

Catalog of the Museum of Faceting Technology

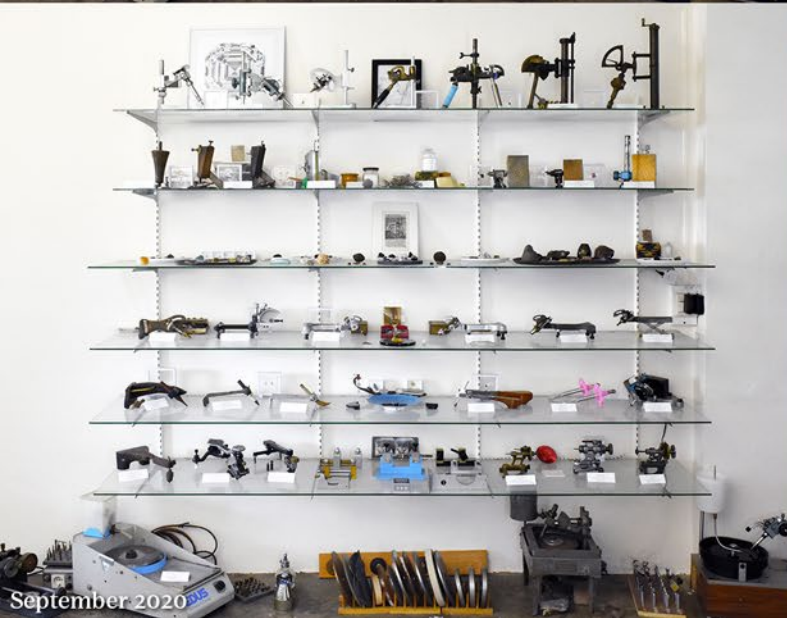


Spring 2021

Catalog of the Museum of Faceting Technology

Bangkok, Thailand
Spring 2021

Timeline of the Museum of Faceting Technology



Beginnings

The Museum of Faceting Technology project began in February of 2018. At first it was devised as a personal collection but the scope quickly changed as more machines were acquired and donated. As the collection grew, it began to become a tangible representation of the worldwide culture of gemcutting.

In three years, the museum has acquired 52 machines, faceting heads, and handpieces from 21 different countries. The end goal will be to have at least one style of machine from each country that has a history of faceting. In some cases, such as the United States and Australia, there are dozens of types of faceting machines going back at least 100 years. In these cases, care will be taken in selecting machines for their uniqueness and antiquity.

The goal of this catalog is to serve as a guide to the machines. All the information that came with each machine has been preserved and when possible, historical data on the machine type and manufacturer has been added.

Acknowledgments

This collection could not have been assembled without the generosity of our donors. The majority of these machines have been donated for free. Some have been offered at extremely low prices in order to support this project. We thank each and every one of our friends and machine donors:

Allan Lindberg, Baier's Enkel, Blake, Christopher Kirfman, David Harucksteiner, Dennis Bodily, Dmitri Petrochenkov, Allen Whitehead, Anders Lyckberg, Chas Matthews Ltd, Derek Katzenbach, Don Williams, Douglas Sawchuck, Doyle Boyington, Ed Perry, Ernie Hayes, Farooq Hashmi, Gary Kratochvil, Gerd, George Seremetis, Gil Yuda, Herbert Schmidt, Instituto Gemologico Espanol, Ivan Andrasi, Jayamini, Jayesh Patel, Jayamini Karim Guerchouche, Jon Sauer, Lou Pierre Bryl, Luana, Mac, Mark Oros, Maxime Ruelle, Michael Krautkremer, Nastasya Mironova, Nicolas Francfort, Patrick Aldridge, Pedro Novaes, Philippe Ressigeac, Ray Metrick, Rojana, Simon Bruce Lockhart, Somsit, Sterling Gems & Lapidary, Thazin Han, Thibault Leclerc, Tom Moore, Vesta Group, Waqas Ahmed

Special thanks to Michael Holmes for the catalog design and layout and to Victoria Raynaud for the continuous support in this project.

Premiere Évention



Country of Origin	France
Date Made	1830-1880
Date Acquired	August 1, 2019
Acquisition Notes	Donated by Maxime Ruelle

Notes

Traded for a handpiece plate

Historical Notes

This is the original style of French jambpeg that was developed in the 1810/20s and was first described in *Mineralogie Applique Aux Arts* by CP Brard in 1821. We find one of the last references to this kind of old style jambpeg in *La Vie des Pierres Précieuses*, 1939. By 1939, only very old cutters would still have been using the premiere Évention. The name Évention is said to be a corruption of "invention"

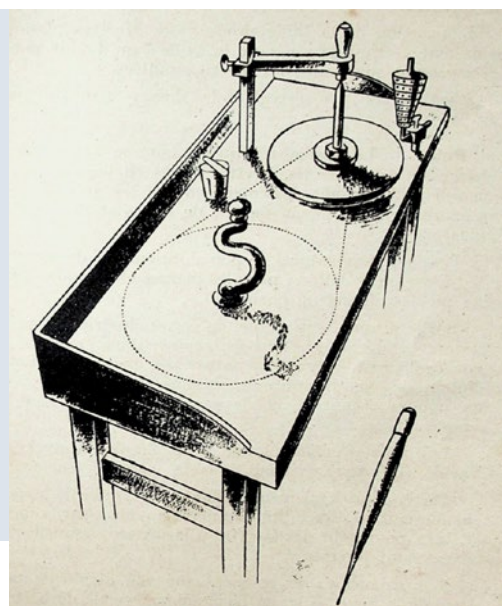


Illustration of a traditional French évention jambpeg from *La Vie des Pierres Précieuses*, 1939

Double Jura Machine



Country of Origin	France
Date Made	After 1880
Date Acquired	December 1, 2018
Acquisition Notes	Purchased from an antiques dealer in Geneva

Notes

Included 2 Évention, a cutting and polishing lap, a box of dops, powder boxes, photo. Dealer bought it from the wife of a deceased lapidary. She bought it 3 years before we got it Next to this city: Lonce le sognier. 100 cm by 103 cm by 98 cm tall.

Historical Notes

This is the later style of French Évention that Daniel Chambre tells us was developed in the Jurassian hills in 1880. There are many depictions of this style of machine between 1900 and 1980. Jura was a major cutting center for France and the entire region was filled with cutters working at home as well as cutters working in local workshops and factories.



Late 19th century photo of Jura lapidaries using the new Évention.

Wooden Diamond Tang



Country of Origin	Belgium
Date Made	1800s?
Date Acquired	July 1, 2018
Acquisition Notes	Donated by Maxime Ruelle

Notes

Included two dop heads, one mechanical and one the traditional lead type.

Historical Notes

This large wood tangs began to be used in the middle of the 1500s and were only slightly modified throughout the centuries until the 1900s when all metal, mechanical tangs mostly replaced them.



Wooden tang as seen in the 1555 manuscript by Adam Lonitzer, *Naturalis historiae opus novum*.

Holtzapffel Goniostat



Country of Origin	England
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Date Made	1850s?
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Date Acquired	September 1, 2020
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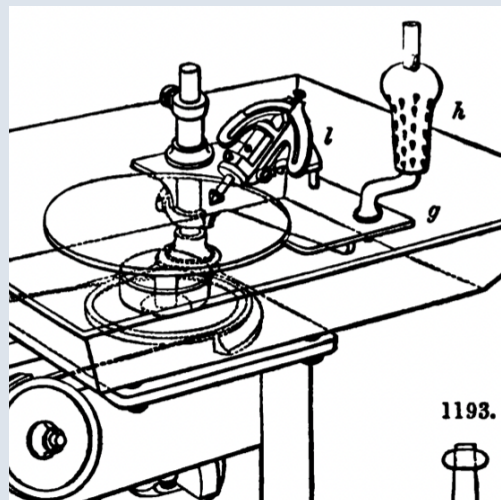
Acquisition Notes	Purchased from Jon Sauer via ebay
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Notes

Included wooden storage box with boxes for polishing powders

Historical Notes

This device is first mentioned in Charles Holtzapffel's *Turning and Manipulation* vol 3 in 1850. The book which is primarily about lathe turning gives a 90 page chapter about gemcutting on the jamb peg. The author also describes how to modify one of his "goniostat" handpiece devices to receive a mechanical index gear and a dop to hold the gemstone. Without the modification this device is used for precise grinding and shape of chisel heads on a lathe. Once it's adapted for gems, it's the precursor to the American style of gemcutting with angles, indexes, and a cheater.



Goniostat modified for gemcutting as seen in Holtzapffel's *Turning and Manipulation* Vol 3, 1850

Early Handmade Mast



Country of Origin United States

Date Made Possibly 1904

Date Acquired January 1, 2020

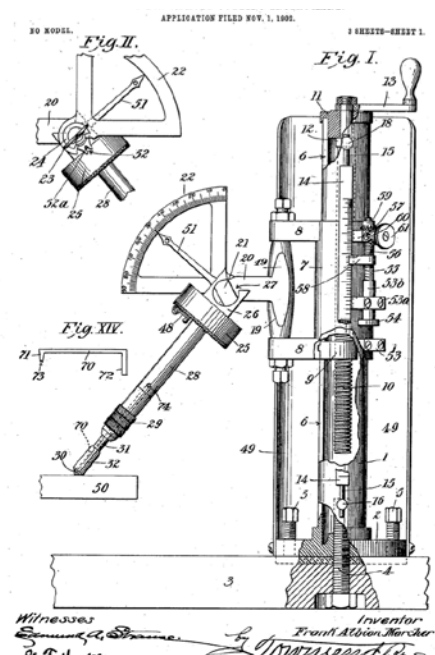
Acquisition Notes Donated by Mark Oros

Notes

Purchased from ebay. Speculated to be from the early 1900s. Came from an ebay seller in Oceanside, California which matches the patent story very well.

Historical Notes

There are no identifying marks on this machines. It's obviously of the early American style but doesn't seems to match any known manufacturer. It very closely matches this 1903 faceting head patent from F.A. Marcher in Los Angeles.



1904 Patent for a visually similar faceting head

Gilde Gem Cutter



Country of Origin | United States

Date Made | 1940s (Late)

Date Acquired | January 1, 2019

Acquisition Notes | Purchased from Gary Kratochvil

Notes

Was told this one is Post WWI because it has a radial vernier. Was told the Pre-WWI models don't have the radial vernier.

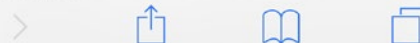
Historical Notes

Sold as a complete outfit for cabochons, faceting, and sawing. Needs an external motor. \$25 in 1946. Built like a tank and painted to match one.

GILDE GEM CUTTER. We now offer this compact portable outfit to the home cutter. Write for details and new catalog listing over one hundred varieties of rough. Also all kinds of supplies. Gem Exchange, Lake Bluff, Ills.

MINERAL SETS—24 Colorful Minerals (identified) in 1x1 compartments—Postage paid, \$3.50. Prospector's Set of 50 Minerals (identified) in 1x1 compartments in cloth reinforced sturdy cartons, Postage paid \$5.75. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

MONTANA MOSS Agates in rough for gem cutting, direct from diggings, \$1.00 per pound, prepaid. Nels Christofferson, Richey, Montana.



Machine Advertisement from Desert Magazine, June 1946

Quadrant Handpiece



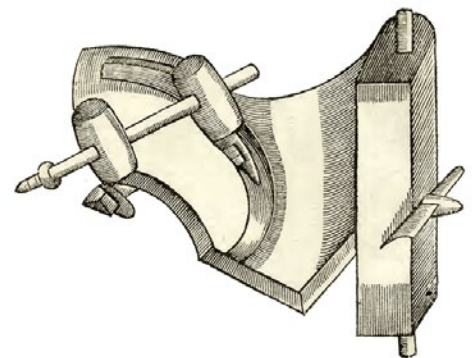
Country of Origin	Czech Republic
Date Made	1940s?
Date Acquired	February 1, 2020
Acquisition Notes	Donated by Ivan Andradi

Notes

Czech machine is about 50 years old. The original owner brought the handpiece from Turnov to Kremnica. Cutting teacher from Turnov went to teach at the art school in Kremnica. Belonged to Ivan's father in law.

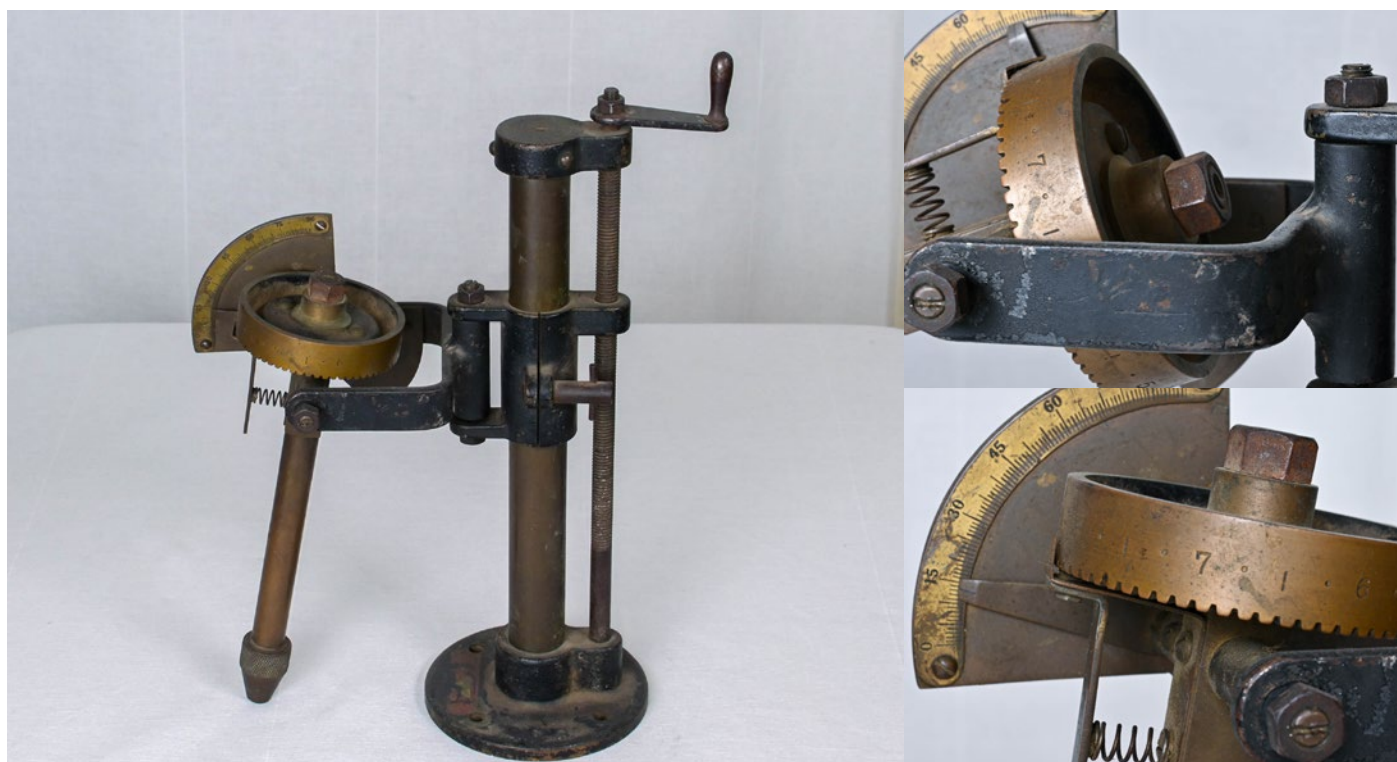
Historical Notes

The Bohemian was developed around 1599 and was popular in Prague by 1609. Between 1609 and the 20th century, the handpiece evolved several times, first with feet instead of a vertical mounting pole, and later with various type of gears. This gear type is one of the last generation handpiece styles.



