

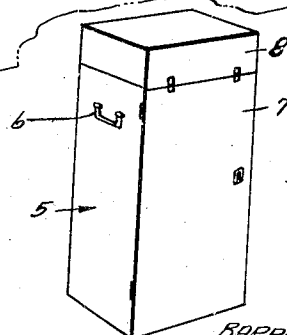
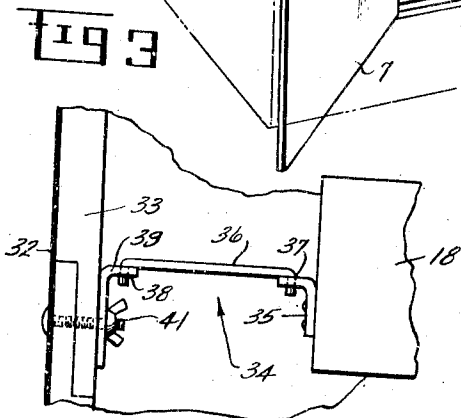
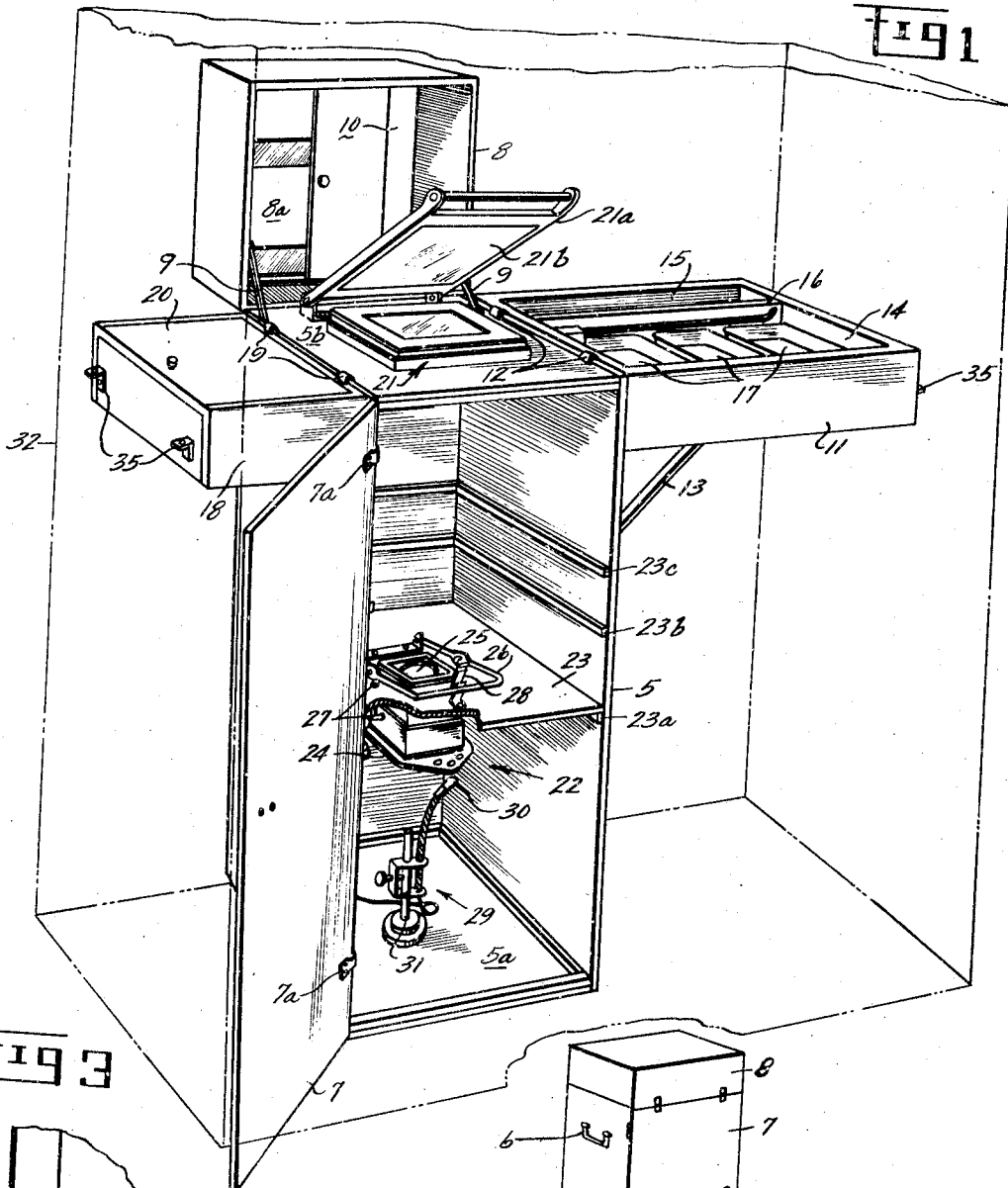
Oct. 11, 1949.

