

= Franklin Peale =

Benjamin Franklin Peale (born Aldrovand Peale ; October 15 , 1795 ? May 5 , 1870) , usually Franklin Peale , was an employee and officer of the Philadelphia Mint from 1833 to 1854 . Although Peale introduced many innovations to the Mint of the United States , he was eventually dismissed amid allegations he had used his position for personal gain .

Peale was the son of painter Charles Willson Peale , and was born in the museum of curiosities that his father ran in Philadelphia . For the most part , Franklin Peale 's education was informal , though he took some classes at the University of Pennsylvania . He became adept in machine making . In 1820 , he became an assistant to his father at the museum , and managed it after Charles Peale 's death in 1827 .

In 1833 , Peale was hired by the Mint , and was sent for two years to Europe to study and report back on coining techniques . He returned with plans for improvement , and designed the first steam @-@ powered coinage press in the United States , installed in 1836 . Peale was made Melter and Refiner of the Philadelphia Mint that year , and Chief Coiner three years later upon the retirement of the incumbent , Adam Eckfeldt , who continued in his work without pay . Eckfeldt 's labor allowed Peale to run a medal business using Mint property . This sideline eventually caused Peale 's downfall : conflicts with Engraver James B. Longacre and Melter and Refiner Richard Sears McCulloh led to Peale being accused of misconduct , and he was dismissed by President Franklin Pierce in 1854 .

In retirement , Peale continued his involvement in and leadership of many civic organizations ; he died in 1870 . Numismatic author Q. David Bowers suggests that the facts of Peale 's career allow writers to draw very different conclusions about him .

= = Early life and career = =

Benjamin Franklin Peale was born October 15 , 1795 , to painter Charles Willson Peale and his second wife , the former Elizabeth de Peyster . As well as pursuing his art , Charles Peale ran a museum of curiosities housed in Philosophical Hall in Philadelphia , home of the American Philosophical Society . The boy was born in the family quarters in the museum . He was given the name Aldrovand , after the Italian naturalist Ulisse Aldrovandi .

Charles Peale recorded family births on the flyleaf of a copy of Matthew Pilkington 's Dictionary of Painters , rather than in a Bible , and after recording " Aldrovand " added the notation , " if he likes that name when he comes of age " . The father was a member of the American Philosophical Society , and in February 1796 brought his young son to a meeting , and asked the members to select another name for the child . They decided on Benjamin Franklin Peale , naming the boy after the Society 's founder , Benjamin Franklin . Society legend holds that the boy was given the name while placed in the chair of the president of the Society , which had been donated by Franklin .

Franklin Peale was one of sixteen children his father would have by his three wives . Elizabeth Peale died when Franklin was eight years old , but his father soon remarried , and the child was thereafter cared for by his stepmother . He was given little classroom education , though he did spend some time at a local school in nearby Bucks County , as well as at Germantown Academy and the University of Pennsylvania . For the most part , his education was informal , as was usual in the Peale family , with the student given the means to study what interested him , or what he appeared to be good at . In Franklin Peale 's case , he made toys as a boy , and surveyed his father 's farm near Germantown . Although he lacked the artistic talent of some of his brothers , such as Titian Peale , he proved mechanically inclined .

At age 17 , Peale began to work for the Delaware cotton factory of William Young , on the Brandywine River , learning the making of machines . He was an apt student , becoming adept as a turner , founder , and draftsman . He was tolerated in his desire for a mechanical career by his father , who considered it a foolish whim . Within a year , one of the Hodgson brothers , who ran a nearby machine shop , described Peale as highly capable with tools . At age 19 Peale returned to Germantown , where , having designed and supervised the installation of the machinery for a cotton

factory there , he was put in charge , and continued to manage the factory for several years . He then moved to nearby Philadelphia , and worked for the firm of John & Coleman Sellers , which made machinery for card sticking .

On April 24 , 1815 , Peale , still a minor at age 19 , married Eliza Greatrake without his father 's consent . Almost immediately , it became evident she had mental problems . Although Eliza bore Peale a child within the first year of the marriage (a daughter , Anna) , she thereafter left him , returning to live with her mother , who had her committed to Pennsylvania Hospital as a " lunatic " . The Peale family began a lengthy effort to show that Eliza Peale was mad when she married Franklin , a ground for annulment . With aid from the testimony of Captain Allen McLane , they were successful , and the annulment was granted on March 22 , 1820 . Franklin Peale was required to post assets as security for the support of his former wife ; his sister Sophy lent him some of her stock in the museum for that purpose .

In 1820 , Peale left factory management to assist his aging father in running the museum , and remained there for over a decade . When Charles Willson Peale died in 1827 , Franklin became the manager of the museum , and like his siblings , inherited stock in it . He not only maintained the exhibits , but added to them , contributing a " curious speaking toy " as well as the model for an early locomotive , which was used to draw two small cars in the museum , with seating for four people . At the time , the museum was located in the Old State House (today , Independence Hall) , and Peale worked out a system for using the State House bell to inform fire companies of the location of a blaze .