Earliest depiction of a Bohemian quadrant handpiece from deBoodt's *Gemmarum et lapidum historia*, 1609

“Golden” Taylor Faceting Head



Country of Origin	Britain (or United States)
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Date Made	1908 (or 1940s)
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Date Acquired	May 1, 2018
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Acquisition Notes	Donated by Tom Moore
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Notes

Was told this machine head is from 1908 though it doesn't appear that Taylor was around at that time. Was told that it isn't American, it's British and was sold in several versions, the last being the Taylor Golden. Was told not to be confused with the old American Tailor from Fresno California 1940-1960 though it looks identical to the 1948 ad for the Taylor head.

First owner: Dr. John Pruitt Sr

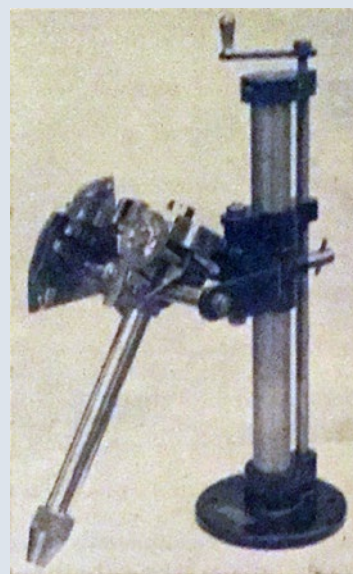
Second owner: Dr. John Pruitt Jr

Third owner: Tom Moore

Fourth owner: Museum of Faceting Technology

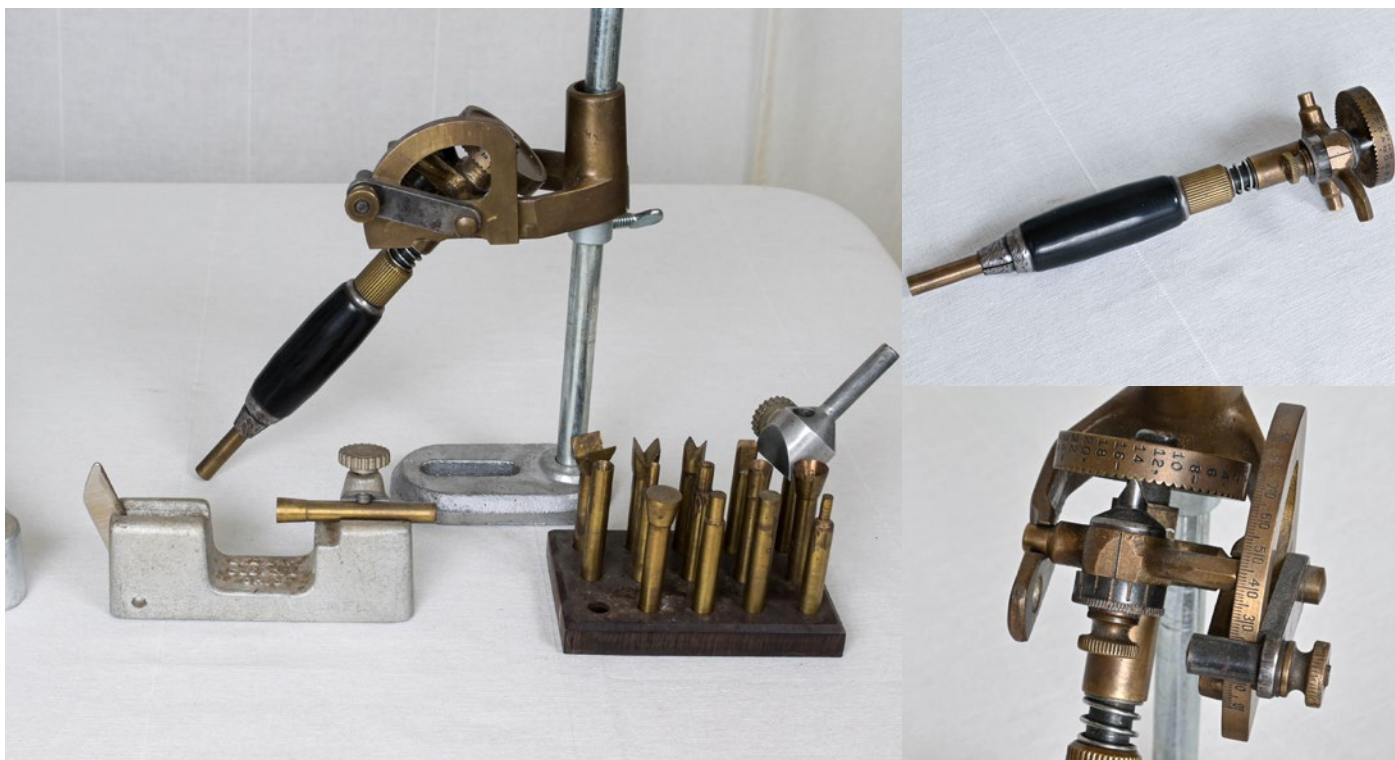
Historical Notes

American manufacturer started in the early 1940s. British manufacturer details unknown.



Advertisement photo for Taylor head from Lapidary Journal, October 1948

Lee Facet Head



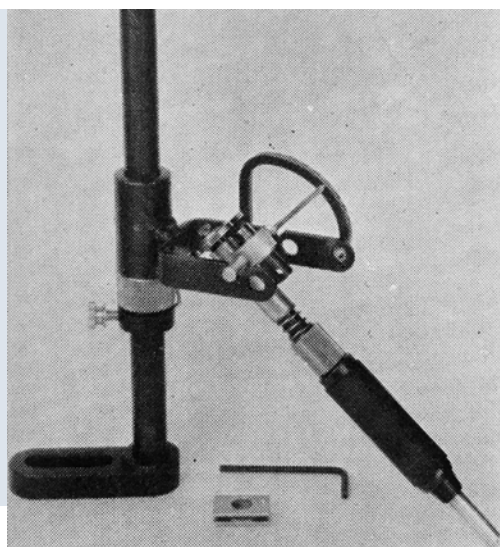
Country of Origin	United States
Date Made	1950s
Date Acquired	August 1, 2018
Acquisition Notes	Donated by Derek Katzenbach

Notes

Included Dops and extra index gears

Historical Notes

The Lee Lapidaries Faceting Head was developed around 1947. It was one of the first mass manufactured American faceting machines and is unique in that it's designed around handpiece that sits in a hanger instead of a typical mast design. Vintage Lee machines are regularly seen in the used lapidary market in the 2010s.



Advertisement photo for Lee head
from Lapidary Journal, April 1952

Angoora Handpiece



Country of Origin	Khambhat, India
Date Made	1950s?
Date Acquired	February 1, 2018
Acquisition Notes	Donated by Jayesh Patel

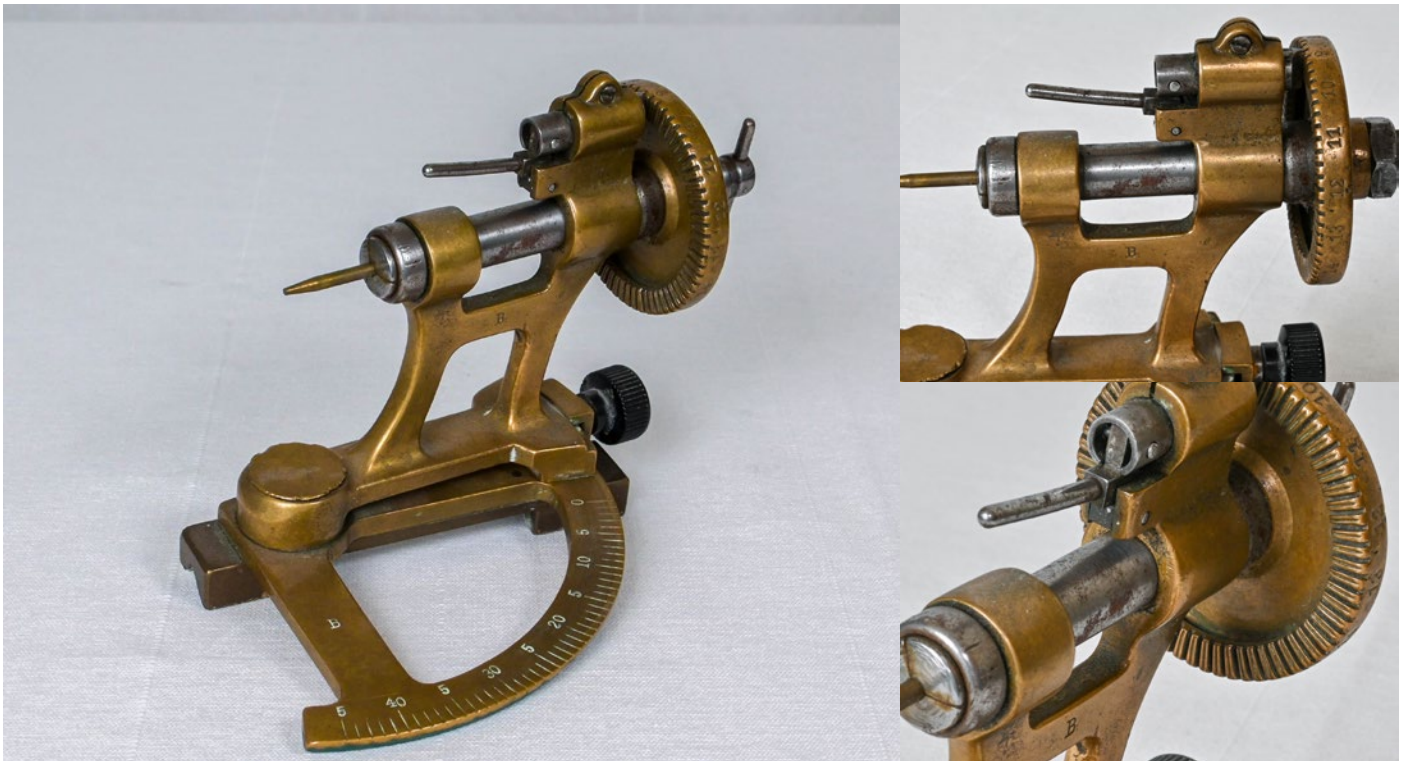
Notes

Family Heirloom from the Patel family.

Historical Notes

These handpieces were already in use in Mogok in 1927

Naftule Handpiece



Country of Origin	Switzerland
Date Made	1950s/60s?
Date Acquired	January 1, 2018
Acquisition Notes	Donated by Nicolas Francfort

Notes

Purchased from Naftule in 1992

Historical Notes

It seems that Naftule started developing machines in the middle of the 20th century alongside or in collaboration with Bunter. These machines are specially designed to cut small, precise stones for the Swiss watch industry.

Thanaasuwa



Country of Origin	Sri Lanka
Date Made	1950s/70s
Date Acquired	October 1, 2020
Acquisition Notes	Donated by Sterling Lapidary

Notes

Purchased from Afker Deen in Beruwala who collects old faceting gear and reassembles them into complete, working, and restored machines. This handpiece came from Beruwala and was used by lapidaries in the "colonial era."

Historical Notes

These type of handpiece originally became popular in Prague in the 17th century. From there they spread to France and England. It's unknown how they came to be used in Sri Lanka.



Photo of a traditional Sri Lankan cutter using a Thanaasuwa handpiece and Banku Pattalya machine in 1941

Gemlap



Country of Origin	United States
Date Made	1960/70s
Date Acquired	November 1, 2020
Acquisition Notes	Purchased from Pedro Novaes

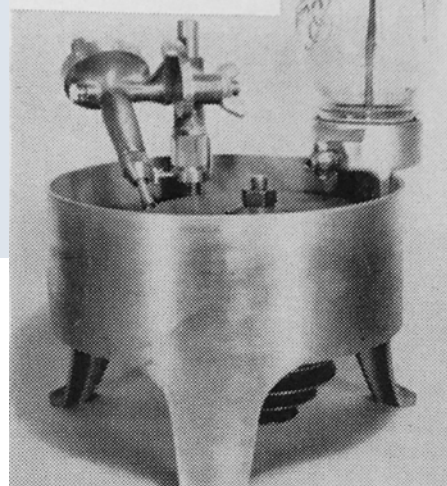
Notes

Belonged to Antonio Fares Borges in Brazil, Includes Preformer.

Historical Notes

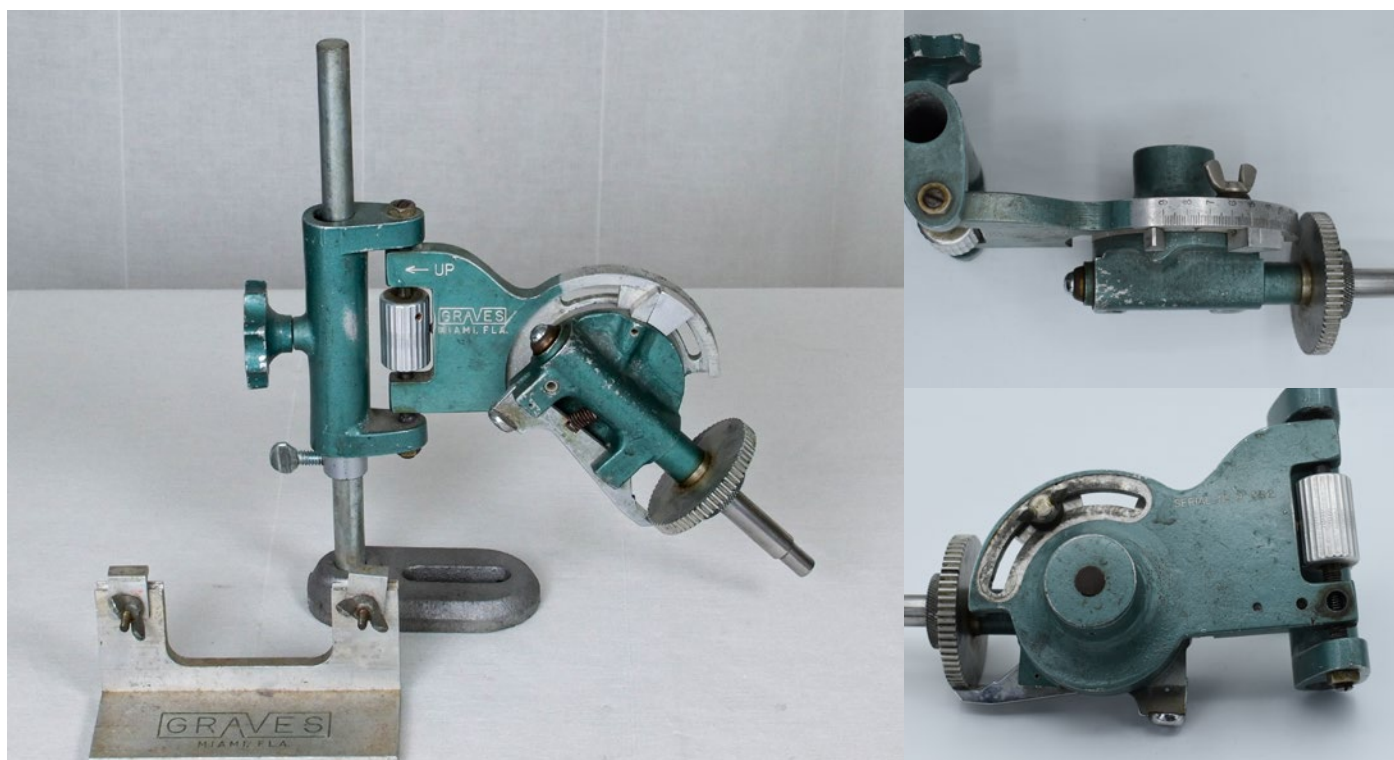
The machine was developed in the mid 1940s and there were many models such as the Model B in the historical photo. This model might possibly be Model A.

