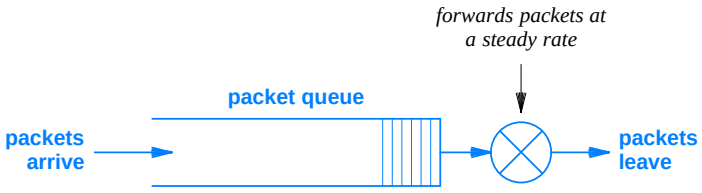

Figure 6.2 Illustration of a leaky bucket traffic shaper. As they arrive in bursts, packets are deposited in a queue. The leaky bucket mechanism then forwards one packet at a time.

The analogy with a water bucket is appropriate. Like the drips from a water bucket, packets leave the bucket at a steady rate. Furthermore, like water dripping from a bucket, the exact rate depends on the number of packets in the queue (which is analogous to the depth of the water in a leaking bucket). Finally, packets arrive at a leaky bucket shaper in bursts, which is analogous to someone adding water to the bucket one pitcherful at a time. Although the packet rate changes as the bucket fills, the output of a leaky bucket is much smoother than the input.

A leaky bucket tends to smooth bursts and makes the outgoing traffic conform to predictable bounds, but it does not guarantee a steady data rate. To see why, observe that although leaky bucket sends a fixed number of packets per second, the amount of data sent each second varies because packet size can vary. A modified shaping mechanism known as *token bucket*