Peale was one of the founders of The Franklin Institute in 1824 , one of several mechanics ' institutes that came into being in the early 1820s to provide working men with technical education . It quickly became important and influential , organizing an exhibition of American manufactured goods that October , one of at least 26 such shows that it put on in the first 34 years of its existence . Peale taught natural history , mechanics (illustrating his lectures with models and drawings) , and chemistry , livening the talks with experiments . He was for many years actively involved with The Franklin Institute , writing articles for its Journal and serving on key committees .

= = Mint employee and officer (1833 ? 1854) = =

= = = Hiring and Europe tour = = =

The second building to house the Philadelphia Mint opened in 1833 , with up @-@ to @-@ date technology except in the coining process . For this , it used the transplanted machinery of its predecessor , using human muscle power to strike coins . Although the Mint wanted all coins to be identical to others of the same denomination , the use of the screw press was an impediment to this , as the force used to impress the design on the coins was not uniform . Additionally , the coinage dies were made by hand , leading to differences between coins struck from different dies . This state of affairs was unsatisfactory to the director , Samuel Moore , who had for several years contemplated purchasing a modern set of steam machinery for the production of coins from the Soho Mint in Birmingham , England , founded by coining pioneer Matthew Boulton . Moore instead decided to engage a new employee and send him on a special tour of European mints and refineries , in order to learn the best features of each and bring the knowledge home for use at the Philadelphia facility . The individual would be given the title of Assistant to the Assayer , Jacob R. Eckfeldt . Moore obtained the approval of Treasury Secretary Louis McLane and an appropriation of \$ 7 @ , @ 000 for the purpose .

Moore , in a letter to McLane , noted that sending an agent to Europe to gather technology had been discussed in the past , but proposals had foundered over the difficulty of finding a person both competent enough to undertake the trip successfully and not too busy to spend a year or more in Europe . At the recommendation of the director 's first cousin , Robert M. Patterson , Moore hired Peale for the position . According to Patterson , " I do not know any man more likely to succeed in such a mission . His skill , his perseverance , his address all fit him for the errand . " Peale was

willing to go , writing , " a variety of circumstances render me very desirous of vacating the situation that I have held for many years as Manager of the Phila Museum , it will therefore be agreeable to change even at a pecuniary sacrifice . "

Peale departed from New York for Le Havre on May 8 , 1833 , arriving in Paris late in the month . At this time , it was only certain that Peale would visit Paris ? a visit to England , with instruction at local mints and refineries , was still under discussion . Peale had been instructed to learn " parting , " a newly developed method for separating gold and silver . This process , also dubbed refining , is necessary because nuggets that contain gold also contain some silver , and the latter metal must be removed before the gold can be alloyed with copper for coining . The older method of removing silver involved the use of nitric and sulphuric acids , and was dangerous and expensive . Director Moore also instructed Peale to gain the method of assaying silver by the " humid process " (titration) , and to learn everything he could of coining technology and how it was powered by steam . Moore warned , " a very material object of your mission is to be regarded as unaccomplished , until you have become familiar with everything requisite for directing the formation of an establishment de novo [from nothing] ... and until you shall have acquired a good share of adroitness in the actual manipulations ... Whatever can be added to our information in regard to the treatment of the precious metals , and Mint processes and machinery is within the scope of your inquiries . " Moore asked that , if Peale had any time remaining , to look into other technologies that might be useful to the United States , such as the gas illumination of cities .

With the aid of the United States Minister to France , Edward Livingston , Peale gained permission to study closely the workings of the Monnaie de Paris . The staff there was cooperative , and Peale was able to learn the " humid " method from watching the assayer as he verified the silver content of the coins from the French branch mints . Peale 's notes were supplemented by detailed engravings of all the fixtures used in the process , published and sold by the Paris mint at an expense of 98 francs 50 centimes , which Peale deemed worth the purchase on the US government 's behalf . Peale also purchased a set of the apparatus for the humid method , made and sold by the mint ; Peale paid 500 francs for this .

Some of the machinery that would be installed on Peale 's return to Philadelphia was based on what he saw in Paris . He sketched the Monnaie de Paris 's Thonnelier model coin presses . He also copied the Paris facility 's Tour á portrait reducing lathe . He could not learn parting there as the facility contracted the process to private refineries ; attempts to gain permission to learn the process at these facilities failed when their owners demanded huge sums , believing that Peale , as a government agent , was flush with money .

Peale journeyed to London , hoping that Moore 's connections could get him instruction in the parting process . Although he visited the Royal Mint , he found officials there unhelpful and unwilling to teach him . In England , Peale studied the method of assaying via the humid process at Percival N. Johnson 's refinery , and in 1835 introduced it to the Philadelphia Mint , replacing assaying by cupellation . Peale wrote that he " cannot speak in too high terms of Mr. Percival Johnson ... I have derived much useful information in his refinery particularly his method of separating silver , gold and paladium [palladium] by a shortened process " . While in London , Peale ordered a delicate balance scale from his friend , expatriate American Joseph Saxton , and later induced Saxton to return to the United States and work for the Philadelphia Mint .

