United States Patent

[11] **3,564,990**

[72] Inventor **Peter Smedes**
Muskegon, Mich.

[21] Appl. No. **808,463**
[22] Filed **Mar. 19, 1969**
[45] Patented **Feb. 23, 1971**

[73] Assignee **E. H. Sheldon Company**
Muskegon, Mich.
a corporation of Michigan

---

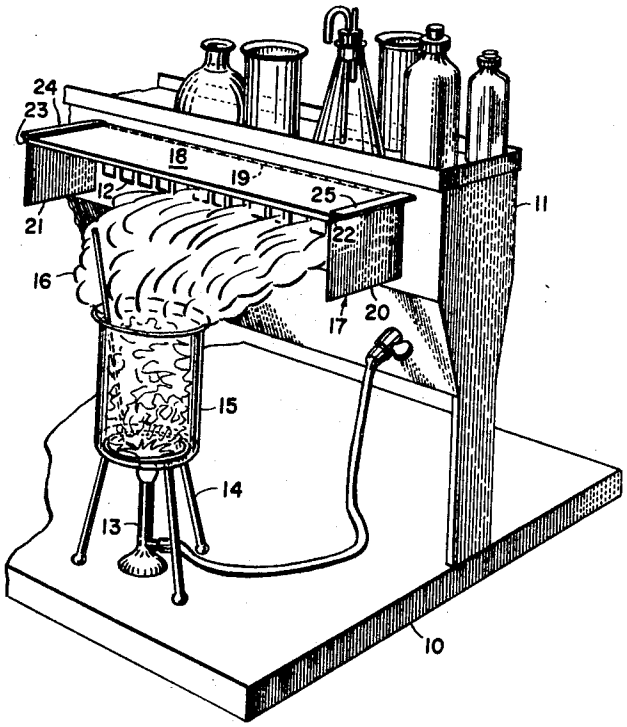
[54] **LABORATORY EQUIPMENT HAVING A COLLAPSIBLE CANOPY**
3 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **98/115, 126/299**
[51] **Int. Cl.** **F23j 11/00**
[50] **Field of Search** 98/115; 126/299, 300

[56] **References Cited**
UNITED STATES PATENTS
2,087,833 7/1937 Boutte 98/115K

Primary Examiner—Meyer Perlin
Attorney—Dawson, Tilton, Fallon & Lungmus

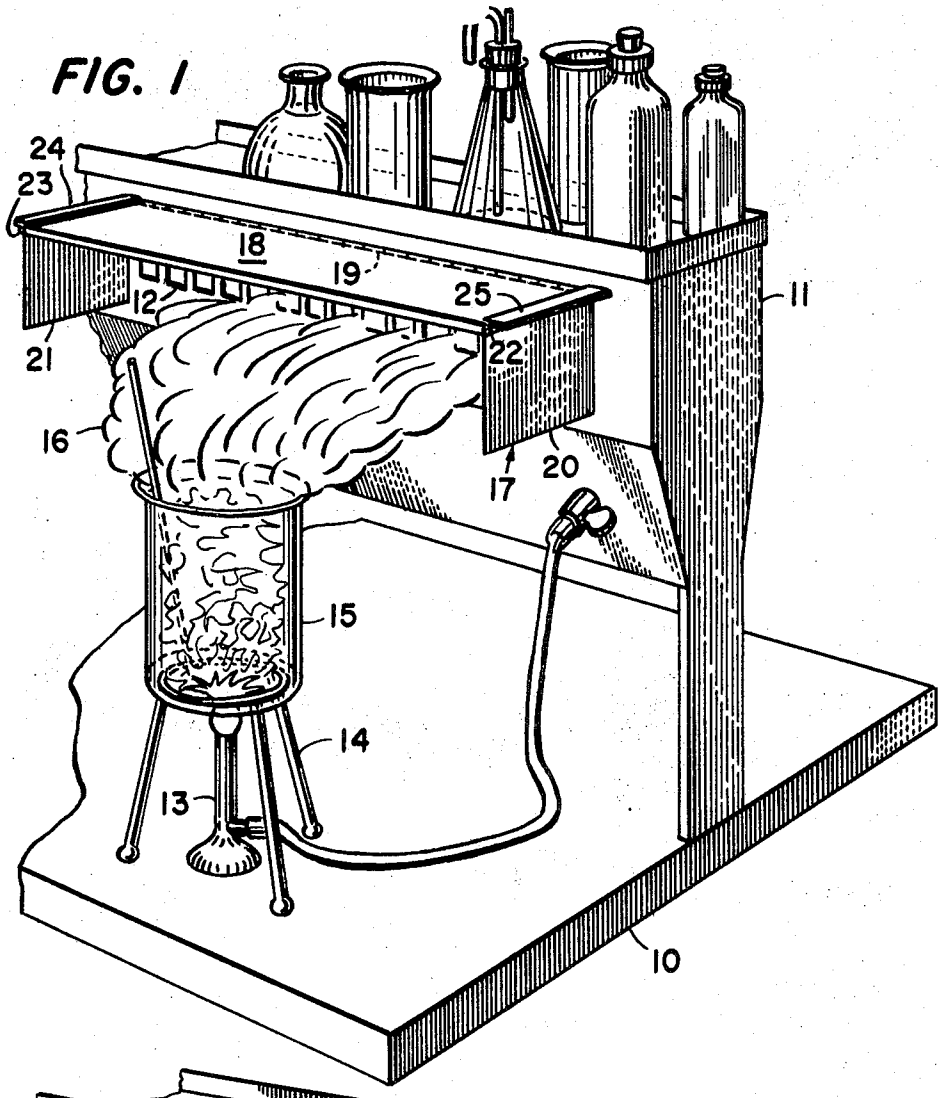
ABSTRACT: Laboratory equipment wherein an exhaust duct is equipped with at least one port, the port being selectively shrouded by a collapsible canopy where the wings and top are hingedly connected together and upon lifting of the top, the wings unfold into place.