**MODEL 1-A GEMLAP
with
MODEL B FACET
HEAD**



Advertisement photo for Gemlap
from Lapidary Journal, October
1949

Graves MK 1



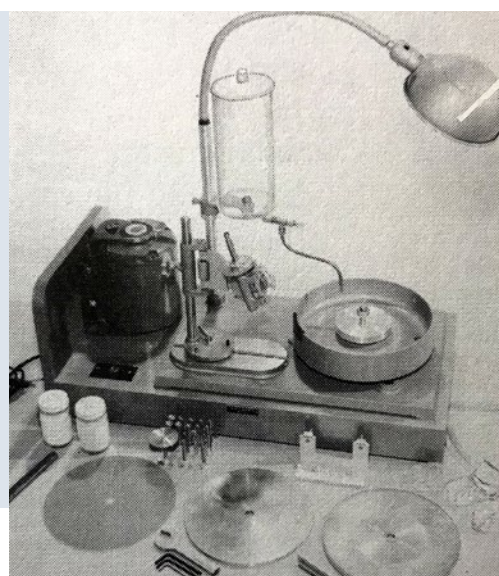
Country of Origin	United States
Date Made	1960s
Date Acquired	January 1, 2018
Acquisition Notes	Purchased from Christopher Kirfman

Notes

This head is an early model which does not have a cheater under the index gear.

Historical Notes

Graves started in 1946 with the MK1. Graves is the longest running American machine manufacturer; 74 years from 1946-2020. In late 2019 and early 2020 the company has started to seem like it's imploding and likely will not produce machines for much longer.



Advertisement photo for the Graves machine from Gemcraft 5th Ed., 1966

Ultratec V2



Country of Origin	United States
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Date Made	1960s
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Date Acquired	August 1, 2020
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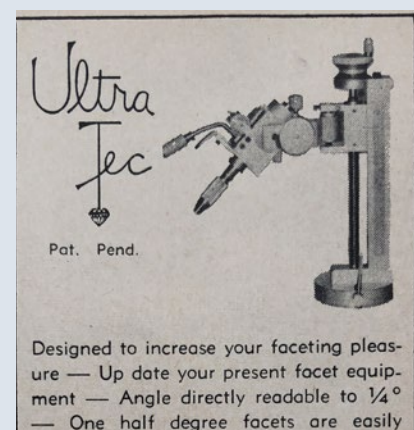
Acquisition Notes	Donated by Philippe Ressigeac
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Notes

ON LOAN. Serial Number: L711. Joe Rubin has confirmed this serial number indicates the machine was made before Ultratec was sold by Stanley

Historical Notes

The Ultra Tec Faceting Machine was invented by an aerospace laboratory technician and amateur faceter, Howard Stanley. Howard Stanley's love of faceting led him to the development of the first Ultra Tec faceting machine. Not being satisfied with the faceting machines of the day, Howard set about designing a better and more accurate faceting machine in his garage workshop in the early 1960s. He incorporated many revolutionary design features in the first prototype, which he patented. In 1965, the "Stanley Lapidary Company" began selling Ultra Tec V-2 faceting machines commercially to the public. Mr. Stanley remained active in the company until 1970 when he sold the Stanley Lapidary Company to aerospace engineers, Joe Rubin and Warren Haines. Howard Stanley retired after the sale of the company and unfortunately died about five years later.



Advertisement photo for Ultratec head from Gems and Minerals, August 1966

O'Brien Professional



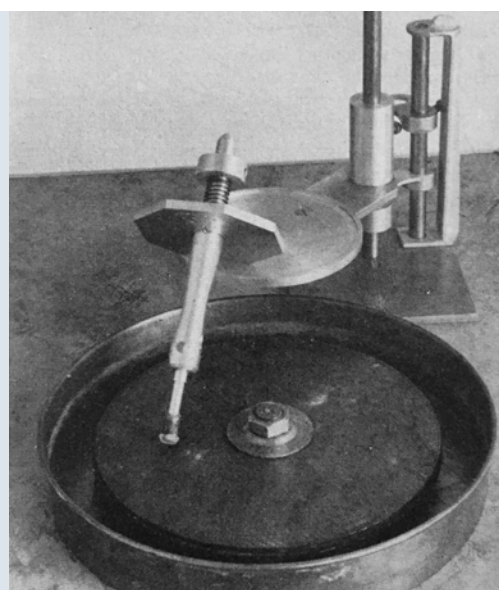
Country of Origin	United States
Date Made	1967ish
Date Acquired	November 1, 2020
Acquisition Notes	Purchased from Doyle Boyington

Notes

Included a second handpiece and the O'Brien How to Cut Gems Book. Was told "I have owned the machine for about 30 years. I bought it used. I modified the motor to arbor so I could get a different speed. I don't use it. I didn't do much to change it from original. I had it as part of a collection of machines. I only cut a couple of stones on it. The reason I got it is to all to my collection of machines."

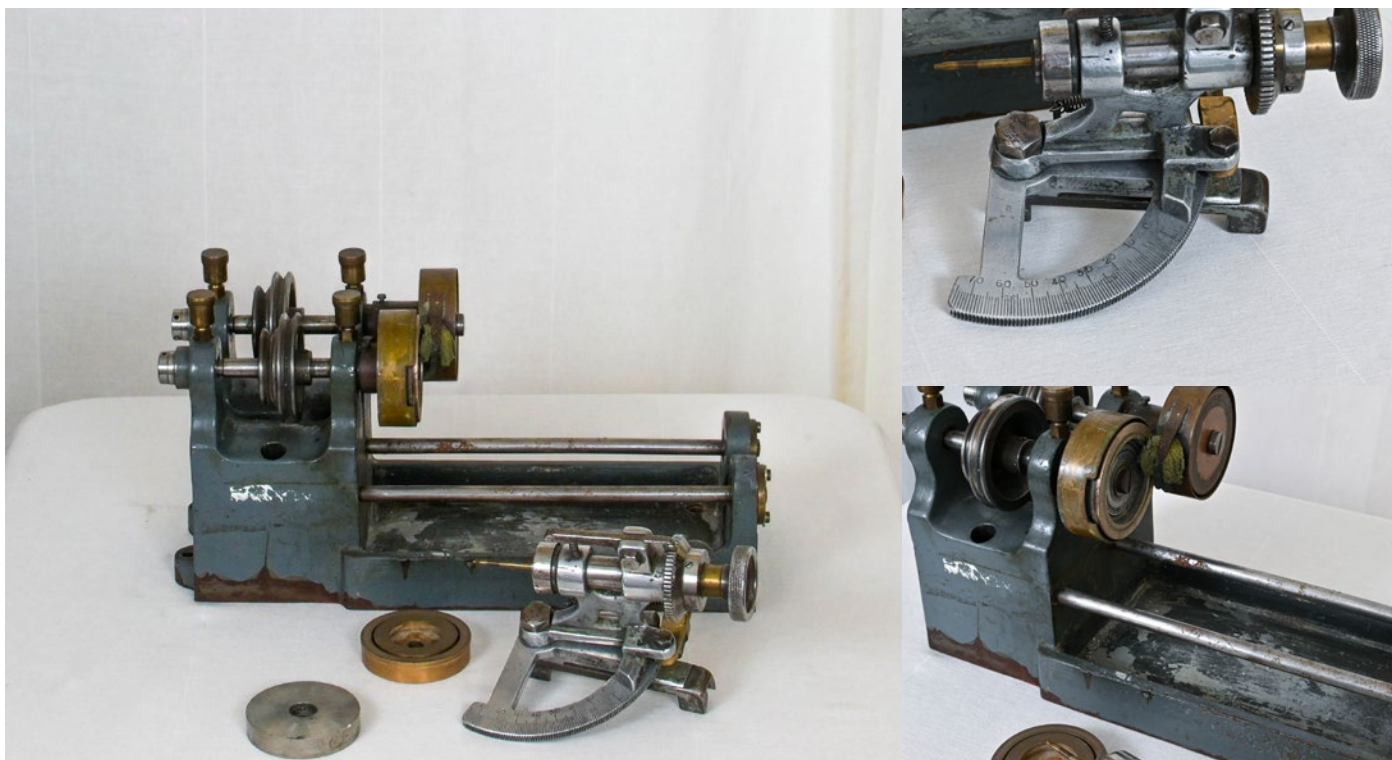
Historical Notes

The O'Brien machine was in the first generation of mass produced American machines. The earliest reference to the machine seems to be from 1949. The machine is interesting because it is designed around a handpiece instead of a mast and is likely the first mass produced handpiece that was made in America.



Advertisement photo from Lapidary Journal, December 1948

Baby Bunter



Country of Origin	Switzerland
Date Made	1970s (Early)
Date Acquired	October 1, 2019
Acquisition Notes	Donated by Thibault Leclerc

Notes

Was told "I think that the size of the machines was thought for the size of small stones for watchmaking, it is in my opinion the reason for the other small size, the engines were fixed on the table and on the new machines the engines are integrated in the machine, I think that it is also a reason for the change of size"

Historical Notes

According to Swiss records, Bunter SA was founded in 1951.

Registre commerce

Inscription au registre du commerce
01.03.1951

Forme juridique
Société anonyme

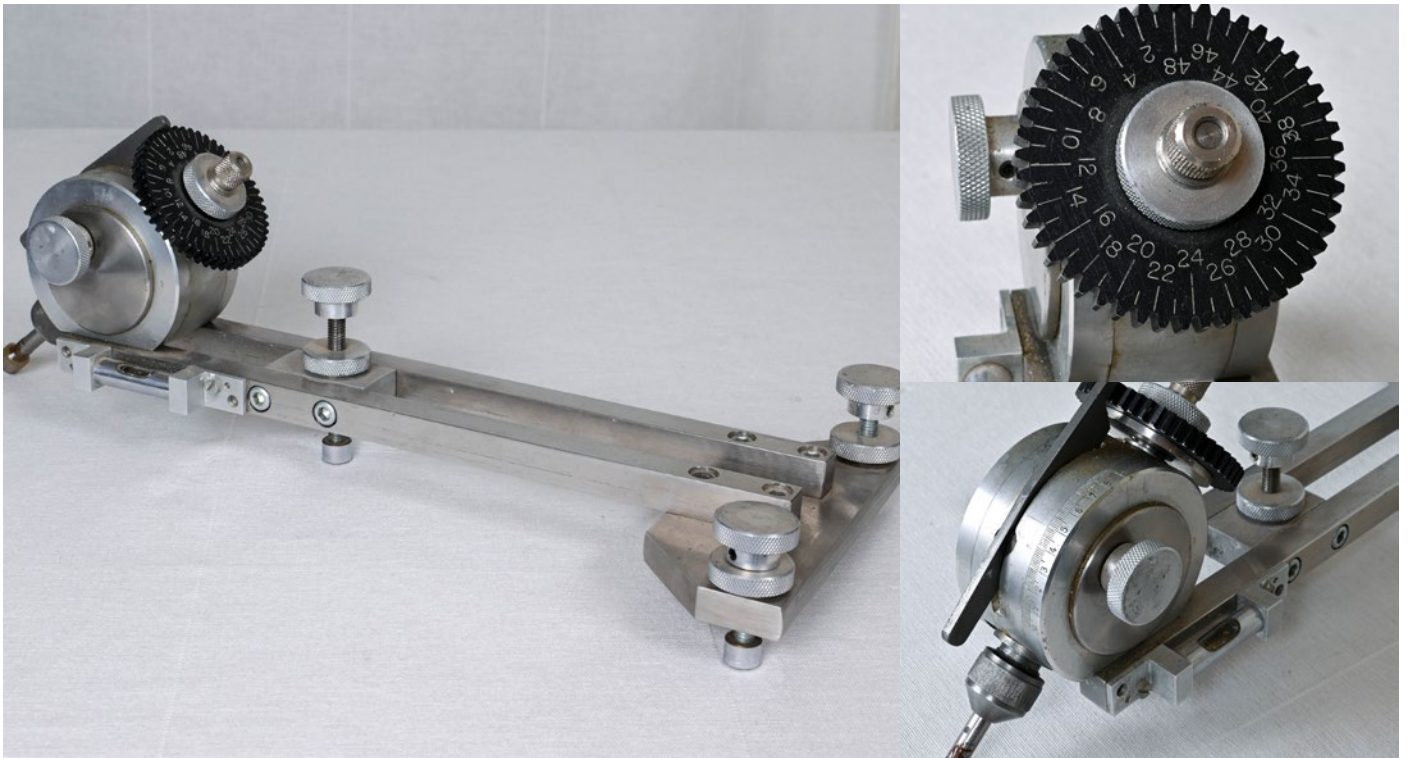
Siège social de l'entreprise
Versoix

Statut de l'entreprise
actif

Registre du commerce
GE

Company Registration information
for Bunter

Swedish Handpiece



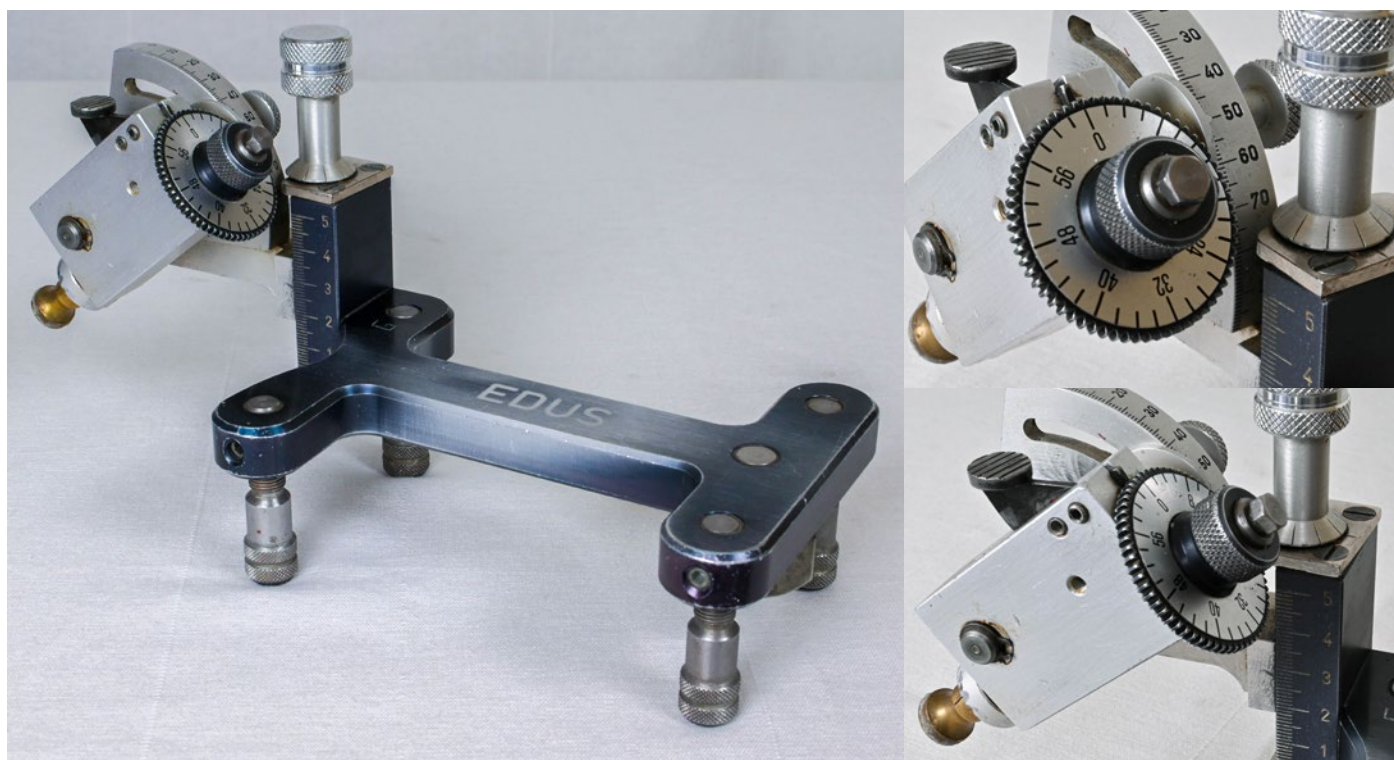
Country of Origin	Sweden
Date Made	1970s?
Date Acquired	December 1, 2020
Acquisition Notes	Donated by Anders Lyckberg