B. C. POWERS ET AL
PORTABLE DARKROOM FOR DEVELOPING

2,484,048

Filed April 15, 1946

2 Sheets-Sheet 1



INVENTORS.
BARRON C. POWERS
WILLIAM H. RICHARDS
BY *Clare L. Hooty and*
Raymond J. Crowley
ATTORNEYS—

Patented Oct. 11, 1949

2,484,048

UNITED STATES PATENT OFFICE

2,484,048

PORTABLE DARKROOM FOR DEVELOPING

Barron C. Powers, Montgomery, Ala., and
William H. Richards, Dayton, Ohio

Application April 15, 1946, Serial No. 662,161

2 Claims. (Cl. 95-90)

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

1 The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to us of any royalty thereon.

This invention relates to portable darkrooms which contain all the equipment necessary for completely processing photographic materials and which may be compacted into a single kit for transportation.

Heretofore photographic darkroom equipment has been carried from one place of use to another in several separate containers, as for instance, the tent or canopy was packed and shipped in one bag, the projector assembly in another, and likewise for the other pieces of the equipment. If any of the several containers of photographic darkroom equipment were for some reason delayed or temporarily lost in transit to the new location where conditions required an immediate assembly of the photographic darkroom, it would result in considerable loss and particularly where the occasion was for military field operations. Further, the packing and transporting of the photographic equipment in several separate containers provides a liability of damage to each separate piece of equipment and requires considerable time and space in packing into any transporting vehicle.

The present invention is intended to overcome these disadvantages and to reduce the probability of damage to the equipment by producing a single kit in which all the equipment for complete processing of photographic materials can be carried from one place to another as a unit.

It is an object of the invention to provide a portable darkroom in which all of the equipment may be stored in a single case but may be set up to form a work table and cabinet for the complete processing of photographic materials, the case being adapted to be enclosed by a demountable tent or canopy to form a darkroom and the tent or canopy structure being stabilized by mechanical connection to the case.

It is another object of the invention to provide a portable darkroom for complete processing of photographic materials wherein the kit includes a rectangular case, one end serving as a base and the other end serving as a work table, work table extensions carried in the case and mountable on the sides of the case to increase the work table area, a lid for the top of the case having a compartment therein and serving as a cabinet when carried by the case adaptable to be erected over the case to form a darkroom and being mechanically

2 cally connected to the case for stabilizing the darkroom structure.

A still further object of the invention is to produce a case for carrying enclosed therein all the equipment for completely processing photographic materials, one end of the case serving as a base and the other end serving as a work table, work table extensions carried by the case and mountable on the sides of the case for increasing the work table area, one extension being in the form of a sink and the other extension providing accessory compartment means, and a lid hingedly mounted to the work table edge of the case and having a compartment therein to serve as a cabinet in its operative position.

Other objects and advantages of the invention will become apparent by reference to the detailed description hereinafter given when taken in conjunction with the appended drawings in which:

20 Fig. 1 is an isometric view of the kit in its operative position with parts broken away to better illustrate constructional details and showing a part of the tent or canopy in phantom;

25 Fig. 2 shows a front elevation of the darkroom assembly with the case shown in dotted outline and a portion of the canopy being broken away to illustrate the connecting means between the canopy and the case.

30 Fig. 3 shows an enlarged cutaway view of the fastening means between the tent or canopy structure and the case, and;

Fig. 4 shows the kit in its closed condition.

The illustrated embodiment of the invention, particularly referring to Fig. 1, comprises a kit 35 assembly which consists of a rectangular case 5 made of any weatherproof material, as wood or metal. The case 5 has a solid supporting base 5a and a top 5b. The opposite sides of the case are supplied with suitable carrying handles 6, better shown in Fig. 4. A door 7, forming substantially one side wall of the case 5, is hinged at 7a to a side member of the case 5. The case 5 is placed in a vertical position for darkroom operation thereby eliminating the necessity of legs.

45 A lid assembly 8, which is preferably of the same material as the case 5, having a compartment 8a therein, is hinged in any desirable manner to the top back side of the case 5. The lid is held in its upright operative position by the stops 9 and when in such position the compartment 8a is accessible through the sliding panel doors 10. The compartment 8a may be used for stowing printing paper which provides adequate protection for the paper as well as convenience to the photographer.

