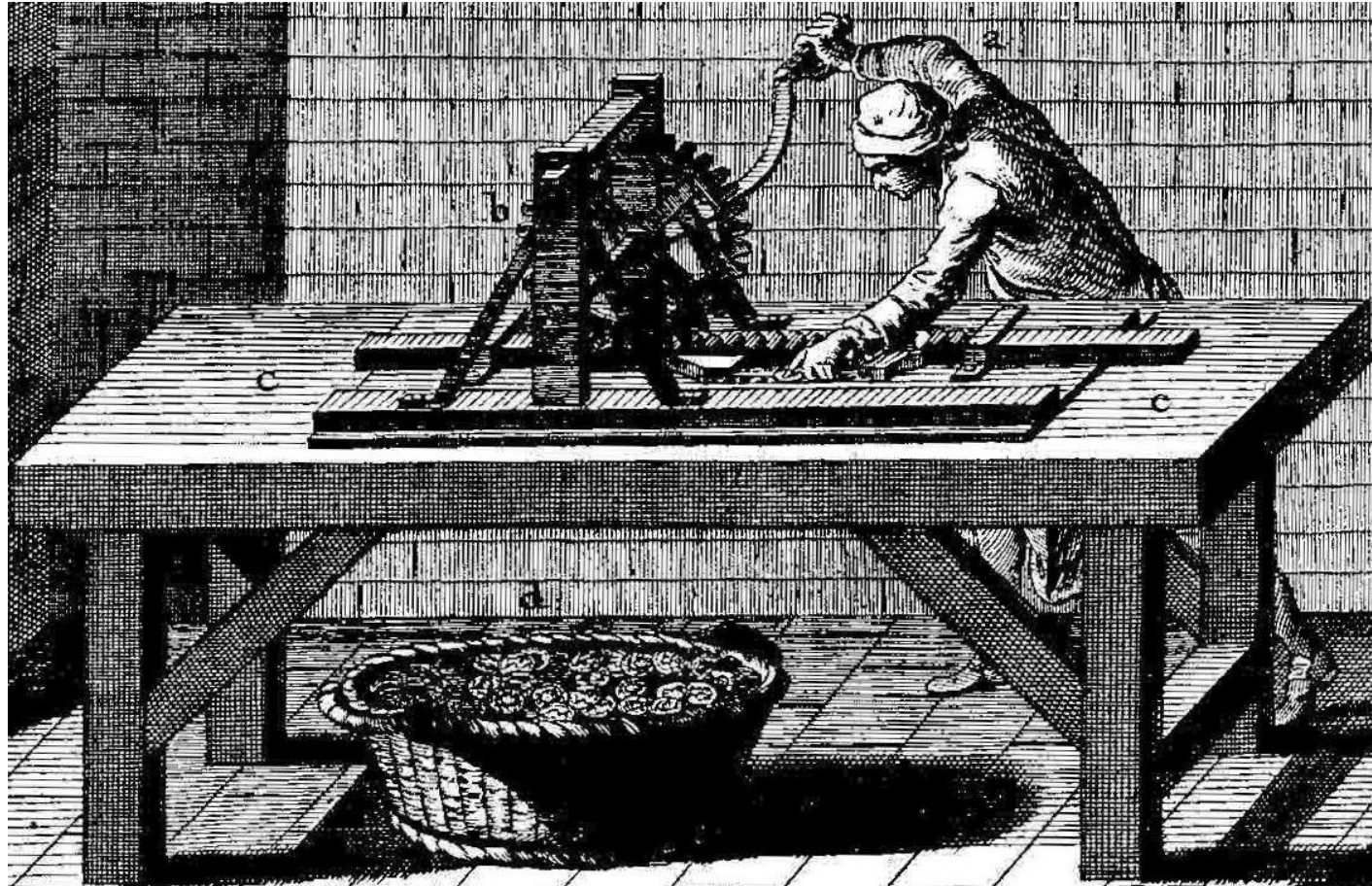


# CASTAING MACHINE

## ALLOWED MORE COMPLEX EDGES

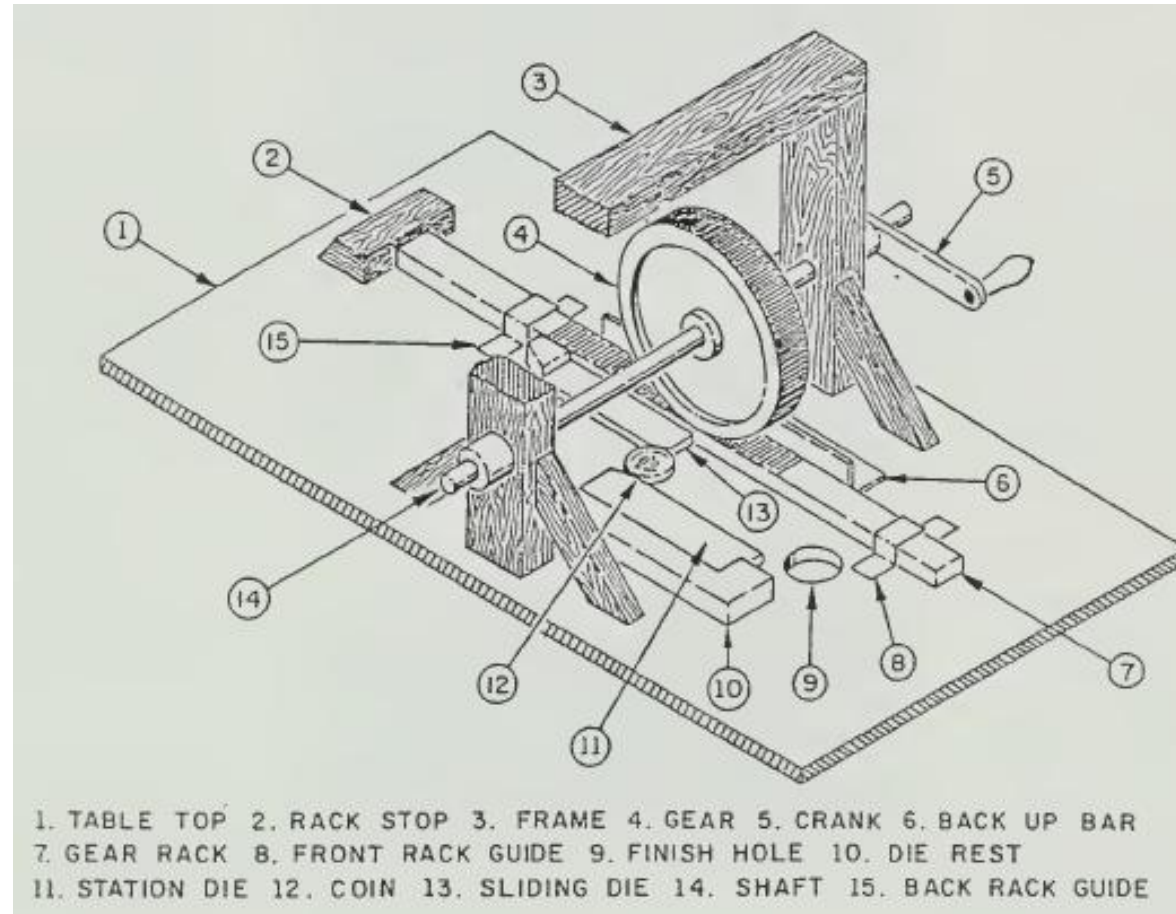
- IN 1619, SIR ISAAC NEWTON BECAME WARDEN OF THE ROYAL MINT AND IMPLEMENTED ENGLAND REEDING ON COINS , BUT IT WASN'T UNTIL [PETER BLONDEAU](#) BROUGHT HIS METHOD OF MINTING COINS THERE IN THE MID-17TH CENTURY THAT SUCH COINAGE BEGAN IN EARNEST IN ENGLAND.
- BLONDEAU ALSO INVENTED A DIFFERENT METHOD OF MARKING THE EDGE, WHICH WAS, ACCORDING TO HIM, FASTER AND LESS COSTLY THAN THE METHOD PIONEERED BY OLIVIER. THOUGH BLONDEAU'S EXACT METHOD WAS SECRETIVE, NUMISMATISTS HAVE ASSERTED THAT IT LIKELY RESEMBLED THE LATER DEVICE INVENTED BY [JEAN CASTAING](#).
- THE **CASTAING MACHINE** IS A DEVICE USED TO ADD LETTERING AND DECORATION TO THE EDGE OF A COIN.
- CASTAING'S MACHINE MARKED THE EDGES BY MEANS OF TWO STEEL RULERS, WHICH, WHEN A COINAGE BLANK WAS FORCED BETWEEN THEM, IMPRINTED LEGENDS OR DESIGNS ON ITS EDGE.
- CASTAING'S DEVICE FOUND FAVOR IN FRANCE, AND IT WAS EVENTUALLY ADOPTED IN OTHER NATIONS, INCLUDING BRITAIN AND THE US, BUT WAS EVENTUALLY PHASED OUT BY IMPROVED MECHANISED MINTING TECHNIQUES.

