



El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 x 55 cm, front, visible light, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



TECHNICAL EXAMINATION REPORT

St. Matthew

about 1610–1614

El Greco (Doménikos Theotokópoulos) and Workshop

Greek, active in Spain, 1541–1614

oil on canvas

28-1/4 × 21-5/8 in.

(71.8 × 55 cm)

The Clowes Collection

2007.53

Overview

Accession number: 2007.53

Artist: El Greco (Doménikos Theotokópoulos) and Workshop

Title: *St. Matthew*

Materials: Oil (untested) on canvas

Date of creation: About 1610–1614

Previous number/accession number: CI0035

Dimensions: 71.8 × 55 cm

Conservator/examiner: [Fiona Beckett](#) with contributions from [Roxane Sperber](#)

Examination completed: 2016, revised 2019

DISTINGUISHING MARKS

Front:

Item 1. Painted initials “δθ” in background above proper left shoulder (tech. fig. 1).



Technical Figure 1: Photomicrograph of painted initials. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Back:

None

SUMMARY OF TREATMENT HISTORY

Letters between G.H.A. Clowes and the Newhouse Galleries, as well as the Fernando Álvarez de Sotomayor, the director of the Prado, reveal information about the conservation history of the painting before the works arrived at the IMA on long term loan in 1971. A letter from Álvarez de Sotomayor to Clowes states that the paintings were brought to the Prado where they were cleaned and relined before 1946.¹

The painting was treated by Edward O. Korany in June 1952 for B.M. Newhouse before being purchased by Dr. Clowes. The treatment included cleaning, as referenced in a letter from Korany to Newhouse dated 20 December 1952.² In a letter from Newhouse to Clowes, Newhouse states, “Despite the fact that these pictures require nothing but cleaning, it must be done very carefully and slowly and the man who is doing it can’t be hurried. If one attempts to hurry him it makes it all the worse and nothing is accomplished.” Newhouse offered to bring the paintings to Woods Hole for Clowes to see while he was visiting Easterly.³ It appears that he did just this because, in a letter from the following September, Newhouse tells Clowes that the paintings were sent back for a final varnishing due to blooming, “which generally happens if you take them away before the final coat of varnish has been applied.”⁴ By October, Clyde Newhouse wrote to Clowes to confirm that the treatment on the El Grecos was finished and that the varnish looked magnificent.⁵

Documentation indicates a series of condition assessments and treatments were carried out on the collection at about the time the works were moved from the Clowes residence to the IMA in 1971. A condition report by Paul Spheeris in October of that year, likely carried out before the paintings were relocated, described the painting as having a chipped frame but that the painting was “O.K.” He recommended cleaning the work for the sake of its appearance but not for the safety of the painting.⁶ A second condition assessment was carried out upon arrival of the paintings at the IMA. This assessment describes the work as being in good condition and no work was deemed necessary.⁷

In 1996, a memorandum summarizing treatment and examination of the Clowes Collection from the time it entered the collection suggests that a major treatment was carried out on the painting in 1979. This was followed by a further treatment in 1980 and a technical study in 1982.²

The painting was previously examined and documented in the Clowes Collection annual survey from 2011 to 2018.

CURRENT CONDITION SUMMARY

Both aesthetically and structurally, the painting is in good condition and suitable for display.

METHODS OF EXAMINATION, IMAGING, AND ANALYSIS

Examination/Imaging	Analysis (no sample required)	Analysis (sample required)
<input checked="" type="checkbox"/> Unaided eye	<input type="checkbox"/> Dendrochronology	<input type="checkbox"/> Microchemical analysis
<input checked="" type="checkbox"/> Optical microscopy	<input type="checkbox"/> Wood identification	<input type="checkbox"/> Fiber ID
<input checked="" type="checkbox"/> Incident light	<input type="checkbox"/> Microchemical analysis	<input type="checkbox"/> Cross-section sampling
<input checked="" type="checkbox"/> Raking light	<input checked="" type="checkbox"/> Thread count analysis	<input type="checkbox"/> Dispersed pigment sample
<input type="checkbox"/> Reflected/specular light	<input checked="" type="checkbox"/> X-ray fluorescence spectroscopy (XRF)	<input type="checkbox"/> Fourier-transform infrared spectroscopy (FTIR)
<input type="checkbox"/> Transmitted light	<input type="checkbox"/> Macro X-ray fluorescence scanning (MA-XRF)	<input type="checkbox"/> Raman microspectroscopy
<input checked="" type="checkbox"/> Ultraviolet-induced visible fluorescence (UV)		
<input checked="" type="checkbox"/> Infrared reflectography (IRR)		<input type="checkbox"/> Gas chromatography–mass spectrometry (GC-MS)
<input type="checkbox"/> Infrared transmittography (IRT)		<input type="checkbox"/> Scanning electron microscope -energy dispersive X-ray spectroscopy (SEM-EDS)
<input type="checkbox"/> Infrared luminescence		<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> X-radiography		

