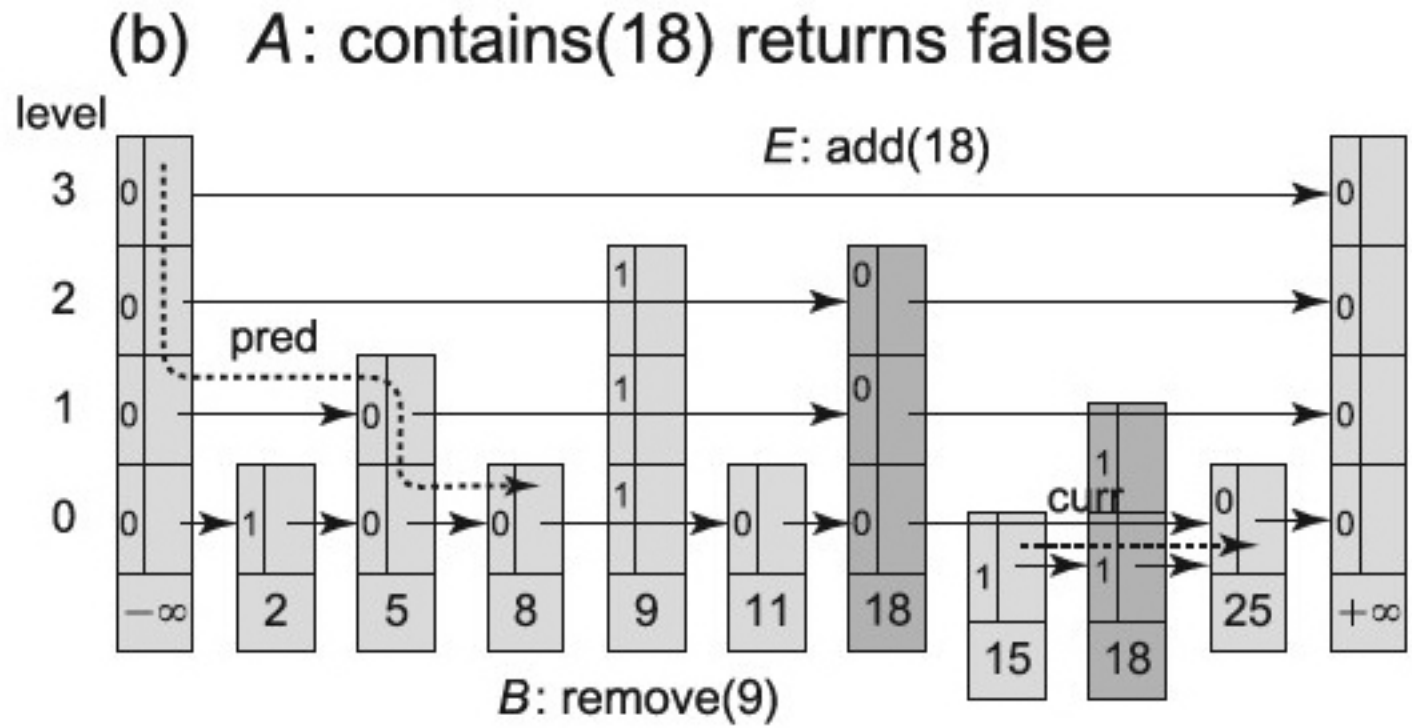

FIGURE 14.16B The LockFreeSkipList class: a contains() call. In part (a), contains*(*18*)* traverses the list starting from the top level of the head node. The dotted line marks the traversal by the pred field. The pred field eventually reaches Node 8 at the bottom level and we show the path of curr from that point on using a sparser dotted line. The curr traverses past Node 9 and reaches the marked Node 15. In part (b), a new node with key 18 is added to the list by a thread *E*. Thread *E*, as part of its find*(*18*)* call, physically removes the old nodes with keys 9, 15, and 18. Now thread *A* continues its traversal with the curr field from the removed node with key 15 (the nodes with keys 15 and 18 are not recycled since they are reachable by thread *A*). Thread *A* reaches the node with key 25, which is greater than 18, returning *false*. Even though at this point there is an unmarked node with key 18 in the LockFreeSkipList, this node was inserted by *E* concurrently with *A*'s traversal and is linearized after *A*'s add*(*18*)*.