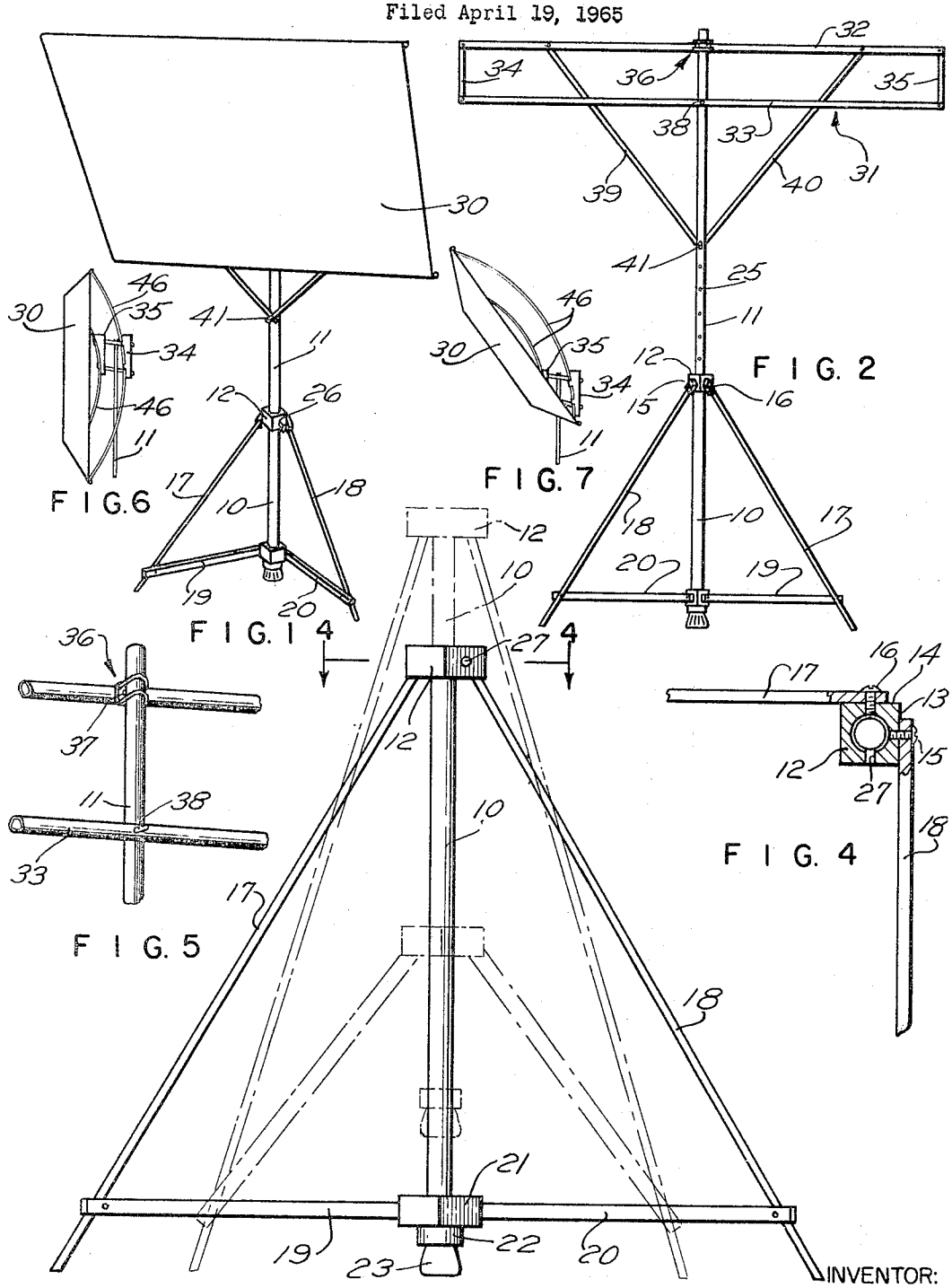
March 14, 1967 P. F. ALBEE, JR 3,309,049

STAND FOR PROJECTION SCREEN

Filed April 19, 1965



F I G. 6

F I G. 7

F I G. 2

F I G. 1

F I G. 3

F I G. 5

F I G. 4

INVENTOR:
PERCY FREDERICK ALBEE, JR
BY

Barlow & Barlow
ATTORNEYS

United States Patent Office

3,309,049

Patented Mar. 14, 1967

3,309,049

STAND FOR PROJECTION SCREEN

Percy Frederick Albee, Jr., Barrington, R.I., assignor to Q-Panel Corporation, a corporation of Rhode Island

Filed Apr. 19, 1965, Ser. No. 449,231
4 Claims. (Cl. 248—171)

This invention relates to a collapsible stand for a projection screen and particularly to a stand which will be of simple construction and lend itself to erection for use or for storage in the corner of a room.

