

```

45 private QNode acquireQNode(Backoff backoff, long startTime, long patience)
46     throws TimeoutException, InterruptedException {
47     QNode node = waiting[ThreadLocalRandom.current().nextInt(SIZE)];
48     QNode currTail;
49     int[] currStamp = {0};
50     while (true) {
51         if (node.state.compareAndSet(State.FREE, State.WAITING)) {
52             return node;
53         }
54         currTail = tail.get(currStamp);
55         State state = node.state.get();
56         if (state == State.ABORTED || state == State.RELEASED) {
57             if (node == currTail) {
58                 QNode myPred = null;
59                 if (state == State.ABORTED) {
60                     myPred = node.pred;
61                 }
62                 if (tail.compareAndSet(currTail, myPred, currStamp[0], currStamp[0]+1)) {
63                     node.state.set(State.WAITING);
64                     return node;
65                 }
66             }
67         }
68         backoff.backoff();
69         if (timeout(patience, startTime)) {
70             throw new TimeoutException();
71         }
72     }
73 }

```

FIGURE 7.27 The CompositeLock class: the acquireQNode() method.