3
A detachable sink assembly 11, of any desirable material, is provided which is mounted on the right side of the case 5 by hooks 12 and a strut 13 that may be connected in any well known manner. The sink assembly 11 is divided into two compartments, a front compartment 14 and a rear compartment 15, by a partitioning wall 16. The front compartment 14 holds trays 17 for developing chemicals while the rear compartment 15 is used as a print washer. The water supply and drainage may be transmitted to and from the sink assembly by means of rubber tubing, or similar tubing (not shown). The sink assembly has a lid (not shown in Fig. 1 in order to reveal the sink construction) that may be used as a splash board while developing film, or placed over the sink and used as a work table for ferrotyping, sorting prints, or the like. The construction and arrangement of the sink assembly is such that it can be packed inside the case 5 when the kit is being transported.

An accessories compartment 18, of any desirable material, is detachably mounted on the left side of the case 5 by hooks 19, similar to the hooks 12. This accessories compartment 18 has a lid 20 that serves as a work table for a trimmer, which may be conveniently carried within the compartment, or for other desirable work. The design of the accessories compartment is such that it may be snugly fit into the case 5 when it is desirable to put the kit in condition for carrying or shipping.

A platen assembly 21 is supported in the top 5b of the case 5. The platen assembly 21 has a balanced lid 21a which has a ground glass contact surface 21b. The ground surface of the glass is adapted to be placed in the same plane as the printing paper. This permits the viewing of the image through the platen assembly 21 for dodging or other purposes before inserting print paper preparatory to making prints. An electric switch in circuit with the light source 30 may be arranged between the lid 21b, and the glass plate of the platen 21 to automatically turn the light source 30 on when the lid 21b is compressed against the glass plate and to automatically turn the light source 30 off when the lid 21b is raised, as is well known in the art. The platen assembly 21 is protected by the lid 8 when the kit is closed up for transportation.

A projector assembly, generally represented by 22, is set in the mounting board 23 within the case 5. The mounting board 23 is shown resting on the positioning strip 23a but is adapted to be placed on the positioning strips 23b or 23c as it is desirable to obtain different diameter enlargements of the developed picture. Other well known means for positioning the projector assembly may be used as for example, a guide and track means between the projector assembly and the case. The projector assembly 22 may be removed from the case entirely when it is desirable to make contact prints. A quick focusing adjustment for properly focusing the negative in relation to the lens is provided. This may be done by either moving the negative film holder or moving the lens cell but is illustrated in this instance as a movable film holder 24 and a stationary lens cell 25. Quick focusing is accomplished by means of a lever 26 pivotally mounted on the mounting board 23 with links 27 connecting the lever 26 and the film holder 24. When the free end of the lever 26 is raised or lowered the negative film holder 24 will correspondingly be raised or lowered with respect to the lens cell 25. A detent strip 28 is attached to the mounting board 23 and is arranged with

detented positions in cooperable relation with the free end of the lever 26. As illustrated, there are three such positions on the detent strip corresponding to the three positioning strips 23a, 23b and 23c to permit corresponding settings of the film holder and mounting board for two, three or four diameter enlargements. That is, for two diameter enlargements the mounting board 23 should be placed on the positioning strip 23c and the free end of the lever should be placed in the uppermost detent on the detent strip 28; for three diameter enlargements the mounting board 23 should be placed on positioning strip 23b and the free end of the lever 26 should be placed in the intermediate detent of the detent strip 28; and similar adjustments should be made for four diameter enlargements, such setting being shown in Fig. 1.

An illuminating assembly, generally represented by 29, consists of an incandescent frosted bulb 30 mounted on an adjustable stand 31 to permit the bulb 30 to be placed in any desirable position relative to the negative in the negative film holder 24. This bulb 30 provides a light source for both contact and projection printing. The electrical power for supplying the bulb 30 may be from house current, portable generator equipment, or batteries as desirable or as necessity requires. The illuminating assembly 29 rests on the base member 5a of the case 5 and may be quickly disassembled for packing.

In order to process photographic film it is essential to work in complete darkness. As best shown in Fig. 2, a collapsible tent or canopy is provided which consists of a light impervious fabric 32 placed over a collapsible framework 33. The framework 33 may be constructed of wood, metal, or any other desirable material having the frame members splice joined as at 33a for being collapsed into a small bundle and consists of two such collapsible upright members at each end held in the upright position by collapsible cross members at the top. The frame members may be collapsed in other ways as by telescopic or pivotal joints. To stabilize the tent or canopy structure detachable connections, generally referred to as 34, are used between the upright end members of the framework 33 and the case 5 through the agency of the sink assembly 11 and the accessory compartment 18. The detachable connections 34 are used between the two outermost corners of the sink assembly, accessory compartment and the framework 33 but for the purpose of illustration the detachable connection 34 is shown in Fig. 3 as it is used connecting the accessory compartment 18 with the framework 33.