Projection stands of the general character herein referred to heretofore have usually been made up of an upright standard having three legs radiating therefrom to form what is generally known as a tripod support. In the erected position such a stand will not store in a corner of a room and must be completely folded for storage. Further, stands of the prior construction will not readily lend themselves to using the screen adjacent to the corner of a room since one or more of the legs will undoubtedly abut the wall and prohibit the entire assembly to be backed close into the corner. Further such a stand does not lend itself to mounting the screen in an overhead diagonal position as the weight of the screen is located too far forward of the center of gravity of the mounting.

It is, therefore, one of the principal objects of this invention to provide a collapsible stand for a projection screen which will be so weighted as to mount an overhead screen in a diagonal position.

Another object of the invention is to provide a collapsible weighted tripod so that the weight may be folded into itself for storing or carrying purposes.

It is a further object of the invention to provide a simple projection screen stand with a center post as the main supporting part to provide greatest vertical stability.

A further object is to provide base bars that may be used to hold the base during adjustment of the screen upwardly.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claims.

Referring to the drawings:

FIG. 1 is a perspective view of the projection screen stand with the screen in place;

FIG. 2 is a rear elevational view with the screen removed and the stand for the projection screen complete with the counting brackets;

FIG. 3 is an enlarged elevational view of the bottom portion of the stand showing in phantom the bottom portion partially folded;

FIG. 4 is a sectional view taken on lines 4—4 of FIG. 3;

FIG. 5 is a rear perspective view of a fragmental portion of the screen mounting support; and

FIGS. 6 and 7 are fragmental perspective views of different positions on the screen with reference to the mounting post.

Referring now to the drawings, 10 designates a vertical telescoping post, the base portion of which forms one leg of a tripod support and which telescopingly receives an adjustable upper portion 11 therein. At the upper end of the base portion 10 is a collar 12, the collar 12 being preferably force fitted onto the upper end of the vertical post 10. The collar 12 is shown as being rectangular although other shapes would suffice, the main requirement being that two substantially flat surfaces 13 and 14 (see FIG. 4) are provided, which surfaces should lie substantially at right angles to each other. Pivotally received on the surfaces 13 and 14 about threaded pins 15 and 16 are a pair of legs 17 and 18. Adjacent the

ends of the legs 17 and 18 there is pivoted a pair of brace arms 19 and 20, which brace arms are in turn pivotally received on a second collar 21 that is also of rectangular shape being provided with two substantially flat surfaces substantially at right angles to each other. For ease in folding the stand, the surfaces 13 and 14 are located further outwardly from the center of the post 10 than are the corresponding surfaces on the second collar 21, thus permitting the brace arms 19 and 20 to pivot inside of the legs 17 and 18. Referring to the phantom portion of FIG. 3, it will be seen that the collar 21 is adapted to slide upwardly along the post 10 bringing inwardly the legs 17 and 18, and as this occurs, it is necessary that the brace arms 19 and 20 pivot in a plane which will be inside of the legs 17 and 18. The collar 21 is limited in its downward motion along the post 10 by an enlargement 22, and below this enlargement or stop means 22 a resilient foot 23 is positioned at the lower end of the post 10. The brace arms 19 and 20 are close to and generally parallel to the supporting surface as seen in FIG. 1. To insure stability of the structure thus far described, it is advantageous to have the center of gravity of the structure low and extend between the legs and preferably on a bisector of the angle therebetween. To achieve this result, the brace arms 19 and 20 may be made of heavier stock, such as steel, than the legs 17 and 18 of aluminum, and preferably the combined weight of the legs 17 and 18 together with the brace arms 19 and 20 will be greater than the weight of the post 10. This will insure that the center of gravity of the structure will be low and will extend on the bisector of the angle between the legs when extended and insure inherent stability of the structure.

