

Conceptual Artistic Metal Forging: Technologies, History, and Artistic Value in Contemporary Art

Sergey Denisiuk*

Vitebsk State University

ORCID: [0009-0002-3542-9504](https://orcid.org/0009-0002-3542-9504)

* Corresponding author: Sergey Denisiuk, kuzznets_gs@mail.ru

OPEN ACCESS

Citation:

Sergey Denisiuk (2026). Conceptual Artistic Metal Forging: Technologies, History, and Artistic Value in Contemporary Art. *Am. Impact Rev.* [10.66308/air.e2026085](https://doi.org/10.66308/air.e2026085)

Received: January 28, 2026

Accepted: February 25, 2026

Published: February 28, 2026

DOI:

[10.66308/air.e2026085](https://doi.org/10.66308/air.e2026085)

ISSN: 3071-124X

Copyright:

© 2026 Sergey Denisiuk. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0).

Abstract

This article examines artistic metal forging as a materially oriented practice situated at the intersection of traditional craft, design, material culture, and contemporary art. The relevance of the study is determined by the expanding functions of forged metal in contemporary artistic practice: from the production of functional and decorative objects to the creation of authorial works, sculptural compositions, and conceptually oriented forms. The main research problem concerns the conditions under which forging technology ceases to function solely as a means of production and becomes a meaningful component of an artistic statement.

The aim of the study is to determine the role of material and forging technology in the formation of the artistic and conceptual content of a work. The research employs a qualitative, interdisciplinary, and interpretive approach combining art history, craft theory, and material culture studies. The primary method is a focused source analysis of scholarly publications, monographs, museum catalogues, exhibition materials, and institutionally documented contemporary artistic practices. An analytical model of “material - technology - form - artistic meaning” is proposed to examine the artwork as an interconnected material-technological system.

The findings demonstrate that the properties of metal, the nature of technological intervention, and traces of the production process may function as independent elements of artistic language. At the same time, technical complexity, manual labor, or surface decoration alone are insufficient to define a work as conceptual. Conceptual potential emerges when material, technology, form, and artistic purpose are substantively interconnected. The study concludes that contemporary artistic forging preserves historical technological heritage while expanding its significance within contemporary art, design, and sculpture.

Keywords: artistic forging; blacksmithing; craft; material culture; metal art; contemporary art; sculpture; materiality

1. Introduction

1.1 Historical and Artistic Context of Artistic Forging

Artistic processing of iron through forging represents a practice in which the functional, technological, and aesthetic characteristics of the material have historically developed in close interrelation. In the European tradition, wrought iron was used to produce architectural elements, railings, doors, interior objects, tools, and other objects, while simultaneously acquiring an independent decorative significance. The history of medieval decorative ironwork demonstrates that the technological possibilities of blacksmith production directly influenced the form, ornament, and structural solutions of objects [1; 2]. Thus, the artistic expressiveness of forging was never completely separated from the production process.

The perception of iron as both a structural and artistic material has persisted in museum practice. Collections of artistic ironwork demonstrate a wide range of objects in which functional purpose is combined with the visual organization of surfaces, rhythm of elements, plasticity, and material qualities [2]. In this context, forging may be considered not only a method of producing an object but also a technology that determines the potential artistic language of the material.

At the same time, the historical development of blacksmithing cannot be reduced exclusively to the European model. Studies of artistic and craft traditions among African blacksmiths demonstrate that working with iron may be connected with local systems of knowledge, the transmission of skills, social relations, and understandings of material [6]. In this context, blacksmith technology functions not simply as a set of operations but as a way of interacting with matter, tools, temperature, and the physical properties of metal.

For understanding the contemporary position of artistic forging, studies of craft as a particular form of material and artistic activity are essential. Glenn Adamson considers craft not merely as an applied or traditional field but as a way of organizing artistic thought through material, technique, manual labor, and the production of objects [3; 4]. Richard Sennett, in turn, associates craftsmanship with prolonged interaction between the individual, tools, and materials, emphasizing practical knowledge, repetition, adjustment, and accumulated experience [5].

Thus, the technological process in forging can be regarded as one of the components of artistic production. Metal is not a neutral material that can be completely subordinated to a predetermined design: its plasticity, temperature, capacity for deformation, surface characteristics, and response to treatment both restrict and expand the range of possible forms [7; 8]. The blacksmith must constantly reconcile artistic intention with the actual behavior of the material.