# 1765 ILLUSTRATION OF CASTAING'S MACHINE IN USE

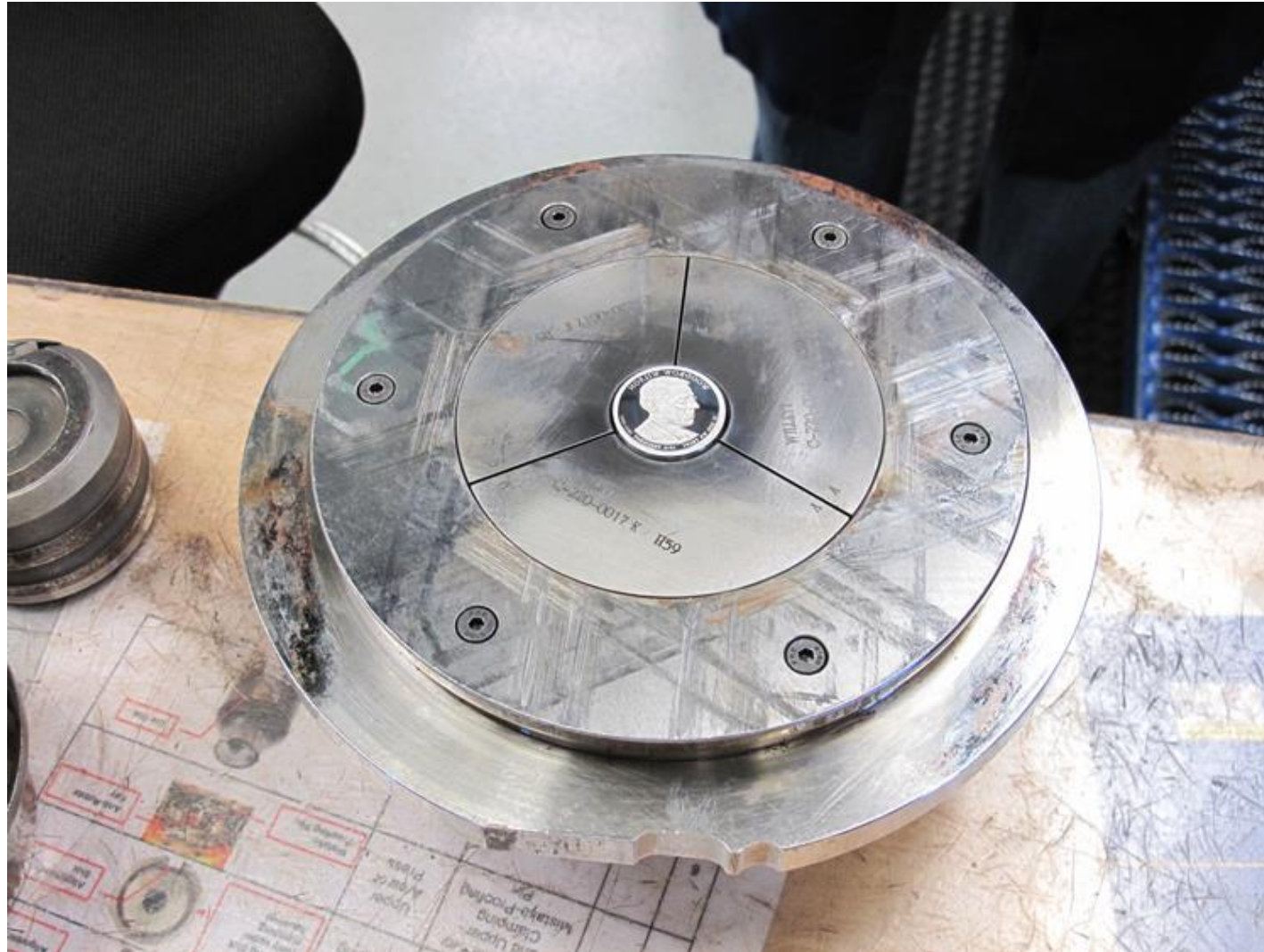




# CASTING MACHINE CIRCA 1819



# ANOTHER WAY TO ADD EDGES: SEGMENTED COLLAR (JEAN-PIERRE DROZ (SWISS) CA 1786)



# TYPES OF EDGES 1 OF 6



**PLAIN**



**REEDED**



**PLAIN-REEDED**

# **EDGE VARIETY: 157 vs 189 REEDS**

## **1921 US MORGAN \$1**

**SILVER, MINTED 1878 – 1921  
ONLY THE 1921P IS KNOWN TO  
HAVE THIS VARIETY**

**LARGEST PRODUCTION  
MORGAN DATE AND MM:  
44,690,000**

**MANY LIKELY MELTED FOR HIGH  
SILVER PRICES (\$27+ IN 2011)**

**OF 15 1921P'S IN MY  
COLLECTION, ONLY ONE WAS  
THE VARIETY!**





# PHILIPPINES 1914S 10 CENTAVOS

NOTABLY WIDE REEDING (US DIME IN FRONT)