Notes

Handmade. There was a machine base as well but too heavy to ship. Included Dops and Index Gears

Historical Notes

Simplified Edus Handpiece



Country of Origin	Germany
Date Made	1970s/80s?
Date Acquired	October 1, 2020
Acquisition Notes	Purchased from Instituto Gemologico Espanol, Spain

Notes

This handpiece came from a Gemology school in Madrid that also had a gemcutting course. In 2020, they discontinued the course and sold all the gear. Included a 2nd handpiece and the preformer attachment for the base

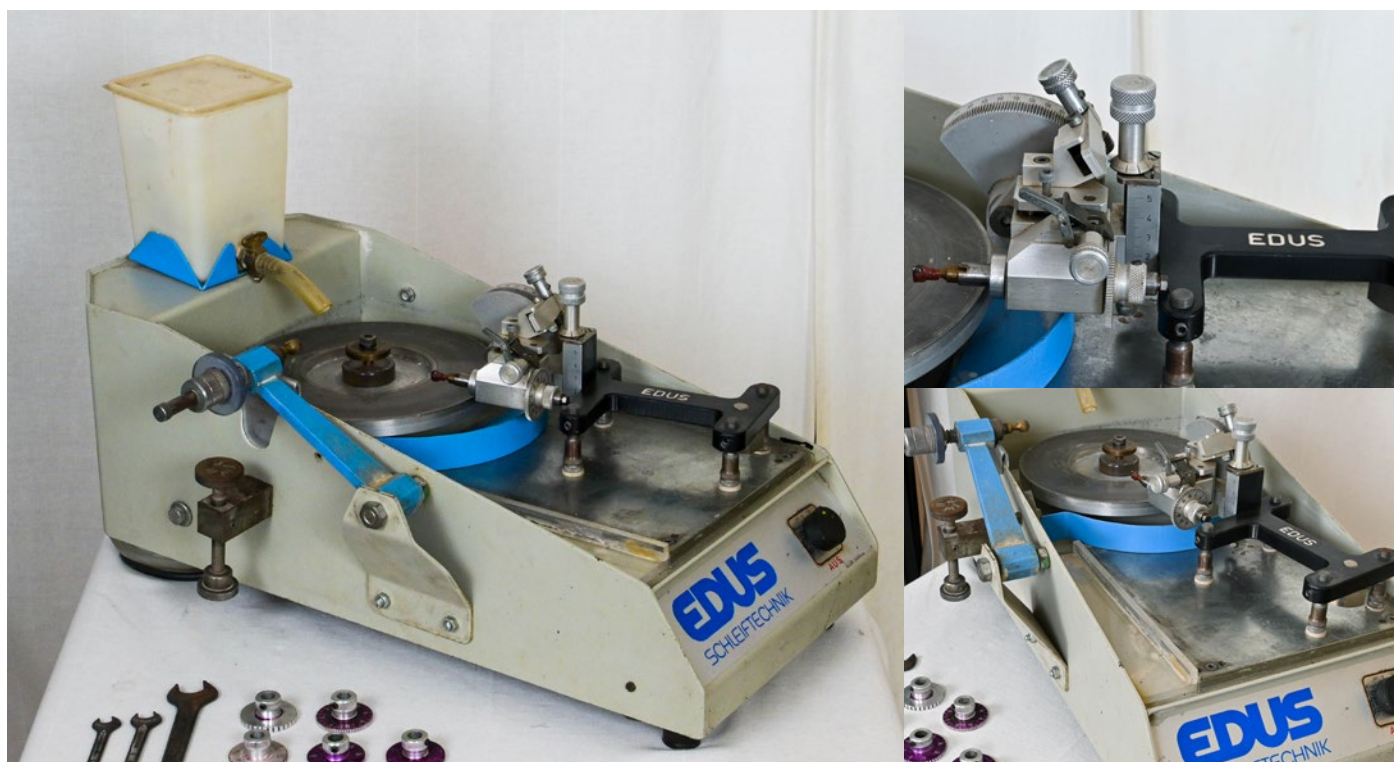
Historical Notes

The EDUS (Erich Dern und Sohne) company belonged to Mr. Erich Dern in Idar. He began selling diamond powder in 1955 and by 1972 he was making selling machines. In 1972 he made an automatic faceting machine, copied from Swarovski in Austria. In 1980 he sold the company. The new company was renamed ALGE and simplified the machine. They continued selling until the death of owner, Mr. Kretchmer. Wilfried Neumann, a former ALGE employee bought the stock and continued selling the machines until his death in 2008.



Faceting Classroom in Madrid

EDUS Machine and Handpiece



Country of Origin	Germany
Date Made	1975 (Before)
Date Acquired	May 1, 2018
Acquisition Notes	Purchased from Ray Metrick via ebay

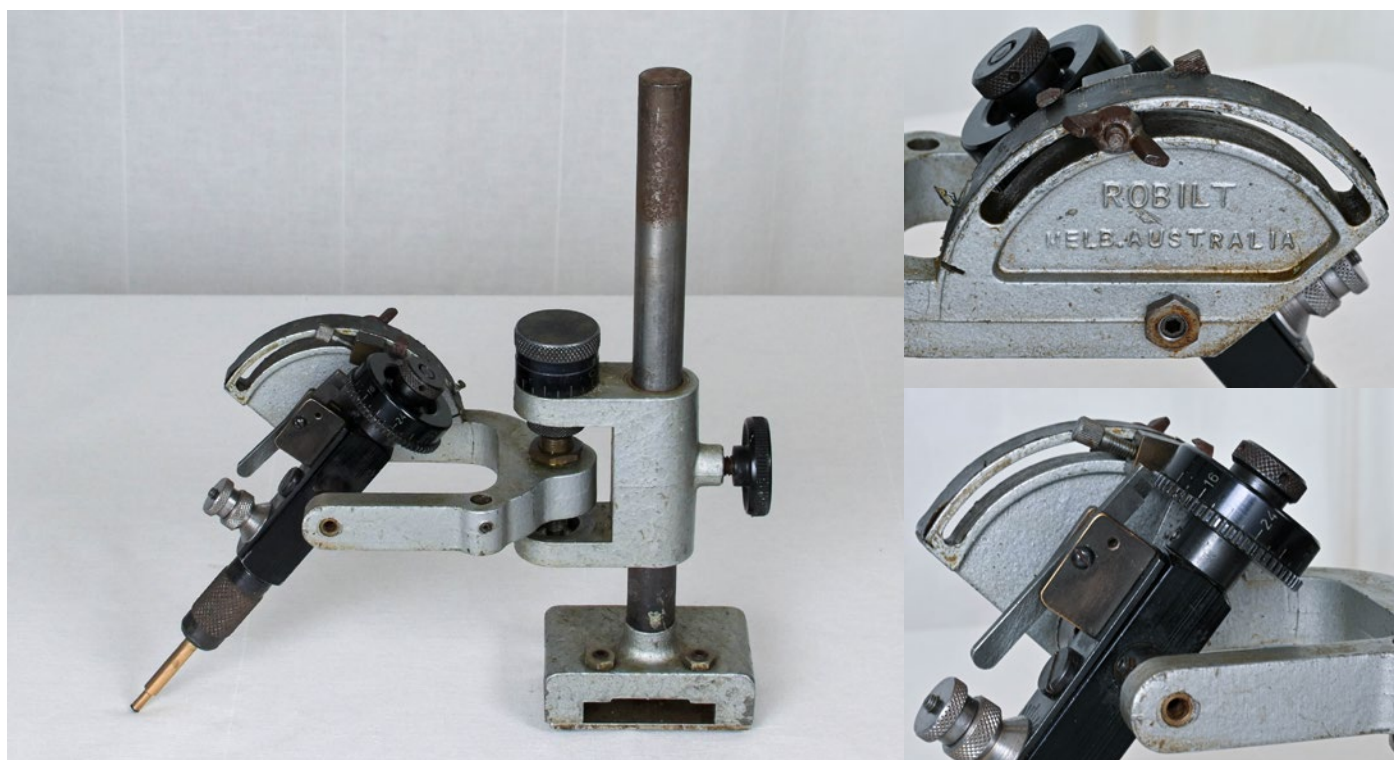
Notes

Included dop set, stepdown converter, and transfer block. Seller told me "It belonged to the father of the man I bought it from. The base of the machine is solid and in good shape but in my opinion is not as precise as the hand piece. It is made with the precision German machinists are noted for. There are so many adjustment points available, you can put any facet exactly where you want it mechanically."

Historical Notes

The EDUS (Erich Dern und Sohne) company belonged to Mr. Erich Dern in Idar. He began selling diamond powder in 1955 and by 1972 he was making selling machines. In 1972 he made an automatic faceting machine, copied from Swarovski in Austria. In 1980 he sold the company. The new company was renamed ALGE and simplified the machine. They continued selling until the death of owner, Mr. Kretchmer. Wilfried Neumann, a former ALGE employee bought the stock and continued selling the machines until his death in 2008.

Robilt M2



Country of Origin	Australia
Date Made	1975
Date Acquired	March 25, 2021
Acquisition Notes	Donated by George Seremetis

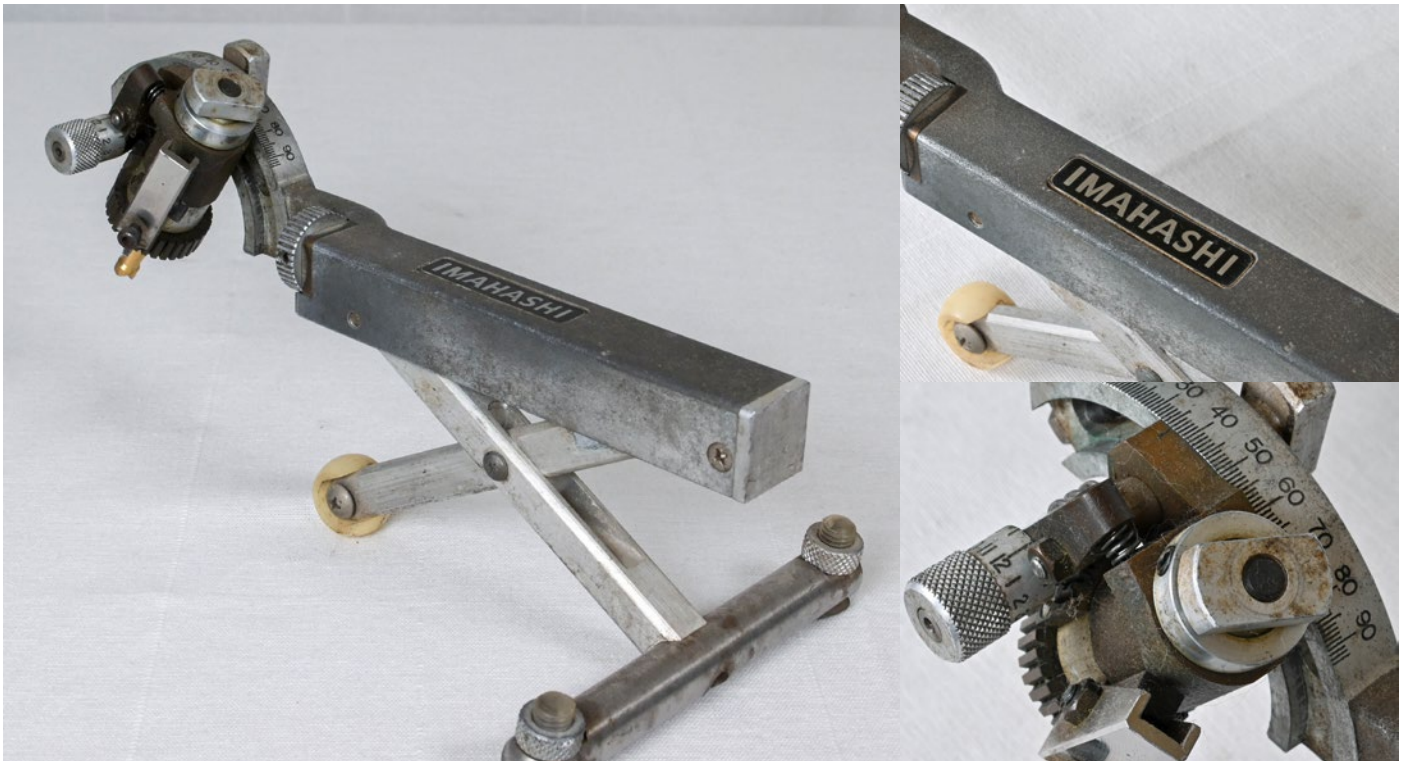
Notes

Previous owner told me "I bought it in 1976 so it should be an early 70's or late 60's. I was only 16 years of age then. I remember going to their factory in Bay road Sandringham in Melbourne. When I went there, Jack Ryding (the master mind of Robilt) looked at me with a big smile and said " you are Greek aren't you? " I replied "yes sir " He took the initiative to drive to my house on a Sunday afternoon , set up the machine and showed me how to cut my first Brilliant Cut on a piece of quartz . Apparently he told me that he had visited Greece for holidays, and saying how the Greek people where very kind to him, so I guess that left a mark on him. He was a very sweet and gentle man. God bless him.

Historical Notes

Robilt started off in 1946 making toy model trains and Jack Ryding a watch maker from England was the founder of RYTIME supplying Robilt with gears. In 1950, the two companies joined together called RYTIME ROBILT still continuing on making model trains and other various toys. In 1960, the company stopped the toy production and finally making lapidary equipment.

Imahashi Double Indexing Handpiece



Country of Origin	Japan
Date Made	1980s
Date Acquired	June 1, 2018
Acquisition Notes	Donated by Simon Bruce Lockhart

Notes

This handpiece was collected from old Bangkok cutting factory closed in 1980s. I was later told "This handpiece is made specifically to resume of the polishing of faceted stones. We adjust to the degree and then we go up or down on the handpiece according to the existing facet. It is a lot easier than taking the adjustment by the right side throttle. For later adjustment there is a cheater on the left side and on the back right on the foot there is a diagonal adjustment."

Historical Notes

This machine was patented by Imahashi in Japan in 1980. According to the patent, the purpose of this handpiece is to enable double indexing by primary indexing and secondary indexing. The design enables the accurate parallel vertical adjustment of the body of the indexing device.