Peale returned to France where , as the refiners wanted payment for teaching him the French method of parting , he learned it by observing the assayer at the branch mint in Rouen . He was not completely happy with this , as he was not allowed to practice it himself , or to experiment , but felt that he could reproduce what he had seen on his return to Philadelphia . Peale also visited the German mints of Dresden , Stuttgart , and Karlsruhe . In Germany , parting was done in iron vessels ; although Peale noted these were cheaper than platinum ones , he preferred the latter , writing in December 1834 that use of iron " sometimes leads to losses that are embarrassing . " He also visited Freiberg , in Saxony , observing the smelting and refining of lead ore .

= = = Return and results = = =

On June 17 , 1835 , Peale submitted his report to Moore , 276 pages of his observations at the various European mints he had visited , and his comments and recommendations . He warned , " in the organization of Mints in both France and England that there are offices and incumbents , that are useless , and who render no services of importance for their appointment " . He recommended favorably the French practice of not appointing a coin designer , but having competitions judged jointly by Mint officers and by artists . Peale also urged the passage of a single , comprehensive Mint Act , to replace the scattered bits of legislation passed over the years ; this was done in 1837 . One recommendation submitted by Peale , but not adopted , was to have the Mint set up a guaranty department , to hallmark items made of gold or silver by the private sector as public assurance of their quality , as done by the Goldsmiths Company in London . He also recommended that the Philadelphia Mint strike medals , as did its French counterpart . He suggested that the Mint establish a museum of coins and coining , as the Paris facility had .

Peale returned from Europe with plans he had drawn for a steam @-@ powered coinage press , borrowing the steam machinery design from English mints and the toggle joint technology from French ones . In September , Patterson , by then Mint Director in place of the retired Moore , wrote to Secretary of the Treasury Levi Woodbury , " we have just completed under the superintendence of Mr. Peale , a model of a coining press from plans which he saw in successful operation in France and in Germany , and possessing many very manifest advantages over the Screw press now applied at the Mint . Among these one of the most important is that [it] admits the immediate and easy application of steam power . " Director Patterson called March 23 , 1836 " an epoch in our coinage " . To take advantage of the new press 's increased production capacity , Peale designed a new machine to cut planchets , or blanks , from metal strips . This machine remained in use , almost unmodified , until 1902 .

Another of the steam @-@ powered machines Peale had installed on his return was a milling machine , which was used to " upset " the coin ? to form a rim around it . A Contamin portrait lathe was imported from France and installed at the Philadelphia Mint in 1837 . Prior to this time , all coin dies for American coins had to be made individually , by hand at Philadelphia . Once the lathe was installed , they could be reproduced mechanically by the pantograph @-@ like device .

The first pieces produced by steam power at the Philadelphia Mint , commemorative medals , were struck on March 23 , 1836 . The first steam press there then began minting cents , with silver and gold coinage first struck there by steam towards the end of the year . Built by the Philadelphia firm of Merrick , Agnew , and Taylor to Peale 's design , the press was able to coin 100 pieces per minute . After being retired from government service , the press was used at The Franklin Institute to strike miniature medals for many years , and in 2000 was moved to the American Numismatic Association 's Money Museum in Colorado Springs . Patterson wrote ,

The performance of the press , in which the power of the lever is substituted for that of the screw , has answered all our expectations . Since that time , all the copper coins have been struck by this press , and it has been lately used with success for coining half dollars . The workmen are now engaged in making other steam presses ; and as these are completed , the coining by human labor be abandoned , and the work that can be executed in ... the Mint will be greatly increased .

Numismatist Roger Burdette notes , " in most respects , Peale seems to have selected the best from European examples , and discarded all unnecessary complexity and ineffective motion . " Although minor improvements were made from time to time , these machines struck the nation 's coinage for the remainder of Peale 's life .

According to numismatist David Lange , " the fact @-@ finding journey of [future] Philadelphia Mint Melter and Refiner Franklin Peale through the mints of Europe from 1833 to 1835 assured that United States coins would be second to none in terms of technology . " Lange , in his history of the Mint , notes that though Peale ended his career by being fired amid accusations of impropriety , upon his return from Europe , " he was the bearer of many innovations devised in the mints of Europe and now made available to the United States Mint at Philadelphia " . Robert Patterson III , son of the Mint Director under whom Peale served for many years , wrote that through Peale 's report , " our Mint was placed in full possession of all that was then worthy to be known " from foreign mints and refineries . Patterson indicated that he had often thought , as he passed through

the Philadelphia Mint 's coining department , that a plaque should be set up to Peale reproducing the tribute to Sir Christopher Wren in London 's St. Paul 's Cathedral , Si Monumentum Requiritur , Circumspice (if you seek his monument , look around you) .