PATENTED FEB23

3,564,990

FIG. 1



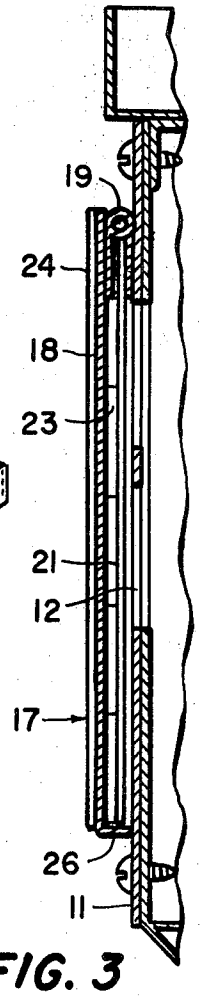


FIG. 3

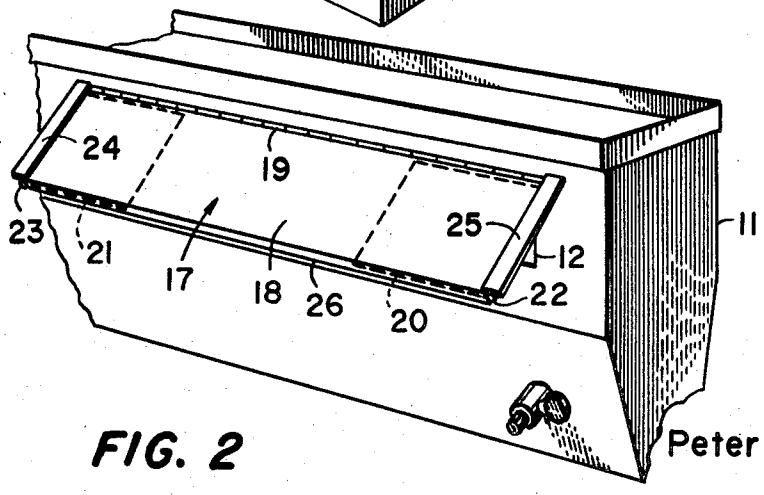


FIG. 2

INVENTOR

Peter Smedes

BY Dawson, Tilton, Fallon and Lungmus

ATTORNEYS

LABORATORY EQUIPMENT HAVING A COLLAPSIBLE CANOPY

BACKGROUND AND SUMMARY OF INVENTION

In school experiments, there are often noxious fumes that have to be vented. This ordinarily requires the provision of a hood but such installations are cumbersome and expensive. On the other hand, just having an exhaust duct with, for example, a slide closure for selective usage does not insure proper capturing of fumes.

