

```
1  public T deq() throws EmptyException {
2      int[] lastStamp = new int[1];
3      int[] firstStamp = new int[1];
4      int[] nextStamp = new int[1];
5      while (true) {
6          Node first = head.get(firstStamp);
7          Node last = tail.get(lastStamp);
8          Node next = first.next.get(nextStamp);
9          if (head.getStamp() == firstStamp[0]) {
10              if (first == last) {
11                  if (next == null) {
12                      throw new EmptyException();
13                  }
14                  tail.compareAndSet(last, next,
15                                      lastStamp[0], lastStamp[0]+1);
16              } else {
17                  T value = next.value;
18                  if (head.compareAndSet(first, next, firstStamp[0],
19                                         firstStamp[0]+1)) {
20                      free(first);
21                      return value;
22                  }
23              }
24          }
25      }
```

FIGURE 10.17 The LockFreeQueueRecycle<T> class: The deq() method uses stamps to avoid ABA.