Technical Examination

DESCRIPTION OF SUPPORT

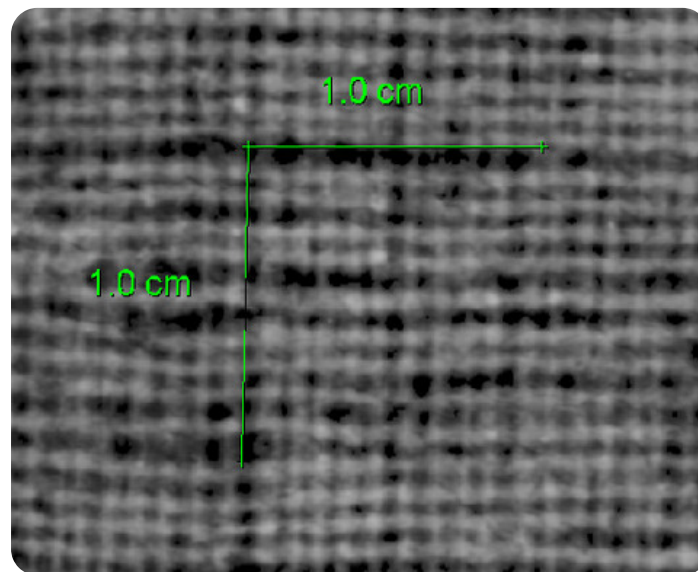
Analyzed Observed



Technical Figure 2: X-radiograph. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Material (fabric, wood, metal, dendrochronology results, fiber ID information, etc.):

The canvas is plain weave, coarsely woven, and incongruous. The original canvas is visible along the edges. The thread count of the original canvas as determined from the X-radiograph is 10×11 threads/cm, similar to the other El Greco paintings of saints in the Clowes Collection (tech. fig. 3).



Technical Figure 3: X-radiograph of canvas weave and thread count (10×11 threads/cm). El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Characteristics of Construction / Fabrication (cussing, beveled edges of panels, seams, joins, battens):

The original canvas was trimmed at the edges, likely when the painting was lined, as was typical. No original tacking margins are present. A stiff glue-paste lining, performed at the Prado before 1946, was applied to the canvas, and brown paper tape is present along all edges. This does not appear to have been the first time the

painting was lined as it was referred to as a "relining."² There is some cusping visible along the top and bottom edges, indicating that the portrait is likely close to its original size (tech. fig. 2).

Thickness (for panels or boards):

N/A

Production/Dealer's Marks:

None

Attachment to Auxiliary Support:

In addition to tacks, the lining canvas was glued to the stretcher. Brown paper tape is present along all edges.

Auxiliary Support:

Original Not original Not able to discern None

The auxiliary support is a relatively new five-member stretcher (one horizontal crossbar set in at 0.4 cm to prevent contact with the canvas), with six keys held in place with finishing nails, and half laps at the joins. The edges of the stretcher members are rounded.

CONDITION OF SUPPORT

The auxiliary support is in good condition with all keys present and no signs of any major damage. Slight general wear is present from handling.

The original canvas support appears to be in stable condition. The adhesion between the canvas and lining canvas is intact. Some minor losses can be seen in the X-radiograph (tech. fig. 2). There is also a weave interference pattern due to the application technique of the lining canvas.

DESCRIPTION OF GROUND

Analyzed Observed

Materials/Binding Medium:

The ground is likely composed of gypsum and lead white.