= = = Melter and Refiner = = =

Joseph Cloud had held the position of Melter and Refiner of the Philadelphia Mint since 1797 . The Washington administration appointee resigned , effective at the start of 1836 . Peale was nominated as Cloud 's replacement by President Andrew Jackson on December 21 , 1835 , and was confirmed by the Senate on January 5 , 1836 .

On taking office as Melter and Refiner , Peale implemented the changes he had recommended based on what he had seen in Europe . He also wanted additional mechanization in the mint 's Coining Department , headed by Chief Coiner Adam Eckfeldt , whose son Jacob was the Philadelphia Mint 's Assayer . Adam Eckfeldt had helped strike some of the first federal coins in 1792 and had been in his office since 1814 . Eckfeldt was reluctant to adopt all Peale 's recommendations , telling Peale 's nephew , engineer George Sellers , " If Mr. Peale had full swing he would turn everything upside down ... he wants something better and no doubt he would have it if we were starting anew . " As improvements crept in despite Eckfeldt 's caution , the Chief Coiner saw their value and became more enthusiastic , noting the savings in working time afforded by the Contamin lathe , which had been imported from France after being seen by Peale there . To help deal with the increased output from the Philadelphia Mint , Peale invented a piling @-@ box , allowing planchets or coins to be quickly stacked , and a counting board , speeding the work of the clerks . The counting board remained in use until the mints installed mechanical counters in 1934 .

One of the innovations that Peale introduced as Melter and Refiner was the use of salt in parting , using it to recover the silver dissolved in nitric acid when gold bullion was being purified . Previously , this could only be done by using copper , a process that generated dangerous and offensive fumes . Table salt (sodium chloride) , dissolved in nitric acid , caused silver chloride to precipitate , which could be recovered as metallic silver through the use of zinc and sulfuric acid . This was a further refinement of the parting process ; the director of the Monnaie de Paris , Joseph Louis Gay @-@ Lussac , had first used a salt solution as an easy , accurate means of assaying silver . A Senate report in 1873 stated that Peale 's advancement of this process " attests to his genius , enterprise , and high attainments " . When there were calls in Congress in 1836 for a two @-@ cent piece to be made of debased silver , or billon , Patterson had Peale , working with Second Engraver Christian Gobrecht , strike pattern coins to show that the coins would be easily counterfeited using base metals .

In 1835 , Congress had authorized branch mints at Charlotte , North Carolina , Dahlonega , Georgia , and New Orleans , Louisiana , to strike into American coin the gold being mined in or entering the country through the South . Despite the rich gold deposits nearby , both Charlotte and Dahlonega were in areas lacking men with technical training ; accordingly trained personnel would have to be sent from Philadelphia . New buildings were to be constructed . In August 1837 , Mint Director Patterson received word of problems at both sites , including a partial collapse of the Dahlonega building . He wrote to Treasury Secretary Levi Woodbury , proposing " to send , to both the Gold mints , a confidential & skillful person , who may ... give instructions as to correcting the errors , that have been committed ... I know of no one competent to this task , except our Melter & Refiner , Mr. Peale . " Woodbury agreed , informing Patterson , " you are authorized to send Mr. Peak . [sic] "

Peale , accompanied by his daughter Anna , arrived in Charlotte on September 23 , 1837 . He found that necessary equipment had not yet arrived , and without it he could do little . Peale ordered a search made , and reported to Patterson that he was " in a trap " in " this fag end of creation " in a town where " the only active beings are the hogs " . Peale spent time visiting the mines on which the Charlotte Mint would rely for bullion . He proposed to Patterson that he continue to New Orleans after Dahlonega , to which the Mint Director replied that he would " exercise my veto upon your proposed long delay " and " your presence [in Philadelphia] cannot be dispensed with " . On

October 27 , much of the missing equipment arrived in Charlotte , and Peale was able to complete his mission there and leave for Dahlonega on November 10 . Following a difficult journey over primitive mountain roads , Franklin and Anna Peale arrived there on November 15 . After assessing the problems at the nascent Dahlonega Mint , Peale reported to Patterson ,

The workmanship of the Mint edifice is abominable , a letter might be three times filled with the details of errors and intentional mal construction , the first and greatest of which might be traced to Philada , in ordering a brick building in a country where there is no clay , the material employed for the brick making being the red soil of the Gold region , a decomposed granite ? put into brick by men who certainly deserve diplomas for Botching .

Nevertheless , Peale recommended that construction on the building continue , as he deemed Congress unlikely to pass another appropriation for construction . The Peales left Dahlonega at the end of November . On their way north , Anna was slightly injured when the train in which they were riding though Virginia derailed . Peale was back at his desk at the Philadelphia Mint on December 23 , 1837 .