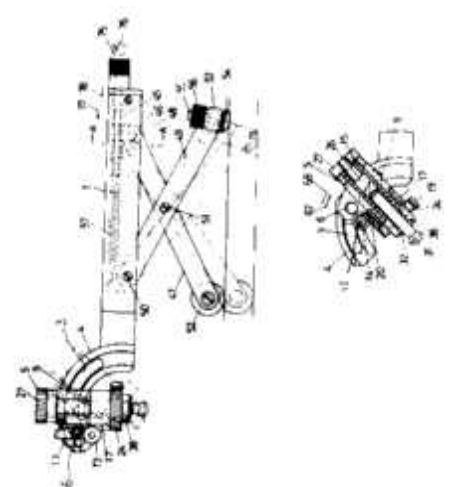
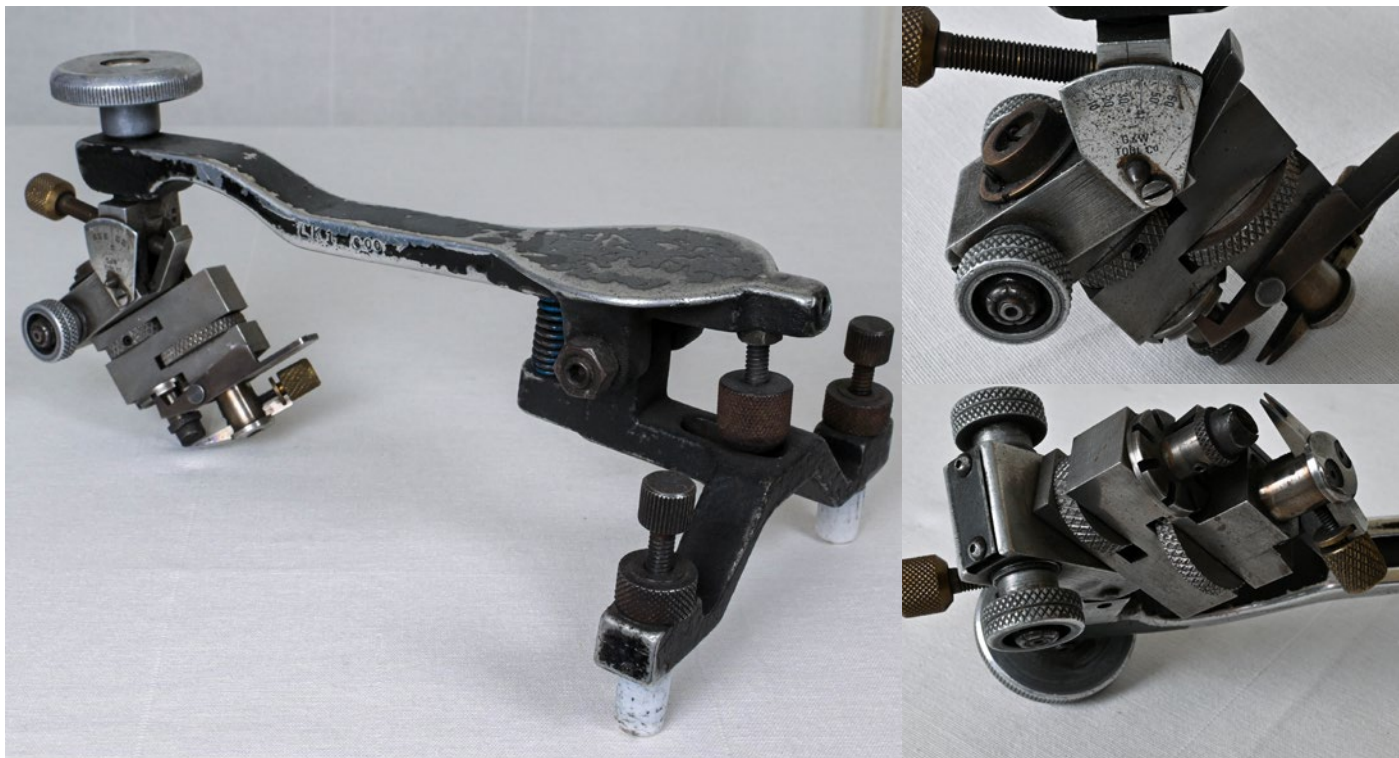


Image from the 1980 Patent

G&W Diamond Tang



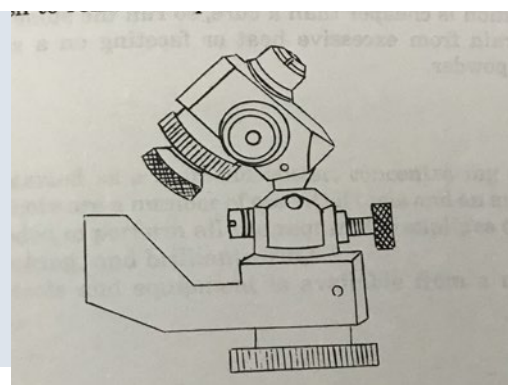
Country of Origin	Israel
Date Made	1978 (After)
Date Acquired	January 1, 2020
Acquisition Notes	Donated by Don Williams

Notes

"The hand pieces came from an old jewelry store in Georgia."

Historical Notes

This is the modern mechanical type diamond tang that replaced the old fashion wooden tangs of previous decades and centuries.



Closeup illustration of the Diamond tang head from *The Art of Diamond Cutting*, 1994

Raytech Shaw Handpiece



Country of Origin America

Date Made 1980s

Date Acquired June 1, 2018

Acquisition Notes Donated by Simon Bruce Lockhart

Notes

This came from an old Bangkok cutting factory closed in 1980s . The handpiece was still in the original box and plastic so basically it was New Old Stock.

Historical Notes

Louis Eaton Shaw invented and patented the Scott Faceter in 1961. Originally the J. Scott Company manufactured the equipment. Years later, Raytech Industries was granted manufacturing rights, and the name was changed to the Raytech Shaw. In 1974 the equipment was modernized (U.S. Patent # 2,724,220) This is the second version of the Scott/Raytech Shaw handpiece. This version came out in 1975 and continued until the companies was sold to Rick Scott in 2006, when he modified the handpiece slightly making a third version.

United States Patent [19] 3,940,888
Wain [45] Mar. 2, 1976

[54] FACETING DEVICE FOR GEMSTONES
[76] Inventor: Harry C. Wain, Stafford Industrial Park, P.O. Box 84, Stafford Springs, Conn. 06076
[22] Filed: Jan. 31, 1975
[21] Appl. No.: 545,878
[52] U.S. CL. 51/229
[51] Int. Cl. B24B 19/00
[58] Field of Search: 51/229, 216 ND, 216 H, 33/174 TD, 1 D, 2795
[56] References Cited
UNITED STATES PATENTS
2,432,089 10/1948 Wain 33/174 TD LX
3,485,482 5/1972 Shaw 51/229
3,818,041 8/1974 Long 51/229 X
Primary Examiner—Harold D. Whithead
Attorney, Agent, or Firm—Berman, Ausenberg & Platt
[57] ABSTRACT
A gemstone faceting machine for properly orienting a gemstone for forming facets thereon in a plurality of spaced rows with equal spacing of the facets in the rows. A clip stick is provided on the end of a faceting shaft secured in a quill sleeve rotatably mounted in a faceting head (which can be angularly adjusted for different facet rows to be formed). A spring-biased detent trigger is pivoted on the bracket to engage between the teeth of an indexing gear secured on a collar on the quill sleeve near the other end of the shaft. A positioning pin is secured to the collar and projects through the gear. A guide disc having evenly spaced peripheral notches is engaged around and can be rotated on a target housing linearly engaged on the quill sleeve adjacent the gear, and a coil spring is provided on the housing, urging the disc toward the gear. The disc has respective holes spaced to receive the pin to establish the angular relationship between the successive rows of evenly spaced facets. The notches on the disc guide the detent trigger into engagement between the gear teeth for storing uniform regular rotational steps of the shaft in forming the facets of a particular row.
7 Claims, 8 Drawing Figures

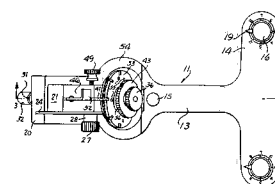
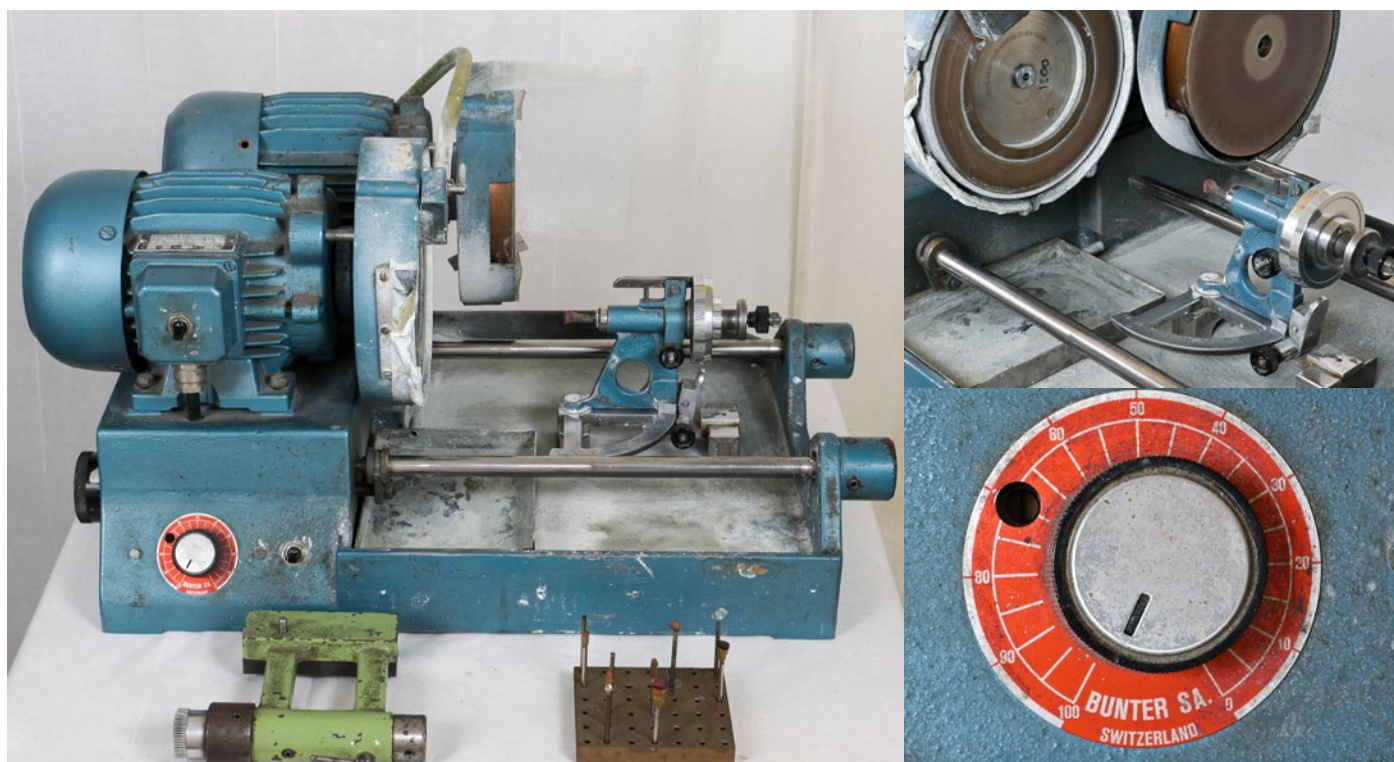


Illustration from 1975 Patent

Bunter Machine



Country of Origin | Switzerland

Date Made | 1980s?

Date Acquired | July 1, 2017

Acquisition Notes | Purchased from Thibault Leclerc

Notes

This machine was purchased from a gemstone and diamond cutter in Geneva who purchased it a few years before from a Geneva based jeweler and setting company. The green lap dressing tool was later donated by George Seremetis. The machine included 3 Swiss-made polishing laps, and 2 cutting laps that are specific to the Bunter machine.

Historical Notes

According to Swiss records, Bunter SA was founded in 1951.

[Afficher tout](#)

Registre commerce

Inscription au registre du commerce
01.03.1951

Forme juridique
Société anonyme

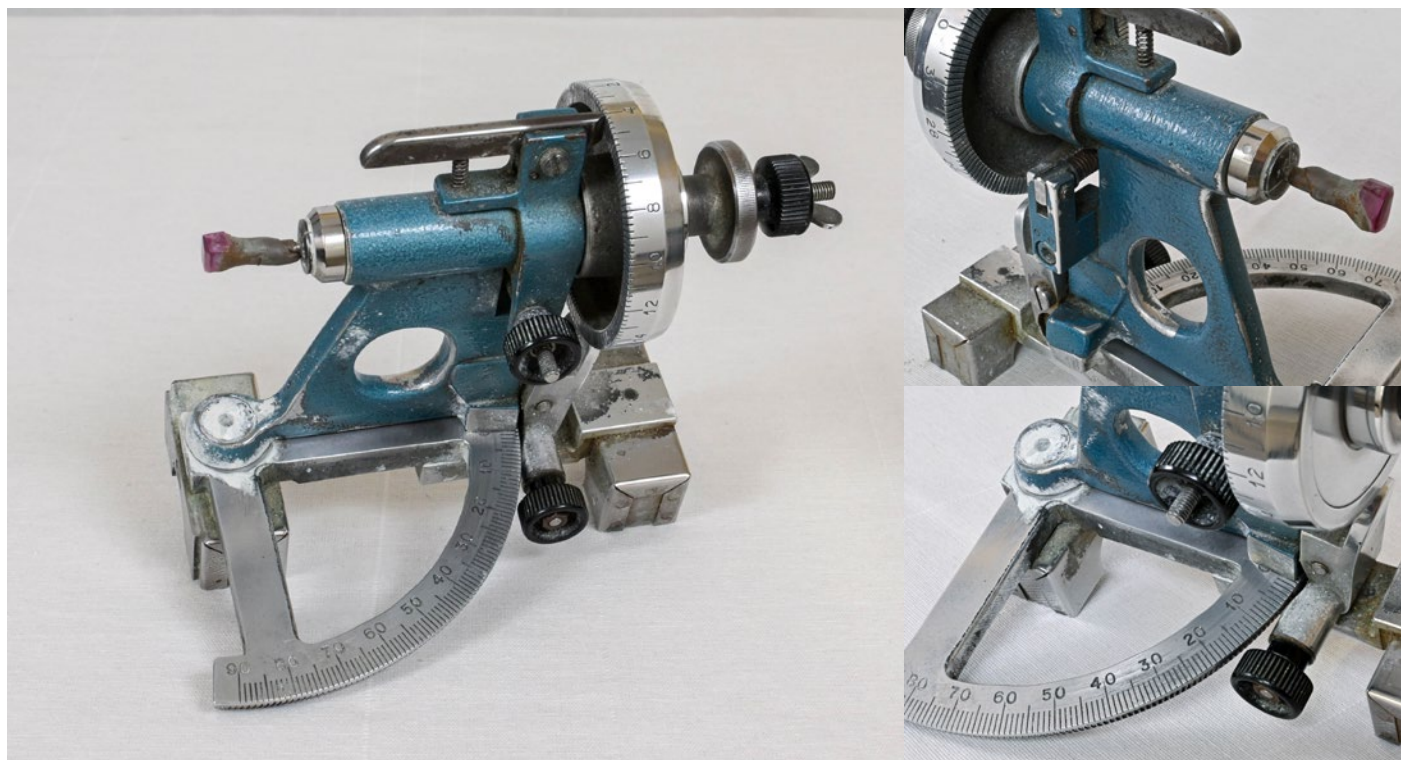
Siège social de l'entreprise
Versoix

Statut de l'entreprise
actif

Registre du commerce
GE

Company Registration Information

Bunter Handpiece with Cheater



Country of Origin	Switzerland
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Date Made	1980s?
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Date Acquired	July 1, 2017
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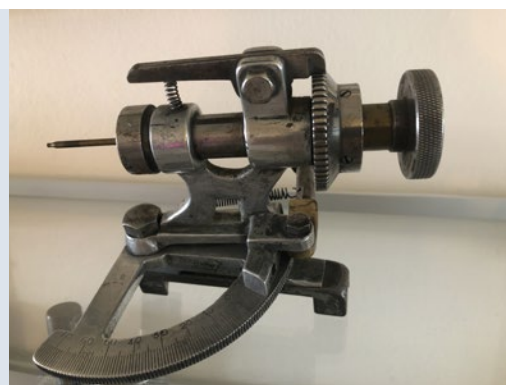
Acquisition Notes	Purchased from Thibault Leclerc
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Notes

Part of the Bunter Machine Purchase. This is one of two handpieces that came with this machine. The other handpiece is now paired with the Baby Bunter. This handpiece is the pinnacle of Bunter technology, having incorporated fine adjustment knobs for the angle and cheater, features which were not included on earlier handpieces.

