



**FIGURE 7.12B** A lock acquisition and release in an MCSLock. (a) Initially the tail is *null*. (b) To acquire the lock, thread A places its own QNode at the tail of the list and since it has no predecessor, it enters the critical section. (c) Thread B enqueues its own QNode at the tail of the list and modifies its predecessor's QNode to refer back to its own. Thread B then spins on its locked field waiting until A, its predecessor, sets this field from *true* to *false*. Thread C repeats this sequence. (d) To release the lock, A follows its next field to its successor B and sets B's locked field to *false*. It can now reuse its QNode.