

Disjoint Set Data Structure:

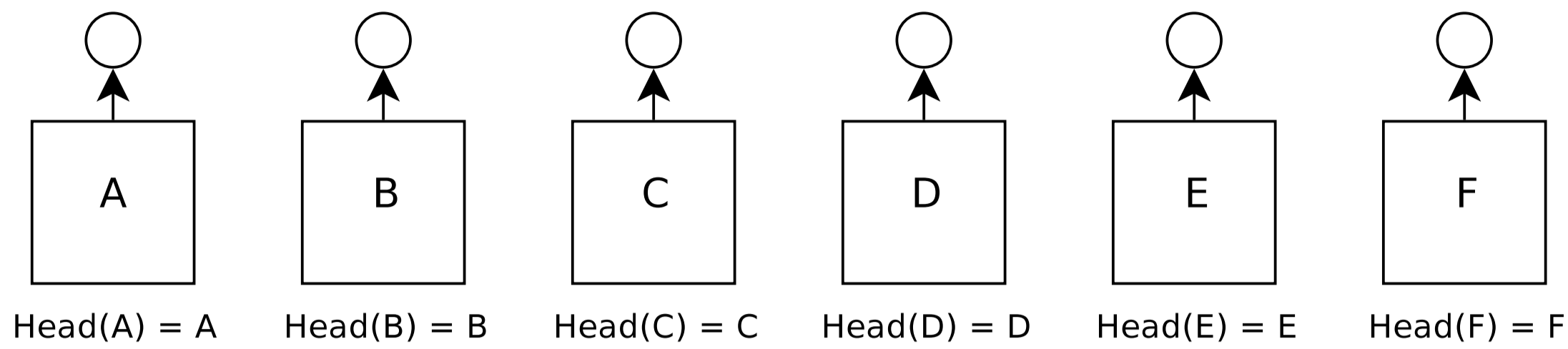
```
func Head(x):  
  if x.ptr==null:  
    return x  
  x.ptr = Head(x.ptr)  
  return x.ptr
```

```
func Merge(x,y):  
  hx = Head(x)  
  hy = Head(y)  
  if hx==hy:  
    return  
  hx.ptr = hy
```

(Arrow to circle indicates null pointer)

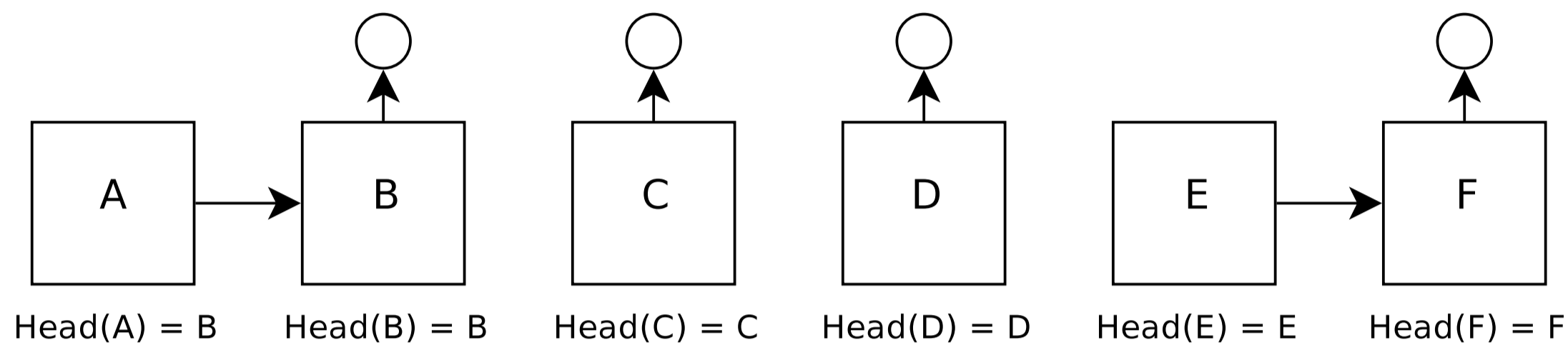
Starting State:

(6 Segments)



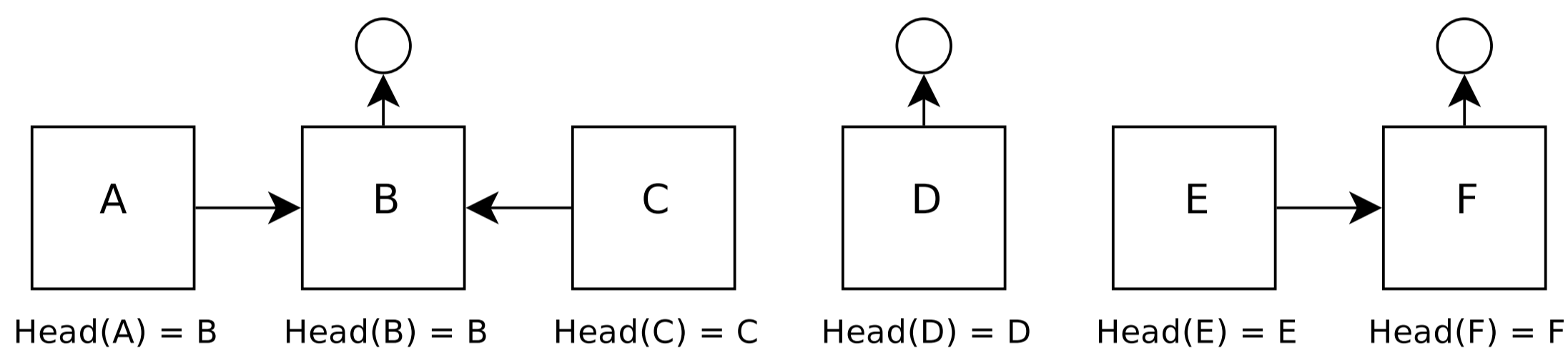
Merge(A,B), Merge(E,F):