Color:

The color of the ground appears to be off-white, as seen in some of the cracks, with a reddish-brown imprimatura layer on top. It is possible that the imprimatura was composed of palette scrapings.¹⁰ The imprimatura layer provides the undertones to the paint layer and was deliberately left visible in the neck, edges of the blue robe, and in the flesh tones.

Application:

The application is difficult to determine with certainty, but it appears to have been scraped over the surface of the canvas.

Thickness:

Appears to be thinly applied, as the canvas nubs remain visible

Sizing:

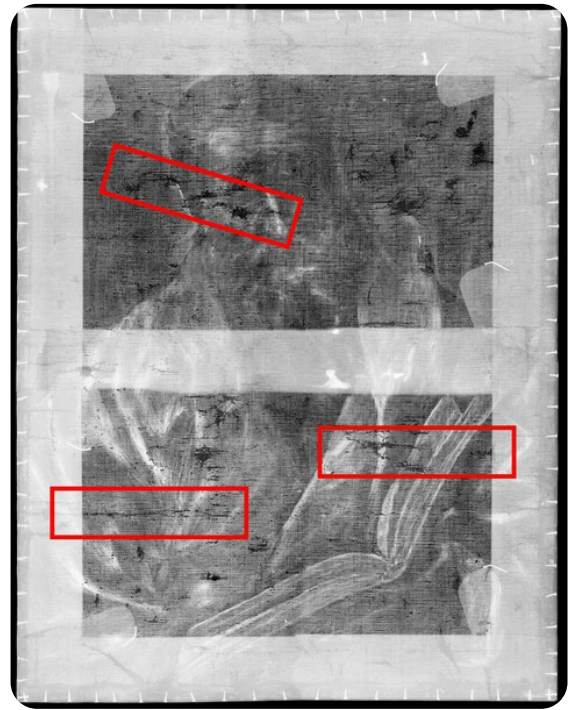
The canvas would likely have been sized prior to the application of the ground and paint layers.

Character and Appearance (Does texture of support remain detectable / prominent?):

The canvas texture remains prominent through the ground and paint layers, and some weave interference is imparted on the paint from the lining canvas.

CONDITION OF GROUND

The ground and imprimatura layers appear to be in good condition. There are some small losses throughout, as well as a few larger losses that were filled and retouched during a previous conservation campaign. The large losses include several horizontal losses in straight lines, consistent with a canvas that was once folded or rolled. This is particularly noticeable in the X-radiograph (tech. fig. 4).



Technical Figure 4: X-radiograph (left) with red rectangles indicating the horizontal losses (right), likely from folding. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

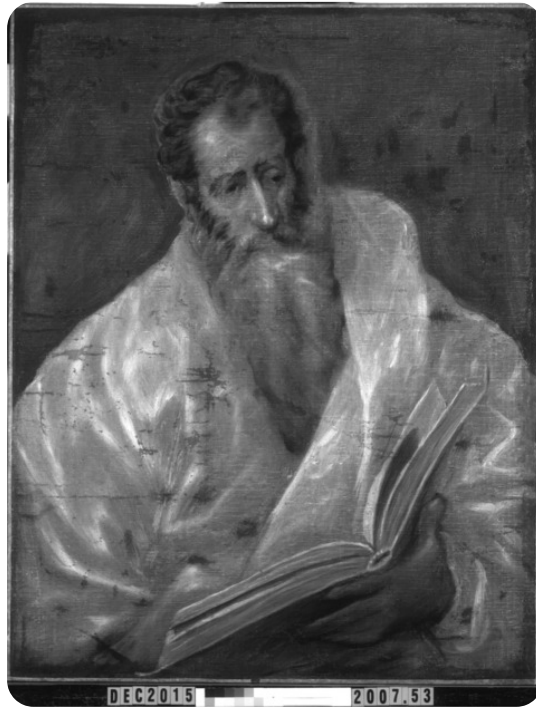
DESCRIPTION OF COMPOSITION PLANNING

Methods of Analysis:

- Surface observation (unaided or with magnification)
- Infrared reflectography (IRR)
- X-radiography

Analysis Parameters:

X-radiography equipment	GE Inspection Technologies Type: ERESKO 200MFR 3.1, Tube S/N: MIR 201E 58-2812, EN 12543: 1.0mm, Filter: 0.8mm Be + 2mm Al
KV:	20
mA:	3
Exposure time (s)	90
Distance from X-ray tube:	36"
IRR equipment and wavelength	Opus Instruments Osiris AI infrared camera with InGaAs array detector operating at a wavelength of 0.9–1.7 μ m.