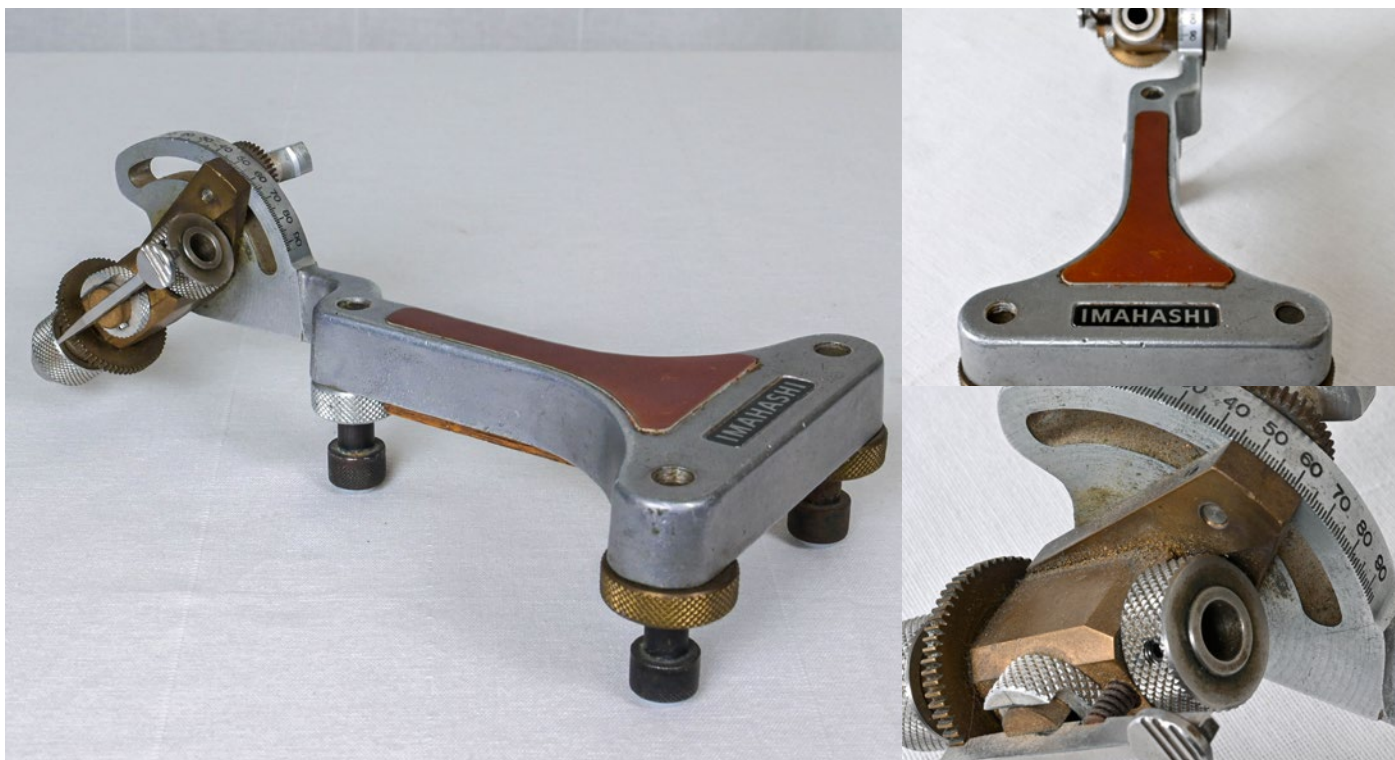
Historical Notes

According to Swiss records, Bunter SA was founded in 1951.



Early version of Bunter handpiece with no cheater knob

Imahashi Faceter P



Country of Origin Japan

Date Made 1980s?

Date Acquired February 1, 2019

Acquisition Notes Donated by Anders Lyckberg

Notes

Historical Notes

In the 1980's, Mr. Imahashi came to Sri Lanka and purchased one of the simplified Sterling handpieces from Universal Gems and took it back to Japan and made a copy of it which they now sell as the "Faceter P" as opposed to their "Faceter C" which has the original cam head for preforming. This copy of a copy makes an interesting circular point in the machine designs as they bounce back and forth between Japan and Sri Lanka and says a lot about why there were never any copyright issues across companies.

Feb. 2, 1971 TAKAHIRO IMAHASHI 3,559,349
FACETING MACHINE
Filed Dec. 31, 1968 8 Sheets-Sheet 1

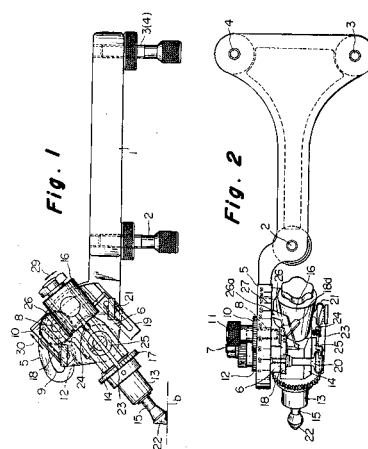


Illustration from 1968 Patent

Jambpeg



Country of Origin	Germany
Date Made	1980s/90s?
Date Acquired	November 1, 2019
Acquisition Notes	Donated by Herbert Schmidt

Notes

This came from a German gemcutter living in Bangkok. It was previously used in a German cutting factory.

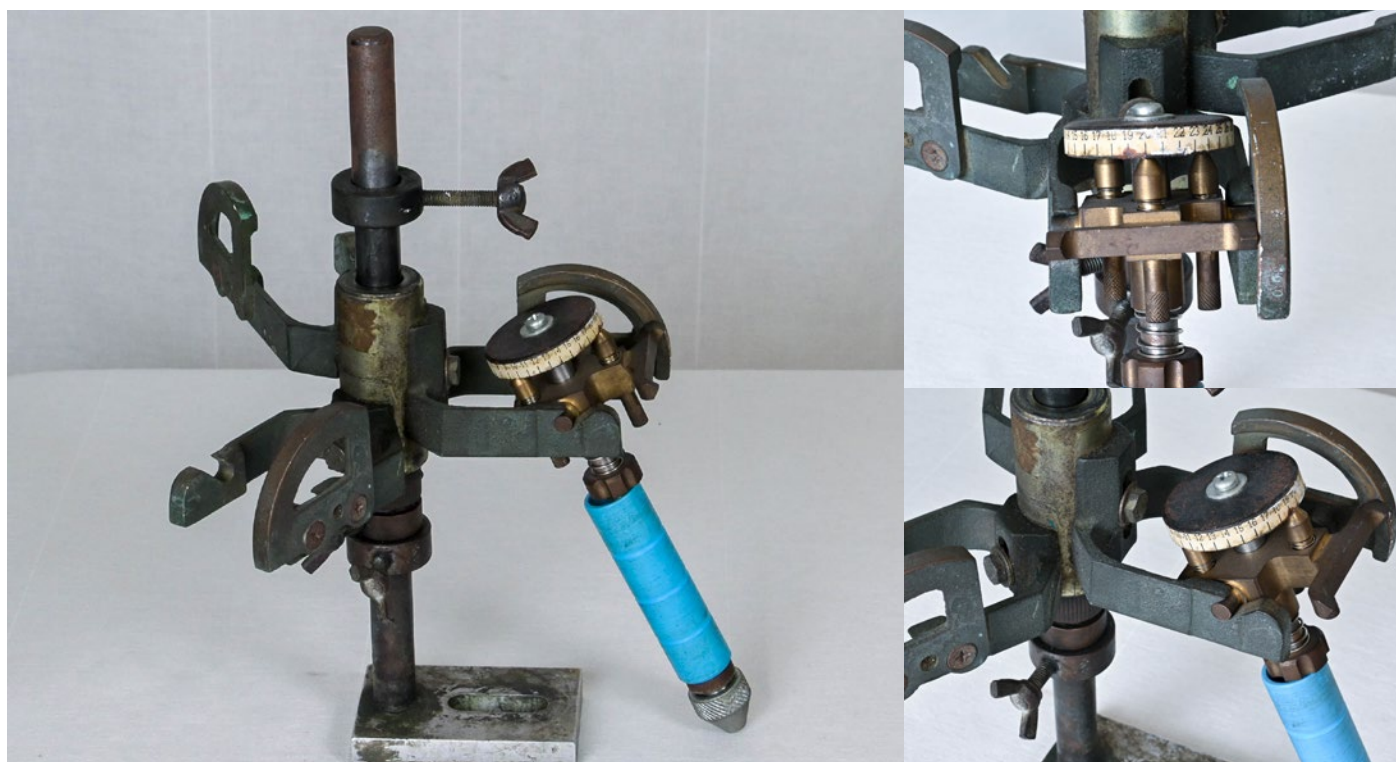
Historical Notes

Until the 1870s, cutters in Germany were using traditional water wheel powered sandstone grinding wheels. In 1875, a local gem cutting factory asked Czech cutter Gustav Postler to teach the local German cutters how to cut using the Bohemian machines and techniques. This introduction of new technology helped to transform Idar-Oberstein into the modern cutting center that it has become today. With the introduction of horizontal cutting tables, quadrant handpieces, and copper polishing laps smeared with emery powder, the German gem cutters, who had adopted the word "lapidaries" from Postler, could now cut "hard stones" such as Rubies and Sapphires and bring more work and therefore more income into the cutting mills.



Early German Handcrank table
with Jambpeg Head

Melee Cutting Machine



Country of Origin	Korea
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Date Made	1990s
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Date Acquired	August 1, 2020
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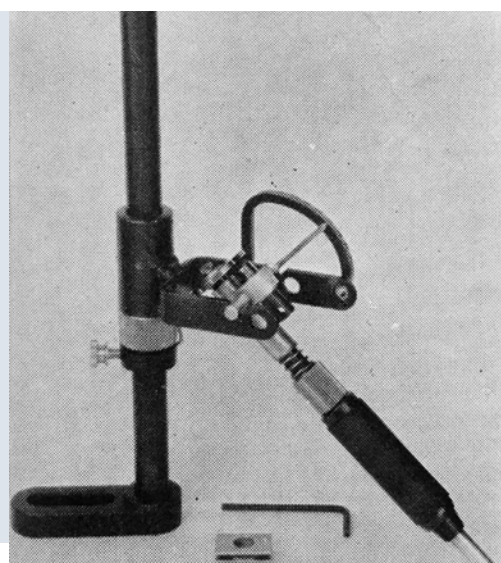
Acquisition Notes	Donated by Karim Guerchouche
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Notes

Came from a now defunct cutting factory in Thailand.
ON LOAN

Historical Notes

This design is based off of the Lee faceting machine design from 1950s America. The design was modified in Korea in the 1990's for the fast production of CZ in round melee sizes. Later when the demand for CZ went down it was re-purposed to cut other kinds of melee stones. Today it can be seen being used in Sri Lanka, combined with Thai style dual band copper and iron laps.



Advertisement photo for Lee head
from Lapidary Journal, April 1952

Jambpeg



Country of Origin	Austria
Date Made	1990s?
Date Acquired	February 1, 2019
Acquisition Notes	Purchased from Baier's Enkel, Vienna

Notes

This was purchased in a lapidary shop in Vienna. It's unknown when this was manufactured in Germany and imported to Austria or whether it was made in Austria.

Historical Notes

An exact duplicate of the German style jambpeg heads.



Early 1900s German cutting factory using Jambpeg

Modern Jambpeg



Country of Origin	Germany
Date Made	1990s?
Date Acquired	February 1, 2019
Acquisition Notes	Donated by Gerd

Notes

This was donated by a gemcutter in Germany who brought it to the Inhorgenta show, Munich, in 2019 and handed it off to the museum.

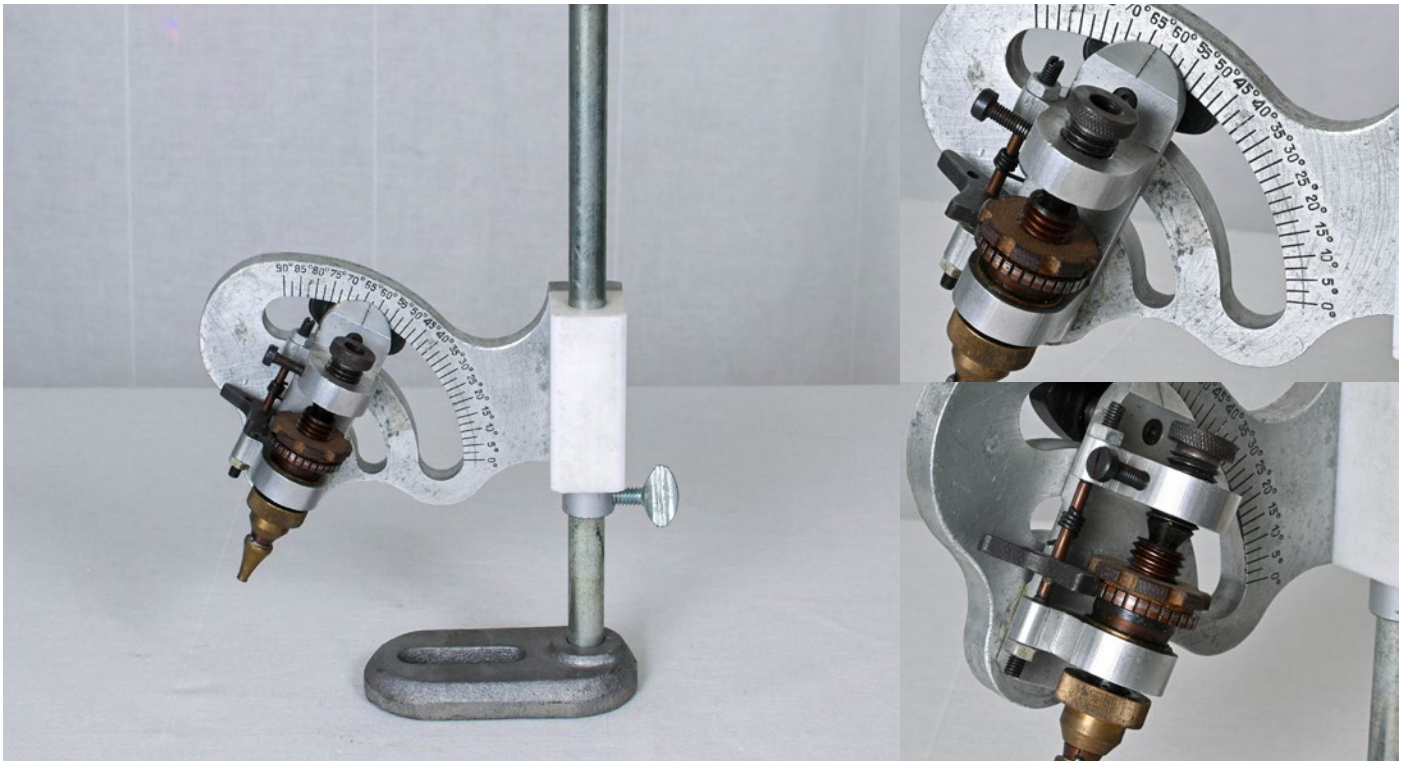
Historical Notes

This is the modern style German jambpeg with has a better manufacturing quality than the old style and also has a find adjustment knob on top.