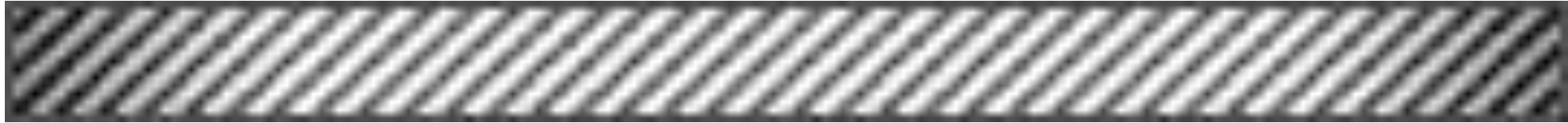
**CHILE 1933 PESO WITH NOTABLY  
FLAT REEDING  
(US QUARTER BEHIND)**



# UZBEKISTAN 2002 50 TIYIN PLAIN-REEDED



# TYPES OF EDGES 2 OF 6



**SLANT-REEDED RIGHT**



**SLANT-REEDED LEFT**



# **WANTED!**

## **SLANT-REEDED**

- **SEARCH ON NUMISTA.COM**
  - **24 HITS, 1700-1850, NOT CHEAP . . .**
  - **EXCEPT A 1810-1830 RUSSIAN  
2 KOPEKS, 29MM CU**
  