Technical Figure 5: Infrared reflectogram. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Medium/Technique:

Unlike *St. Luke* (2008.273), where sketchy underpainting is visible in the final version of the painting, little underpainting preparatory drawing is visible in the final version of this work or observed through infrared reflectography (tech. fig. 5). It is likely that a similar underpainting, using dark, sketchy brushwork, was used to establish the composition, but the higher level of finish has obscured this stage of the painting process. Similar sketchy brushwork, however, is visible in the upper paint layers, as a final outlining.

Pentimenti:

None apparent

DESCRIPTION OF PAINT

Analyzed Observed

Application and Technique:

The paint has been applied using the same process as on the *St. Simon* (2008.274) and *St. Luke* (2008.273). However, this work exhibits a higher level of finish, with more care given to the crisp overlapping of forms and blending of edges. The background appears to have been applied first, leaving a rough reserve for the figure. The areas of color were painted next in loose, sweeping strokes of bright blue and red. Three distinct shades of each color were applied to create midtones, highlights, and shadows. In the areas of drapery, pure white was used for the brightest highlights. The skin and hair were painted after the drapery in similarly loose, confident strokes. Unlike on the *St. Simon*, and to a lesser degree on the *St. Luke*, there is little gap between areas of the composition. Rather, the drapery and skin overlap to conceal the reddish imprimatura. The imprimatura does function to deepen the areas of shadow, but it is not left directly exposed. Final outlining in black is present around the hands, drapery, and features of the saint and is also used to deepen the shadows. Light outlining around the head creates the appearance of a blended aura and softens the harsh lines of the reserve. This higher level of finish may suggest a greater attention from the master in this painting when compared to the *St. Simon* and *St. Luke*.

When viewed under the microscope, the paint surface and brushwork indicate a wet-in-wet technique. The paint was applied in sweeping brushstrokes that were swiftly but well executed. Overall, the paint layer is thin. There are no intricate details, but rather a rustic appearance, similar to the other El Greco paintings of saints at the IMA.

Painting Tools:

Medium-size brushes

Binding Media:

Oil (untested)

Color Palette:

The painting uses a limited color palette of blue, red, grays, and beige with a brown background. XRF analysis identified significant peaks for lead, iron, magnesium, and copper. This suggests the artist used a color palette rich in lead white, iron oxide earth pigments (including umber), and azurite (and/or another copper-containing green pigment). Passages of the red robe were not found to contain mercury, suggesting that vermilion was not the red pigment used in these areas. Iron was confirmed, suggesting the possible use of red earth, such as hematite, or the use of an organic red lake pigment that could not be confirmed using XRF. The bright passages of blue appear to have been painted primarily with mixtures of lead white and azurite. A strong peak for manganese was identified in the background, suggesting umber pigments were used in greater quantities in this area than in other areas of brown (tech. fig. 6, sample 5). A carbon black pigment is likely also present on the palette, but this could not be confirmed using XRF. This palette is consistent with that available during El Greco's lifetime.

XRF Analysis:



Technical Figure 6: XRF sample locations. El Greco (Doménikos Theotokópoulos) and Workshop. *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Sample	Location	Elements	Possible Pigments
1	Blue in garment	Major: Pb, Cu Minor: Fe, Ca Trace: K, Ti	Azurite, lead white, iron oxide (earth pigments), calcium (from ground layer).
2	Skin tone forehead	Major: Pb Minor: Cu, Fe, Ca Trace: Mn, Ti	Lead white, iron oxide (earth pigments including umber), calcium (from ground layer), copper-containing green and/or blue pigment.
3	Red in garment	Major: Pb, Fe Minor: Cu, Ca, Cd, Ba Trace: K, Mn	Lead white, iron oxide (earth pigments including umber), copper-containing green and/or blue pigment, calcium (from ground layer), cadmium red (likely from retouching), possible presence of a red lake pigment (cannot be confirmed using XRF).
4	Gray in hair	Major: Pb Minor: Cu, Fe, Ca Trace: Mn	Lead white, copper-containing green and/or blue pigment, iron oxide (earth pigments), calcium (from ground layer), likely carbon black (cannot be confirmed using XRF).
5	Brown-black in background	Major: Pb Minor: Cu, Fe, Ca Trace: K, Mn, Ti	Lead white, copper-containing green and/or blue pigment, iron oxide (earth pigments including umber), calcium (from ground layer), likely carbon black (cannot be confirmed using XRF).

