CLAIMS

WHAT IS CLAIMED IS:

1. A liquid collector for collecting a falling liquid and permitting air to flow about the liquid collector, the liquid collector comprising:

a forward lower edge;

a connecting wall portion extending downwardly from the forward edge;

a first layback wall portion connected to the connecting wall portion and extending upwardly and rearwardly away from the connecting wall portion, the first layback wall portion having a first inclined surface to receive liquid thereon and direct the liquid toward the connecting wall portion;

an intermediate upper edge of the layback wall portion rearward of and above the forward lower edge;

an air diverter wall portion extending rearwardly from the first layback wall portion below the intermediate upper edge;

a second layback wall portion extending upwardly and rearwardly of the air diverter wall portion, the second layback wall portion having a second inclined surface to receive liquid thereon and direct the liquid toward the air diverter wall portion; and

a rearward upper edge of the second layback wall portion rearward of the intermediate upper edge and above the forward lower edge.

2. The liquid collector of claim 1 further comprising a juncture between the air diverter wall portion and the second layback wall portion; and

wherein the juncture includes a lower drip edge.

3. The liquid collector of claim 2 wherein the air diverter wall portion includes a recess forward of the lower drip edge.

4. The liquid collector of claim 1 further comprising a lower drip edge intermediate the air diverter wall portion and the second layback wall portion; and

wherein air diverter wall portion includes a curved portion forward of the lower drip edge.

5. The liquid collector of claim 1 wherein the second layback wall portion, the air diverter wall portion, and the first layback wall portion define at least a portion of a primary gutter of the liquid collector; and

wherein the connecting wall portion and the first layback wall portion define at least a portion of a secondary gutter of the liquid collector.

6. The liquid collector of claim 1 wherein the first layback wall portion includes an upper straight wall portion below the intermediate upper edge and a lower straight wall portion extending transversely to the upper straight wall portion;

a juncture connecting the upper and lower straight wall portions; and

wherein the air diverter wall portion extends rearwardly from the juncture.

7. The liquid collector of claim 1 wherein the first layback wall portion includes an upper wall portion connecting the intermediate upper edge and the air diverter wall portion; and

wherein the upper wall portion of the first layback wall portion and the second layback wall portion extend parallel to one another.

8. The liquid collector of claim 1 wherein one or more of the forward lower edge, intermediate upper edge, and the rearward upper edge is a portion of a barb.

9. The liquid collector of claim 1 wherein the liquid collector has a length and a cross-section perpendicular to the length that is uniform throughout at least a majority of the length of the liquid collector.

10. The liquid collector of claim 1 wherein the liquid collector comprises:

a body including the forward lower edge, the connecting wall portion, the first layback wall portion, the intermediate upper edge, the air diverter wall portion, the second layback wall portion, and the rearward upper edge;

wherein the body has opposite end portions;

an open end cap connected to one end portion of the liquid collector; and

a closed end cap connected to the other end portion of the liquid collector.

11. The liquid collector of claim 1 further comprising a lower forward wall portion and a lower rearward wall portion, the lower forward and rearward wall portions protruding below the connecting wall portion and forming tertiary gutters of the liquid collector.

12. A heat exchange apparatus comprising:

a heat exchanger;

a liquid distribution system configured to distribute liquid onto the heat exchanger;

a pair of spaced rails;

a plurality of liquid collectors for collecting at least a portion of the liquid distributed onto the heat exchanger;

mounts of the liquid collectors configured to facilitate positioning the liquid collectors side-by-side along the rails; and

interlocking portions of the mounts of the liquid collectors configured to engage and inhibit movement of the liquid collectors with the liquid collectors positioned along the rails.

13. The heat exchange apparatus of claim 12 wherein the interlocking portions of the mounts include forward engagement surfaces and rearward engagement surfaces of each of the mounts that engage corresponding rearward and forward engagement surfaces of adjacent mounts when the liquid collectors are positioned side-by-side along the rails.

14. The heat exchange apparatus of claim 12 wherein the interlocking portions of the mounts include a forward lower protrusion, a forward upper recess, a rearward lower recess, and a rearward upper protrusion of each of the mounts.

15. The heat exchange apparatus of claim 12 wherein the mounts include flats to slide along the rails.

16. The heat exchange apparatus of claim 12 wherein the interlocking portions of the mounts include recesses and detents to engage the recesses for releasably engaging the mounts together.

17. The heat exchange apparatus of claim 12 wherein the rails each include lower supports for supporting the mounts of the liquid collectors; and

wherein at least one of the rails has a through opening in the lower support thereof sized to facilitate advancing of one of the mounts of each liquid collector through the through opening in the lower support.