Contemporary artistic practice expands this historical relationship. The exhibition *FORGE*, presented by the Metal Museum in 2018, was organized around contemporary forged metal as an independent international artistic and design practice. The exhibition materials emphasize that contemporary artists work not only with traditional understandings of material, process, and function but also address broader cultural, environmental, and socio-political issues [10]. A similar tendency can be observed in the exhibition *Meta-Formation: New Connections in Contemporary Blacksmithing*, where contemporary blacksmithing is presented through a range extending from functional objects to sculptural forms and experimental approaches [12].

Contemporary forging therefore occupies an intermediate space between craft, design, and visual art. This circumstance requires clarification of how the technological process and material properties of metal participate in the creation of artistic meaning.

1.2 Research Problem, Question, and Aim

One of the problems in interpreting artistic forging is the tendency to evaluate it primarily according to external characteristics: complexity of execution, quality of manual work, surface decoration, or the degree of technical mastery. Such characteristics are important for understanding the craft dimension of the practice, but by themselves they do not establish its conceptual status.

Contemporary craft studies increasingly shift attention from the opposition between “craft” and “art” toward an analysis of the ways in which material processes become part of artistic thinking [3; 4]. However, in relation to artistic forging, the question of the conditions under which forging technology ceases to function merely as a means of production and becomes a meaningful component of the artwork remains insufficiently developed.

Contemporary artistic practices in which forging is used not only to create functional objects but also sculptural works, spatial constructions, and conceptually oriented works are particularly relevant in this respect [10; 11;

12; 13]. In such cases, analysis of the finished form alone may be insufficient: significance also lies in the way the form is connected with the material properties of metal and with the technology through which it is produced.

The research question of this study is formulated as follows: how do material and forging technology participate in the formation of the artistic and conceptual content of a contemporary artwork?

In this study, conceptual artistic forging is understood as a practice in which the material and the forging process have a meaningful connection with the artistic purpose of the work. This definition does not imply that all contemporary forging is conceptual. Rather, it makes it possible to distinguish technically complex or visually decorative work from an artwork in which the properties of metal and the technology itself form part of the artistic statement.

The study proposes a model of “material - technology - form - artistic meaning.” This is an analytical construct developed for the present research and treats the artwork as a system of reciprocal relationships: material properties influence technological decisions; technology determines the possible range of form; form becomes a carrier of artistic content; and the artistic purpose, in turn, may determine the choice of material and its method of treatment.

The aim of the study is to determine the role of material and forging technology in the formation of the artistic and conceptual content of a contemporary artwork.

To achieve this aim, four objectives were established:

1. to trace the relationship between historical blacksmith technology and the artistic function of forged metal;
2. to analyze the interrelationship between material, technological process, and form;
3. to identify criteria that distinguish the conceptual use of forging from technically complex or decorative work;
4. to assess the possibilities and limitations of considering artistic forging as a contemporary craft and conceptually oriented practice.

2. Methods

2.1 Research Design and Research Material

The study has a qualitative, interdisciplinary, and interpretive character. It combines approaches from art history, material culture studies, and contemporary craft theory. This design was selected because the subject of the research simultaneously involves a material object, a technological process, and a system of artistic meanings.

Methodologically, the study constitutes a focused source analysis rather than a systematic literature review. Sources were selected according to their direct relevance to the research question and their ability to document historical, technological, material-cultural, and contemporary artistic aspects of forging.

The unit of analysis is not only the completed artwork but the material-technological configuration of the object, comprising four interconnected components: material, production technology, visual-spatial form, and the presumed artistic function or meaning.

The research material consisted of scholarly publications, monographs, museum and exhibition materials, catalogues, and institutional descriptions of contemporary metalworking practices [1-6; 10-18].

Sources were selected according to four criteria:

- direct relevance to the history or technology of artistic forging;
- theoretical significance for the study of craft and material culture;
- documented descriptions of contemporary artistic practices;
- the possibility of tracing the relationship between material, process, and artistic function.