Table 1: Results of X-ray fluorescence analysis conducted with a Bruker Artax microfocus XRF with rhodium tube, silicon-drift detector, and polycapillary focusing lens (~100µm spot).

*Major, minor, trace quantities are based on XRF signal strength not quantitative analysis.

Surface Appearance:

The brushwork has some impasto with definitive ridges and texture, worn in places during conservation campaigns or flattened from the lining process. Canvas nubs are visible through the paint layer.

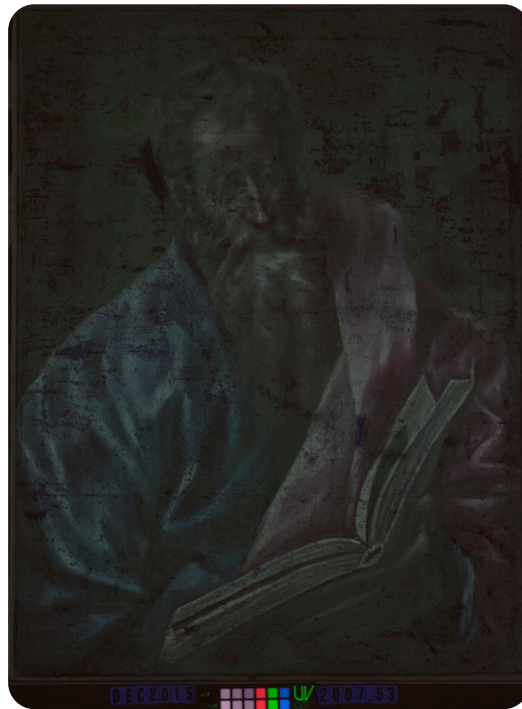
CONDITION OF PAINT

A micro-cracking pattern from natural aging extends over the entire painting. Small point losses are scattered throughout, as well as a couple of larger losses. The pattern of these losses seems to be consistent with the painting being rolled at one point in its past. These were subsequently retouched during conservation campaigns. Wear is visible around the perimeter of the painting where the paint is in contact with the frame. Lead soaps are scattered throughout the painting and can be easily discerned under the microscope. Due to the likely use of lake pigments in the reds, it is possible that the reds have faded slightly over time and that the robes may have been more vibrant originally.

DESCRIPTION OF VARNISH/SURFACE COATING

Analyzed Observed Documented

Type of Varnish	Application
<input checked="" type="checkbox"/> Natural resin	<input checked="" type="checkbox"/> Spray applied
<input checked="" type="checkbox"/> Synthetic resin/other	<input type="checkbox"/> Brush applied
<input checked="" type="checkbox"/> Multiple layers observed	<input type="checkbox"/> Undetermined
<input type="checkbox"/> No coating detected	



Technical Figure 7: Painting under ultraviolet-induced visible fluorescence showing natural resin varnish and inpainting. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Imaging with ultraviolet-induced visible fluorescence reveals the characteristic greenish fluorescence of an aged natural resin varnish. This is visible over the entire surface of the painting (tech. fig. 7). The varnish appears to have pooled in some of the low points of the paint surface. The painting was also spray varnished with a synthetic coating during a later conservation campaign.

CONDITION OF VARNISH/SURFACE COATING

The natural resin varnish is slightly discolored and yellowed, but this is not overly distracting. A few small scuffs and minor losses are visible, particularly around the perimeter where the painting is in contact with the frame. The varnish is otherwise intact. It also adequately saturates the surface of the painting and has a semigloss sheen.

