2023

Floating Liens Over Crypto-in-Commerce

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Commercial law and crypto are colliding. Against the backdrop of explosive growth (and discord) in the digital asset market, there has been a series of recent revisions to American commercial law aimed at addressing new and emerging technologies. These changes to the Uniform Commercial Code (UCC) are designed to facilitate the buying and selling of digital assets as well as their use as collateral. However, to date, the literature exploring these changes has mainly focused on understanding the basics of the new regime. This Essay moves beyond that baseline by showing how the UCC amendments can be used to structure more complex secured credit arrangements that tap into the borrowed capital potential of blockchain technology. Specifically, this study explains how these recent law reforms—in concert with the inherent capabilities of distributed ledgers, smart contracts, and cryptography—can be used to create a floating lien (the quintessential financing device in American commercial law) over crypto inventory.

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* Josephine R. Witte Professor of Law and Affiliate Professor of Finance, University of Iowa. I thank the Office of International Programs at the University of Iowa for the generous funding support that allowed me to spend time as a visiting researcher at the *Institut International pour l'Unification du Droit Privé* [The International Institute for the Unification of Private Law] in February 2023.

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INTRODUCTION

The digital asset market has been both explosive and turbulent in recent years.[1] Even after the so-called *crypto winter* of summer 2022, digital assets ranging from cryptocurrencies, to utility tokens, to non-fungible tokens (NFTs), to bespoke crypto tokens, to stablecoins continue to attract the capital of retail investors, hedge funds, institutional market makers, and even sovereign wealth funds.[2] In the wake of this activity, the Uniform Law Commission and the American Law Institute recently made extensive revisions to American commercial law to address emerged and emerging technologies.[3] These changes and additions to the Uniform Commercial Code (the 2022 UCC Amendments) include the ability to more efficiently and

1. *See* Juliet M. Moringiello & Christopher K. Odinet, *The Property Law of Tokens*, 74 FLA. L. REV. 607 (2022) (discussing recent trends and accompanying legal developments); *see also* R. Wilson Freyermuth, Christopher K. Odinet & Andrea Tosato, *Crypto in Real Estate Finance*, 75 ALA. L. REV. 93 (2023); Juliet M. Moringiello & Christopher K. Odinet, *Blockchain Real Estate and NFTs*, 64 WM. & MARY L. REV. 1131 (2023); Kara J. Bruce, Christopher K. Odinet & Andrea Tosato, *The Private Law of Stablecoins*, 54 ARIZ. ST. L.J. 1073, 1076 (2022).

2. *See supra* note 1 and accompanying text.

3. *See UCC, 2022 Amendments to*, UNIF. L. COMM'N (2022), https://www.uniformlaws.org/committees/community-home?communitykey=1457c422-ddb7-40b0-8c76-39a1991651ac [https://perma.cc/99FW-GNUS]; UNIF. L. COMM'N, *Uniform Commercial Code and Emerging Technologies* (June 30, 2021).

effectively buy and sell digital assets, as well as use them as collateral.[4] Indeed, the ability to tap digital assets in order to access borrowed capital was a primary driver of the effort.[5] The 2022 UCC Amendments are currently before state legislatures across the country, with several states having already enacted the new law.[6]

This Essay aims to move beyond a basic understanding of the 2022 UCC Amendments—a topic which has largely dominated the literature. Instead, this work shows how these changes to commercial law, against the backdrop of crypto technologies resting on distributed ledgers and smart contracts, can be used to create one of the most quintessential financing devices in American commercial law: the *floating lien* over goods in commerce.

The floating lien has a long history. It was born in British law, and it travelled across the Atlantic with the rest of English common law of personal property security and then evolved, becoming a tool essential to American commerce.[7] Whether it be retail merchants, grocery stores, or auto dealers, most businesses in the United States rely on floating liens to finance their operations. And as this Essay details, the road to legally creating a so-called *floating lien* in American law, akin in ways to the English *floating charge*,[8] has a long and bumpy history.[9] That story, as outlined below, has much to do with political motivations driven by limited sources of funding for small businesses alongside the slow progression of overcoming theoretical legal obstacles when it came to granting a security interest in property that one does not yet own. Specifically, accounts receivable and inventory, both of which are at the "immediate core of a commercial debtor's enterprise"[10] but that "are like water flowing through a river bed."[11] The combination of these factors led to the eventual drafting of Article 9 of the UCC and its provisions that allow for a floating charge over property of a debtor. For the first time, this Essay shows how the new 2022 UCC amendments can be used to create a floating lien—not merely over

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4. *See* Freyermuth, Odinet & Tosato, *supra* note 1.

5. *Id.*; *see also* John B. Hutton III & Kevin Hoyos, *Proposed UCC Amendments to Article 12 Shed New Light on Transacting and Securing Interests in Digital Assets*, GREENBERGTRAURIG (Dec. 1, 2022), https://www.gtlaw.com/en/insights/2022/12/proposed-ucc-amendments-to-article-12-shed-new-light [https://perma.cc/YT5A-BLX3].

6. *UCC 2022 Amendments – Final Version Now Being Considered by State Legislatures*, VEDDERPRICE (Mar. 9, 2023), https://www.vedderprice.com/ucc-2022-amendments-final-version-now-being-considered-by-state-legislatures [https://perma.cc/99FW-GNUS].

7. *See* George L. Gretton, *Reception Without Integration? Floating Charges and Mixed Systems*, 78 TUL. L. REV. 307, 313–16 (2003) (discussing the origins of the floating charge in English law).

8. *See id.*

9. Notably, Article 9 only allows a floating charge for certain types of property capable under the law of being encumbered with a nonpossessory security interest; the English floating charge was more all-encompassing in terms of debtor assets. *See* Jeanette L. Goldsberry, *Perfection of Nonpossessory Security Interests Under Revised Article 9: Consequences of the Practical and Conceptual Incompatibility of US and English Secured Transactions Law*, 3 CHI. J. INT'L L. 241, 243–44 (2002).

10. 3 COMMERCIAL ASSET-BASED FINANCING § 18:1 (2023).

11. 3 ELDON H. REILEY, SECURITY INTERESTS IN PERSONAL PROPERTY 34:35 (2022).

traditional tangible goods and their related monetary obligations—but over digital assets themselves.

For purposes of clarity, a floating lien means the following: (i) a proprietary interest; (ii) created by an agreement between a secured party and a debtor; (iii) enforceable against third parties, including a bankruptcy trustee; (iv) to secure performance of an existing or future obligation; and (v) encumbering all present and future personal property of the debtor. In practice, the most common example of a floating lien is a security interest that a business contractually grants to a financial institution to secure repayment of a revolving credit facility that encumbers all the business's assets, including inventory and receivables. Crucially, a floating lien does not prevent the debtor from making use of its assets to carry out its economic activity, including selling or leasing its inventory, collecting receivables, and reinvesting proceeds in the business.[12]

This Essay tells a brief story of the floating lien in the United States—from pre-UCC Article 9 (as discussed in Part I) to the eventual passage of this most important commercial law and its blessing of the floating lien (in Part II). This Essay concludes with Part III—its novel contribution: explaining how to use the new 2022 UCC amendments to create a floating lien for the digital age.[13]

I. FLOATING LIENS BEFORE THE UCC

A. Problems of Small Business Financing

Long before the rise of digital assets, the institution of the floating lien was a crucial element of American commercial law due to its importance in small business financing.[14] In the United States as Homer Kripke explains, the ability to attract capital to finance small business operations has always been a major challenge.[15] Small businesses are "chronically undercapitalized" but have few options for obtaining funding.[16] Specifically, equity investors are generally not interested in or able to provide capital in this regard because of the extensive underwriting and associated monitoring costs.[17] As such, the public market for the buying and selling of securities is generally not hospitable to small businesses.[18] For the few equity investment opportunities that do exist, they are highly selective, thereby leaving out a great deal of the small business financing demand.[19]

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12. *See id.*; *see also* Richard L. Barnes, *Tracing Commingled Proceeds: The Metamorphosis of Equity Principles into U.C.C. Doctrine*, 51 U. PITT. L. REV. 281, 287 n. 13–14 (1990).