1970s photo of a modern German cutting station

Quadrant Handpiece (ШТЫРЕВОЙ КВАДРАНТ)



Country of Origin Russia

Date Made 1990s?

Date Acquired July 1, 2018

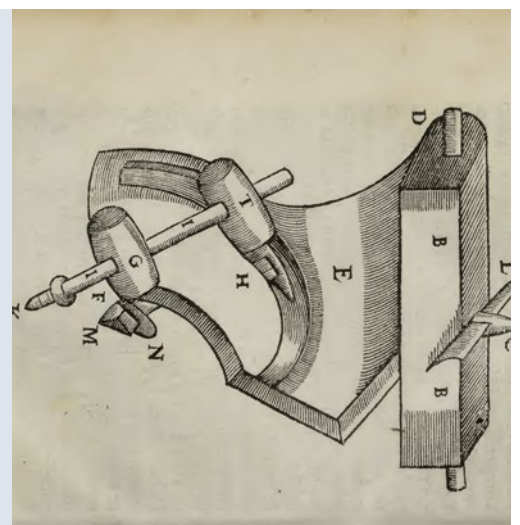
Acquisition Notes Purchased from Dmitri Petrochenkov

Notes

I was told that these are now very old fashioned in Russian and only very old cutters use them. New cutters either use the diamond tang handpiece or a mast machine, homemade or imported. It's likely that this design came to Russia from the Czech Garnet cutters, possibly during Soviet times.

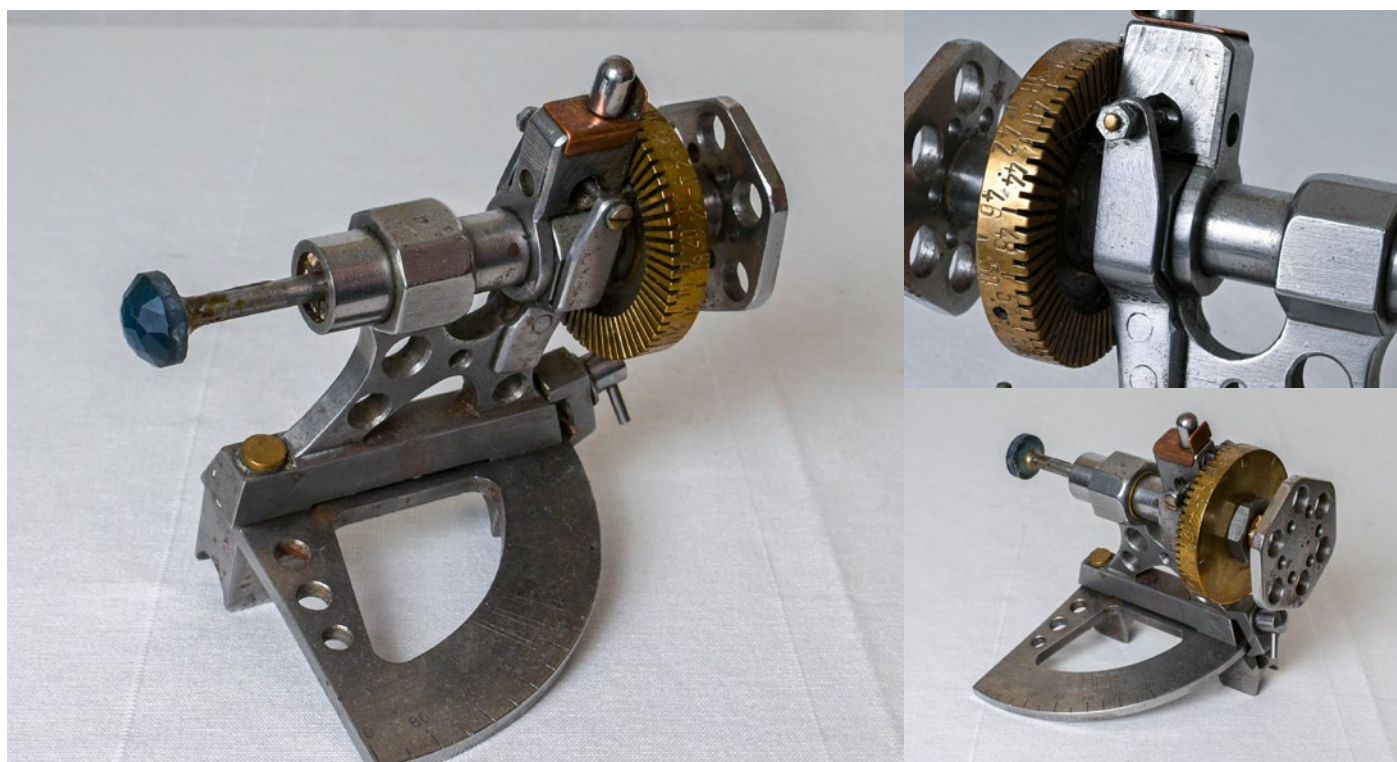
Historical Notes

Overlowski Stone Polishing Works.
Until 1924 the lapidaries worked as individual craftsmen on their own hand or treadle machines. Despite the primitive methods they used, Russian lapidaries turned out some beautiful stones and lost very little weight in the cutting. After 1924 a certain amount of mechanisation was introduced, although they continued to work on individual electrically-driven tables.



Earliest depiction of a Bohemian quadrant handpiece from deBoodt's *Gemmarum et lapidum historia*, 1609

Swiss Style Handpiece



Country of Origin	Sweden
Date Made	1990s/2000s
Date Acquired	February 1, 2020
Acquisition Notes	Donated by Anders Lyckberg

Notes

Homemade machine from Sweden, donated by a Swedish mineral dealer.

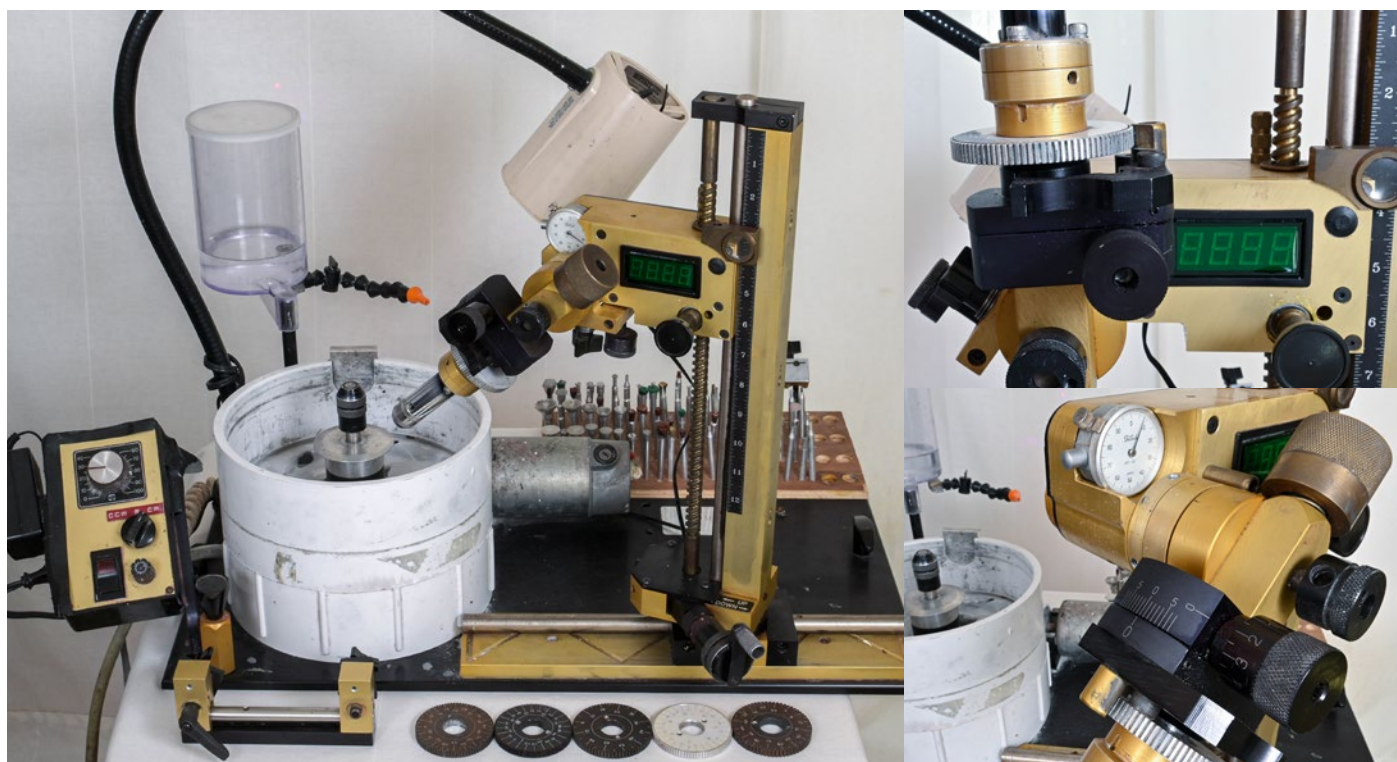
Historical Notes

This is a homemade version of the Bunter handpiece. With some attractive details like the honeycomb pattern on the dop tightening knob.



The Bunter design that this handpiece was based upon

Polymetric 88 Scintillator



Country of Origin	United States
Date Made	1996
Date Acquired	April 1, 2016
Acquisition Notes	Purchased from Dennis Bodily

Notes

Serial number indicated 1996 manufacturing date. This was purchased from a Polymetric representative, used. He drove it all the way from Southern Utah to San Francisco to avoid damaging it in shipping. The water tank was replaced with a modern one in 2017. The digital readout was replaced by Polymetric in February 2020. The original sale included rough gems, dops, and an OMF concave machine which was later sold.

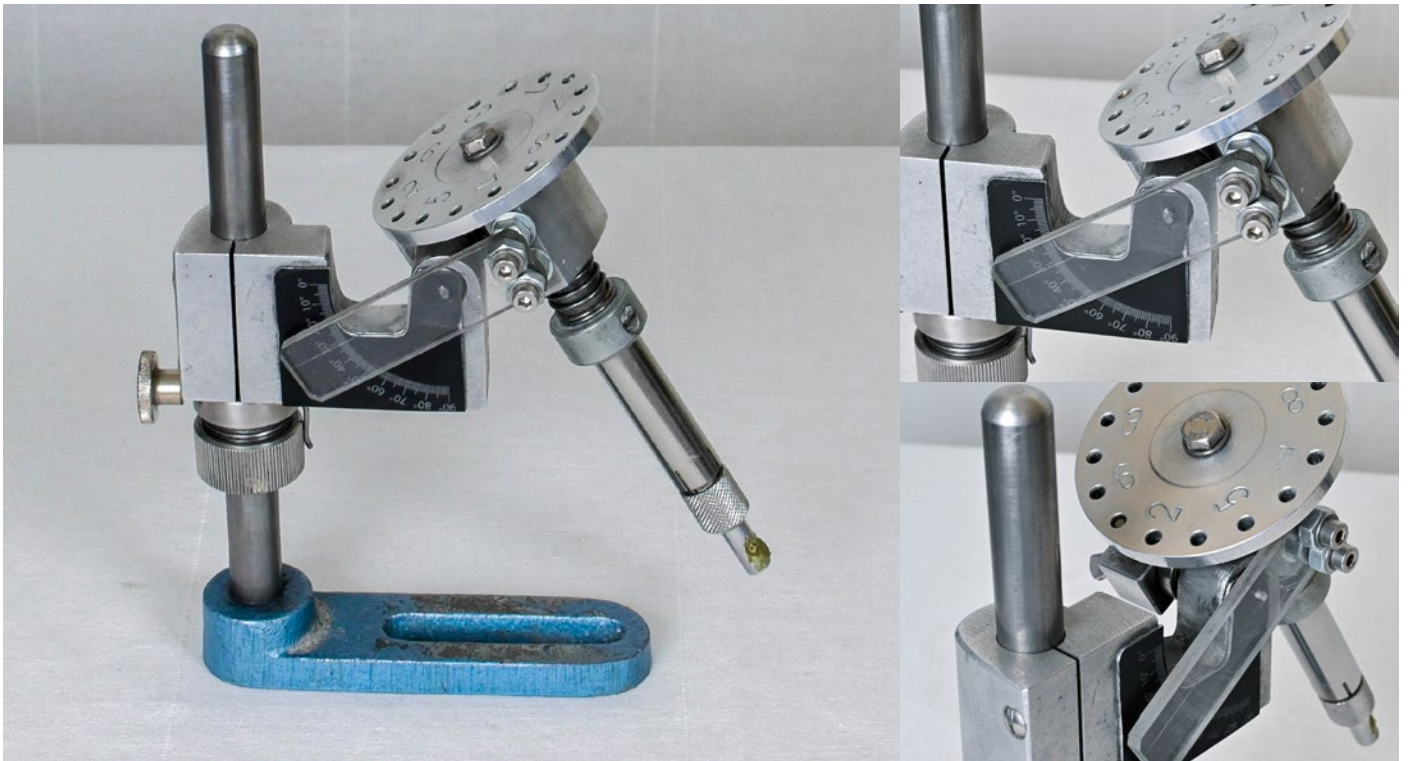
Historical Notes

This is an early Scintillator model, from before they changed the water tank and control box.



Early Scintillator Photo

Hamag XV Nova



Country of Origin Germany

Date Made 2000s

Date Acquired October 1, 2019

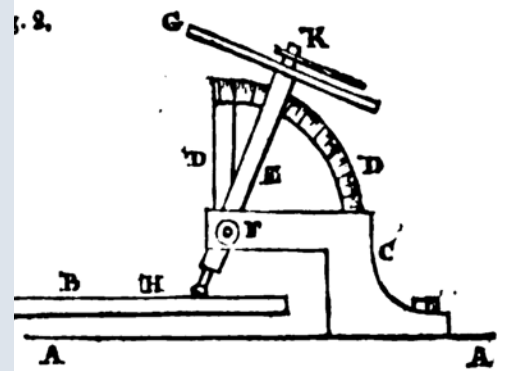
Acquisition Notes Purchased from David Harucksteiner

Notes

This was purchased from a gemcutter in Austria who bought it in Germany and used it until he replaced it with a newer machine.

Historical Notes

This is a modern style German head that seems to have taken inspiration from the British quadrant designs of the late 19th century. The design was printed in an 1849 newspaper and this XV Nova visually looks to be an exact duplicate of that old design.



British "Quadrant" Design as printed in The Saturday Magazine. December 12 1840

Angoora Handpiece



Country of Origin	Pakistan
Date Made	2000s?
Date Acquired	April 1, 2018
Acquisition Notes	Donated by Waqas Ahmed

Notes

Historical Notes

The typical handpiece style for Pakistan and Indian cutters. Similar to the Burmese buffalo horn handpiece and the Thai handpiece. No angles or indexes, just a crude rotation of the wooden dop and a visual adjustment by the cutter.

Modified Diamond Tang



Country of Origin	Russia
Date Made	2000s?
Date Acquired	July 1, 2018
Acquisition Notes	Purchased from Dmitri Petrochenkov

Acquisition Notes	Purchased from Dmitri Petrochenkov
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Notes

Many Russian cutters adapt these for colored stone use. I was told "someone set the diamond tool to the handle, which is put on the shaft, so that the angle does not change during the grinding of the stone"

Historical Notes

Originally a lightweight diamond handpiece, this has been adopted to colored stones and has become one of the predominant cutting machine styles in Russia. Very light weight and includes a spirit level in the handle.