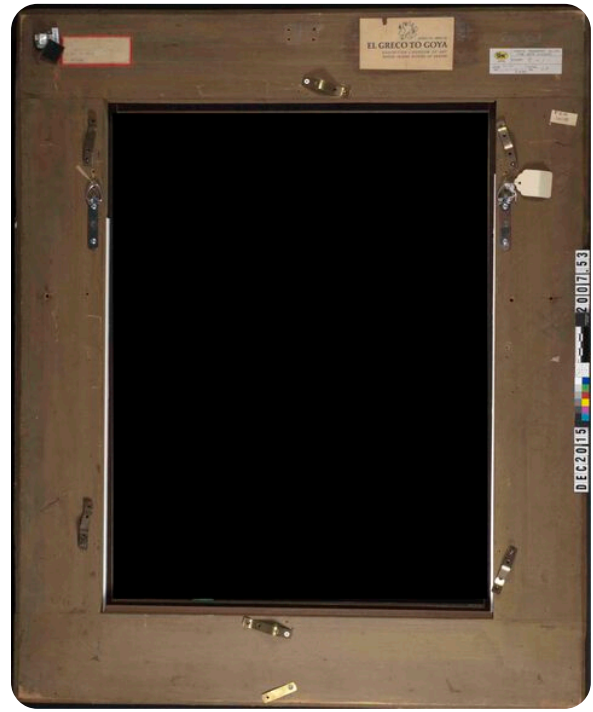
Retouching is present in several areas of the painting to conceal previous damages. The retouching is well matched.

DESCRIPTION OF FRAME

- Original/first frame
- Period frame
- Authenticity cannot be determined at this time/ further art historical research necessary
- Reproduction frame (fabricated in the style of)
- Replica frame (copy of an existing period frame)
- Modern frame



Technical Figure 8: Frame, front. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



Technical Figure 9: Frame, back. El Greco (Doménikos Theotokópoulos) and Workshop, *St. Matthew*, about 1610–1614, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.

Frame Dimensions:

Outside frame dimensions: 98 × 81 × 8.5 cm

Sight size: 53.5 × 70 cm

Distinguishing Marks:

Item 2: Frame, off-white label with double red border, back, top left: "The Clowes Fund Incorporated Fine Arts Department 3711 Spring Hollow Road Indianapolis, INDIANA, USA No.23 El Greco St. Matthew" (tech. fig. 9).

Item 3: Frame, off-white label, back, top right: "April 20–May 26 El Greco to Goya Exhibition, Museum of Art Rhode Island School of Design" (tech. fig. 9).

Item 4: Frame, off-white label with cat design, back, top right: "Yamato Transport Co. LTD FINE ARTS DIVISION JAPAN EXHIBIT_ CASE NO_ CATAL NO 48" (tech. fig. 9). Item 5: Frame, off-white label, back, top right: "T.R. # 10035" (tech. fig. 9).

Item 6: Frame, black chalk or grease pencil, back, right member: "060_xxx" (tech. fig. 9).

Description of Molding/Profile:

The carved wooden frame has a painted and gilded surface (tech. fig. 8). The frame is very similar to the one on *St. Luke* (2008.273) in the Clowes Collection. Timothy Newbery described the stencil design on the painted black portions of this frame as having "a strapwork beaded reel reminiscent of pomegranate wall covering decorations."

CONDITION OF FRAME

The frame is in good structural and aesthetic condition.

Notes

1. Letter from Fernando Álvarez de Sotomayor to G.H.A. Clowes, 21 November 1952, Correspondence Files, Clowes Registration Archive, Indianapolis Museum of Art at Newfields.
2. Letter from Edward O. Korany to B.M. Newhouse, 20 December 1952, Conservation Department Files, Indianapolis Museum of Art at Newfields.
3. Letter from Bert Newhouse to G.H.A. Clowes, 9 June 1952, Correspondence Files, Clowes Registration Archive, Indianapolis Museum of Art at Newfields.
4. Letter from Bert Newhouse to G.H.A. Clowes, 16 September 1952, Correspondence Files, Clowes Registration Archive, Indianapolis Museum of Art at Newfields.
5. Letter from Clyde Newhouse to G.H.A. Clowes, 25 October 1952, Correspondence Files, Clowes Registration Archive, Indianapolis Museum of Art at Newfields.
6. Paul A.J. Spheeris, "Conservation Report on the Condition of the Clowes Collection," 25 October 1971, Conservation Department Files, Indianapolis Museum of Art at Newfields.
7. Martin Radecki, Clowes Collection condition assessment, undated (after October 1971), Conservation Department Files, Indianapolis Museum of Art at Newfields.
8. Memorandum from Martin Radecki to Bret Waller, "Conservation Work on Clowes Fund Collection," 16 February 1996, Conservation Department Files, Indianapolis Museum of Art at Newfields.