13. For a discussion of commercial law's doctrinal workings and points of private law risk with regard to property—particularly digital assets, see note 1 and accompanying sources.

14. Homer Kripke, *Current Asset Financing as a Source of Long-Term Capital*, 36 MINN. L. REV. 506, 506–09 (1952).

15. *Id.*

16. *Id.* at 511.

17. *Id.* at 508.

18. *Id.* at 506–09.

19. *Id.* at 509–13.

In terms of credit, rather than equity, institutional lenders have historically also been very hesitant to lend to small businesses.[20] As Bruce Campbell notes, the "costs, complexities, and risks" involved in small business lending resulted in only a few lenders—specifically, commercial finance companies and only the very largest banks—actually engaging with this market.[21] Indeed, "[m]any banks simply did not engage in asset-based financing at all."[22]

B. Chattel Mortgage Inadequacies

The lack of lending to small businesses was due to the fact that the primary form of collateral available for securing such financing was the small business's inventory and the accounts receivable generated by its sale.[23] That is not to say that it was impossible to obtain a security interest in such assets.[24] The laws of almost every state allowed for such an arrangement.[25] These ranged from specific laws permitting the creation of chattel mortgages, trust receipt transactions, assignments of accounts receivable and other contracts, and factor's lien agreements.[26] Of these, the oldest was the *chattel mortgage*.[27] Governed by largely homogenous statutes across states, this "device" enabled a creditor to obtain a security interest over personal property of a debtor without taking possession of the collateral (as required by the common law pledge), but rather by filing a copy of the relevant agreement in the competent registry,[28] without a transferring of its possession but only to the creditor.[29] Yet, as Allison Dunham accounts, this security device was a viable tool only to collateralize "goods at rest."[30] In other words, the chattel mortgage was only meant to cover personal property of a debtor-business that was not intended to be sold or transferred in the ordinary course and scope of the business, such as factory equipment, tools, and work vehicles.[31] If a debtor-business was authorized to sell personal property subject to a security interest (such as in the case of inventory), then courts would view this as "no security at all."[32]

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20. Bruce A. Campbell, *Contracts Jurisprudence and Article Nine of the Uniform Commercial Code: The Allowable Scope of Future Advance and All Obligations Clauses in Commercial Security Agreements*, 37 HASTINGS L.J. 1007, 1013 (1986).

21. *Id.*

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.*

26. *Article IX of the Uniform Commercial Code: The "Floating" Lien*, 37 ST. JOHN'S L. REV. 392, 394 (1963) [hereinafter Article IX].

27. *See* Grant Gilmore & Allan Axelrod, *Chattel Security: I*, 57 YALE L.J. 517, 529 n. 28 (1948) (explaining the history of the chattel mortgage).

28. GRANT GILMORE, SECURITY INTERESTS IN PERSONAL PROPERTY 26 (1965). For a history of chattel mortgage statutes in America, see George Lee Flint, Jr., *Secured Transactions History: The Fraudulent Myth*, 29 N.M. L. REV. 363, 397–404 (1999).

29. Allison Dunham, *Inventory and Accounts Receivable Financing*, 62 HARV. L. REV. 588, 590 (1949).

30. *Id.*

31. *Id.*

32. *Id.*

Interestingly, Dunham notes that a fear among judges was that of "Papa's mortgaging the stock of the corner grocery store to Mama in order to ward off his creditors."[33] In doing so, Mama would acquire a "security interest" that would defeat (or, rather, be given priority over) the claims of the business's other true creditors.[34] The idea was that such a chattel mortgage would be faux security, designed solely with the notion of undermining the suppliers and other creditors of the grocery store.[35]

Over time, courts and legislatures attempted to accommodate a chattel mortgage that would float over, as Grant Gilmore described them, "goods in motion"[36] in various ways (like inventory and accounts), but never with great effectiveness.[37] For example, some courts recognized the validity and enforceability of chattel mortgages over goods in motion, if they were coupled with an obligation for the debtor to immediately remit all proceeds generated from the sale of the collateral to the secured lender.[38] Similarly, statutes enacted by several states expressly validated chattel mortgages on goods held for resale, albeit only for certain types of borrowers and often subject to the requirement that any proceeds be remitted immediately to the secured lender.[39]

Overall, lenders and borrowers structuring secured transactions that involved inventory and other moving goods as collateral were subject to severe restrictions. *Twyne's Case*'*s* shadow continued to weigh heavily on such commercial arrangements.[40] Gilmore notes that "a chattel mortgage with mortgagor in possession plus power of sale clause plus after-acquired property clause was about the largest camel which could be swallowed."[41] Even this, however, did not truly account for a floating lien because the proceeds from the sale of the collateral still had to be given to the lender upon sale and could not be reinvested, even in part, to acquire new inventory or to cover business expenses.[42] Attempts to structure such creditor-debtor arrangements were met with "judicial condemnation."[43]

C. Conditional Sales as Substitutes

The constraints and deficiencies inherent in chattel mortgages compelled market participants to develop substitute arrangements. Suppliers frequently chose to facilitate the acquisition of goods by their merchant-buyers through *conditional*

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33. *Id.*
34. *Id.* at 590–93.
35. *Id.* at 590–91 & n.7
36. Gilmore & Axelrod, *supra* note 27, at 533.
37. *See* Dunham, *supra* note 29, at 594–97.
38. *Id.* at 595.
39. *Id.* at 592–93.
40. Twyne's Case, 3 Co. Rep. 806, 76 Eng. Rep. 809, *sub nom.* Moo. KB. 638,72 Eng. Rep. 809 (1601); *see also* Flint, *supra* note 28 (documenting the historical hostility of the English common law toward non-possessory security interests, *Twyne's Case*, and its influence in American's law restriction on non-possessory secured transactions).
41. Gilmore & Axelrod, *supra* note 27, at 534.
42. *Id.* at 534–35.
43. *Id.* at 535.

sales.[44] In these transactions, there was no formal lending of funds; rather, suppliers would agree to sell goods to merchant-buyers under the condition that title would not be transferred until price (and possibly interest) had been paid in full.[45]

In this way, the merchant had possession of the goods, but the supplier retained ownership.[46] As title formally remained with the supplier-seller, no security device was used and thus the limitations of the chattel mortgage were avoided; although, to be sure, the supplier-seller was acting in the position of a lender and the substance of the transaction was very much one of security.[47] This dissonance between form and substance led courts to look at conditional sales with suspicion and often to hold them void on vaguely articulated grounds of public policy.[48] Moreover, as Gilmore observed, the conditional sale was limited in that it always required a sale.[49] There had to be a seller and a buyer of goods, thereby cutting out possible participation by third-party lenders.[50]

D. Trust Receipts as Substitutes

Soon enough, lenders wanted to become involved in the conditional sale market.[51] To do so, they either purchased the conditional sale contract rights from the supplier-seller or engaged in a new kind of transaction involving so-called *trust receipts*.[52] These arrangements originated at least prior to 1850 but became popular by the end of the nineteenth century.[53]

In the case of trust receipts, the supplier-seller would sell goods to the lender.[54] The lender, now the owner of the goods, would entrust the goods to a merchant-buyer, who would in turn issue a trust receipt evidencing that their possession of the goods was one of limited authority.[55] Crucially, the lender would authorize the merchant-buyer to sell the goods, under the condition that the proceeds from the sale would be handed over to the lender.[56] Thus, as Dunham explains, "a new breed of security resulted," and financing attorneys argued, with some success, that despite its clear nature, this arrangement was neither a conditional sale nor a secured transaction using a chattel mortgage.[57]