- **INTERNET SURFING**
  - **NOTHING!**

# TYPES OF EDGES 3 OF 6



**HERRING BONE RIGHT**



**HERRING BONE LEFT**

# **WANTED!**

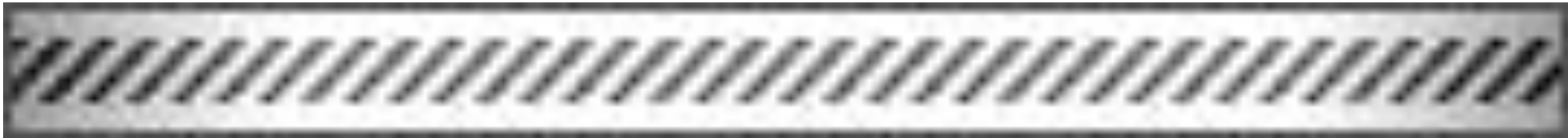
## **HERRINGBONE**

- **SEARCH ON NUMISTA.COM**
  - **SIX HITS**
  - **1700-1835**
  - **ALL MODERATELY EXPENSIVE**
  
- **INTERNET SURFING**
  - **NOTHING!**

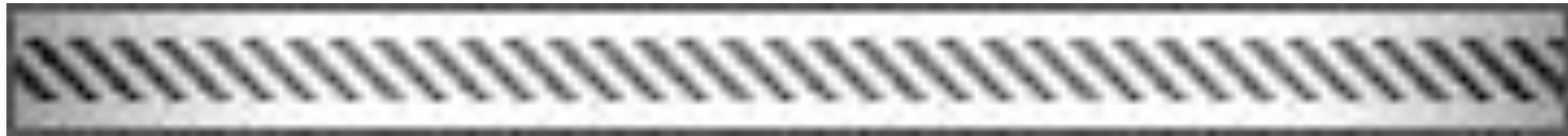
# TYPES OF EDGES 4 OF 6



**REEDING**

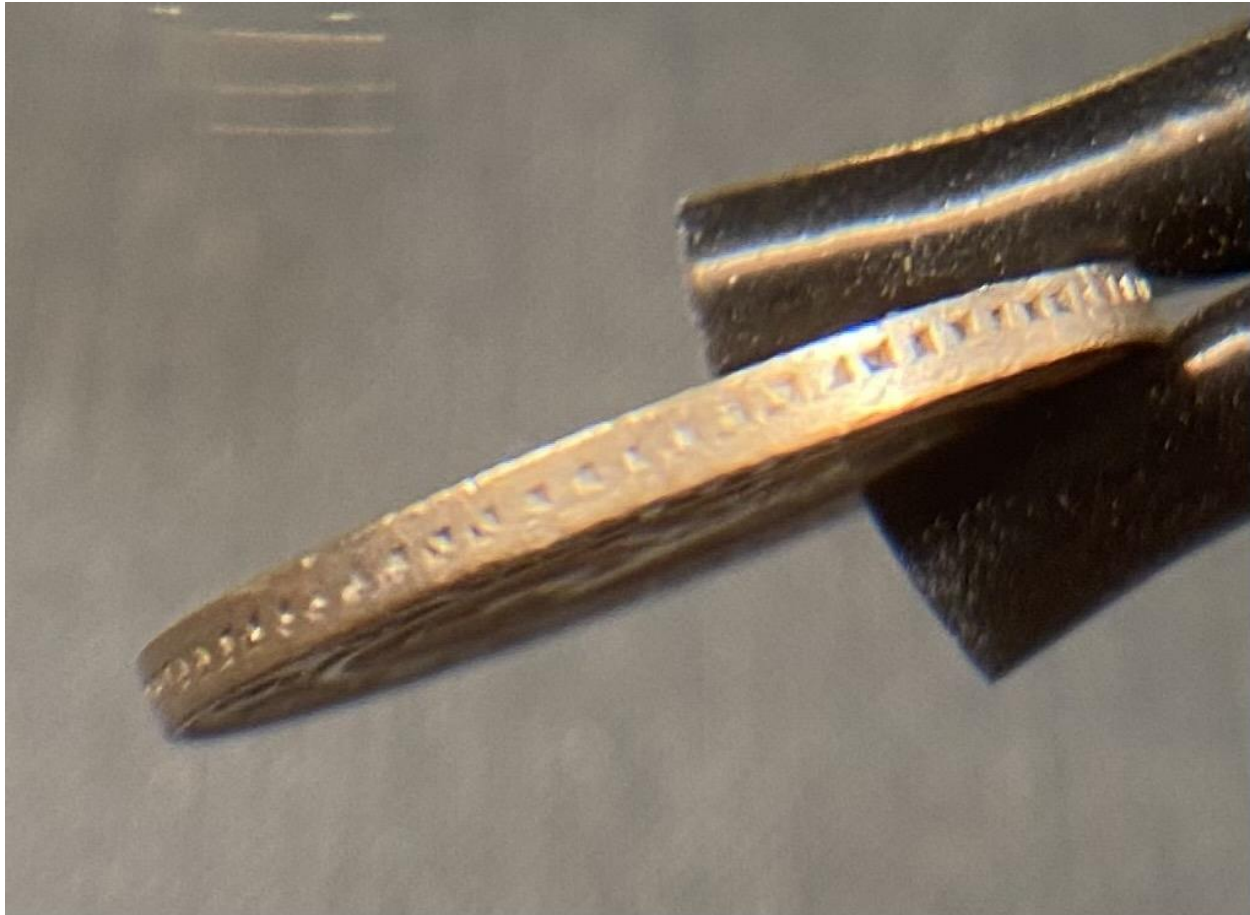


**CENTER SLANTED REEDING RIGHT**

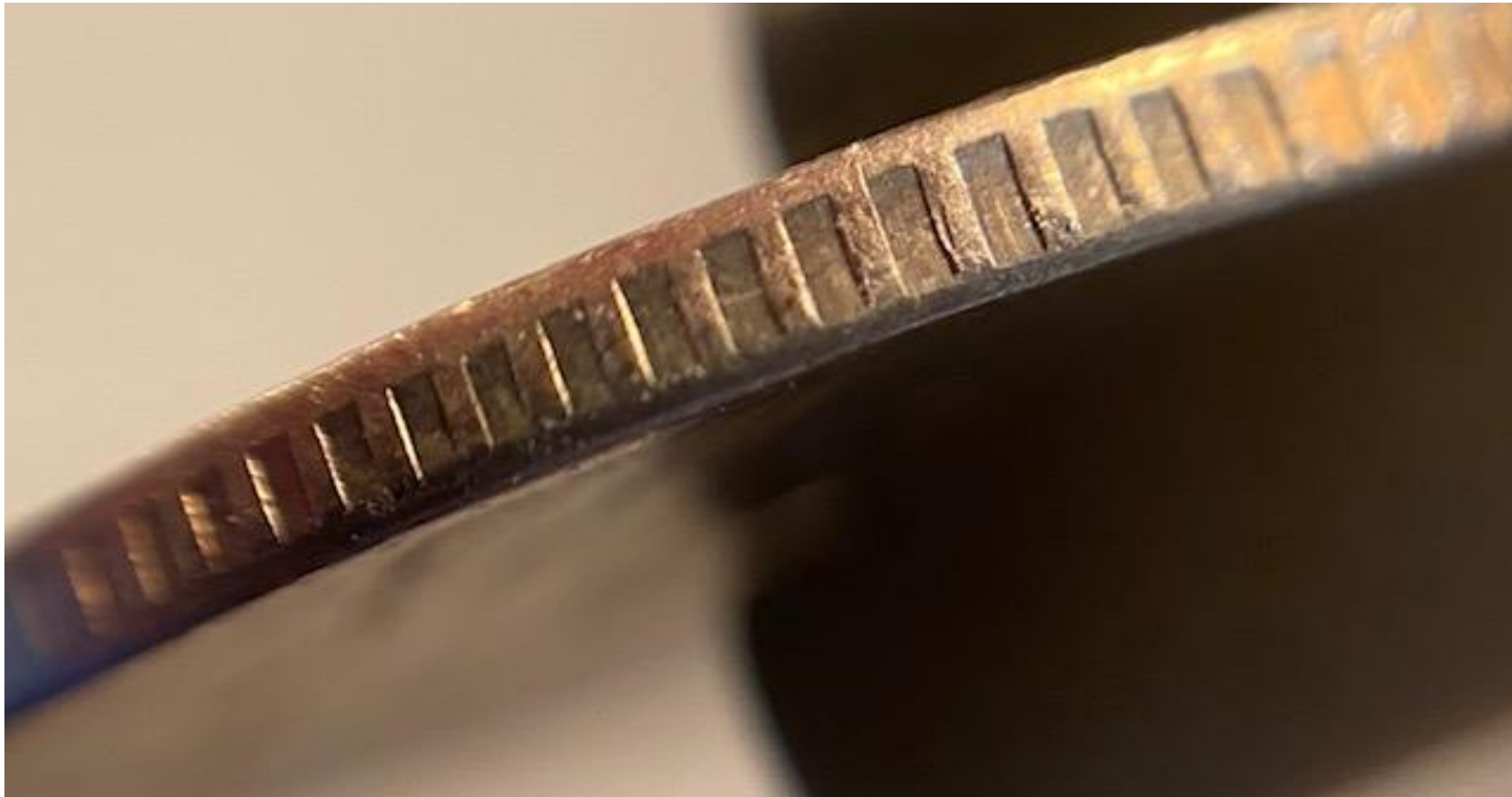


**CENTER SLANTED REEDING LEFT**

# BELGIUM 1862 10 CENTIMES SMOOTH WITH CENTRAL REEDING

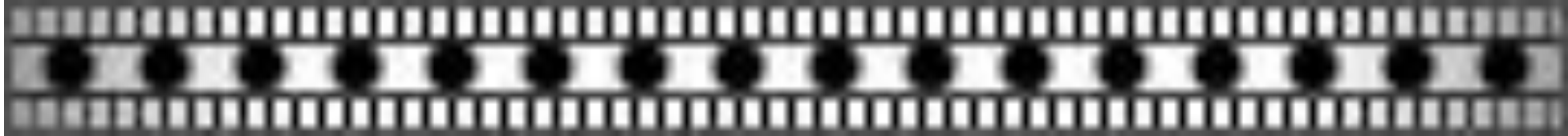


# FORMOSA 1967 YUAN SMOOTH WITH CENTRAL REEDING

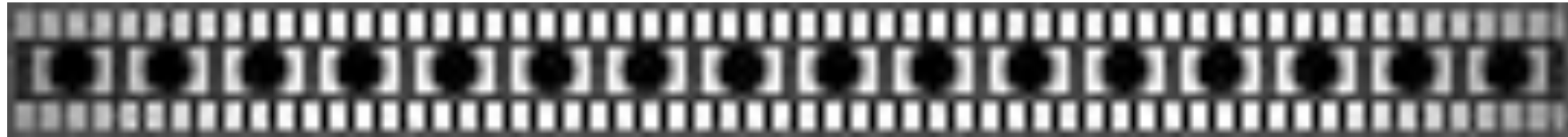




# TYPES OF EDGES 5 OF 6



**SECURITY 1**

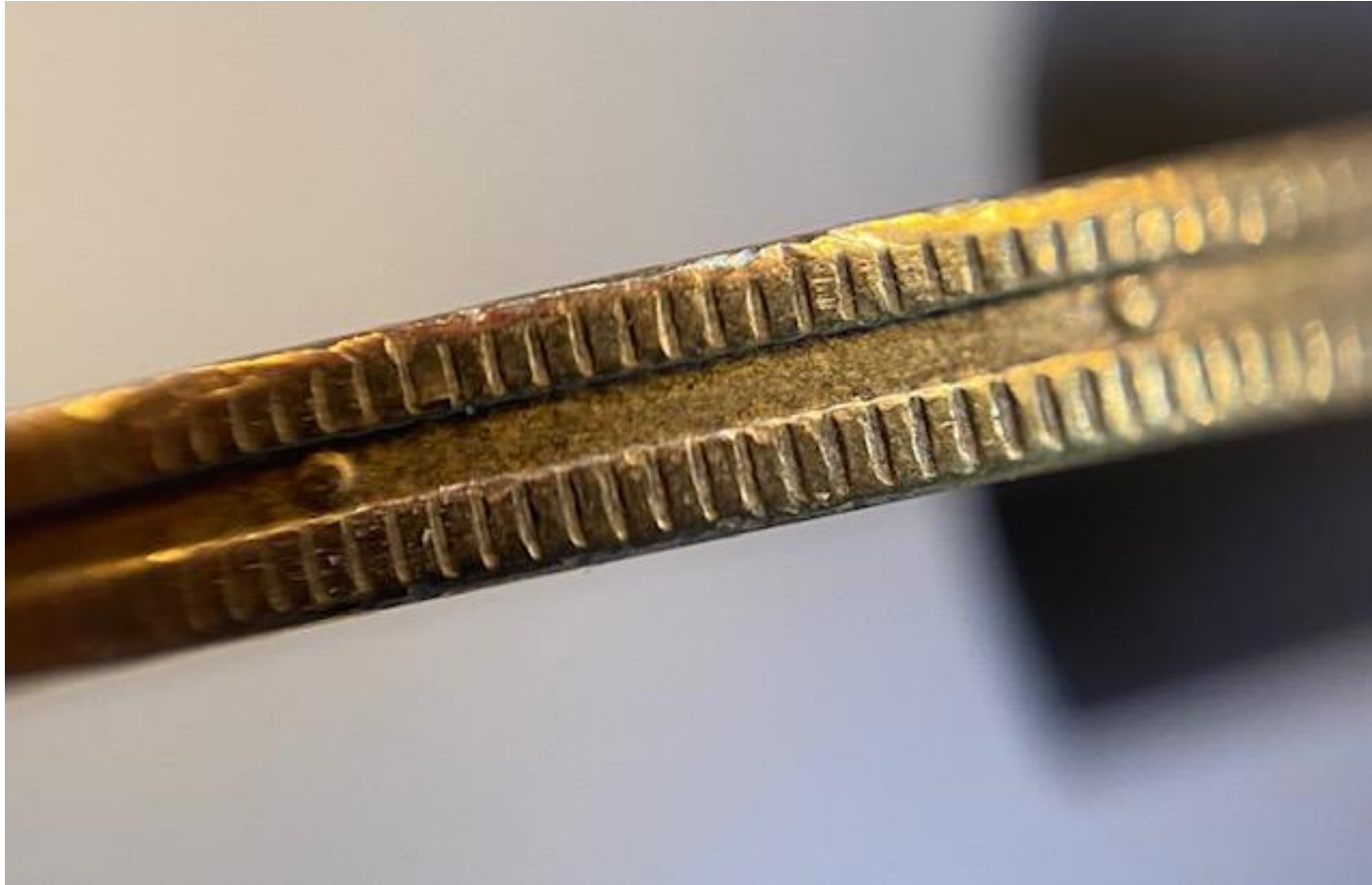


**SECURITY 2**

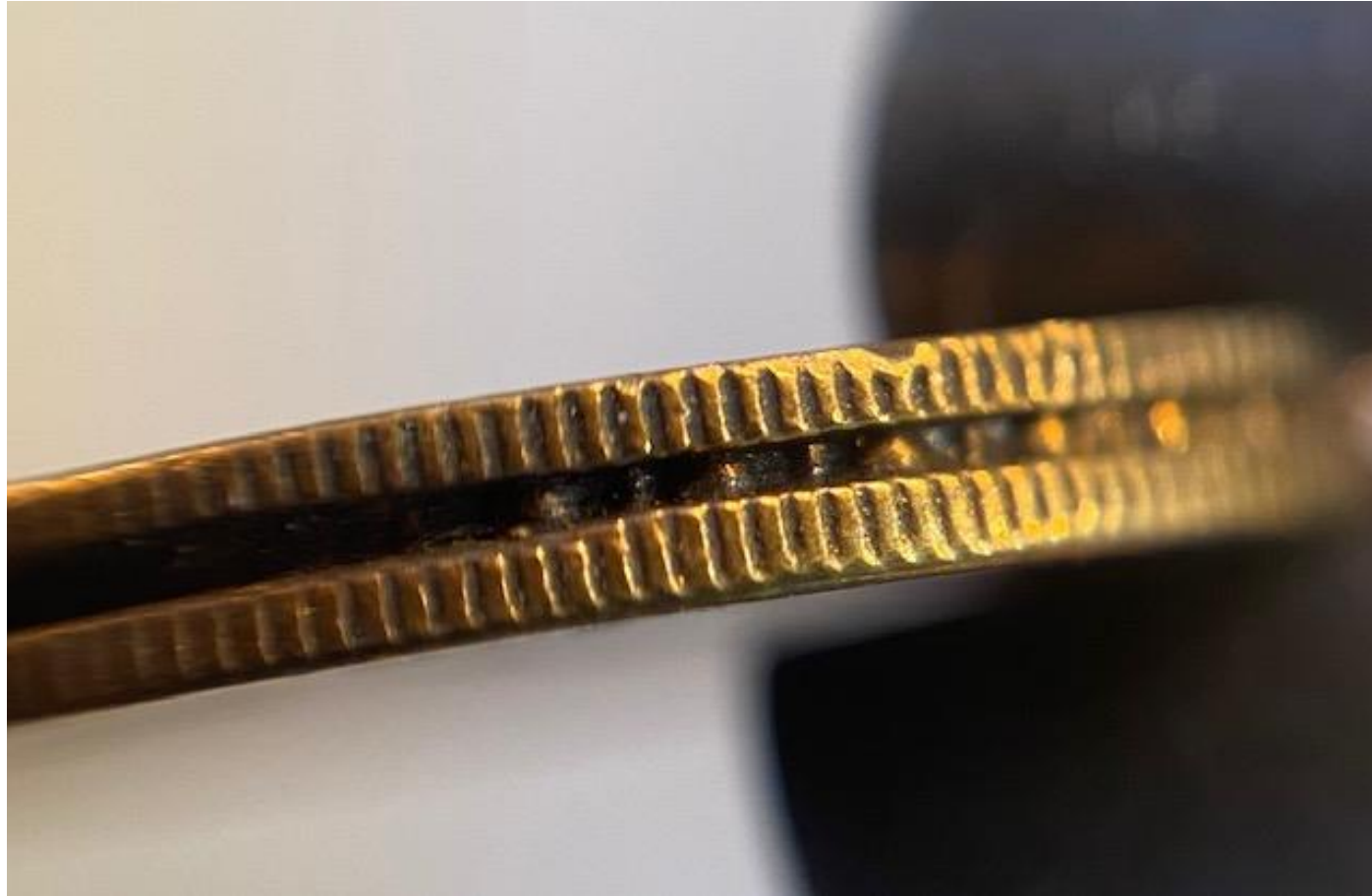


**SECURITY 3**

# **NEW ZEALAND 1990 2 DOLLARS SECURITY EDGE (WIDELY-SPACED BEADS)**



# HONG KONG 1955 10 CENTS SECURITY EDGE (CLOSELY-SPACED BEADS)



# HONG KONG 1960 1 DOLLAR SECURITY EDGE (BEAD-REED)

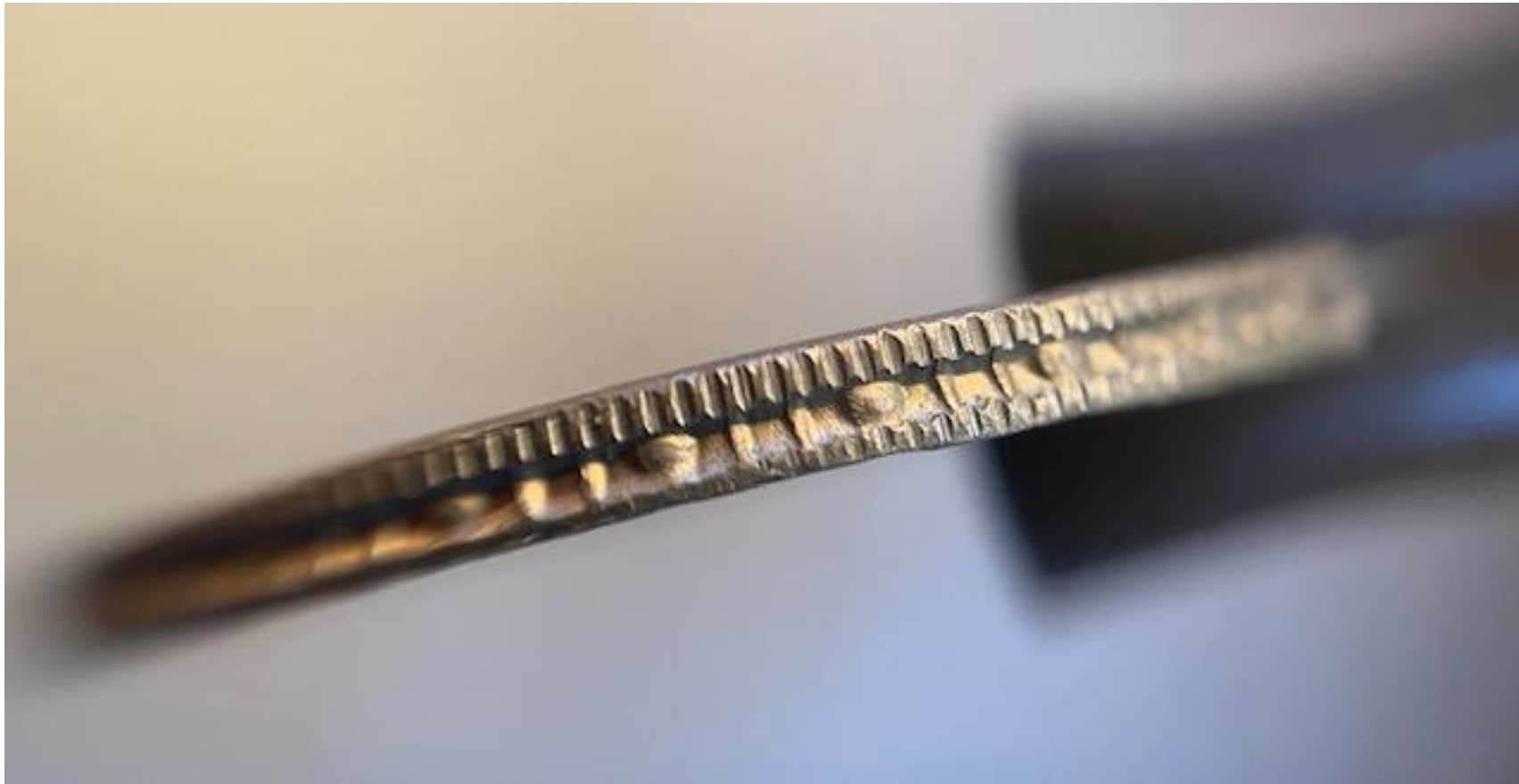


