Nov. 5, 1940. S. A. KRAUSER ET AL 2,220,373

DARK ROOM FOR PHOTOGRAPHIC PURPOSES

Filed Oct. 25, 1939

FIG. 1.

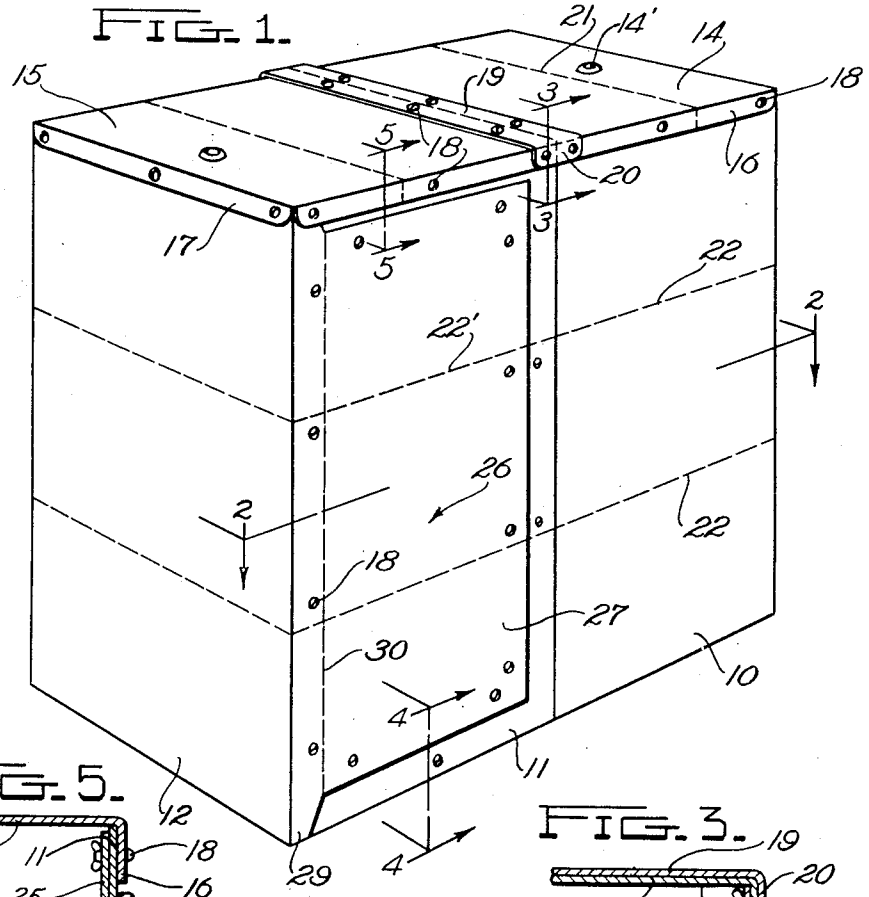


FIG. 5.

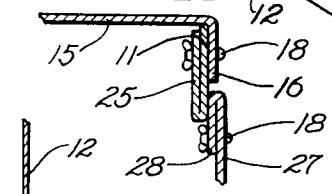


FIG. 3.

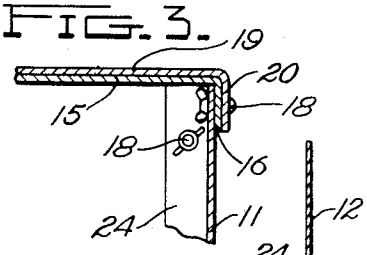


FIG. 2.

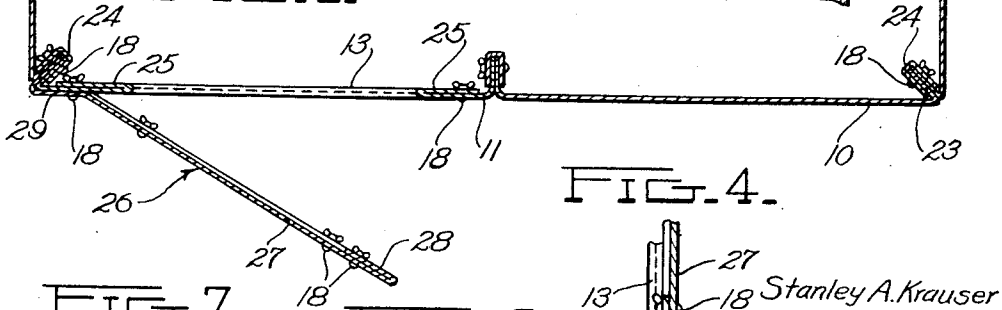


FIG. 4.

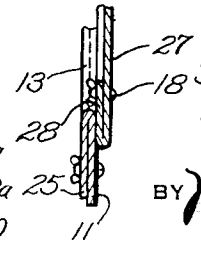


FIG. 7.