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44. Dunham, *supra* note 29, at 591.
45. *Id.*
46. *Id.*
47. *Id.*
48. *See* 1 GRANT GILMORE, SECURITY INTERESTS IN PERSONAL PROPERTY 62–65 (1965) (providing an exhaustive account of the treatment of conditional sale during the nineteenth and early twentieth centuries).
49. Gilmore & Axelrod, *supra* note 27, at 541.
50. *Id.* at 542.
51. Dunham, *supra* note 29, at 592.
52. *Id.* at 591.
53. Grant Gilmore, *Chattel Security: II*, 57 YALE L.J. 761, 761 (1948).
54. Dunham, *supra* note 29, at 591.
55. *Id.*
56. *Id.*
57. *Id.*

From a historical perspective, as Gilmore explains, the trust receipt was initially used as a method to finance imports of raw materials from foreign locales.[58] In the late 1930s, however, courts began to hold that these devices could be used to finance domestic transactions.[59] The explosive advent of the automobile served as the impetus for such domestic use, and it soon became the preferred method of dealer financing.[60]

E. Factor's Liens as Substitutes

Yet another security-like device engineered by commercial lawyers to finance the purchase of personal property was the *factor's lien*.[61] Its origins lay in the textile manufacturing industry and the practice of factoring.[62]

For many centuries,[63] a "factor" was an agent with authority to sell goods consigned to them by their principal in return for a flat fee or a commission.[64] At common law, it was long recognized that a factor enjoyed a lien over both the goods entrusted to them as well as the proceeds generated by their sale, securing the obligation of their principal to compensate them for their services.[65]

During the nineteenth century, factors active in the North American textile industry started transforming their business activity.[66] Faced with chronically underfunded manufacturers, factors started to supply working capital to the principals for whom they sold goods on consignment.[67] In time, factors stopped operating as selling agents and focused solely on financing textile manufacturers.[68] Coextensively, courts accepted that the lien, which factors had traditionally held on the principal's goods delivered to them on consignment, shifted to the inventory of the mills to which they were providing financing, despite there being no transfer of possession.[69] Eventually, the New York legislature enacted a law to establish a reliable legal framework for these transactions.[70] Pursuant to this law, a factor providing financing to a business could create a lien on their inventory without taking

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58. Gilmore, *supra* note 53, at 764.

59. *Id.* at 764–65.

60. *See id.* at 765.

61. *See* Dunham, *supra* note 29, at 592.

62. *Id.*

63. The historical origins of factors are not well known. Nevertheless, it is universally accepted that they were a recognized and well-established category of market participants by the seventeenth century. *See* GERARD MALYNES, LEX MERCATORIA 308–14 (photo. reprt. 2009) (London, 3d ed. 1686) (for an extensive discussion of factors).

64. GILMORE, *supra* note 28, at 128; Roscoe T. Steffen & Frederick S. Danziger, *The Rebirth of the Commercial Factor*, 36 COLUM. L. REV. 745, 745–46 (1936).

65. Steffen & Danzinger, *supra* note 64, at 745; *see also* Robert H. Skilton, *The Factor's Lien on Merchandise*, WIS. L. REV. 356, 356–57 (1955).

66. *See generally* Skilton, *supra* note 65, at 367–69; GILMORE, *supra* note 48, at 128–134; Steffen & Danzinger, *supra* note 64, at 751.

67. GILMORE, *supra* note 48, at 130.

68. Steffen & Danzinger, *supra* note 64, at 751–57 (detailing this momentous transformation).

69. *Id.* at 755–57 (analyzing the key court decisions that recognized this shift).

70. New York Personal Property Act, Section 45.

possession of these goods, provided that they posted a sign on the borrower's premises indicating the existence of the lien and also filed a notice of lien into the public records.[71] Other states eventually followed suit, progressively expanding the scope of the factor's lien to cover all transactions in which a lender advanced funds secured by the borrower's inventory.[72]

F. Analysis and Summation

The preceding analysis describes both the strong market appetite for a security interest device capable of encumbering goods in motion and the disjointed efforts of clever lawyers to satiate this demand. This fervent activity spurred the adoption of several uniform laws,[73] including the Uniform Conditional Sales Act, the Uniform Trust Receipts Act, the Factors Lien Act, and the amendments that were made to Section 60a of the Bankruptcy Act in 1951.[74]

Nevertheless, the ensuing legal framework remained unsatisfactory and laden with technical pitfalls.[75]

The security devices available to market participants were governed by markedly different rules depending on the type of collateral at issue.[76] Moreover, their enforceability against third parties was conditional upon a myriad of variable components, including "form, timing, recording, and other circumstances."[77] Crucially, the priority rules for these coexisting security devices severely lacked coordination, causing instances of circular priority among competing creditors and problematic legal uncertainty.[78]

Moreover, neither the trust receipt transaction nor the conditional sale arrangement actually achieved a true floating security device in that they could only collateralize property acquired prior to when the credit was advanced.[79] In other words, they could not encumber after-acquired property, and, as Dunham remarks, neither device could likely be used to secure preexisting debts from prior transactions. These limitations made it almost impossible to structure secured revolving lines of capital loans.[80] And then there was also a complication that existed for quite some time—until 1980—under the Bankruptcy Act that allowed a trustee to claim non-perfection for property acquired by the debtor during the bankruptcy despite preexisting collateralization under an after-acquired property clause.[81]

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71. The factor had to file a lien both where the encumbered merchandise was located and the city in which the borrower had his principal place of business. *See* Steffen & Danziger, *supra* note 64, at 758–61 (explaining this public notice requirement in detail).
72. *Id.*
73. Dunham, *supra* note 29, at 591; Kripke, *supra* note 14, at 514.
74. Kripke, *supra* note 14, at 514.
75. Campbell, *supra* note 20, at 1012–16.
76. *Id.* at 1021.
77. *Id.*
78. *Id.* at 1022–26.
79. Dunham, *supra* note 29, at 592.
80. *Id.*
81. REILEY, *supra* note 11, § 34:35.

In sum, to quote one observer, "only the most expert lawyers [could] hope to avoid the many hidden pitfalls" involved in such secured lending.[82]

Much of the resistance to creating an all-purpose and easy-to-use security device that would lien and float over all the debtor's major assets in motion stemmed from "the ancient policy of preserving a cushion of free assets" to satisfy the debts owed to various unsecured creditors.[83] Despite these various uniform acts, state legislatures and courts had not quite moved away from this policy point of view, nor had they been ready to grant carte blanche in terms of debtor-creditor freedom of contract,[84] when it came to commercial financing transactions.[85] Grant Gilmore describes this as "the early 19th century bias in favor of the unsecured creditor," which resulted in devices like the chattel mortgage being "uneasily tolerated" by courts.[86]

Many of the various methods of collateralizing inventory and accounts receivable required what is described as *self-liquidation*.[87] This meant that as goods were sold or accounts were collected upon, the funds had to go straight to the lender.[88] The borrower could not keep them, lest the security interest be compromised.[89] This was considered to be a significant flaw in American secured lending law because it deprived the debtor of the useful deployment of income from the business.[90]

Lastly, the benefit of automatically obtained security in after-acquired property was not often achievable.[91] For example, while the trust receipt transaction had many benefits, the entruster's lien could only attach to the goods described in the trust receipt.[92] This meant that each time goods were handed over to a merchant, a new trust receipt had to be issued.[93] The factor's lien had a similar constraint in that the lien would only attach to the goods that were designated in writing by the borrower: hardly a rule that would allow for the kind of general security interest that the floating lien contemplates.[94]