Roger Burdette discusses the influence Peale had on the Mint in the 1830s :

In mid @-@ 1835 we find Philadelphia engineer / machinist Benjamin Franklin Peale discarding most of the complexity and tradition attendant to press design work of Thonnellier in Paris , Uhlhorn in Karlsruhe , and Boulton in London . Peale went to basic principles of equipment used at these great mints , and adapted it to the American model of efficiency . Equipment had to be robust and easy to repair . The vast distances of North America made it impossible to have mechanical experts at each mint , sitting , waiting for something to break ... The Mint Bureau of 1839 had to insist on similar ways of processing gold and silver [at the four mints] , even if these processes were not the most efficient or inexpensive . As with equipment , we can again see Franklin Peale borrowing from the Royal Mint and Paris Mint such production methods that worked well , and discarding those of questionable utility in the American mints .

= = = Chief Coiner = = =

= = = = Appointment and early years = = = =

When Adam Eckfeldt retired in 1839 , he recommended Peale as his successor . As the Senate was not sitting , Peale was given a recess appointment as Chief Coiner of the Philadelphia Mint by President Martin Van Buren on March 27 , 1839 . On January 23 , 1840 , after the Senate reconvened , Van Buren nominated Peale ; the Senate gave its approval on February 17 . Despite his retirement , Eckfeldt continued to come to the mint every day until shortly before his death in February 1852 , performing the function of Chief Coiner and leaving Peale with time on his hands .

Soon after his appointment , Peale began to engage in a private business on the Mint 's premises . He did this by designing , striking and selling medals for private commission , using government property and labor , and the Philadelphia Mint 's facilities . Peale 's enterprise was very profitable , as his expenses were minimal . This activity took place with the knowledge of the other officers of the Philadelphia Mint , most of whom were Peale 's friends and relatives . Clients included corporations as well as one couple celebrating a 50th wedding anniversary . According to Robert E. Wright in his history of Philadelphia as an early financial center , the legality of Peale 's business was unclear , but " the uncertainty of the situation made it almost inevitable that someone would make a stink on [Philadelphia 's] Chestnut Street . "

This activity has been variously characterized by numismatic writers . According to coin dealer and numismatic author Q. David Bowers , " Peale started to abuse his position and privileges , in effect stealing services from the government " . Burdette notes , " Overall , it appears that Peale used mint equipment and employees to make medals as instructed by Congress and the mint director , and to produce copies from private and official dies for sale to anyone who was interested . In the case of private sales , Peale seems to have used government metal , then reimbursed the bullion accounts when he collected for the medal . Profits were not accounted for in mint ledgers and it is unknown

how much went to Peale , others at the mint or into the mint 's Cabinet of Coins . The total amount was probably not large . "

After scalemaker Saxton left the Mint Service in 1844 , much of the work of maintaining and modifying the sensitive balances for which Saxton was responsible fell to Peale . The Chief Coiner made a number of improvements to the scales , which he wrote up for an article in the Journal of The Franklin Institute in 1847 . These balances , sensitive to .0001 troy ounces (0 @. @ 00011 oz ; 0 @. @ 0031 g) , were protected by plate glass from air currents and dust .

= = = Conflict with Longacre = = =

In 1844 , Engraver Gobrecht died , and was replaced by James B. Longacre . The new incumbent had obtained his appointment through the influence of South Carolina Senator John C. Calhoun . He had no relationship to the families that dominated the Philadelphia Mint , such as the Pattersons and Eckfeldts , and the connection with the Southerner Calhoun was objectionable to Peale , Patterson , and their associates . They would have preferred no replacement for Gobrecht , with the New York engraver Charles Cushing White or others they knew and trusted brought in on contract as necessary . This would ensure Peale 's highly profitable medal business was not threatened . Additionally , Longacre had no training , prior to his appointment , in coin or medal design , being a successful plate engraver , and Lange states that the Mint officers were " understandably " prejudiced against him .

Peale sometimes worked on medals for the government , taking care to exclude Longacre from the process . During the Mexican @-@ American War , Congress voted a gold medal to Major General Zachary Taylor for his victories at Palo Alto and Resaca de la Palma . Peale engraved the design from a portrait by William Carl Brown and a model by John T. Battin . After Taylor became president , Peale designed his Indian Peace Medal ; Peale also engraved Indian Peace Medals for presidents John Tyler and James Polk , working from designs or models by other men . In 1846 , Peale designed and engraved the Coast Survey Medal (also called the George M. Bache medal) . Peale believed that all national commemorative medals , those authorized by Congress , should have their dies lodged at the Philadelphia Mint , and be struck there , and with Patterson 's support urged the issuance of medals for presidents for whom no Indian Peace Medal had been designed , such as John Adams and William Henry Harrison . This was done , but not in Peale 's time ? for example , the William Henry Harrison medal was designed by later Assistant and Chief Engraver George T. Morgan . These works , like Peale 's Indian Peace Medals , form part of the Mint 's Presidential series , which continues to the present day .