# BRITISH W AFRICA 1938H 2 SHILLINGS SECURITY EDGE (BEAD-SLANTED REED)





# INDIA 1976 RUPEE SECURITY EDGE (BEAD-2 REED)





# DENMARK 1815 2 SKILLING TOKEN SMOOTH WITH CENTRAL SLANTED REEDING



# TYPES OF EDGES 6 OF 6



**LETTERED**

# UNITED KINGDOM 2000 POUND REDED WITH INCUSED LETTERS



# **NEW ZEALAND 1969 50 CENTS (NC) SMOOTH WITH INCUSE LETTERING**



# PRUSSIA 1871A THALER INCUSED PATTERN (“INSCRIPTED”)



# GERMANY 1937 2 MARKS (3<sup>RD</sup> REICH) INCUSED LETTERS





# TURKEY 1959 LIRA

## INCUSED PATTERN "INSCRIPTED"



# TURKEY 1959 LIRA

## INCUSED LETTERING "INSCRIPTED"



# TURKEY 1960 2 1/2 LIRA INCUSED PATTERN



# FRANCE 1960 5 FRANCS RAISED LETTERS



# FRANCE 1965 10 FRANCS RAISED FIGURES



# FRANCE 1965 10 FRANCS RAISED FIGURES





# FRANCE 1965 10 FRANCS RAISED FIGURES



# FRANCE 1965 10 FRANCS RAISED FIGURES



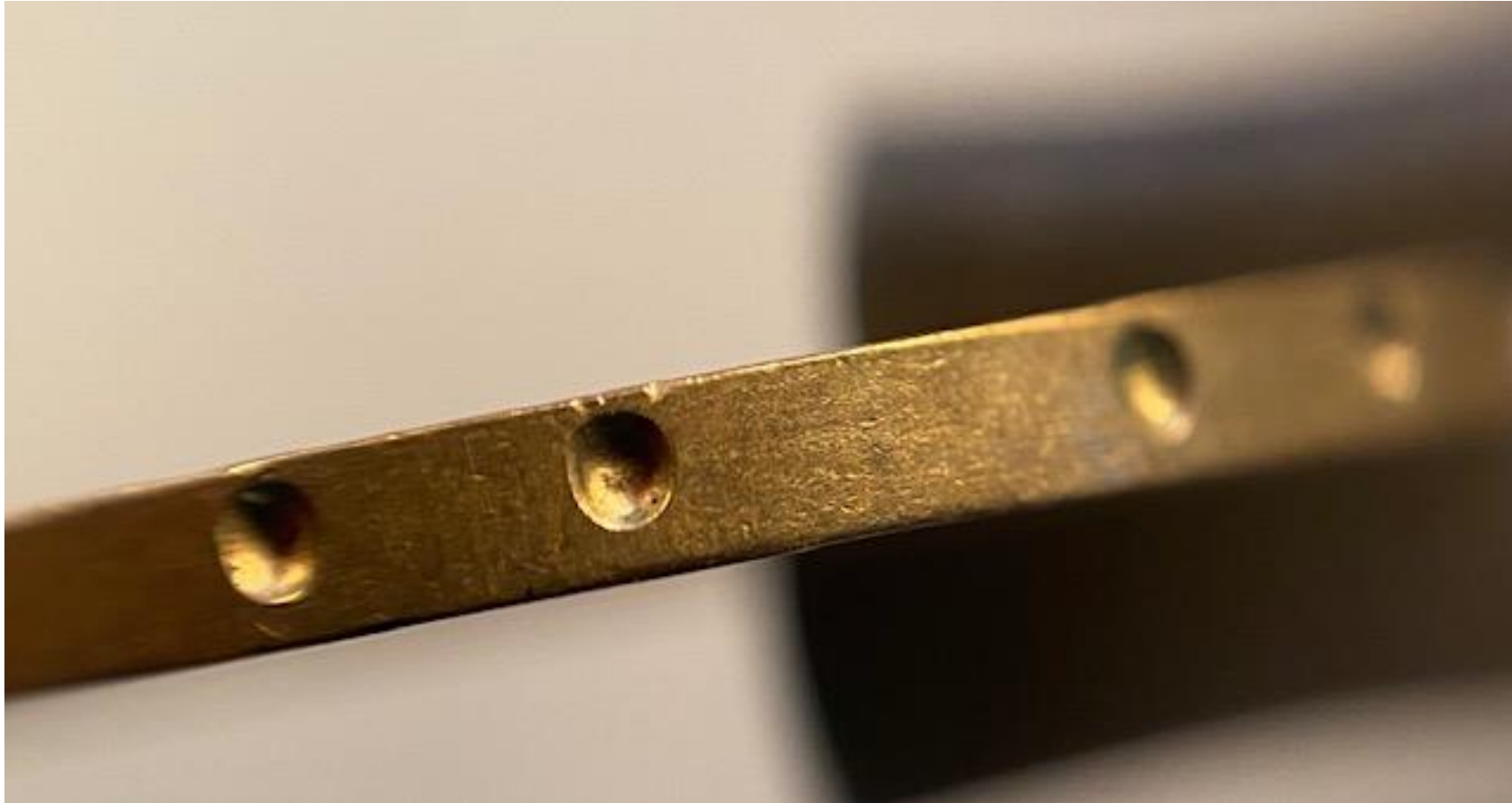
# 1981 HONG KONG FIVE DOLLARS SECURITY WITH RAISED CHINESE CHARACTERS



# 1981 HONG KONG FIVE DOLLARS SECURITY WITH RAISED ENGLISH LETTERS



# 1980 AUSTRIAN 20 SCHILLING SMOOTH EDGE WITH INDENTS



# 1816A AUSTRIAN KREUZER CHAIN LINKS





# **PAYING ATTENTION TO EDGES CAN BE WORTHWHILE**

- **LOTS OF ROOM FOR ERRORS IN MINTING**