II. FLOATING LIENS AFTER THE UCC

A. Enactment Concerns, Drafting, and Commentary

The complexity and obscurity of American secured transactions law "stunted free development of financing arrangements" during the nineteenth and early twentieth centuries.[95] Famously, Gilmore likened this legal framework to "the obscure wood

82. Campbell, *supra* note 20, at 1013 (quoting GILMORE, *supra* note 48, at 360).
83. *Id.* at 1018.
84. Barnes, *supra* note 12, at 320–21.
85. Campbell, *supra* note 20, at 1018.
86. Gilmore & Axelrod *supra* note 27, at 533.
87. Dunham, *supra* note 29, at 597.
88. *Id.*
89. *Id.*
90. *Id.* at 598.
91. *See generally* Gilmore, *supra* note 53.
92. *Id.* at 768.
93. *Id.*
94. *Id.* at 770.
95. Iris H-Y Chiu, *The Legal Fabrication of Security Interests in the United Kingdom*, 31

in which Dante once discovered the gates of hell."[96] This unsatisfactory state of the law gradually spurred "a movement to reconceptualize security arrangements" as well as to "provide a total legal framework to address credit and security."[97] The fruit of this effort was Article 9 of the Uniform Commercial Code.[98]

UCC Article 9 fundamentally reformed secured transactions law. Its integration of security devices, such as chattel mortgages, trust receipts, and conditional sales, into a unitary security interest with common rules on creation, validity, perfection, priority, and enforcement was a major achievement.[99] Crucially, this novel law gave its unreserved blessing to the floating lien, squarely addressing the needs of commercial parties and those seeking to finance their activities through working capital credit facilities. As Dana McAlister explained, the drafters of Article 9 decided that "rather than insist on a series of complex transactions that ultimately had the same effect as a floating lien" it was better to outright bless the use of the device in a "more efficient and more certain" manner.[100]

UCC Article 9 ushered the floating lien through a web of provisions. Taken together, these rules enable a creditor to obtain a security interest in all the present and future assets of a debtor to secure all present and future obligations owed by that debtor to the creditor in question. In effect, UCC Article 9 eliminated prior distinctions between fixed collateral and collateral in motion by validating the use of after-acquired property clauses in security agreements.[101] Parties were given free rein to collateralize an assortment of property types, including then-owned and later-acquired assets of a debtor.[102] And of course, the ability to have the floating lien secure obligations that would arise in the future, such as with revolving lines of credit, was also authorized.[103]

To make matters explicit, the UCC drafters included a comment to Section 204 of Article 9. Section 9-204 provides the specific authorization for after-acquired property and the ability for a security interest to secure future advances of credit.[104] Importantly for purposes of this Article, Comment 2 provides:

> [This section] makes clear that a security interest arising by virtue of an after-acquired property clause is no less valid than a security interest in

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N.C. J. INT'L L. & COM. REG. 703, 727 (2006).

96. GILMORE, *supra* note 48, at 27; *see also* K. N. Llewellyn, *Problems of Codifying Security Law*, 13 L. & CONTEMP. PROB. 687, 687 (1948).

97. Chiu, *supra* note 95, at 727. *See* Peter Winship, *An Historical Overview of UCC Article 9, in* SECURED TRANSACTIONS LAW REFORM: PRINCIPLES, POLICIES AND PRACTICE 21, 2–9 (Orkun Akseli & Louise Gullifer eds., 2016) (providing an extensive historical overview of this movement).

98. John F. Dolan, *Changing Commercial Practices and the Uniform Commercial Code*, 26 LOY. L.A. L. REV. 579, 591–92 (1993).

99. *See* Winship, *supra* note 97, at 8.

100. Dana L. McAlister, *Purchase Money Security Interests and Their Continuing Priority as to Proceeds:* MBank Alamo National Association v. Raytheon Co., 34 B.C. L. REV. 655, 666–67 (1993).

101. *See id.* at 655–56.

102. *Id.* at 656.

103. *Id.*

104. U.C.C. § 9-204 (AM. L. INST. & UNIF. L. COMM'N 1972).

> collateral in which the debtor has rights at the time value is given. A security interest in after-acquired property is not merely an "equitable" interest; no further action by the secured party—such as a supplemental agreement covering the new collateral—is required. This section adopts the principle of a "continuing general lien" or "floating lien." It validates a security interest in the debtor's existing and (upon acquisition) future assets, even though the debtor has liberty to use or dispose of collateral without being required to account for proceeds or substitute new collateral.[105]

By moving away from a property-based approach, which struggled with the notion that one could grant a security interest in a thing that one did not yet own, and moving to a contract-based frame, the UCC drafters created the conditions whereby "a bargain concluded today can include a commitment which will bind you as an encumbrance on property you acquire in the future."[106] And moreover, the new law allowed the debtor to maintain control of the collateral,[107] including by comingling it with other property, by selling it, or by otherwise disposing of it.[108]

The enactment of Article 9's provisions, however, relative to the floating lien was not without controversy.[109] In fact, when the new law was introduced in the California legislature in the early part of the 1960s, unsecured creditors warned that the legislation provided far too much power to lenders with a blanket first priority lien.[110] And, in turn, this outsized power over the most important property of the debtor would hurt all the various parties who provide important forms of unsecured credit to businesses, such as suppliers of materials and laborers.[111]

Yet, eventually these concerns were defeated, and Article 9 was enacted across all jurisdictions in the United States,[112] thereby bringing a true floating lien to the American commercial market.[113] As Bruce Campbell notes, Article 9 "was, and was

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105. U.C.C. § 9-204 cmt. 2.

106. Campbell, *supra* note 20, at 1022.

107. REILEY, *supra* note 11, § 34:35.

108. *See* Article IX, *supra* note 26, at 395; Barnes, *supra* note 12, at 320 (both discussing the case of *Benedict v. Ratner* and its overturning by the UCC Article 9 drafters). The Supreme Court in that case invalidated an assignment of accounts receivable on the ground that because the debtor was allowed to maintain control over the accounts and their collection—rather than handing such management over to the creditor—this was a fraudulent conveyance. *See* Benedict v. Ratner, 268 U.S. 353, 364–65 (1925).

109. Campbell, *supra* note 20, at 1013.

110. *Id.*

111. *Id.*

112. The final jurisdiction to enact UCC Article 9 was the United States' sole mixed jurisdiction, Louisiana, which did not enact the legislation until 1988, taking effect in 1990. *See* Act of July 8, 1988, No. 528, 1988 La. Acts 1367; Act of June 22, 1989, No. 135, 1989 La. Acts 417; *see also* Christian Paul Callens, *Louisiana Civil Law and the Uniform Commercial Code: Interpreting the New Louisiana U.C.C.-Inspired Sales Articles on Price*, 69 TUL. L. REV. 1649 (1995). *James A. Stuckey, Louisiana's Non-Uniform Variations in U.C.C. Chapter 9*, 62 LA. L. REV. 793 (2002).

113. Robert H. Skilton, *Tradition and Change: The Law of Mortgages on Merchandise*, 1963 WIS. L. REV. 359, 422 (1963).

intended to be, revolutionary."[114] And, in terms of achieving a broad and easy to use floating lien in American commercial financing, it was indeed that.

B. Doctrinal Mechanics

The final section in this Part sets forth the mechanism by which a floating lien can be created and maintained under UCC Article 9. It also highlights exceptions to the normal rules of priority to shine a light on the limits of this security device.

