Claims

1. A laboratory work cabinet comprising:
(a) a housing defining a work chamber and a filtration chamber,
(b) a filter between the filtration chamber and the work chamber for removing contaminants from air passing between the work chamber and the filtration chamber, the filter comprising a filter medium surrounded by a perimeter seal,
(c) an air circulation system for directing air flow between the work chamber and the filtration chamber and through the filter in an air flow direction transversely to the filter medium, and
(d) a filter mounting mechanism comprising:
(i) a stationary filter support surface disposed between the work chamber and the filtration chamber,
(ii) a filter clamping surface movable toward and away from the filter support surface between a clamping position relatively proximal to the filter support surface for holding the filter in an operational disposition against the filter support surface and an installation position relatively distal to the filter support surface for permitting insertion and removal of the filter between the filter support and clamping surfaces, and
(iii) an extensible and retractable linkage mechanism connected between the housing and the filter clamping surface outside of the work and filtration chambers for selectively actuating movement of the clamping surface between the clamping and installation positions in a linear direction parallel to and outside of the air flow.

2. A laboratory work cabinet according to claim 1, wherein the linkage mechanism is a pantograph linkage.

3. A laboratory work cabinet according to claim 2, wherein the linkage mechanism is a scissors linkage.

4. A laboratory work cabinet according to claim 3, wherein the scissors linkage comprises pivoted scissors links connected by a common drive rod for moving the scissors links in coordinated extending and retracting movements relative to one another.

5. A laboratory work cabinet according to claim 1, wherein the housing, filter and air circulation system are arranged for operation of the work cabinet as a biological safety cabinet.

6. A laboratory work cabinet according to claim 5, wherein the air circulation system includes a fan interposed between the work chamber and the filtration

chamber for drawing air under negative pressure from the work chamber and directing the air under positive pressure into the filtration chamber and therefrom through the filter for return into the work chamber for recirculating air between the work and filtration chambers.

7. A laboratory work cabinet according to claim 6, further comprising a second filter between the filtration chamber and an exhaust opening in the housing for exhausting a portion of the pressurized air delivered by the fan to outside the housing.

8. A laboratory work cabinet according to claim 7, further comprising a second filter mounting mechanism comprising:

(i) a second stationary filter support surface adjacent the exhaust opening,

(ii) a second filter clamping surface movable toward and away from the second filter support surface between a second clamping position relatively proximal to the second filter support surface for holding the second filter in an operational disposition against the second filter support surface and a second installation position relatively distal to the second filter support surface for permitting insertion and removal of the second filter between the second filter support and clamping surfaces, and

(iii) a second extensible and retractable linkage mechanism connected to the second filter clamping surface for selectively actuating movement of the second clamping surface between the second clamping and installation positions.

9. A laboratory work cabinet according to claim 8, wherein the second linkage mechanism is a pantograph linkage.

10. A laboratory work cabinet according to claim 9, wherein the second linkage mechanism is a second scissors linkage.

11. A laboratory work cabinet according to claim 10, wherein the second scissors linkage comprises pivoted scissors links connected by a common drive rod for moving the scissors links in coordinated extending and retracting movements relative to one another.

12. A laboratory work cabinet according to claim 8, further comprising first and second plenum sections defining the filtration chamber, the first and section plenum sections being movable relative to one another, the first plenum section including the first-mentioned filter clamping surface and the second plenum section including the second filter clamping surface.