Jan. 9, 1940. C. J. THOMPSON 2,186,915

ABSORPTION CELL CHEST FOR PHOTOMETERS

Filed July 23, 1938

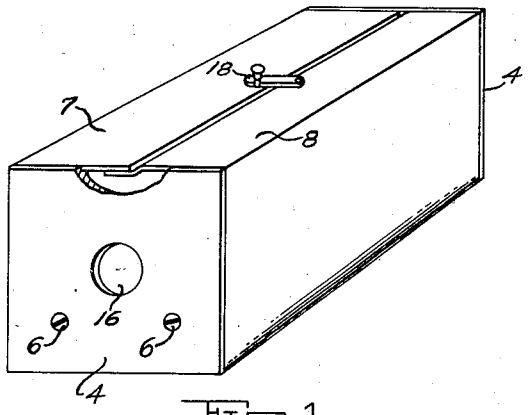


FIG. 1.

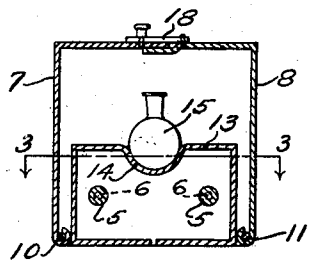


FIG. 2.

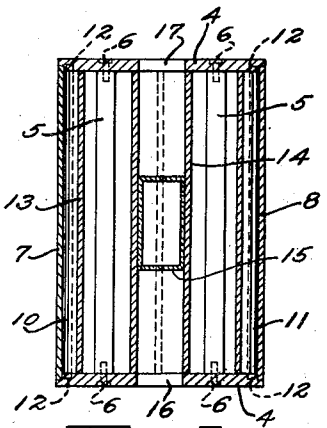


FIG. 3.

Inventor
C. J. THOMPSON

By

Attorneys

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2,186,915

UNITED STATES PATENT OFFICE

2,186,915

ABSORPTION CELL CHEST FOR PHOTOMETERS

Clifford J. Thompson, Washington, D. C.; dedicated to the free use of the People of the United States of America

Application July 23, 1938, Serial No. 220,943

2 Claims. (Cl. 88—14)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This application is made under the act of March 3, 1883, as amended by the act of April 30, 1928, and the invention herein described, if patented, may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment to me of any royalty thereon.

I hereby dedicate the invention herein described to the free use of the People of the United States of America to take effect on the granting of a patent to me.

This invention relates to absorption photometers and it is more particularly concerned with a light excluding chest for the absorption cell.

Absorption cells used in photometers are generally positioned on the outside of the housing of the photometer and in this way they are subjected to interfering light rays unless the instrument is used in a dark room. Other types of photometers provide for disposition of the absorption cell within the housing of the instrument. This has been found to be unsatisfactory because when so disposed access to them is frequently difficult and generally they are not free from interfering rays emanating from the lamps within the photometer.

One of the objects of this invention is the provision of a chest as a complete unit which can be placed on the photometer in the position normally reserved for the exposed absorption cell, which chest is not only light proof, but it is also quickly and easily opened to provide free access to the absorption cell.

The following description considered together with the accompanying drawing will disclose this invention more fully, its construction and operation of parts, and further objects and advantages thereof will be apparent.

In the drawing:

Figure 1 is an isometric view of this invention in an illustrative embodiment.

Figure 2 is an end section; and

Figure 3 is a plan section along the line 3—3 of Figure 2.

Referring with more particularity to the drawing in which like numerals designate like parts, the end walls 4, 4 of the device are held in spaced relation by two bars 5, 5, attached to said walls by means of countersunk screws 6, 6, 6, 6, or any other suitable means. The sides and roof of the device are formed by two members 7 and 8, bent toward each other at the top and overlapping, substantially as shown. These two members 7 and 8 also constitute the doors of the device and are hinged to the lower part of the end walls 4, 4 by means of two shafts 10 and 11, respectively, about which the lower ends of the members 7 and 8 are respectively lipped. Said shafts 10 and 11 are rotatably mounted in the end walls by any suitable means such as the pins 12, 12, 12, 12, engaging with complementary recess bearings in said end walls.

The floor of the chest is made up of a box channel 13, having a depressed portion 14 at the top. This depressed portion is adapted to removably support the absorption cell 15. The box channel 13 is held in position between the end walls by frictional engagement or by any other suitable means. In line with the absorption cell 15, apertures 16 and 17 are provided in the rear end wall and front end wall, respectively, for the absorption beam of light from the photometer. The edges of the end walls on the sides and top are stepped inwardly to provide recesses for the members 7 and 8 by means of which light from any outside source is effectively prevented from entering the chest. Also, the overlapping ends of the members 7 and 8 on top prevent light from entering at that point, and the box channel, having an appreciable thickness and being substantially coextensive with the inside bottom width of the chest, prevents outside light from finding its way to the absorption cell.

A latch 18 of any desired construction may be provided to hold the two doors in closed relation.

By opening the two doors 7 and 8, free access to the absorption cell is provided, and consequently substitutions are quickly made without disturbing any other part of the photometer. When the doors are closed, the absorption cell is rendered free from incidental light not intended to reach it.

Having thus described my invention, I claim:

1. A chest for housing the absorption cell of a photometer adapted to be disposed in the path of the absorption light beam of the photometer, said chest comprising two end walls vertically disposed in fixed spaced relation, a box channel disposed between said end walls substantially coextensive with the width of said end walls, said channel having a depressed portion in one wall to support an absorption cell in the light beam, the opposite wall forming the rear wall of the chest, two overlapping angular doors hinged opposite to each other at the lower corners of said end walls, said doors forming when in closed relation the side walls and roof of said chest, and entrance and exit means for said light beam.

2. A photometer absorption cell chest adapted to be disposed in the path of the absorption light beam of the photometer, comprising two parallel

end walls disposed in fixed spaced relation, a box channel disposed between said end walls, said channel having a depressed portion in one wall to support an absorption cell in the light beam, the opposite wall of said box channel forming the lower wall of the chest, two overlapping doors hinged opposite each other at the lower corners of said end walls, said doors forming, when in a closed relation, the side walls and upper wall of said chest, and entrance and exit means for the light beam.

CLIFFORD J. THOMPSON.