1. Attachment

The first requirement is that the security interest must *attach* to the collateral. This means that the security interest must first come into existence as between the debtor and the creditor and be enforceable against the debtor. There are three elements to attachment.[115] First, value must be given by the secured party to the debtor in exchange for receiving the security interest.[116] However, value is defined very broadly to include not only value given at the time the security interest is granted but also value that was given in the past (such as for a preexisting loan) or, importantly, for value given in the future (such as for a line of credit that will only be drawn on in the future).[117]

Second, the debtor must have the necessary rights in the collateral that would allow them to grant a security interest.[118] This idea comes back to fundamental property law—one cannot grant a right that one does not have. If one lacks a property right in something, then one cannot thereby give a property right in that thing to someone else. However, it is important to note that Article 9 allows one to grant a security interest prospectively. In other words, one can grant a security interest in property that the debtor will come to own in the future.[119] This is the after-acquired property concept.

The third and final element for enforceability of a floating lien over accounts and inventory under Article 9 is that the debtor must authenticate a security agreement.[120] The term "authenticate" is broad and means a signature or some other form of authorization, such as when consent is given electronically.[121] The security agreement is simply a written contract that contains words evidencing a desire by the debtor to grant a security interest in collateral. This of course means that the security agreement must actually describe the collateral. Yet, this description can be quite broad.[122] The standard is that the description must *reasonably identify* the property to be collateralized,[123] and the statute provides a series of examples of how to meet

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114. Campbell, *supra* note 20, at 1018.
115. U.C.C. § 9-203.
116. U.C.C. § 9-203(b)(1).
117. U.C.C. § 1-204.
118. U.C.C. § 9-203(b)(1).
119. U.C.C. § 9-204.
120. U.C.C. § 9-203(b)(3)(A).
121. U.C.C. § 9-102(a)(7).
122. U.C.C. § 9-108.
123. U.C.C. § 9-108(a).

this standard, including by using a series of set definitions that are provided in the law itself.[124] Two such definitions are *inventory*[125] and *accounts*.[126]

Lastly, the security interest created hereby can secure, as noted above, value of a future kind. Therefore, the parties can agree—and this will typically be in the security agreement, although it is not one of the formal requirements under UCC Article 9—that the security interest secures future advances of funds from the creditor to the debtor.

Therefore, one can simply include in the security agreement a statement that the debtor is granting a security interest in all of its now owned and thereafter acquired accounts and inventory to secure any and all advances—past, present, or future—made by the creditor to the debtor. This simple formulation is all that is required in order to then attach a long-desired floating lien to goods in motion.

2. Perfection

Now that the lien has become effective as between the debtor and the creditor, it is necessary to cause it to become effective as against third persons, including other creditors of the debtor and buyers of the debtor. This process is known as *perfection*. For purposes of perfecting a floating lien in inventory and accounts, one must file a financing statement into the proper public recording office. Notably, perfection cannot occur until attachment has been accomplished.[127]

The document that must be filed is called a *financing statement*, which is a brief document that contains three essential pieces of information: the name of the debtor, the name of the secured party, and a description of the collateral.[128] Since we are discussing a floating lien, we will assume the debtor is a business entity.[129] In such a case, the name that should be included on the financing statement is the legal name of the debtor as shown on its charter if the business is registered (like a corporation). For unregistered businesses, such as partnerships, the name should either be the name by which the partnership is known or else the individual names of each of the partners. The method of determining the name of the secured party is the same.

In terms of describing the collateral, one can simply recite the same description contained in the security agreement or one can use a broad, omnibus description.[130] For example, one can simply state "all assets" of the debtor or "all personal property" of the debtor. Notably, this formulation can be used even if the security agreement contains a much narrower class of collateral. The reason for this has to do with the filing system itself. It is not a system that is meant to convey facts to third parties. Rather, it is meant to convey the potential for facts. One who searches the public filings will find the financing statement and see that potentially all of the debtor's assets have been encumbered. It is then incumbent upon the searcher to seek more information from the debtor as to whether this is true. To do so, one must look to the

124. U.C.C. § 9-108(b).
125. U.C.C. § 9-102(a)(48).
126. U.C.C. § 9-102(a)(2).
127. U.C.C. § 9-308.
128. U.C.C. § 9-502.
129. *Id.*
130. U.C.C. § 9-504.

security agreement, which contains the true agreement between the parties. It is important to observe, however, that one may not use such an omnibus description of collateral in the security agreement, although one could achieve essentially the same substantive result by simply listing all the UCC Article 9 collateral categories individually.

These three simple elements are all that are needed for the financing statement to be effective. The fact of after-acquired property or future advances need not be included in the financing statement. In terms of where to file,[131] if one is dealing with a business entity as debtor, then one simply files in the applicable public office of the jurisdiction where the business is registered.[132] If the business is not registered, then one should file in the public office of the jurisdiction where the business has its place of business if it has only one, or where it has its principal place of business, if it has more than one.[133] Once one determines the applicable jurisdiction for filing (and by jurisdiction, this typically means which state among the various states that constitute the United States), one files in whatever public office is designated for such filings. In many jurisdictions, this is the Office of the Secretary of State.

Once the filing is made, the security interest has now attached and is perfected. The effect of perfection will last for five years from the date of the filing—this is known as the lapse date.[134] To cause perfection to continue for a longer period, the creditor must file another document into the same filing office—this document is known as a continuation statement.[135] This, if filed no sooner than six months before the date of lapse, but not after the date of lapse, will cause the effects of perfection to continue for another five years from the date of making this additional filing.[136]

3. General Ranking Rules

Once perfection is achieved, as the debtor acquires inventory, those assets are immediately encumbered with a security interest. The same is true when accounts receivable are generated. Moreover, the priority point of this security interest will be retroactive to the date when perfection was achieved.[137] For example, on January 1, Debtor grants a security interest in its existing and after-acquired inventory to Creditor1 who perfects by filing a notice in the competent registry on the same day. On February 1, Debtor grants another security interest in the same collateral to Creditor2 who duly perfects by filing a notice on the same date. Thereafter, on March 1, Debtor acquires a stock of inventory, followed a week later by defaults on both of the secured obligations owed to Creditor1 and Creditor2. As between these two creditors, Creditor1 prevails because it perfected first. This is true even though at the time of perfection, Debtor had not yet acquired the inventory. The reasoning behind the ordering of the creditors' right is reflected in UCC Article 9's general rule of *first*

131. U.C.C. § 9-301.

132. *See* U.C.C. § 9-307. For a definition of a registered organization, see U.C.C. § 9-102(a)(71).

133. *See* U.C.C. § 9-307.

134. U.C.C. § 9-515.

135. *Id.*

136. *Id.*

137. U.C.C. § 9-322.

in time, first in right.[138] Whichever creditor perfects first prevails over those that perfect later.

4. Special Rules: Buyers in the Ordinary Course

In general, once perfected, a security interest in inventory will continue even after the inventory has been conveyed to third persons—unless one of Article 9's specific "take free" rules apply.[139] And indeed, one of the most important of Article 9's take free rules, when it comes to inventory lending, is that of the *buyer in the ordinary course*.[140] If a purchaser qualifies as a buyer in the ordinary course, then that person acquires the property free and clear of any security interest under Article 9 created by the seller, even if that security interest has otherwise been and remains perfected. However, the definition of a buyer in the ordinary course is limited. First, the seller of the good must be in the business of selling those sorts of items. Thus, buying a book from a bookstore would be sufficient but purchasing kitchenware from a bookstore would not.

Second, the buyer must act in good faith. For example, if the buyer has actual knowledge of the fact that the seller is not permitted under its agreement with its lender to sell certain goods, but the buyer purchases the goods anyway, then the buyer would not be in good faith. However, the buyer's mere knowledge of the existence of a security interest in the goods is not alone sufficient to constitute bad faith. Third and lastly, the buyer must actually take possession of the goods (rather than purchasing them but leaving them in the possession of the seller), and the buyer must actually pay for the goods with new value (one cannot claim payment by forgiving a prior debt).