(4 Segments)



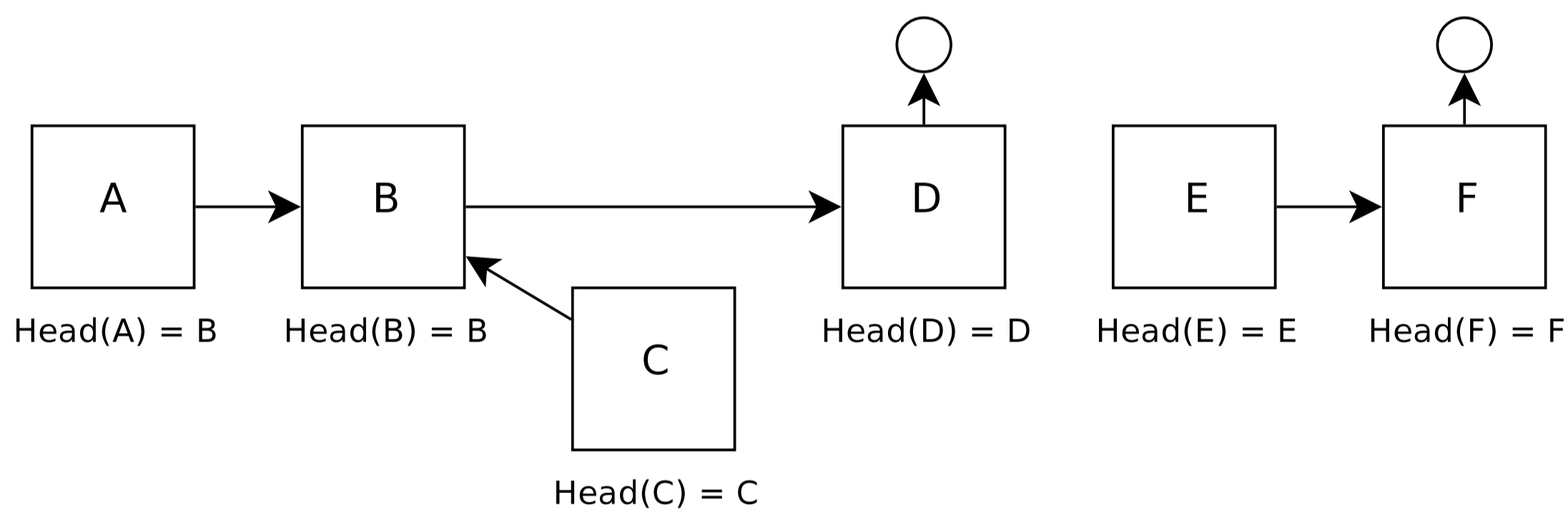
Merge(A,C):

(3 Segments)



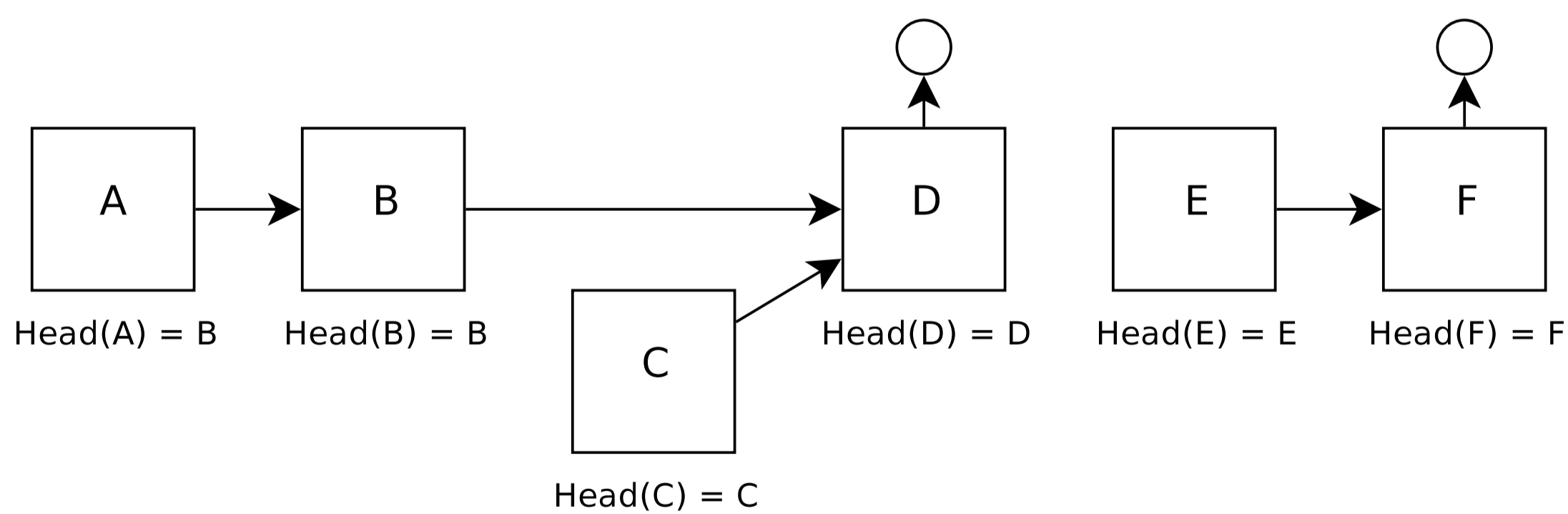
Merge(A,D):

(2 Segments)



After Calling Head(C):

(2 Segments)



Merge(A,F):

(Note call to head A)

(1 Segment)