Peale 's improvements had made it possible for dies to be reproduced mechanically , relieving the Mint 's Engraver of much of his routine duties . In the absence of a need for new designs or denominations , Longacre had little to do but add the dates to dies . Some of these insertions were blundered , and modern @-@ day numismatic scholars , such as R. W. Julian , have wondered if , as Peale and those who worked under him also sometimes inserted dates into dies , these mistakes were done intentionally in an attempt to bring discredit on Longacre . Nevertheless , Longacre 's first few years at the Philadelphia Mint passed without serious conflict with Peale . All this changed in 1849 , when Congress authorized a gold dollar and a double eagle (\$ 20 piece) . This made Longacre the center of attention at the mint , as he would be responsible for producing the new designs and dies . It also brought him into direct conflict with Peale : the Engraver would need to use the Contamin lathe , which was necessary to Peale 's medal business . Peale sought to sabotage Longacre 's attempts , with the goal of having him dismissed , and such work contracted for outside the government , allowing the medal business to continue undisturbed . In this , Peale had the support of Director Patterson .

As Longacre worked to complete the two new coins , he had to deal with interference from Peale . In early 1849 , according to a letter written by Longacre the following year , the Engraver was approached by a member of the Mint staff , warning him that another officer (plainly Peale) sought to have the engraving work done outside the Mint , making Longacre redundant . Longacre 's response to the information was to spend much of March 1849 preparing the dies for the gold dollar

, at some cost to his health , as he later related . Longacre proceeded with work on the double eagle through late 1849 , and described the obstacles set in his path by Peale :

The plan of operation selected for me was to have an electrotype mould made from my model , in copper , to serve as a pattern for a cast in iron . The operations of the galvanic battery for this purpose were conducted in the apartments of the chief coiner . The galvanic process failed , my model was destroyed in the operation . I had , however , taken the precaution to make a cast in plaster ... From this cast , as the only alternative , I procured [sic] a metallic one which , however , was not perfect ; but I thought I should be able to correct the imperfections in the engraving of the die ... this was a laborious task , but seasonably completed , entirely by my own hand . The die then had to be hardened in the coining department ; it unluckily split in the process .

According to numismatic historian Don Taxay , " under the circumstances , Peale 's adoption of a process not normally used at the Mint , together with its catastrophic failure , seems more than coincidental . " When Longacre completed the double eagle dies , they were rejected by Peale , who stated that the design was engraved too deeply to fully impress the coin , and the pieces would not stack properly . Taxay , however , noted that the one surviving 1849 double eagle displays no such problems , and by appearance would be level in a stack . Peale complained to Patterson , who wrote to Treasury Secretary William M. Meredith asking for Longacre 's removal on December 25 , 1849 , on the ground he could not make proper dies . Meredith was apparently willing to have Longacre fired , but relented after the Engraver journeyed to Washington and met with him personally .

Beginning in 1849 , there were calls for a silver three @-@ cent piece , and pattern coins were struck at the Philadelphia Mint . Longacre 's design featured a shield within a six @-@ pointed star on one side . Peale offered a competing design , showing a Liberty cap , very similar to one Gobrecht had made in 1836 when a gold dollar had been proposed . Patterson preferred Peale 's design , but reluctantly endorsed Longacre 's , since it was in lower relief and could be struck more easily , and Treasury Secretary Thomas Corwin approved the Engraver 's work . The three @-@ cent piece went into circulation in 1851 .

In 1850 , with the Mint faced with a vast increase in gold deposits due to the California Gold Rush , Peale suggested that the Mint hire women to supplement the staff assigned to weigh and adjust gold planchets , or coin blanks , describing the work as " being entirely suited to their capacity " . The Mint did hire 40 women , who were (as of 1860) paid \$ 1 @.@ 10 per ten @-@ hour day , a sum considered generous . The Mint 's hiring of women was the first time the American government had employed women to fill specific jobs at regular wages .

In 1851 , Peale designed a new steam engine for the Philadelphia Mint , using a " steeple " design without exterior pipes . Although designed to generate 100 horsepower , wear soon reduced its capacity . American journals of engineering mentioned Peale 's latest work without comment ; British journals pointed out the defects and suggested that time had passed Peale by .

= = = = Downfall = = = =

Not all of Peale 's innovations were successful . He caused the Mint to purchase a large lathe for turning heavy metal rolls , which cost the government at least \$ 2 @,@ 000 and that Peale conceded had never worked and likely never would . He bought from his nephew , George Sellers , a set of molds for casting ingots and accompanying equipment , which proved unusable as they were not adapted to the Mint 's machinery . A drawbench made by Peale at the cost of at least \$ 1 @,@ 500 proved dangerous as the piston would drive with tremendous force against the end of its cylinder , causing a concussion and endangering those nearby . " Peale 's machine gun " was put aside by Mint staff as useless soon after its introduction . An 1853 attempt by Peale to convert the Philadelphia Mint 's wood @-@ burning annealing furnaces to use anthracite coal destroyed the furnaces , cost the government several thousand dollars , and led to Peale being ordered to undertake no more such projects . One invention that worked well was the " noisy sofa " ? sitting on it set off a trumpet blast . Constructed at the cost of about \$ 200 in government funds , it graced in turn the offices of Peale and Patterson .