The reason for the buyer in the ordinary course rule makes a great deal of sense in the retailer-consumer setting. Sellers obtain financing from lenders and thereby grant floating liens under Article 9 in their inventory. However, buyers who purchase that inventory do not want security interests of third-party lenders with whom they have no relationship to continue to encumber the property once it is taken home by the buyer. The provisions of Article 9 resolve this issue by making what is otherwise within the expectations of the parties explicit in the law itself.

III. FLOATING LIENS IN THE DIGITAL AGE

Moving beyond traditional forms of collateral subject to the floating lien—i.e., tangible personal property in the form of inventory and intangible rights such as

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138. *See* U.C.C. § 9-322, cmt. 3 ("The first two rules are based on precedence in the time as of which the competing secured parties either filed their financing statements or obtained perfected security interests."); *see also* Alvin C. Harrell, *2011-2013 Secured Transactions Review*, 68 CONSUMER FIN. L.Q. REP. 157, 157–58 (2014); Heather Hughes, *Enabling Investment in Environmental Sustainability*, 85 IND. L.J. 597, 603 (2010); Ronald J. Mann, *Secured Credit and Software Financing*, 85 CORNELL L. REV. 134, 143 (1999); William H. Widen, *Lord of the Liens: Towards Greater Efficiency in Secured Syndicated Lending*, 25 CARDOZO L. REV. 1577, 1624 (2004).

139. U.C.C. § 9-315.

140. U.C.C. § 9-320.

accounts receivable—the remainder of this Article addresses the main contribution of this work: the collateralization of digital assets reliant on distributed ledger technologies (DLT) using a floating lien.

A. NFTs as Inventory

To help envision the applicable scenario in terms that are realistic (at least as of the time of this writing), consider a company that is in the business of minting so-called non-fungible tokens (NFTs), such as Dapper Labs or Yuga Labs. Though a universally accepted definition of NFTs remains elusive, they can be broadly described as digital assets that are uniquely identifiable and one of a kind within a specific system. NFTs have gained considerable traction in DLT networks such as Ethereum, Solana, Avalanche, and many others.[141]

As written elsewhere, the dominant use case for NFTs is associated with the concept of *tokenization*.[142] This refers to the process whereby a person creates an NFT and asserts that it represents and conveys property rights to a specific tangible or intangible property, such as a painting, a rare car, a digital image, or an ownership interest in a company.[143] Alternatively, the issuer of an NFT asserts that the holder of this digital asset is entitled to receive a particular service, such as access to a concert or other event.[144] According to its proponents, tokenization is supposed to facilitate the buying and selling,[145] as well the securitization,[146] of otherwise illiquid assets, by representing them through a unique digital identifier (i.e. the NFT) and leveraging the speed and security of DLT networks.

There are presently two primary models for tokenizations.[147] The first is largely *intermediated*, and it is prevalent in the high-volume, low-value NFT market.[148] An individual creates and then sells an NFT through an online "minting" platform.[149] This is done initially by creating an account with a minting platform and linking it to a crypto digital wallet, through which the creator will send and receive funds in relation to the minting and disposing of NFTs.[150] Relying on the platform provided by the minting company, the NFT creator then uploads a digital image, text, music

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141. Moringiello & Odinet, *Property Law*, *supra* note 1, at 609. *See generally* Freyermuth, Odinet & Tosato, *supra* note 1, at 98–100. Whether the external thing—being the asset—is actually linked or tethered to the NFT is subject to other law. *See* Moringiello & Odinet, *Property Law*, *supra* note 1, at 609.

142. *See* Moringiello & Odinet, *Property Law*, *supra* note 1, at 609.

143. *Id.* at 611; *see generally* Bruce, Odinet & Tosato, *supra* note 1 (discussing the business model).

144. *See* Moringiello & Odinet, *Property Law*, *supra* note 1, at 611; *see also* Freyermuth, Odinet & Tosato, *supra* note 1, at 98–99.

145. Moringiello & Odinet, *Property Law*, *supra* note 1, at 611–12.

146. Freyermuth, Odinet & Tosato, *supra* note 1, at 98–99.

147. *See* Moringiello & Odinet, *Property Law*, *supra* note 1, at 628; Freyermuth, Odinet & Tosato, *supra* note 1, at 103–104.

148. *See* Freyermuth, Odinet & Tosato, *supra* note 1, at 98–99.

149. Moringiello & Odinet, *Property Law*, *supra* note 1, at 611; *Top NFT Minting Platforms in 2023*, COINBOUND (July 19, 2022), https://coinbound.io/top-nft-minting-platforms [https://perma.cc/VNR3-R55S].

150. *See* Moringiello & Odinet, *Property Law*, *supra* note 1, at 628–29.

file, or other digital file they desire to be linked to their soon-to-be-created NFT.[151] Thereafter, the creator selects the manner in which they want to monetize their NFT; typically this will be through a direct sale or an auction.[152]

At this juncture, the minting platform performs two core functions: it mints the NFT[153] and produces a webpage devoted to this unique digital asset that showcases the uploaded content—i.e. the digital image, text, or music—alongside any related metadata provided by the creator.[154] This webpage and its contents are managed by the minting platform and are typically hosted by a web-services provider, such as Amazon, Microsoft, or Google. The NFT is created using a *smart contract*[155] that is coded by the minting platform and executed through a DLT system of its choice, such as Ethereum, Solana, or Avalanche.[156] Once all these operations have been carried out, the NFT is offered to the public.[157] Generally, both the minting platform and the person who created the NFT strive to attract prospective purchasers by advertising through social media and other channels.[158] When a buyer wishes to acquire the NFT, the minting company acts as an intermediary, handling both processing of the payment and the transfer of the NFT.[159] The material execution of this final step might differ depending on the technological structure adopted by the platform. In most cases, the NFT will be transferred to a wallet cryptographically controlled by the buyer. Alternatively, the NFT might remain in an omnibus wallet controlled by the platform if both the creator and buyer of the NFT have accounts on the platform itself. This is not dissimilar to how banks manage fund transfers when the buyer and seller both have accounts at that same institution.[160]

The second tokenization model is *disintermediated*, and it has been used in most large price tag NFT transactions, such as with corporate issuers and major artists.[161]

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151. *See* Mitchell Clark, *NFTs, Explained*, THE VERGE (June 6, 2022, 8:30 AM), https://www.theverge.com/22310188/nft-explainer-what-is-blockchain-crypto-art-faq [https://perma.cc/27RF-D48J].

152. *See* Moringiello & Odinet, *Property Law*, *supra* note 1, at 628–29.

153. Freyermuth, Odinet & Tosato, *supra* note 1, at 99–100.

154. *Id.*

155. *See* Nick Szabo, *Smart Contracts: Building Blocks for Digital Markets*, Universiteit van Amsterdam (1996), https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html [https://perma.cc/K3A8-SDYY].

156. Freyermuth, Odinet & Tosato, *supra* note 1.

157. Moringiello & Odinet, *Property Law*, *supra* note 1, at 628–29.

158. *Id.*

159. *Id.*

160. *Id.* It is possible, however, that the minting platform holds all of the NFTs that it mints through a single public cryptographic key (like an omnibus account). Then, all transfers of the NFT are actually confined to the books and records of the minting platform, just as a bank keeps track of the accounts of its various customers through an internal accounting system. But, with a single public cryptographic key, all of the deposited funds are pooled together. *See* Freyermuth, Odinet & Tosato, *supra* note 1.