18. The heat exchange apparatus of claim 12 wherein the rails each include first and second ends and a length extending therebetween;

wherein one of the rails has a through opening intermediate the first and second ends thereof, the through opening sized to permit mounts of the liquid collectors to be advanced therethrough;

wherein the through opening is a first distance from the first end of the one rail to permit a first plurality of the liquid collectors to be positioned on the one rail between the first end and the through opening; and

wherein the through opening is a second distance from the second end of the one rail to permit a second plurality of the liquid collectors to be positioned on the one rail between the second end and the through opening.

19. The heat exchange apparatus of claim 18 wherein the first distance is greater than the second distance to permit a majority of the liquid collectors of the plurality of liquid collectors to be positioned between the through opening and the first end of the one rail.

20. The heat exchange apparatus of claim 12 wherein the liquid collectors each include a liquid collector body having a primary gutter and a secondary gutter for collecting the fluid; and

wherein the liquid collectors each include an open end cap connected to the liquid collector array that permits fluid in the primary gutter and the secondary gutter to discharge from the liquid collector.

21. The heat exchange apparatus of claim 12 wherein at least one of the rails has a stop to limit movement of the liquid collectors along the rails.

22. The heat exchange apparatus of claim 12 wherein each of the liquid collectors comprises:

a forward lower edge;

a connecting wall portion extending downward from the forward edge;

a first layback wall portion connected to the connecting wall portion and extending upwardly and rearwardly from the connecting wall portion, the first layback wall portion having a first inclined surface to receive liquid thereon and direct the liquid toward the connecting wall portion;

an intermediate upper edge of the layback wall portion rearward of and above the forward lower edge;

an air diverter wall portion extending rearwardly from the layback wall portion below the intermediate upper edge; and

a second layback wall portion extending upwardly and rearwardly of the air diverter wall portion, the second layback wall portion having a second inclined surface to receive liquid thereon and direct the liquid toward the air diverter wall portion.

23. The heat exchange apparatus of claim 12 wherein the heat exchange apparatus includes an enclosed space;

wherein the heat exchanger is in the enclosed space;

wherein the liquid distribution system includes liquid outlets in the enclosed space above the heat exchanger; and

wherein the liquid distribution system includes a pump in the enclosed space below the liquid collectors.

24. A method of assembling a liquid collector array, the method comprising:

positioning mounts of a first liquid collector upon rails of the liquid collector array, the first liquid collector having at least one gutter to collect a falling liquid;

shifting the first liquid collector along the rails to a first installed position, the first liquid collector inclined with the first liquid collector in the first installed position to cause liquid in the at least one gutter of the first liquid collector to discharge from the first liquid collector;

positioning mounts of a second liquid collector upon the rails of the liquid collector array, the second liquid collector having at least one gutter to collect a falling liquid; and

shifting the second liquid collector along the rails to a second installed position proximate the first liquid collector, the second liquid collector inclined with the second liquid collector in the second installed position to cause liquid in the at least one gutter of the second liquid collector to discharge from the second liquid collector.

25. The method of claim 24 wherein positioning the mounts of the first liquid collector upon the rails comprises advancing one of the mounts of the first liquid collector through an opening in one of the rails.

26. The method of claim 25 wherein the one of the rails has a length; and

wherein advancing the one of the mounts of the first liquid collector through the opening in the one rail comprises advancing the one mount through the opening in a direction transverse to the length of the one rail.

27. The method of claim 25 wherein positioning the mounts of the second liquid collector upon the rails comprises advancing one of the mounts of the second liquid collector through the opening in the one rail.

28. The method of claim 24 wherein shifting the first and second liquid collectors along the rails includes shifting the first and second liquid collectors in a first direction along the rails, the method further comprising:

shifting a third liquid collector along the rails in a second direction opposite the first direction.

29. The method of claim 24 wherein positioning the mounts of the first liquid collector upon the rails comprises advancing one of the mounts of the first liquid collector through an opening in one of the rails, the method further comprising:

positioning a first mount of a third liquid collector upon the other rail and a second mount of the third liquid collector above the opening in the one rail; and

connecting a support to the one rail below the second mount of the third liquid collector to close the opening in the one rail.

30. The method of claim 24 wherein shifting the first liquid collector along the rails to the first installed position comprises shifting the first liquid collector in a first direction and abutting the first liquid collector with a stop of the rails that limits further movement of the first liquid collector in the first direction.

31. The method of claim 24 wherein shifting the second liquid collector along the rails comprises advancing forward projections of the mounts of the second liquid collector into rearward openings of the mounts of the first liquid collector.

32. The method of claim 24 further comprising positioning mounts of a plurality of liquid collectors on the rails to fill the rails with liquid collectors and secure the first liquid collector, the second liquid collector, and the plurality of liquid collectors to the rails.

33. The method of claim 24 wherein shifting the second liquid collector along the rails comprises stacking portions of the mounts of the first and second liquid collectors.