Abstract. Skew polynomial rings have invited attention of mathematicians and various properties of these rings have been discussed. The nature of ideals (in particular prime ideals, minimal prime ideals, associated prime ideals), primary decomposition and Krull dimension have been investigated in certain cases. In this article, we introduce a notion of primary decomposition of a noncommutative ring. We say that a Noetherian ring satisfying this type of primary decomposition is a *transparent ring*. We then show that if $R$ is a commutative Noetherian $\mathbb{Q}$-algebra ($\mathbb{Q}$, the field of rational numbers) and $\sigma$ is an automorphism of $R$, then there exists an integer $m \geq 1$ such that the Ore extension $R[x; \alpha, \delta]$ is a *transparent ring*, where $\sigma^m = \alpha$ and $\delta$ is an $\alpha$-derivation of $R$ such that $\alpha(\delta(a)) = \delta(\alpha(a))$, for all $a \in R$.