According to the instant invention, the venting facilities are available for immediate usage yet are completely unobtrusive and stored completely out of the way so that the laboratory desk can be used by the student without interference by the equipment. This is achieved through the cooperation of three generally planar elements hingedly interconnected with the central element hingedly interconnected to the duct above the exhaust port and adapted to be moved from a storage position where the port is closed to an operational position where efficient venting of fumes is achieved.

DETAILED DESCRIPTION OF THE INVENTION

The invention is described in conjunction with an illustrative embodiment in the accompanying drawing, in which:

FIG. 1 is a fragmentary perspective view of a portion of a laboratory setup featuring the inventive equipment;

FIG. 2 is a fragmentary perspective view of the equipment seen in the central portion of FIG. 1 but with the inventive exhaust unit in a different condition; and

FIG. 3 is an enlarged vertical sectional view of the inventive hood.

In the illustration given, the numeral **10** designates generally a desk or table; above the table top and running full length is a fume removal system, i.e., a duct **11** which is provided as part of a combination service assembly. Each service assembly includes plumbing and electrical services and a bottle shelf. The one specific embodiment has an overall height of 21 inches for the service assembly and a width of 12 inches, servicing student areas on both sides thereof. An open space of 9 inches exists between the counter and the bottom of the service assembly. The fume removal system **11** consists of a main horizontal duct 5½inches high by 11½inches wide and constructed of fairly rigid material such as a metal, the instant device being of stainless steel. On both 5½inch bases are provided grilled openings for ports **12** at each student position.

For example, a student may be performing an experiment using a Bunsen burner **13**, a ring stand **14**, a beaker **15** supported on the ring stand which gives off noxious fumes (for example, HCN). The fumes are designated **16** and these are advantageously collected in the inventive hood generally designated **17**.

The hood is seen to include a top plate **18** pivotally connected by means of a hinge **19** to the duct **11**. The hood further includes wings **20** and **21**, each of which is connected to the ends of the generally rectangular top plate **18** by means of hinges **22** and **23** respectively. As seen in FIGS. **1** and **2**, limiting flanges **24** and **25** are provided as extensions of the top plate **18** for limiting the pivotal movement of the wings **21** and **20** respectively. The front side and both ends of the top plate are equipped with a closure flange **26** which limits the pivotal movement of the wings **20** and **21** to a vertical position when unfolding and which, when the hood **17** is in its storage position (see FIG. **3**), serves to restrict the inflow of air into port **12**.

As can be appreciated from a consideration of FIG. **2** which shows the hood **17** in a condition just about to be opened, raising of the top plate **18** permits the wings **20** and **21** to be unfolded into a position generally normal to the plane of the top plate **18**. As the top plate **18** is raised to a generally horizontal position, the wings **20** and **21** assume vertical positions and support and bolster the top plate **18** to form a rigid generally rectangular enclosure for the direction of the fumes into the port **12**. Each of the wings **20** and **21** is also planar and have a width (measured in a direction normal to the face of the port **12** when in operational condition) approximating that of the top plate **18**. By providing the flanges **24** and **25**, I limit the outward pivoting of the wings to the most efficient vertical condition.

For collapse of the hood **17**, it is only necessary for the student to fold the wings **20** and **21** inwardly against the inner surface of the top plate **18** and allow the assembly to pivot back to the condition seen in FIG. **3**.

I claim:

1. Laboratory equipment comprising an exhaust duct having a generally planar surface, exhaust port means in said surface, and a collapsible hood for said port means, said hood including a top plate hingedly interconnected to said duct above said port means, and a pair of wings of rectangular shape hingedly interconnected along one of their sides to the outer ends of said top plate and having inner side edges adjacent said duct planar surface whereby lifting said plate from a storage position generally parallel to said surface to an operational position normal to said surface effects a pivoting of said wings to a position abutting said duct planar surface to define and maintain a three-sided canopy for said port means.

2. The structure of claim **1** in which said top plate is equipped with flange means adjacent the hinge connection thereto of said wings whereby said wings are confined to about 90° pivotal movement relative to said top plate.

3. The structure of claim **1** in which said top plate is generally rectangular with the hinge connection to said duct being along one side, the other side of said plate being equipped with an integral flange adapted to bear against said duct below said port means when said hood is in storage position.