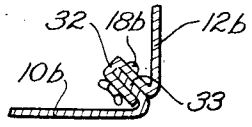
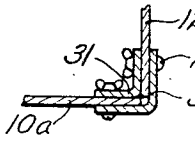


FIG. 6.



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UNITED STATES PATENT OFFICE

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DARK ROOM FOR PHOTOGRAPHIC PURPOSES

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9 Claims. (Cl. 189—2)

This invention relates to portable structures which, when assembled into position of use, are adapted to provide a dark room suitable for photographic purposes, such as for developing films, printing, etc., and an object is to produce a new and improved structure of this character which can be compacted when not in use into a relatively small space but which may be set up or assembled readily and conveniently with the sections or panels connected together by simple fasteners.

Another object is to provide a structure of the above character with a new and improved door mounting and joint connections so that the room formed by the structure is substantially light-proof.

Other objects and advantages will hereinafter appear and, for purposes of illustration but not of limitation, the invention is shown on the accompanying drawing in which

Figure 1 is a perspective view of the dark room in its assembled condition ready for use;

Figure 2 is an enlarged sectional view substantially on the line 2—2 of Figure 1, showing particularly the connections between the side wall panels and the manner of mounting the door;

Figure 3 is an enlarged sectional view substantially on the line 3—3 of Figure 1;

Figure 4 is an enlarged sectional view substantially on the line 4—4 of Figure 1;

Figure 5 is an enlarged sectional view substantially on the line 5—5 of Figure 1; and

Figures 6 and 7 are fragmentary sectional views showing alternate forms of attaching side wall panels to make the structure substantially light-proof.

The illustrated embodiment of the invention shown on Figure 1 comprises a structure composed of side panels 10 and 11, and panels 12 at opposite ends of the structure, it being understood that on the back side of the structure, two side panels similar to the panel 10 are employed. The panel 11 as will hereinafter appear, is formed to provide a door opening 13. Closing the top of the structure are panels 14 and 15 which are substantially identical with each other and each of the panels 14 and 15 have depending side flaps 16 and end flaps 17, which are secured to the adjacent side wall panel by bolts 18 and wing nuts. One or more holes 14 are formed in the top panels through which electric light cord may be passed to the inside of the dark room. Covering the space between the adjacent panels 14 and 15 is a strip 19 having end flaps 20 at opposite ends and extending through the flaps 16 and 20 and the upright wall panels are bolts 18 to which are attached wing nuts. Each of the panels 14 and 15 are provided with fold lines 21 enabling these panels to be folded into a relatively small space.

The various panels above referred to are preferably formed of corrugated board, although it is to be understood that they may be formed from other similar sheet materials which are capable of being folded in order to compact the various sections of the structure into a relatively small space. As shown, each of the upright wall panels has two lines 22 of scoring, thereby enabling them to be folded into a substantially Z-shape, when not in use in order to occupy a minimum amount of space.

As shown in Figure 2, each of the side and end wall panels is formed with an inturned flap 23 along its vertical edge portion. Each flap 23 extends inside the structure and abuts against the flap of the next adjacent panel. In order to militate against the entrance of light along the abutting flaps 23, a substantially U-shaped sealing strip 24 substantially co-extensive with the abutting flaps 23 extends from top to bottom of the panels. As shown on Figure 2, the strip 24 is folded over the outside of each pair of abutting flaps 23 and a series of similar bolts 18 hold these parts together, wing nuts engaging the opposite ends of the bolts to afford a simple fastening device. From an examination of Figure 2, it will be observed that the above described joint is employed not only between adjacent side wall panels but also at the corners betwen the side wall panels and the adjacent end panels, the flexibility of the flaps enabling the positioning of the panels at substantially right angles to each other.

The side wall panel 11 differs from the other side wall panels only in that it is formed with a door opening and since the side and end wall panels are all of the same size, the door opening may be positioned as desired with respect to the sides or ends of the structure. The door opening 13 is very simply formed by cutting the panel 11 so that flaps 25 may be folded inwardly upon the adjacent panel structure and held in place by similar bolts 18 and wing nuts, a series of these being applied for the purpose. The material of the panel is severed so that flaps 25 are not only provided along the vertical or up and down edges of the door opening but also along the top and bottom edges of the opening 13 (see Figure 4). In this manner the entire edge of the door opening is satisfactorily re-enforced and the opening may be of any desired size but preferably of such size conveniently to admit a person to the inside of the dark room.

The door opening 13 is closed by a door 26 which conveniently is of the same material as the rest of the structure and is likewise provided with lines 22' of scoring enabling it to be folded in to Z shape for convenient packaging. As shown, the door consists of a panel portion 27, which is somewhat smaller than the side wall panel 11 but sufficiently large to close the door

opening 13. The top, bottom and outer free edge portions of the panel 27 are folded inwardly upon itself as indicated at 28 in Figures 2, 4 and 5, the folds being held in place by bolts 18 and wing nuts, with the latter disposed on the inside of the door. Integral with the opposite vertical edge portion is a hinge extension 29 which projects upwardly and downwardly beyond the horizontal edges of the door to be substantially coextensive with the adjacent side wall panel 11. The door panel 27 can swing relatively to the extension 29 along a line of scoring 30 at the juncture between the panel 27 and the extension 29.