161. Freyermuth, Odinet & Tosato, *supra* note 1, at 99–102. *See, e.g.*, BEEPLE, https://www.beeple-crap.com [https://perma.cc/V9U4-ZPS2]; DAPPER LABS, https://www.dapperlabs.com [https://perma.cc/22RC-WMGQ]; *Merge by Pak*, NIFTY GATEWAY (Dec. 2, 2021), https://www.niftygateway.com/collections/pakmerge

The process works as follows. Relying on either a major public DLT network (such as Ethereum) or one under their control (such as Dapper Lab's FLOW Blockchain), the issuer mints one or more NFTs and then allies them with a creative work, such as a digital image, video, or sound file.[162] This allying typically involves the storing of the relevant images, videos, or sounds on servers connected to the internet and then linking each NFT to a specific creative work through a hyperlink or a functionally similar mechanism such as hashing.[163]

Thereafter, the NFTs are offered to the public either by the issuers directly or via specialized intermediaries, including renowned auction houses such as Christie's, Sotheby's, and Phillips.[164] In addition to the NFT itself, the issuer may also offer supplementary services or accompanying assets. For example, regarding the Bored Apes NFT collection, Yuga Labs granted the original purchasers and subsequent buyers a worldwide license to use the images connected to their token.[165] However, it is noteworthy that artists such as Beeple have successfully auctioned their NFTs, neither granting to purchasers a license to the specific creative work in question nor transferring the relevant copyrights.[166]

With that background in mind, consider the second NFT business model—which is disintermediated and typically involves corporate issuers. Here, the issuer mints hundreds, often thousands, of NFTs and then sells them to the public, either via direct sale or at auction. These digital assets often command substantial prices, frequently serving as the primary revenue driver that underpins the entire operation of the issuing company. In a layman's sense, the NFTs are the inventory of these businesses. The next section explores how one might go about obtaining a floating lien over this novel crypto inventory.

B. NFT Inventory Financing

Assume that a corporate issuer of NFTs wishes to use these digital items as collateral. This business holds NFTs out for sale. In a practical sense, these assets are its inventory. Under Article 9, however, inventory is a defined term that only

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[https://perma.cc/ML4K-UKZF]; YUGA LABS, https://www.yuga.com [https://perma.cc/3JCM-H28R].

162. Freyermuth, Odinet & Tosato, *supra* note 1, at 99–102.

163. *See* Joshua A.T. Fairfield, *Tokenized: The Law of Non-Fungible Tokens and Unique Digital Property*, 97 IND. L.J. 1261, 1296 (2022); *see also* Freyermuth, Odinet & Tosato, *supra* note 1.

164. *See, e.g.*, CHRISTIE'S NFT, https://nft.christies.com [https://perma.cc/2N5F-SHBQ]; SOTHEBY'S NFT ART DEP'T, https://www.sothebys.com/en/departments/nft [https://perma.cc/9F5A-JFZ2].

165. *See* Juliet M. Moringiello & Christopher K. Odinet, *NFTs in Commercial Transactions*, *in* CAMBRIDGE HANDBOOK ON EMERGING ISSUES AT THE INTERSECTION OF COMMERCIAL LAW AND TECHNOLOGY (Nancy Kim & Stacy-Ann Elvy eds., forthcoming 2023).

166. Freyermuth, Odinet & Tosato, *supra* note 1, at 105–106; *see also* Taylor Locke, *Millionaire Artist Beeple: This Is the Very Important Thing 'I Think People Don't Understand' About Buying NFTs*, CNBC (Mar. 29, 2021, 11:22 AM), https://www.cnbc.com/2021/03/26/digital-artist-beeple-common-misunderstanding-about-nfts.html [https://perma.cc/LXV7-VBDS].

encompasses *goods* and other tangible movables held out by a person for sale or to be furnished under a service.[167] As NFTs are *intangible* personal property, Article 9 classifies them as *general intangibles*.[168] As we explain below, the UCC 2022 Amendments reshape the regime to create a floating lien over crypto inventory.

1. NFTs as Controllable Electronic Records

The sponsoring entities of the UCC, the Uniform Law Commission (ULC) and the American Law Institute (ALI), recognized the growing use of digital assets, especially cryptocurrencies, in commercial transactions, as well as the desire for crypto-supportive laws in various states of the United States.[169] In response to this rapidly evolving landscape, between 2018 and 2022, the ULC and the ALI drafted revisions to the UCC aimed at facilitating and clarifying the rules regarding transactions involving certain types of digital assets (the 2022 UCC Amendments).[170] These novel rules create a new collateral subcategory under Article 9's preexisting definition of general intangibles: *controllable electronic records* (CERs).[171]

A CER is defined as "information . . . that is stored in an electronic or other medium and is retrievable in perceivable form" and that is susceptible of control.[172] Notably, this definition is predicated on the ability to take *control* of the record.[173] The new rules set up a three-prong test for control: a person must have the powers to (i) enjoy "substantially all the benefit" of the CER, (ii) prevent others from enjoying "substantially all the benefit" of the CER, and (iii) transfer control to someone else.[174] And importantly, the person in control must have the ability to identify themselves to a third-party as having the three aforementioned powers.[175]

As described in the NFT minting summary earlier in this Article, an NFT will typically meet the definition of CER.[176] NFTs are data entries stored in a distributed database and, thus, they constitute "information that is stored in an electronic or other medium and is retrievable in perceivable form" in the eyes of the UCC. Moreover, the cryptographic infrastructure implemented in DLT networks enables a person to have dominion over and dispose of NFTs in a manner that satisfies the "control" requirements. For example, on Ethereum, a person can control an NFT thanks to the

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167. U.C.C. § 9-102(a)(48).

168. U.C.C. § 9-102(a)(44).

169. *See UCC, 2022 Amendments to*, UNIF. L. COMM'N, https://www.uniformlaws.org/committees/community-home?CommunityKey=1457c422-ddb7-40b0-8c76-39a1991651ac [https://perma.cc/99FW-GNUS].

170. *See id.*

171. U.C.C. § 12-102(a)(1); *id.*

172. Certain kinds of electronic records, particularly electronic chattel paper, electronic documents, electronic money, investment property, and transferable records. U.C.C. §12-102(a)(1); s*ee UCC, 2022 Amendments to*, UNIF. L. COMM'N (2022), https://www.uniformlaws.org/committees/community-home?CommunityKey=1457c422-ddb7-40b0-8c76-39a1991651ac [https://perma.cc/99FW-GNUS].

173. *See* U.C.C. § 12-105(a).

174. U.C.C. § 12-105(a)(1)(A)–(B).

175. U.C.C. § 12-105(a)(2).

176. *See* U.C.C. § 12-105(a)(1)-(2).

public/private key cryptography adopted by this network. Through their private key, an individual has the powers to interact with an NFT enjoying all of its benefits (whatever those might be) and to prevent all others from interfering. This same technology also enables that individual to completely divest themselves of those powers by transferring them to someone else. Finally, public/private key cryptography also enables an individual to identify themselves as being in control of a determinate NFT through their digital signature.[177]

2. Collateralizing Crypto Inventory

The 2022 UCC Amendments forge a new framework for collateralizing crypto inventory. Regarding attachment, prospective secured lenders have two avenues when using CERs as collateral. First, as these digital assets are a subset of the broader "general intangibles" category, a creditor and debtor can create a security interest with a "signed" agreement that adequately describes the collateral. Notably, the 2022 UCC Amendments have moved past the word "authenticated."[178] Specifically for NFTs, a contract clause stating that the collateral comprises "all debtor's present and future general intangibles" or "all debtor's present and future CERs" would be effective; there would also be no obstacle to a narrower description of the encumbered asset that more narrowly focuses on the tokens in question, such as "all NFTs minted by the debtor" and, possibly, also specifying the relevant DLT network, smart contract, and cryptographic identifiers.

The second avenue to create a security interest in crypto inventory leverages the concept of control. Dispensing with the requirement of a signed security agreement, the 2022 UCC Amendments provide that a security agreement can be created between debtor and creditor if "the collateral is … controllable electronic records… and the secured party has control under Section … [12-105] … pursuant to the debtor's security agreement."[179] Extending to CERs the rules previously available for deposit accounts, electronic chattel paper, investment property, or letter of credit rights, the 2022 UCC Amendments recognize that taking control of CERs adequately evidences what collateral the parties objectively intended to encumber.