9. Letter from Fernando Álvarez de Sotomayor to G.H.A. Clowes, 21 November 1952, Correspondence Files, Clowes Registration Archive, Indianapolis Museum of Art at Newfields.

10. "El Greco From Italy to Toledo: Technical Study of the Works in The Thyssen-Bornemisza Collection," Museo Thyssen-Bornemisza website (2014), <http://www2.museothyssen.org/microsites/exposiciones/2014/el-greco/evolucion-tecnica-pictorica-1.php?lang=en>.

Additional Images



El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 × 55 cm, front, visible light, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



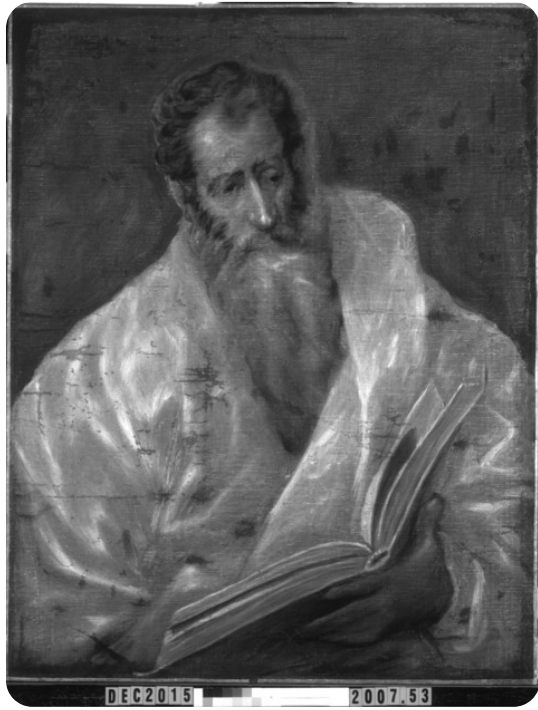
El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 × 55 cm, back, visible light, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 × 55 cm, front, raking light, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 × 55 cm, front, ultraviolet visible fluorescence, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



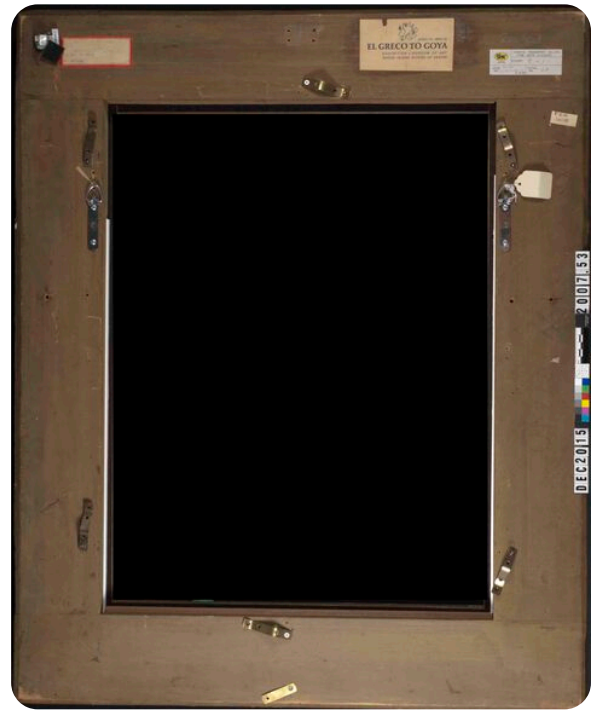
El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 × 55 cm, front, infrared reflectography, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



El Greco (Doménikos Theotokópoulos) and Workshop (Greek, active in Spain, 1541–1614), *St. Matthew*, about 1610–1614, oil on canvas, 71.8 × 55 cm, X-radiography, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



Frame for *St. Matthew*, 98 × 81 cm, front, visible light, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.



Frame for *St. Matthew*, 98 × 81 cm, back, visible light, Indianapolis Museum of Art at Newfields, The Clowes Collection, 2007.53.