- **ONLY CONFIRMED EXAMPLE OF A 2007-D SACAGAWEA DOLLAR WITH PRESIDENTIAL DOLLAR EDGE LETTERING INSTEAD OF THE INTENDED PLAIN EDGE WAS FOUND BY A COLORADO COLLECTOR IN POCKET CHANGE IN 2007.**
- **HE EARNED A \$10,000 FINDER'S FEE FROM PCGS FOR ALLOWING PCGS THE PRIVILEGE OF AUTHENTICATING, GRADING AND ENCAPSULATING THE ERROR.**
- **THE COLLECTOR SOLD THE SLABBED COIN FOR \$17,161.10 IN A 2015 AUCTION, ATTRACTING 59 BIDS FROM NINE BIDDERS.**
- **ARE THERE MORE ERRORS OUT THERE?**

# **\$50 X FACE VALUE?**

**ONLY 2007 & 2008 US PRESIDENTIAL DOLLAR COINS HAVE THE WORDS "IN GOD WE TRUST" ON THE EDGE**

**WHY? CONTROVERSY OVER THE *SEEMING* OMISSION OF "IN GOD WE TRUST" ON SOME OF THE 2007 WASHINGTON AND ADAMS COINS**

**MOST COMPLAINTS FROM FOLKS WHO DIDN'T REALIZE MOTTO WAS ON EDGE**

**THE U.S. MINT RESPONDED BY PLACING "IN GOD WE TRUST" ON THE OBVERSE FROM 2009 ON**

**REMEMBER THE \$1 ROLL I SHOWED YOU? SHOWS REVERSE ON BOTH ENDS!**

**ARE THEY 2007 "GODLESS" COINS?**



# BTW, THERE *ARE* WAYS TO HANDLE EDGES, OF COURSE: COIN GLOVES





# MORE WAYS TO HANDLE EDGES: COIN TONGS





# MORE WAYS TO HANDLE EDGES: CHEAPLY!



# **IN CLOSING: DO YOU KNOW THE ANSWER?**

- ARE THERE COINS WITH MINTED HOLES THAT HAVE SPECIAL EDGES?**