The 2022 UCC Amendments also introduce a novel regime for the perfection of security interests in CERs that further cements the prominent role of control. As with all types of collateral,[180] a creditor can perfect a security interest in crypto inventory by filing a financing statement in the relevant registry, just as it could before the new rules came into effect.[181] However, the 2022 UCC Amendments also provide that a

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177. *See Understanding Digital Signatures*, CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY (Feb. 1, 2021), https://www.cisa.gov/news-events/news/understanding-digital-signatures [https://perma.cc/3263-A8ME].

178. U.C.C. § 9-203.

179. *UCC, 2022 Amendments to*, UNIF. L. COMM'N (2022), https://www.uniformlaws.org/committees/community-home?communitykey=1457c422-ddb7-40b0-8c76-39a1991651ac [https://perma.cc/99FW-GNUS]; UNIF. L. COMM'N, *Uniform Commercial Code and Emerging Technologies* (July 2021).

180. Note the exception of a security interest in money, which can only be perfected by possession. U.C.C. § 9-313(a).

181. *See* U.C.C. § 9-312(a).

creditor can perfect a security interest in CERs by taking control of these assets.[182] A creditor can also obtain control through a third party who acknowledges that it has or will obtain control on their behalf.[183]

Crypto inventory financiers will likely want to achieve perfection by control for two main reasons. First, under Article 9, the general rule to rank competing interests over the same collateral is that the party first to file a financing statement or to otherwise perfect has priority.[184] The 2022 UCC Amendments introduce a special, non-temporal priority rule to rank competing security interests over CERs.[185] Specifically, the security interest of a secured creditor who perfects by control "has priority over a conflicting security interests held by a secured party that does not have control."[186] Replicating the same approach historically adopted by the UCC for the priority regime applicable to deposit accounts and investment property, the 2022 UCC Amendments recognize preference to secured creditors who have direct dominion over the encumbered CERs.

The second reason why crypto financiers will want to take control of encumbered CERs stems from the *take free* regime introduced by the 2022 UCC Amendments for the commercial circulation of these assets.[187] Under these rules, a person who acquires a CER for value, in good faith, and without notice of any conflicting property claims is deemed a "qualifying purchaser" and, as such, takes it free from any preexisting property claims.[188] Drawing heavily from the UCC Article 3 regime for negotiable instruments, these provisions elegantly endow CERs with the attribute of negotiability.[189] It follows that if a secured creditor obtained a security interest in crypto inventory and only perfected by filing, they would be at risk of the debtor disposing of the collateral and transferring control to a qualifying purchaser that would take it free from any competing claim.

3. Liening Crypto-in-Commerce

Now consider how a lender would take a floating lien over all of the debtor's NFTs. Recall, as described above, that our debtor is a corporate issuer of NFTs who mints and then sells them routinely to the public. Attachment could happen in the way described earlier in this Article, with a security agreement describing the collateral either as "all of the debtor's general intangibles" (if one wanted to be broad) or else all of the debtor's NFTs in a specific DLT network (if one wanted to be more specific). The security agreement would also provide that this includes all

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182. *See* U.C.C. § 9-314(a).

183. U.C.C. § 9-307.

184. U.C.C. § 9-322(a)(1).

185. *See* U.C.C. § 9-322(c).

186. U.C.C. § 9-326A, U.L.A. (West, Westlaw through 2022 ann. meetings of the Nat'l Conf. of Comm'r on Unif. State Ls. and Am. L. Inst.).

187. U.C.C. § 9-317(h).

188. U.C.C. §§ 9-317(h), 12-102(a)(2), 12-104(e).

189. *See* Edwin E. Smith & Steven O. Weise, *The Proposed 2022 Amendments to the Uniform Commercial Code: Digital Assets*, BUS. L. TODAY (Mar. 25, 2023), https://businesslawtoday.org/2022/03/proposed-2022-amendments-uniform-commercial-code-digital-assets/ [https://perma.cc/P7DX-7WH5].

currently existing and later acquired or created NFTs, and that the security interest in these NFTs secures preexisting, contemporaneous, and future arising debts of the debtor to the creditor.

For purposes of perfection, the secured party should both file a notice in the jurisdictionally competent security registry and take control of the collateral. There are a plethora of ways to structure such an arrangement in practice; here, we describe two options that are notable for their simplicity and effectiveness. The debtor and the creditor could agree that all newly minted NFTs should be associated with the creditor's cryptographic keys on the applicable blockchain—not those of the debtor. Said another way, the NFTs should be generated by a smart contract and automatedly transferred to the creditor's digital wallet rather than that of the debtor. In doing so, the creditor would have control (and thus be perfected) for each NFT. Alternatively, the creditor and the debtor could agree that all newly minted NFTs should be held through an escrow-like smart contract that would be jointly governed by the parties.[190] It is worth noting that the 2022 UCC Amendments explicitly allow for control to be shared among multiple parties, with the commentary specifically considering "multi-sig arrangement[s]."[191] Such an arrangement would be a not-so-distant digital cousin of existing transactions in which the debtor and secured creditor agree that the collateral will be held by a third-party intermediary and released only if predetermined conditions are satisfied.

Subsequently, whenever the debtor wished to sell one of the NFTs, the creditor would have to approve of such transactions. This could be subject to a transfer of funds or to any other compensatory mechanism agreed upon by the parties. For instance, the debtor may need to convey a percentage of the sale price of each NFT to the creditor. This arrangement would of course involve monitoring costs, but such expenses would be significantly lower than those associated with traditional inventory. Typically, a creditor with security in tangible inventory must arrange for inspectors that examine the state, quantity, and quality of the collateral, the premises where it is held, the manner in which it is offered to the public, and many other similar matters. By contrast, for a creditor that has taken security in digital inventory and perfected by control, the primary task would be approving any sale of the assets in question and surveilling the debtor to ensure that the debtor does not secretly mint NFTs without duly transferring their control. Finally, any minting of an NFT by the debtor that does not immediately appear in the creditor's digital wallet or in the designated multi-sig smart contract should be deemed an event of default in the security agreement.

In constructing the transaction in the way described above, the creditor would have used UCC Articles 12 and 9 to create a floating lien on the CERs of the debtor—specifically, digital inventory in the form of NFTs. The lien would float while also providing preferential priority through control. Notably, this is a stronger position than that held by a secured party undertaking traditional inventory-backed financing,

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190. *See* Kevin Werbach & Nicolas Cornell, *Contracts* Ex Machina, 67 DUKE L.J. 313, 344–45 (2017) (exhaustively exploring the analogies between certain types of smart contracts and escrow arrangements).

191. U.C.C. § 12-105 and accompanying comment.

where the inventory consists of tangible personal property and the only practical method for perfection is filing a financing statement.

CONCLUSION

The floating lien in American law has come a long way since its early days, when the U.S. commercial market was still in a decidedly developing stage. The variability of devices evidences a tension between achieving a commercial transaction that facilitates the flow of credit on the one hand and providing necessary guardrails for warding off creditor overreaching and maintaining coherence with the law of property on the other.

The story of the American floating lien is one of savvy lawyers, cautious courts, innovative reformers, and careful legislators. The twenty-first century and the advent of the digital age has seen yet another wave of commercial law reforms, this time dealing not with tangible goods and their money-claim offspring (those being inventory and accounts) but rather with the complex and ever-growing world of digital assets. As explained in these pages, the United States' experience with creating a floating lien over such novel items like digital assets is happening at the very moment this Essay is being written. And indeed, we should expect to see more reforms as the chronicle of secured transactions law—and the story of the floating lien in particular—continues to unfold.