Science and technology scholars have long studied how expert or specialized communities of practice tend to develop particular cultures or ways of viewing the world imbued with a set of vested interests. Most patent law scholarship, however, has emphasized the importance of more specialized training as a way to improve the efficiency, legal consistency, and accuracy of patent decisions, but has neglected to study the costs of greater technocratic know-how and specialization. This Article seeks to fill this gap in the literature. It argues that the two principal institutions in charge of interpreting and implementing patent law—the PTO and the Federal Circuit—suffer from a democratic deficit that is in part responsible for patent law’s subject matter expansion. Using as a case study the continued expansion of patentable subject matter to include isolated genes, proteins, and genetically engineered animals, this Article examines how the PTO’s and the Federal Circuit’s embeddedness in a closed community of practice caused them to think of these entities simply as a patentable combination of chemicals. Moving from the descriptive to the normative, this Article suggests potential mechanisms to correct specialization bias, such as empowering additional agencies to participate in the patent policy debate, granting the PTO limited rule-making authority requiring notice and comment, and decentralizing judicial decision-making.