Table 1. Structure of the Source Corpus

Source group	Content	Main function in the study	Sources
History of artistic forging	History of decorative and artistic ironwork	Establishment of historical context	[1; 2]
Craft theory	Material, craft, manual labor, practical knowledge	Theoretical foundation for the relationship between material and artistic thinking	[3-5]
Material and technology	Hot forging, deformation, material properties	Description of the technological basis of the practice under study	[7; 8]
Blacksmith knowledge and material culture	Practical knowledge of metal and process	Expansion of technological analysis to the level of material knowledge	[6; 9]
Contemporary exhibition practices	Contemporary blacksmithing, forged metal, functional and sculptural objects	Analysis of the contemporary range of artistic forging	[10-13; 17; 18]
Material culture studies	Object-centered analysis and observation of material objects	Methodological basis for object interpretation	[14-16]

Note. The table reflects the functional distribution of sources within the analytical model rather than a quantitative assessment of their scientific significance.

Particular importance was given to primary institutional sources - catalogues and materials documenting museum exhibitions. For example, *FORGE* directly describes contemporary artists' work with forged metal through the categories of material, process, function, and idea [10]. The materials associated with *Meta-Formation* make it possible to compare functional and sculptural directions within contemporary blacksmithing [12]. The exhibitions *Master Metalsmith: David Secrest*, *Measured Making: The 150mm Challenge*, and *Everyday Objects* additionally document the use of forging in sculpture, experimental approaches to material, and the transition from functional ironwork toward conceptual artistic expression [11; 17; 18].

The study does not include metalworking experiments, laboratory testing, or interviews with artists. Therefore, its findings primarily concern the interpretation of documented artistic practices.

Because the study does not involve human participants, interviews, or focus groups, informed consent procedures and ethical approval were not applicable. The COREQ recommendations, which are primarily intended for interview and focus-group research, are not directly applicable to the present study design.

2.2 Analytical Model

The proposed model of “material - technology - form - artistic meaning” is an analytical construct developed for this study. It is based on the understanding of craft as a practice in which artistic thinking is realized through material and technological processes [3-5].

Material is considered through its physical and visual characteristics: plasticity, capacity for deformation, response to heating, texture, and surface properties.

Technology includes heating, deformation, drawing out, upsetting, bending, joining, and other operations through which material acquires a specific form [7; 8].

Form is understood as the result of the interaction between artistic intention and the technological possibilities of the material.

Artistic meaning is determined through the function of the object, its visual and spatial organization, the context of presentation, and the conceptual questions with which the work may be associated.

Table 2. Analytical Model of “Material - Technology - Form - Artistic Meaning”

Component	Main analytical question	Observable characteristics	Possible artistic significance
Material	Why is metal, and specifically its particular properties, selected?	Plasticity, texture, mass, response to heating, traces of treatment	Material as a carrier of physical and cultural meanings
Technology	How does the process influence the production of the object?	Heating, deformation, drawing out, upsetting, bending, joining	Technology as a means and potential component of artistic content
Form	How are technological possibilities realized in form?	Contour, volume, rhythm, construction, surface, scale	Visual and spatial organization of the artistic statement
Artistic meaning	How are material and process connected to the idea?	Function, context, artistic purpose, cultural associations	Conceptual interpretation of the object
Interrelation of components	Do the four levels form an integrated system?	Mutual conditioning of material, process, form, and idea	Basis for identifying conceptual potential

Particular attention is given to the fact that the practical knowledge of a craftsperson cannot always be reduced to a formalized instruction. An ethnographic study of Guji Oromo blacksmithing, for example, demonstrates a system of empirical knowledge about the properties of metals, including methods for determining material quality and suitability for processing [9]. This makes it possible to consider technological competence as a form of material knowledge rather than merely a set of mechanical operations.

The study also takes into account object-centered approaches to material culture, in which the properties, provenance, mode of production, and context of use of an object are considered sources of interpretation [14-16].

The research also considers the technological conditioning of forging: the treatment of heated metal requires control of temperature, deformation, and tools, while the properties of metallic materials influence the possible outcome [7; 8].

2.3 Interpretive Criteria

Three principal criteria were used to determine the conceptual character of artistic forging.

The first criterion is the substantive relationship between material and artistic purpose. If the choice of forged metal is not incidental and its physical or cultural properties are connected with the content of the work, the material becomes part of the artistic statement.

The second criterion is the significance of the technological process. Conceptual status may emerge when the method of processing metal influences not only the technical production of the form but also its artistic interpretation.

The third criterion is the relationship between form and idea. A technologically conditioned form should be considered in the context of the artistic purpose rather than in isolation as a demonstration of craftsmanship.