These activities were financed through a provision of the Mint Act of 1837 that Patterson interpreted to allow the Mint to decline to give credit for small amounts of silver in gold deposits . This practice was twice approved by the then @-@ Secretary of the Treasury , in 1837 and 1849 . Small deposits of bullion were rounded down to be divisible by \$ 5 , with the surplus kept and used at the discretion of Mint officials . This , and similar practices whereby officials financed activities without an appropriation from Congress , were brought to an end after Peale proposed a \$ 20 @,@ 800 renovation of part of the Philadelphia Mint building in 1850 , and ran over budget by \$ 12 @,@ 000 . To pay this , Patterson used the profits , or seignorage , projected to be made from the new three @-@ cent pieces . When Congress heard of this , it passed the Act of February 21 , 1853 , requiring the Mint Director to regularly pay the seignorage into the Treasury .

One flaw in Peale 's medal business was his need to acquire gold and silver bullion within the Mint . This was paid for once the medal sold , and there was no problem while the Melter and Refiner of the Philadelphia Mint was Peale 's friend Jonas R. McClintock . But in 1846 , McClintock resigned and was replaced by Richard Sears McCulloh . At first , McCulloh gave Peale whatever gold and silver he needed without question , but came to object to doing so . Peale and McCulloh made a deal whereby the struck medal would remain in McCulloh 's custody until Peale had replaced the bullion , but Peale objected that the procedure was " inconvenient " . Beginning in August 1849 , McCulloh refused further requests from Peale for bullion , and Peale instead gained it from the Mint 's Treasurer .

Peale did his best to make McCulloh 's position difficult , such as refusing to accept bullion for coins except from McCulloh personally . In 1850 , McCulloh resigned . In November of that year , the former official published an article in the New York Evening Express alleging that those employed at the Mint had transformed " it into a workshop for their gain " . President Millard Fillmore sent the article to Secretary of the Treasury Corwin for an explanation ; Corwin forwarded it to Patterson , who confirmed that Peale was running a private medal business on the premises , but stated that there was no interference with the performance of Peale 's duties as Chief Coiner . Taxay noted that this was only true because the retired Adam Eckfeldt was still performing the duties of that office without salary , and this ceased in February 1852 when Eckfeldt died after a brief illness . The death of his predecessor caused Peale to write " a frantic letter " to the new Mint Director (Patterson had retired) , George N. Eckert , stating that he urgently needed an assistant .

McCulloh 's campaign had continued ; on August 1 , 1851 , he wrote directly to President Fillmore , accusing Peale of " lavish and unnecessary expenditure of public money " , and stating that Peale was unfit to hold office . He alleged that Mint workmen had been detailed to make repairs to Peale 's house while being paid for their time by the government . One man subsequently stated that he and another Mint employee spent two days working on Peale 's house ; another alleged that whenever the archery club of which Peale was a member met , Mint employees were sent to help with the arrangements . McCulloh also accused Peale of having Mint workers make furniture for his use when they would otherwise be idle . Corwin ordered an investigation , which dragged on for the next year and a half . Peale entered a statement in April 1852 , alleging that McCulloh was accusing the Director and the accounting staff of " gross neglect of duty " , and that McCulloh 's attack on Peale 's medal business was a slight on " the late venerable and much loved Adam Eckfeldt " , whose precedent Peale stated he was following . Peale wrote in his defense , " I boldly claim to have done for the Mint and my country , much that will entitle me gratitude . "

Eckert was friendly towards Peale , and worked to discredit the accusations . McCulloh urged Corwin to review the correspondence himself , and the Secretary agreed , but both Corwin and Eckert left office in early 1853 with no action having been taken against Peale . McCulloh that summer published a pamphlet , The Proceedings of the Late Director of the Mint in Relation to the Official Misconduct of Franklin Peale Esq . , Chief Coiner and Other Abuses in the Mint , printing much of the correspondence . This tract was reviewed by the new Mint Director , James Ross Snowden ; he and the new Treasury Secretary , James Guthrie , decided to forbid private enterprises on the Mint 's property . In August 1854 , Guthrie issued regulations banning the practice

Taxay recorded that the new policy " seem [s] to have been ill @-@ received in certain quarters of

the Mint " but that as not all records are extant , the specifics are uncertain . According to Taxay ,

It is clear , however , that Snowden wrote to Guthrie preferring charges against Peale , and that Guthrie in turn wrote to the President [Franklin Pierce] who , having no one else to write to , dismissed Peale at once ... Peale left the Mint on December 2 , [1854 ,] never again to return .