- ARE THERE MULTI-SIDED COINS THAT HAVE SPECIAL EDGES?**
- ARE THERE SCALLOPED COINS THAT HAVE SPECIAL EDGES?**



# BACKUP INFORMATION (1 OF 5)

- **SLIDE 04: THE AUGUSTUS SAINT-GAUDENS DOUBLE EAGLE \$20 GOLD COIN, WHICH WAS STRUCK FROM 1907 THROUGH 1933, FEATURED EDGE LETTERING. THE EDGE LETTERING CONTAINS THE INSCRIPTION “E PLURIBUS UNUM”, WITH STARS DIVIDING THE WORDS**

**[HTTPS://COINS.THEFUNTIMESGUIDE.COM/COIN\\_EDGE\\_LETTERING/](https://coins.thefuntimesguide.com/coin_edge_lettering/)**

- **SLIDE 14: (PICTURE OF MULTIPLE COIN EDGES)**

**[HTTPS://WWW.REDDIT.COM/R/COINS/COMMENTS/JH UQEQ/MY\\_COINS\\_THAT\\_HAVE\\_INTERESTING\\_EDGES/](https://www.reddit.com/r/coins/comments/jhUQEQ/my_coins_that_have_interesting_edges/)**

# BACKUP INFORMATION (2 OF 5)

- SLIDE 11: (COIN LANDING ON EDGE)

- VIDEO: [HTTPS://WWW.YOUTUBE.COM/WATCH?V=M0l-xm7iCBU](https://www.youtube.com/watch?v=M0l-xm7iCBU)
- CHANCES: [HTTPS://EN.WIKIPEDIA.ORG/WIKI/COIN\\_FLIPPING#COUNTERINTUITIVE\\_PROPERTIES](https://en.wikipedia.org/wiki/coin_flipping#counterintuitive_properties)

