



FIGURE 10.6 The `enq()` and `deq()` methods of the `BoundedQueue` with four slots. First a node is enqueued into the queue by acquiring the `enqLock`. The `enq()` checks that the `size` is 3, which is less than the bound. It then redirects the `next` field of the node referenced by the `tail` field (step 1), redirects `tail` to the new node (step 2), increments the `size` to 4, and releases the lock. Since `size` is now 4, any further calls to `enq()` will cause the threads to block until the `notFullCondition` is signaled by some `deq()`. Next, a node is dequeued from the queue by some thread. The `deq()` acquires the `deqLock`, reads the new value `b` from the successor of the node referenced by `head` (this node is the current sentinel), redirects `head` to this successor node (step 3), decrements the `size` to 3, and releases the lock. Before completing the `deq()`, because the `size` was 4 when it started, the thread acquires the `enqLock` and signals any enqueueurs waiting on `notFullCondition` that they can proceed.