The reasons for Peale 's firing were not publicly announced , and his friends and allies , such as William DuBois (Adam Eckfeldt 's son @-@ in @-@ law and the Assistant Assayer (later Assayer) of the Philadelphia Mint) stated that it was so President Pierce could have the position to fill from the Democratic Party . Taxay noted that this explanation ignored the fact that Martin Van Buren , under whose administration Peale had been appointed Chief Coiner , was also a Democrat as president . Nevertheless , an 1873 Senate report on Peale 's request for compensation after being dismissed stated , " why such a valuable officer was displaced does not appear " .

= = Later years , death , and assessment = =

After his departure from the Philadelphia Mint , Peale initially retired from all employment . In 1864 , he returned to the private sector as president of the Hazelton Coal and Rail Road Company , in which he had long been involved , remaining in that position through 1867 . Civic organizations of which he was president included the Musical Fund Society of Pennsylvania and the Institution for Instruction to the Blind . He had been elected a manager of the latter organization in 1839 , served on many important committees , and was elected its president in 1863 , still holding the office at his death in 1870 . A member of the American Philosophical Society since 1833 , he served as one of its curators from 1838 to 1845 and from 1847 until 1870 . A longtime member of the Pennsylvania Academy of Fine Arts , which his father had helped to found , he served as one of its directors through much of his retirement . He was elected a member of the American Antiquarian Society in 1865 .

In his later years , Peale spent some of his autumns at the Delaware Water Gap north of Philadelphia , searching for Stone Age artifacts and amassing a major collection . Peale catalogued his finds and added narrative descriptions , bequeathing the collection to the American Philosophical Society . An adept archer , he helped found the United Bowmen club , members of whom carried his casket to his grave , at his instructions . He was also , at his death , president of the Skater 's Club . He was a lifelong skater , and developed a method for extracting a skater who broke through the ice that saved many lives .

Peale was among those consulted in 1870 by Treasury Secretary George Boutwell in preparing the legislation to reform the Mint that became the Coinage Act of 1873 . Peale advocated for the office of the Mint Director to be moved from Philadelphia to Washington ; this was enacted . He supported the abolition of the gold dollar and the three @-@ dollar piece , but these coins were not ended by Congress until 1890 . He denigrated recent coin issues (many designed by Longacre , who had died in 1869) , saying that their designs have , " hitherto been lamentably , if not disgracefully deficient " .

Peale married twice ; his first marriage to Eliza Greatrake , contracted in 1815 while he was still a minor , produced one daughter , Anna , who survived him . His second , childless , marriage was to Caroline Girard Haslam , a widow , and the niece of the wealthy Stephen Girard ; it lasted from 1839 to his death . He enjoyed the company of children , making toys by his own hand for them . Peale was in declining health in his final months , but was still able to continue his activities , and only a short illness preceded his death at his home at 1131 Girard Street in Philadelphia , on May 5 , 1870 . His final words were , " If this is death , it is as I wished , perfect peace , perfect comfort , perfect joy . "

Mint Director Henry Linderman stated in 1873 of Peale , " Although Mr. Peale undoubtedly received the cooperation of [Patterson and others] , the inventions and improvements were peculiarly Mr. Peale 's . I have no doubt whatever on that point . They were of almost incalculable value to the public service . " George G. Evans , in his late 19th century history of the Mint , described Peale , " his mildness , integrity , gentlemanly bearing and high moral and mental culture constituted him a model officer " . Walter Breen deemed Peale , " brilliant but unscrupulous " . Burdette writes of Peale

and his effect on the Mint , " during the generation from about 1830 to 1855 , the greatest influence to operations and production came from one man : Benjamin Franklin Peale . He was the consummate ' machinist ' of the day at a time when this term encompassed imaginative design , planning , construction and improvement of working processes ... While he had the complete support of mint directors Moore and Patterson , he was also held in high esteem by the common mint workers and Philadelphia 's scientific elite . Results of many of his ideas lasted a century or more , until growth in population made nineteenth century engineering insufficient for modern coinage needs . " According to Bowers , " today Peale is one of several Mint people who can be viewed from many different angles , each perspective sometimes leading certain writers to draw widely differing conclusions . "

After his dismissal , Peale petitioned Congress for \$ 30 @,@ 000 as payment for improvements and inventions he had made for the government . The Senate twice , in 1858 and 1860 , passed legislation to pay Peale \$ 10 @,@ 000 , but the House of Representatives declined to vote on it . In 1870 , it was introduced in the Senate again , but did not pass . Legislation to compensate Peale in the amount of \$ 10 @,@ 000 was enacted on March 3 , 1873 , after his death ? the act was , according to its title , in relief of Anna E. Peale , Franklin Peale 's daughter . The following month , Caroline Peale , Franklin 's widow , gave the Mint a marble bust of her late husband , " to be set upon a pedestal , in some position , where it may be open to the inspection of visitors and preserve his memory to future generations . " Taxay , writing in 1966 , stated that he had been unable to ascertain the bust 's whereabouts .