- SLIDE 18: (SLABS)

- (PCGS HOLDER PICTURE)

[HTTPS://WWW.GOOGLE.COM/SEARCH?Q=COIN+SLAB+HOLDERS+PCG&TBM=ISCH&VED=2AHUKEWIP\\_Q3og6HxAHVETVMKHfUdBxkQ2-cCEGQIABAA&OQ=COIN+SLAB+HOLDERS+PCG&GS\\_LCP=CgNpbWcQA1D4vA5YGEKOYL7xDmgACAB4AIABTYGBgQASAQixMPGBAKABAaoBC2D3cy13AXOTAW1nWAEB&SCLIENT=IMG&EI=6NZMYI\\_HB8TQZGL1U5ZIAQ&BIH=587&BIW=1057&HL=EN#IMGRC=YTP42c7TYTU3DM](https://www.google.com/search?q=coin+slab+holders+pcg&tbm=isch&ved=2AHUKEWIP_Q3og6HxAHVETVMKHfUdBxkQ2-cCEGQIABAA&oq=coin+slab+holders+pcg&gs_lcp=CgNpbWcQA1D4vA5YGEKOYL7xDmgACAB4AIABTYGBgQASAQixMPGBAKABAaoBC2D3cy13AXOTAW1nWAEB&sclient=img&ei=6NZMYI_HB8TQZGL1U5ZIAQ&bih=587&biw=1057&hl=en#imgrc=yTP42c7TYTU3DM)

- (NGC HOLDER PICTURE)

[HTTPS://WWW.GOOGLE.COM/SEARCH?Q=NGC+COIN+SLABS&SXSrf=ALEKK00QJf2RGgH5QMBMJoJ38w13HNSDw:1624015340875&SOURCE=LNMS&TBM=ISCH&SA=X&VED=2AHUKEWJE9oHMIKHxAHVkQT8KHxUBDXGQ\\_AUoANoECAEQBA&BIW=1069&BIH=587#IMGRC=PXDw9WMOILQV3M](https://www.google.com/search?q=ngc+coin+slabs&sxsrp=ALEKK00QJf2RGgH5QMBMJoJ38w13HNSDw:1624015340875&source=LNMS&tBM=ISCH&sa=X&ved=2AHUKEWJE9oHMIKHxAHVkQT8KHxUBDXGQ_AUoANoECAEQBA&biw=1069&bih=587#imgrc=PXDw9WMOILQV3M)

# BACKUP INFORMATION (3 OF 5)

- **SLIDE 25: HAMMERED COINS**
  - **[HTTPS://WWW.WARWICKANDWARWICK.COM/NEWS/GUIDES/WHAT-ARE-HAMMERED-COINS](https://www.warwickandwarwick.com/news/guides/what-are-hammered-coins)**
- **SLIDES 2, 35, 40, 42, 44, 47, 54: “COIN EDGE TYPES” DIAGRAM SLIDES)**
  - **[HTTPS://EN.NUMISTA.COM/NUMISDOC/EDGE-TYPES-ON-MODERN-COINS-261.HTML](https://en.numista.com/numisdoc/edge-types-on-modern-coins-261.html)**
- **SLIDES 30 AND 32: CASTAING MACHINE 1819**
  - **[HTTPS://WWW.NGCCOIN.COM/BOARDS/TOPIC/420825-1834-CAPPED-BUST-HALF-EDGE-LETTERING-ISSUES/](https://www.ngccoin.com/boards/topic/420825-1834-capped-bust-half-edge-lettering-issues/)**
- **SLIDE 33: CASTAING MACHINE 1765**
  - **[HTTPS://EN.WIKIPEDIA.ORG/WIKI/CASTAING\\_MACHINE](https://en.wikipedia.org/wiki/Castaing_machine)**

# BACKUP INFORMATION (4 OF 5)

- **SLIDE 27: MILLED COINAGE**
  - [HTTPS://EN.WIKIPEDIA.ORG/WIKI/MILLED\\_COINAGE](https://en.wikipedia.org/wiki/Milled_coinage)
  - [HTTP://KPOLSSON.COM/COINHIST/WORLD/](http://kpolsson.com/coinhist/world/)
- **SLIDES 24 & 28: STRIKING A COIN BY HAND & SCREW PRESS**
  - [HTTPS://WWW.FLEUR-DE-COIN.COM/ARTICLES/ANCIENT-MINTING](https://www.fleur-de-coin.com/articles/ancient-minting)
- **SLIDE 30: COLLAR DIAGRAM**
  - [HTTPS://WWW.RESEARCHGATE.NET/FIGURE/COIN-MINTING-A-SCHEMATIC-REPRESENTATION-AND-NOTATION-B-PHOTOGRAPH-OF-THE-REVERSE-FIG1\\_325341177](https://www.researchgate.net/figure/COIN-MINTING-A-SCHEMATIC-REPRESENTATION-AND-NOTATION-B-PHOTOGRAPH-OF-THE-REVERSE-FIG1_325341177)
- **SLIDE 34: SEGMENTED COLLAR**
  - [HTTPS://WWW.COINNEWS.NET/2013/04/17/U-S-MINT-AT-SAN-FRANCISCO-COINING-PRESS-ROOM/](https://www.coinnews.net/2013/04/17/u-s-mint-at-san-francisco-coining-press-room/) AND
  - [HTTPS://WWW.REVOLUTIONARYPLAYERS.ORG.UK/DROZ-SEGMENTAL-COLLAR/](https://www.revolutionaryplayers.org.uk/droz-segmental-collar/)
  - [HTTPS://NNP.WUSTL.EDU/LIBRARY/DICTIONARYDETAIL/516724](https://nnp.wustl.edu/library/dictionarydetail/516724)

# BACKUP INFORMATION (5 OF 5)

- **SLIDE 36: (1921 MORGAN VARIATION)**

[HTTP://SSDCVAMS.COM/1921WIDEREEDS-FINAL.PDF](http://ssdcvams.com/1921widereeds-final.pdf)

[HTTPS://WWW.NGCCOIN.COM/PRICE-GUIDE/SERIES-DETAIL.ASPX?MVDETAILID=13&SERIES=MORGAN-DOLLAR](https://www.ngccoin.com/price-guide/series-detail.aspx?MVDETAILID=13&series=Morgan-Dollar)

- **SLIDE 71: (SACAGAWEA DOLLAR WITH EDGE INSCRIPTION)**

[HTTPS://WWW.COINWORLD.COM/NEWS/PRECIOUS-METALS/SACAGAWEA-DOLLAR-WITH-EDGE-INSCRIPTION-REALIZ.HTML](https://www.coinworld.com/news/precious-metals/sacagawea-dollar-with-edge-inscription-realiz.html)