Table 3. Criteria for Distinguishing Technical Complexity from the Conceptual Use of Forging

Criterion	Insufficient basis for conceptual interpretation	Basis for conceptual interpretation
Technical complexity	Complex technology in itself	Technological complexity is connected with the artistic purpose
Manual labor	Presence of manual work	Traces of the manual process have substantive meaning
Decoration	Expressive surface or ornament	Surface and ornament are connected with the idea of the work
Material	Use of iron or steel	Properties or cultural meanings of metal form part of the statement
Technological process	Process merely enables the production of the form	Method of processing influences the meaning or interpretation of the work
Form	Unusual or complex form	Form is determined by the substantive interrelationship of material, process, and idea

Thus, technical complexity, manual production, and decoration are not treated as independent criteria of conceptuality. They may be significant characteristics of an artwork but do not provide sufficient grounds for its conceptual interpretation.

No statistical analysis was applied because the study has a qualitative interpretive design and does not involve a quantitative sample or statistical testing.

3. Results

3.1 Functionality and the Changing Status of the Object

Analysis of historical and contemporary sources demonstrates that artistic forging retains a fundamental connection with the functional object. Historically, iron was used to create architectural elements, furniture, tools, railings, and interior objects, in which structural function directly determined form [1; 2].

However, contemporary artistic practice demonstrates a gradual expansion of the status of the forged object. It may retain functionality while simultaneously acquiring qualities of authorial design, an independent artistic object, or sculpture [10-13; 17; 18].

This transformation does not imply a complete rejection of utility. On the contrary, functionality may become part of an artistic concept. An object may continue to perform a practical function while simultaneously emphasizing the properties of the material, the character of manual production, structural logic, or cultural context.

The practice of Joseph Anderson is particularly illustrative in this regard. According to materials from the Metal Museum, his practice included both functional objects and an individual artistic style, through which traditional functional forging was combined with conceptual forms of artistic expression [18].

Thus, the boundary between a craft object, a design object, and an artwork is fluid. It is determined not only by the purpose of the object but also by the way it is presented, its context, and the nature of the artistic task.

3.2 Material and Technological Process as Elements of Artistic Form

The results of the analysis demonstrate that material and technology in artistic forging cannot be regarded solely as technical prerequisites of form.

Metal possesses visual and tactile characteristics that directly influence the perception of an object. Hammer marks, surface changes, localized deformation, differences in texture, and methods of joining may preserve information about the production process. As a result, the surface becomes a kind of record of the interaction between the maker and the material.

Craft theory makes it possible to understand such interaction as a form of practical knowledge. Working with material involves not only formal adherence to a predetermined instruction but also continuous adaptation to the behavior of the material [3-5]. Studies of blacksmithing traditions likewise demonstrate that knowledge about metal is formed directly through practical work [6; 9].

For artistic forging, this means that the process may leave a materially legible trace in the object. Such a trace may be perceived not merely as evidence of manual labor but as part of the artistic language.

The contemporary exhibition *Measured Making: The 150mm Challenge* particularly clearly demonstrates this relationship. Participants were asked to transform a small standardized piece of steel, while the exhibition itself was organized around the categories of process, material, and innovation. The exhibition included functional tools, figurative objects, and abstract sculptures, making it possible to observe the transition from technological constraint to diverse artistic outcomes [17].

At the same time, the presence of production traces must be distinguished from their artistic significance. Any trace of forging is not automatically conceptual. It acquires meaning when its presence is connected with the artistic purpose of the work.

3.3 Expansion of the Conceptual and Sculptural Range of Forging

Contemporary exhibitions demonstrate that blacksmithing is gradually moving beyond the traditional category of decorative and applied art. Contemporary blacksmithing includes functional objects, design objects, abstract forms, and spatial sculptural works [10-13; 17; 18].

The exhibition *Master Metalsmith: David Secrest* provides a representative example of this expansion. The Metal Museum characterizes Secrest as both a sculptor and blacksmith working with forged iron, steel, and bronze. His practice employs forging and other technological processes in the creation of sculpture and furniture [11]. This allows blacksmith technology to be understood not only as a method for producing functional objects but also as an element of sculptural artistic practice.

Another example is the exhibition *Meta-Formation*, where the range of works extends from sculpture to functional objects and participants employ approaches that move beyond traditional blacksmithing techniques [12]. Contemporary practice therefore demonstrates not the disappearance of tradition but its technological and artistic expansion.

This expansion is particularly important for understanding the conceptual potential of forging. Metal may be

used not only as a material for producing a particular form but also as a means of investigating questions of labor, time, transformation, memory, space, and human interaction with the material world.