The detachable connection consists of an angle bracket 35 permanently attached to a member of the case as the accessory compartment 18 and a rod 36, preferably of U-shaped configuration, having one leg portion inserted in an opening 37 in the outstanding end of the bracket 35 and the other leg portion in an opening 38 of an outstanding end of an angle bracket 39. The angle bracket 39 is held to the framework 33 by a thumb nut and bolt means 41 which at the same time may hold the splice joint 33a of the upright frame members. To disconnect the framework 33 from the case 5 it is merely necessary to remove the U-shaped members 36 from the angle bracket openings 37 and 38.

The fabric material 32 has an overlapping slit 42 therein to permit easy access to the darkroom. The bottom edge 43 is weighted to assure a light

tight contact with the supporting surface. The fabric may be rolled or folded for packing in the case.

When the tent or canopy, sink assembly and accessory compartment are all packed within the case 5 and the door 7 and lid 8 closed, there is obtained a compact kit which is easily handled for transportation. It has been found that the complete kit can be made to weigh less than one hundred pounds and can be easily handled by one man. The kit in its packed condition ready for transporting is shown in Fig. 4. When needed, the kit can be quickly and easily assembled for use as a darkroom without the use of any tools.

It is to be understood that various changes in construction and arrangement of parts may be made without departing from the spirit and scope of the appended claims.

What we claim as new and desire to secure as Letters Patent is:

1. A case for use as a kit in the complete field processing of photographic materials, said case being of rectangular form and housing developing, printing and enlarging mechanisms, one end of said case constituting a base on which the case rests, the other end of said case having a lid compartment hingedly openable to form a cabinet work table with the lid compartment impositively held in an upright open position and one side of said case opposite the hinge of said lid compartment being hinged to form a door for accessibility to the interior of said case, the two sides and back of the case interior having spaced ledges lying in parallel planes; and a cabinet compartment detachably mounted on each of the opposite sides of said case adjacent said door by hooks overhanging said other end forming said cabinet work table to hold the top surface of said cabinet compartments in the same plane as the top surface of said work table to form work table extensions, one cabinet compartment being in the form of a sink and the other cabinet compartment providing stowage for accessories, the cabinet compartments being exteriorly dimensioned to fit between said spaced ledges within said case whereby, upon detachment of said cabinet compartments and slidably positioning them between said ledges and upon the door and lid compartment being closed, a compact portable photographic kit is provided.

2. A portable darkroom for the complete field processing of photographic material comprising; a rectangular case housing a developing, printing and enlarging mechanism, one end of said case constituting a base on which the case rests, the other end of said case having a lid compartment hingedly openable to form a cabinet work table with the lid compartment impositively held in an upright open position and one side of said case opposite the hinge of said lid compartment being hinged to form a door rendering the in-

terior of said case accessible, the interior of said case sides having protruding means lying in parallel planes between the base and said cabinet work table to support the enlarging mechanism at various heights; a cabinet compartment detachably connected on each of the opposite sides of said case adjacent said door by hooks overhanging said other end forming said cabinet work table to hold the top surface of said cabinet compartments in the same plane as the top surface of said work table to form work table extensions, one cabinet compartment being in the form of a sink and the other cabinet compartment providing stowage for accessories, the cabinet compartments being exteriorly dimensioned to fit within said case between said protruding means along with said enlarging mechanism when said cabinet compartments are stowed in said case; brackets on the outermost corners of said cabinet compartments; a canopy of light impervious fabric enclosing said case and cabinet compartments and supported by a collapsible framework for providing a darkroom, said framework including vertical supports having brackets thereon; and detachable rods interconnecting the brackets of said cabinet compartments and said vertical supports of said framework for stabilization of the portable darkroom, the cabinet compartments upon being detached from the case and framework, the framework upon being collapsed and the canopy upon being folded and stowed within the case with the cabinet compartments supported between said protruding means and the lid compartment and the door closed provide a darkroom kit for movement when changing darkroom location.

BARRON C. POWERS.
WILLIAM H. RICHARDS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
181,629	Brice	Aug. 29, 1876
1,994,091	Shwartz	Mar. 12, 1935
2,003,190	Hineline	May 28, 1935
2,411,704	Beattie et al.	Nov. 26, 1946

FOREIGN PATENTS

Number	Country	Date
102,243	Germany	May 8, 1898
4,978	Great Britain, 1899	Jan. 20, 1900
8,941	Austria	Aug. 25, 1902
342,438	France	July 6, 1904
352,243	France	May 26, 1905
735,963	France	Apr. 26, 1932

OTHER REFERENCES

Popular Photography, December 1938, page 77.
Wilson, "Quarter Century in Photography," published by Edward L. Wilson, New York, 1887.