As shown particularly on Figure 2, the extension 29 extends around the outside of the corner formed by the corner flap 23 on the panel 11 and has its end portion disposed between the flaps 23 of the side wall panel 11 and the end wall panel 12. Overlapping these end portions is a strip 24 above described and bolts 18 pass through the overlapping strip 24, end flaps 23, as well as door extension 29. It should also be noted that the bolts 18 which hold the flaps 25 of the door opening and which are adjacent to the end wall 12 also pass through the door extension 29 and assist in supporting the door in the desired position.

From the above description, it will be manifest that an exceedingly simple and inexpensive dark room for photographic purposes is produced. The structure may be inexpensively made from corrugated board or other similar relatively inexpensive sheet materials. The several side and end wall panels are similarly formed with the exception of that panel providing the door opening so that the die expense and cost of manufacture is kept as low as possible. A single die is sufficient for the top panels and in view of the fact that these panels are interchangeable, the assembly problem is made extremely simple. The simple and convenient manner of fastening the panels together is of importance. It will be obvious that bolts having ordinary wing nuts are used throughout and the joints between the panels are sufficient to eliminate any possibility of access of light to the inside. The door may be mounted in any position desired and, manifestly, it is not necessary that it be mounted at the juncture of an end wall and side wall panels, because it can also be satisfactorily mounted if the panels 10 and 11, shown on Figure 2, are transposed.

Figure 6 illustrates an alternate form of connection between an end wall panel 12*a* and a side wall panel 10*a*. In this form, flaps on the edge portions of the wall panels are dispensed with. L-shaped strips 30 and 31 are arranged respectively on the inside and outside and bolts 18*a* connect the strips 30 and 31 to the adjacent wall panels. This connection likewise is light-resistant and affords a relatively sturdy connection.

In the form shown on Figure 7, a wall panel 12*b* is formed with a substantially U-shaped flap extension 32 and received within the U is a flap 33 on the wall panel 10*b*. Bolts 18*b* extend through the various thicknesses of material and retain the flaps in position. It will be obvious that this joint between wall panels is likewise effective in keeping light from the inside of the room.

It is to be understood that numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention especially as defined in the appended claims.

What we claim is:

1. A dark room structure for photographic purposes comprising a plurality of separate side wall panels of bendable sheet material, top panels, said panels having lines of scoring thereby to enable folding same for packaging, sealing strips at the joints of said side panels overlapping same, detachable fasteners securing said strips and adjacent panels, one side panel having a door opening, a door of sheet material for closing said opening, and an extension on said door projecting into the space between adjacent side wall panels and retained in place by the same fasteners which secure together said panels.

2. A dark room structure as claimed in claim 1, comprising side flaps on the side walls arranged in abutting relation to each other, a U-shaped sealing strip embracing abutting flaps, and fasteners common to said sealing strip and flaps.

3. A dark room structure as claimed in claim 1, comprising flaps cut from one side wall panel and folded back upon said panel to provide said door opening, and fasteners securing said flaps in place.

4. A dark room structure as claimed in claim 1, comprising depending flaps at the edges of said top panels overlapping adjacent side wall panels, and fasteners securing said flaps to said side wall panels.

5. A dark room structure as claimed in claim 1, comprising a door panel of a size to cover the door opening, said extension on one side of said door panel having a longitudinal line of scoring providing a hinge, inturned flaps on the vertical edges of the side walls adapted to abut against each other, the end portion of said extension being disposed between said abutting flaps, and fasteners securing said end portion and flaps.

6. A dark room structure as claimed in claim 1, integral flaps on three sides of said door panel folded back upon the panel, fasteners securing said folded flaps in place, said extension on one side of said door panel having a longitudinal line of scoring providing a hinge, inturned flaps on the vertical edges of the side walls adapted to abut against each other, the end portion of said extension being disposed between said abutting flaps, and fasteners securing said end portion and flaps.

7. A dark room structure as claimed in claim 1, said extension on one side of said door panel having a longitudinal line of scoring providing a hinge, inturned flaps on the vertical edges of the side walls adapted to abut against each other, the end portion of said extension being disposed between said abutting flaps, a U-shaped sealing strip embracing said abutting flaps, and fasteners securing said end portion, sealing strip and flaps.

8. A dark room structure as claimed in claim 1, comprising a sealing strip on the outside of the panel joints, and another sealing strip on the inside of the panel joints, the fasteners passing through both sealing strips and the panel disposed therebetween.

9. A dark room structure as claimed in claim 1, comprising a sealing strip U-shaped in cross section integrally joined to one of the side wall panels, the adjacent end portion of the other panel extending between the arms of the U, and the fasteners passing through the several plies to hold the parts in assembled relation.

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