Material culture studies provide additional grounds for such an analysis. An object may be considered a carrier of information about its method of production, social context, and the system of values within which it was created and used [14-16].

Consequently, contemporary artistic forging may function simultaneously on several levels: as a craft practice, as design, as material culture, and as contemporary art.

4. Discussion

4.1 Technology as a Component of Artistic Content

The results obtained suggest that the main distinction between a traditional understanding of forging and its conceptual use lies not in the technology itself but in its status within the artistic statement.

Within the traditional model, technology primarily enables the transformation of a metal blank into a functional or decorative form. In contemporary artistic practice, the same technological process may itself become an object of artistic attention.

This change in the status of technology corresponds to a broader understanding of craft as a form of material thinking. According to theoretical approaches to craft, manual work constitutes not only the production of an object but also a means of understanding material through action [3-5].

This is particularly evident in forging, since the result is directly connected with physical intervention in metal. Heating, hammering, deformation, drawing out, bending, and joining do not merely alter the material but leave visually and structurally perceptible traces.

In this sense, the technological process may be considered part of artistic content when it becomes significant for the interpretation of the object.

4.2 Conceptual Artistic Forging in the Context of Contemporary Craft

The contemporary understanding of craft is characterized by expanding boundaries between craft, design, and art. Craft theorists emphasize that material practice can generate a specific form of knowledge and artistic thinking [3-5].

Artistic forging demonstrates this relationship particularly clearly. On the one hand, it preserves a historically developed body of technological knowledge. On the other hand, a contemporary artist may use this knowledge in new formal and conceptual contexts.

Exhibition practices in contemporary blacksmithing demonstrate a variety of such approaches. Forged metal may be used to create functional objects, experimental works, and sculptural compositions in which traditional technological methods acquire new artistic meanings [10-13; 17; 18].

Consequently, conceptuality should not be understood as a rejection of craft but as a transformation in the relationship between craft technology and artistic purpose.

This proposition is of particular importance. A high level of craftsmanship does not by itself make an artwork conceptual. Likewise, technological complexity, decoration, or the presence of manual labor are not sufficient criteria.

Conceptual potential emerges when material, technology, form, and artistic idea constitute an interconnected

system.

4.3 Limitations of the Study and Directions for Further Research

The present study has several limitations.

First, it is based primarily on published sources and institutionally documented exhibition materials. Such a corpus makes it possible to trace the main directions of the development of artistic forging but does not encompass all contemporary practices.

Second, the absence of interviews with artists and craftspeople limits the possibility of directly reconstructing their intentions. Therefore, the interpretation is based primarily on material and documentary evidence.

Third, exhibition and museum descriptions may emphasize the artistic and cultural significance of objects without always providing detailed information about specific technological operations.

Future research could productively combine object-centered analysis with artist interviews, observation of working processes, and photographic or video documentation of technological operations. Such an approach would make it possible to investigate more precisely the relationship between the practical knowledge of the maker, the material properties of metal, and the formation of artistic meaning.

5. Conclusions

The study demonstrates that contemporary artistic forging represents a considerably broader practice than the production of functional or decorative metal objects.

Historical analysis demonstrates a persistent relationship between function, material, technology, and artistic form. Contemporary practice preserves this relationship while simultaneously expanding the use of forging toward authorial design, object-based art, and sculpture.

The principal result of the study is the identification of a particular status of forging technology. The technological process may function not only as a tool of form-making but also as a component of artistic language. However, this does not occur automatically. Technical complexity, manual labor, and decoration alone are insufficient grounds for defining a work as conceptual.

The proposed model of “material - technology - form - artistic meaning” makes it possible to consider the forged object as an integrated material-artistic system. Within this model, conceptual potential emerges when the properties of metal, the technological process, and the visual form are substantively connected with the artistic purpose.

Thus, contemporary artistic forging may be defined as a materially oriented artistic practice in which historical technological heritage becomes a basis for new forms of artistic thinking. Its contemporary significance lies not in abandoning craft tradition but in the possibility of reinterpreting that tradition within the contexts of contemporary art, design, and sculpture.

Declarations

Acknowledgments. The preparation of the manuscript involved the use of artificial intelligence tools for language structuring, editorial processing, and text organization. The selection and interpretation of scholarly sources, formulation of the research conclusions, and final responsibility for the content of the manuscript belong to the author.