Pineapple Cutter



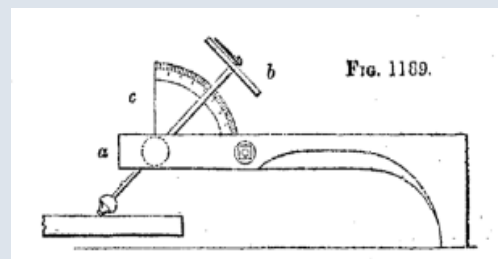
Country of Origin	Thailand
Date Made	2010s
Date Acquired	September 1, 2020
Acquisition Notes	Purchased from Rojana, Chanthaburi

Notes

A special, modern style Thai handpiece from Chanthaburi. The Index gear is designed for cutting the Portuguese cut, or as it's known in Thailand, the Pineapple Cut (Sapparad Cut). Rojana also sells different variations of this design.

Historical Notes

This design is almost identical with a handpiece design attributed to a Geneva cutter in 1850. This 1850 model is the first handpieces of its type, obviously based off of a diamond tang but modified with a simple way to keep track of "indexes" and also with a angle vernier added.



"Geneva" handpiece as depicted in 1850 Turning and Manipulation Vol 3

Buffalo Horn Handpiece



Country of Origin	Mogok, Myanmar
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Date Made	2018
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Date Acquired	May 1, 2018
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Acquisition Notes	Purchased via Thazin Han
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Notes

Made from Buffalo Horn. Purchased Brand new in Mogok.

Historical Notes

The design for this handpiece is extremely similar to the Thai handpiece as well as the angora handpiece. It's likely that all these crude handpiece designs are descended from Dutch diamond cutting tangs.



The Burmese cutting station,
Mogok, 2016

Large Thai Handpiece



Country of Origin	Thailand
Date Made	2018
Date Acquired	June 1, 2018
Acquisition Notes	Purchased from Somsit., Ltd, Bangkok

Notes

One of the two standard types of faceting machines in Thailand. This type of handpiece is also used in Cambodia.

Historical Notes

"The origins of the modern Thai cutting industry can be traced to the arrival of a Dutch lapidary named L.W. Zerner in the late 1940s. Zerner was a diamond cutter, and thus the equipment he introduced were diamond cutting tools of that era. If one examines the photos below, one can see an uncanny resemblance to the lapidary tools of the diamond cutter, with a hand-held tang (the device that holds the stone and controls the angles) and a scaife upon which the actual polishing is done. This equipment is quite different from that used in other countries to cut colored stones, because it is designed for cutting diamonds." - Ruby & Sapphire, Richard Hughes



The Handpiece in Action, 2017

Tukata



Country of Origin	Thailand
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Date Made	2018
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Date Acquired	August 1, 2019
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Acquisition Notes	Purchased from Somsit., Ltd, Bangkok
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Notes

Purchased brand new from the manufacturer, Somsit Ltd in Bangkok.

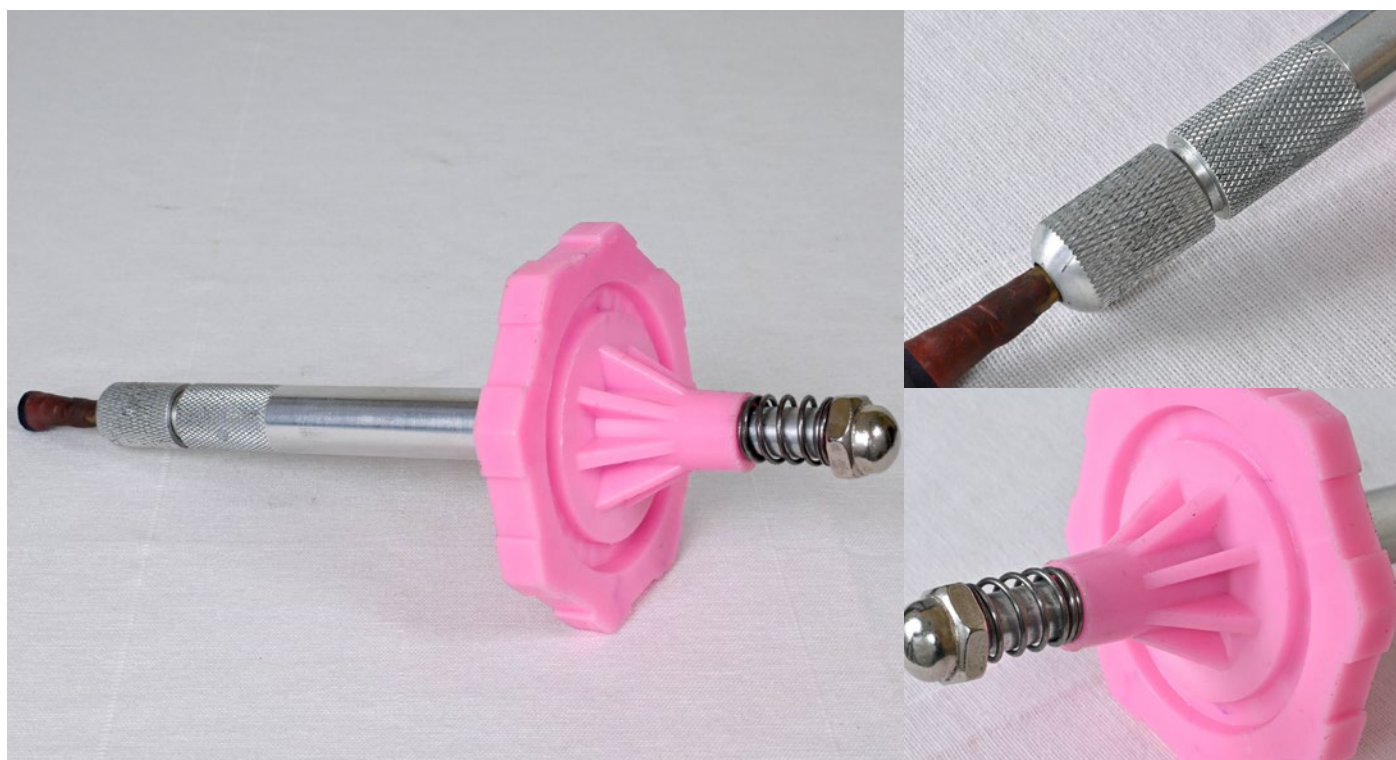
Historical Notes

This is a Thai adaption of the 1880s style French Évention jambpeg head. It has been told to me that a family in the 1960s started making these in Bangkok and it became the dominant cutting machine style in Thailand, allowing Thai cutters to cut more quickly than other cutting centers around the world.



1976 Photo of Thai cutter using the Tukata jambpeg

Chinese Handpiece



Country of Origin	China
Date Made	2019?
Date Acquired	August 1, 2019
Acquisition Notes	Donated by Luana

Notes

Made of pink plastic "because pink is stronger". Came with a 2nd handpiece,

Historical Notes

This machine style is a cheap copy of the American O'Brien machine from the 1940s. It was likely developed in the 1990s in China. The machine has been made cost efficient by making the index gear out of plastic. Over time the corners of the handpiece curve from use making each cutters handpiece unique to his body.



Gemstone Cutting in Guangzhou, China, 2017

Sterling ST-08



Country of Origin	Sri Lanka
Date Made	2018
Date Acquired	February 1, 2018
Acquisition Notes	Purchased from Sterling Gems & Lapidary

Notes

Purchased new from the company for use at the Institute of Gem Trading in Bangkok

Historical Notes

Sterling Gems & Lapidary company was started by Palitha Aponsu in 1982. Palitha's father was the chief draftsman of the mechanical department in the local university. Palitha was an engineer by training who had studied gem cutting at the Gem Bureau in Ratnapura under Badra Marapana. He saw a photo of the Imahashi handpiece in the late 1970s and constructed a simplified version of it in 1979 under the name Serendib. In 1984, Palitha began manufacturing several types of cutting machines.



A first generation Sterling machine in the early 1980s

Sterling Prototype Speed Controller Machine



Country of Origin	Sri Lanka
Date Made	2019
Date Acquired	August 1, 2019
Acquisition Notes	Purchased from Sterling Gems & Lapidary

Notes

This model features modern upgrades to the machine that Sterling has been making since the early 1980s. A speed controller and RPM readout have been added to the machine. This is the prototype version with the readout mounting in a house on top. The readout was later built into the machine. This prototype also includes the newly developed cheater handpiece with has a radial vernier

Historical Notes

Sterling Gems & Lapidary company was started by Palitha Aponsu in 1982. Palitha's father was the chief draftsman of the mechanical department in the local university. Palitha was an engineer by training who had studied gem cutting at the Gem Bureau in Ratnapura under Badra Marapana. He saw a photo of the Imahashi handpiece in the late 1970s and constructed a simplified version of it in 1979 under the name Serendib In 1984, Palitha began manufacturing several types of cutting machines.



Vesta VFM2



Country of Origin	Vietnam
Date Made	2020
Date Acquired	September 1, 2020
Acquisition Notes	Donated by Vesta Group

Notes

This is the second version of the Vesta Faceting Machine. Version 2 fixed problems with the first version.

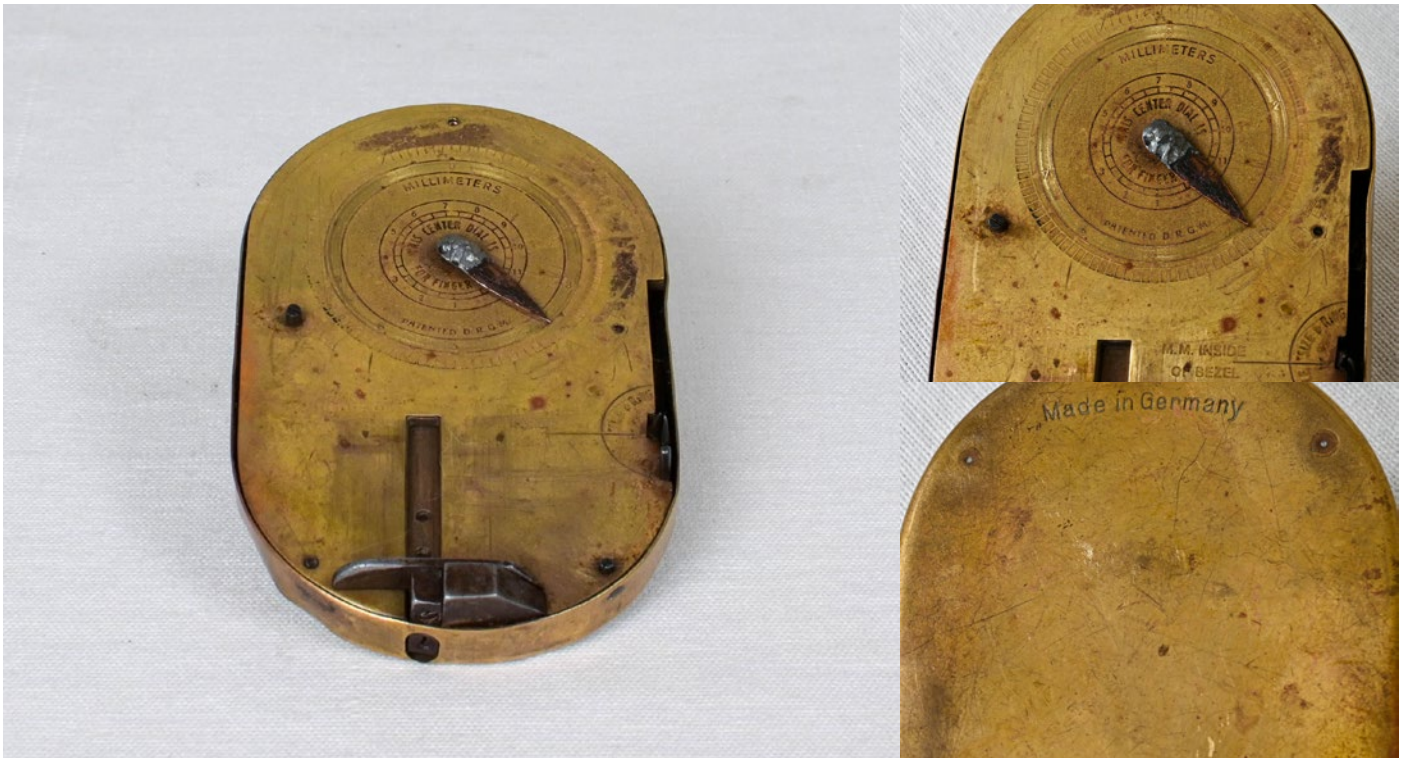
Historical Notes

The company started producing faceting machines in 2017. They seem to be the first Vietnamese faceting machine to manufacture mast-style machines. Since their debut in 2017, at least two other Vietnamese manufacturers started producing similar machines.



First generation Vesta Machine,
March 2017

Vintage Gem Gauge



Country of Origin	Germany
Date Made	1940s?
Date Acquired	February 20, 2020
Acquisition Notes	Donated by Ed Perry

Notes

I was told: "Stephen Kotlowski and I were friends and lived fairly close. He gave it to me before he passed away. He got it from a jewelry store back in NJ. I think. That's about all I know. I never expected him to go so soon so I never asked."

Historical Notes

Bruce Bar Abrasives

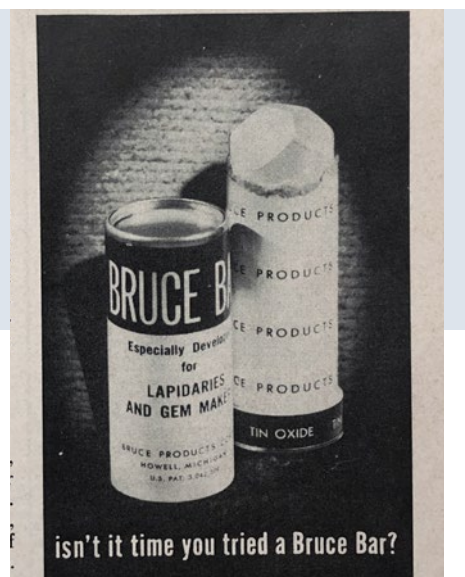


Country of Origin	United States
Date Made	1950s
Date Acquired	June 2020
Acquisition Notes	

Notes

Historical Notes

This is an American product from the 1950s and 1960s.



Advertisement photo for Bruce Bar
from Gems and Minerals, March
1966

Traditional Polishing Abrasives



Country of Origin	England / Sri Lanka
Date Made	2010s
Date Acquired	2018
Acquisition Notes	Chas Matthews Ltd / Jayamini

Notes

The tripoli/rotten stone was donated by the cutters of the Chas Matthews studio in London. The traditional Sri Lanka wadi powder ball was donated by the Jayamini family in Ratnapura, Sri Lanka.

Historical Notes

Before diamond powder was common and cheap, many other types of polishing abrasives were used to polished colored stones. "Rotten Stone" also known as Tripoli was often mentioned in 19th century British texts. In Sri Lanka, Wadi was used. Wadi was made from the ashes of midribs from kitul palm fronds, plus the ashes of burned rice husks. The ashes were cooked together in equal parts along with a trace of lime (CaCO_3) to make fist-sized balls. The balls were burned for a few hours using rice shells, and then the ashy remains were partially dissolved in water. Several rounds were required to get the mixture down to the finest particles, which would then be used for polishing.



Traditional gem faceter using Wadi polishing abrasive



About the Author

Justin K Prim is an American lapidary and gemologist living and working in Bangkok, Thailand. He has studied gem cutting traditions all over the world as well as attending gemology programs at GIA and AIGS. He works as a Lapidary Instructor for the Institute of Gem Trading as well as writing articles, producing videos, and giving talks about gem cutting and its history.

www.justinkprim.com

www.facetinghistory.com

justinkprim@gmail.com

Instagram: [@justinkprim](https://www.instagram.com/justinkprim)

