

```

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.