Author Contributions. Author: Conceptualization; Methodology; Formal Analysis; Investigation; Writing (Original Draft); Writing (Review & Editing).

Funding. This research received no external funding.

Data Availability. The study is based on published scholarly sources, museum and exhibition materials, catalogues, and institutional web resources listed in the bibliography. No separate primary dataset was created for this study.

Conflicts of Interest. The author declares no conflicts of interest.

References

1. Geddes J. *Medieval Decorative Ironwork in England: English Ironwork from 1050-1550*. London: The Society of Antiquaries of London; 1999.
2. Morris KM. *The Art of Iron: Objects from the Musée Le Secq des Tournelles, Rouen, Normandy*. Williamstown, MA: Clark Art Institute; 2018. ISBN 978-0-300-23704-7.
3. Adamson G. *Thinking Through Craft*. Oxford; New York: Berg; 2007. ISBN 978-1-84520-646-8.
4. Adamson G. *The Invention of Craft*. London: Bloomsbury Academic; 2013. doi:[10.5040/9781350036123](https://doi.org/10.5040/9781350036123).
5. Sennett R. *The Craftsman*. New Haven, CT: Yale University Press; 2008.
6. Roberts AF, Joyce T, Berns MC, Dewey WJ, Drewal HJ, Goucher CL, editors. *Striking Iron: The Art of African Blacksmiths*. Los Angeles, CA: Fowler Museum at UCLA; 2019. ISBN 978-0-9907626-6-9.
7. The Open University. Hot forging (open die). *OpenLearn*. 2017. Accessed October 2, 2026. <https://www.open.edu/openlearn/science-maths-technology/engineering-technology/manupedia/hot-forging-open-die>
8. Emamverdian AA, Sun Y, Cao C, Pruncu C, Wang Y. Current failure mechanisms and treatment methods of hot forging tools (dies) - a review. *Engineering Failure Analysis*. 2021;129:105678. doi:[10.1016/j.engfailanal.2021.105678](https://doi.org/10.1016/j.engfailanal.2021.105678).
9. Tigist M, Alemu M. Learning chemistry of metals in the context of forging: An ethnographic case study of blacksmithing in Guji Oromo, Ethiopia. *Heliyon*. 2024;10(18):e37855. doi:[10.1016/j.heliyon.2024.e37855](https://doi.org/10.1016/j.heliyon.2024.e37855).
10. Done D, Crowson SH, editors. *FORGE*. Exhibition catalogue. Hereford: Hereford College of Arts; Ruthin: Ruthin Craft Centre; 2018. Exhibition presented at the Metal Museum, Memphis, May 13-September 16, 2018. Accessed October 2, 2026. <https://www.metalmuseum.org/forge>
11. Metal Museum. *Master Metalsmith: David Secrest*. Exhibition. Memphis, TN: Metal Museum; 2017. Accessed October 2, 2026. <https://www.metalmuseum.org/mm-david-secrest>

12. Houston Center for Contemporary Craft. *Meta-Formation: New Connections in Contemporary Blacksmithing*. Exhibition. Houston, TX: Houston Center for Contemporary Craft; 2020-2021. Accessed October 2, 2026. <https://crafthouston.org/exhibition/meta-formation/>
13. Frank R. Forging new paths. *American Craft*. 2022;Summer. Accessed October 2, 2026. <https://craftcouncil.org/articles/forging-new-paths/>
14. Elmer P, Harrison R. *An Introduction to Material Culture*. OpenLearn. The Open University. Accessed October 2, 2026. <https://www.open.edu/openlearn/history-the-arts/visual-art/an-introduction-material-culture/>
15. Dyer S. State of the Field: Material Culture. *History*. 2021;106(370):282-292. doi:10.1111/1468-229X.13104.
16. Hodge CJ. Decolonizing Collections-Based Learning: Experiential Observation as an Interdisciplinary Framework for Object Study. *Museum Anthropology*. 2018;41(2):142-158. doi:10.1111/muan.12180.
17. Metal Museum. *Measured Making: The 150mm Challenge*. Exhibition. Memphis, TN: Metal Museum; 2021. Accessed October 2, 2026. <https://www.metalmuseum.org/measured-making>
18. Metal Museum. *Everyday Objects: The Evolution & Innovations of Joseph Anderson*. Exhibition. Memphis, TN: Metal Museum; 2017-2018. Accessed October 2, 2026. <https://www.metalmuseum.org/everyday-objects>