```
1  class Queue {
2    AtomicInteger head = new AtomicInteger(0);
3    AtomicReference items[] = new AtomicReference[Integer.MAX_VALUE];
4    void enq(Object x){
5      int slot = head.getAndIncrement();
6      items[slot] = x;
7    }
8    Object deq() {
9      while (true) {
10       int limit = head.get();
11       for (int i = 0; i < limit; i++) {
12         Object y = items[i].getAndSet(); // swap
13         if (y != null)
14           return y;
15       }
16     }
17   }
18 }
```

FIGURE 5.18 Queue implementation.