The telescoping upper portion 11 of the post is provided with a number of apertures as at 25, which apertures are adapted to receive a pin 26 that passes through a hole 27 in the upper collar 12, thus holding the post 11 in adjusted position relative to the lower post 10. To support a projection screen such as, for example, 30, the frame generally designated 31 is received thereon. This frame 31 consists of an upper bar 32 and a lower bar 33 which have their respective ends joined by the screen holding brackets 34 and 35. Midway of the upper bar 32 a bail-like member 36 is pivoted to the bar as at 37, while midway of the bar 33 an aperture is provided which receives a stud 38. Brace means 39 and 40 extend from the upper bar 32 in pivotal fashion to join at a common point as at 41 where they are pinned to the post 11 in a suitable fashion.

For ease in storing the stand in complete assembled condition in a corner or other small area, it is merely necessary to unpin the brace arms 39 and 40 from their common point as at 41 and unpin the bar 33 from the pin 38. In this position the parallelogram frame made up of the bars 32, 33, 34 and 35 will pivot around the pin 37 of the bail 36, permitting storage tightly into a corner.

The screen 30 is mounted upon arcuate rods 46 which are generally each in a vertical plane and which frictionally fit into the brackets 34 and 35 in such a manner that the screen 30 may be moved from a vertical plane such as shown in FIG. 6 to an incline or diagonal plane or position such as shown in FIG. 7 by sliding the rods 46 through the brackets 34 and 35 which frictionally grip the rods so as to dispose the screen in a plane which it is desired it should assume depending upon the height to which the telescoping post 11 is raised so that the projected light or picture will be at substantially right angles to the plane of the screen and thus not cause the picture to be distorted or "keystoned."

In the moving of this collapsible stand from a collapsed position to an erected position, the collar 12 will be slid downwardly along the post 10 so as to spread the

legs 17 and 18 which together with the post 10 provides a triangular base support. The screen will then be mounted in its brackets, and then the upper portion of the telescoping post will be raised, and in order to hold the post at its lower end in the raising of the upper telescopic portion of the post, the arms 19 and 20 will be at such a location adjacent to the supporting surface for the stand that the operator's feet may be placed upon the arms 19 and 20 as the upper portion of the post 11 with its screen is raised, thus enabling a very good relationship of the parts in moving the screen to the elevated position.

It will be apparent that when the screen is in the elevated position, it is desirable to tilt the screen at an angle such, for instance, as shown in FIG. 7 to place it in a plane at right angles to the projected light, thus causing the center of gravity of the screen to be projected outwardly from the post a considerable distance, but as the screen and the legs and arms 19 and 20 extend on the same side of the post that the screen is mounted, the triangular relation between the bottom of the post which engages the floor or support and the ends of the legs 17 and 18 will be such that the center of gravity of the screen and the entire device will pass within the area of this support and thus support the screen even though it is tilted well forward which is a condition which will not exist in the situation where there are three legs equally angularly disposed with reference to the floor or support and the post for mounting the screen extends upwardly from the center of these legs. Thus, in the particular relationship of the tilted screen such as here shown, the base provides an unusually stable support.

I claim:

1. A mounting stand adapted to be maintained in an upright position upon a generally horizontal supporting surface comprising a vertical post, a first collar slidably mounted on said post, two legs pivoted to said collar at an angle other than a straight angle, a second collar below and spaced from the first collar and slidably received on the post, a pair of arms each pivoted to said second collar and to each leg, and a stop means at the base portion of said post to limit movement of the second collar, said legs and said post forming a three-point contact with a horizontal supporting surface.

2. A mounting stand as in claim 1 wherein the upper end of the post has a parallelogram frame of two similarly extending bars, end members pivoted thereto, means pivoting one bar of the frame to the post and detachable securing means holding the other bar to the frame.

3. A mounting stand as in claim 2 wherein brace means are attached to one bar at spaced locations and are attached to the post.

4. A mounting stand adapted to be maintained in an upright position upon a generally horizontal supporting surface comprising a vertical post, a first collar slidably mounted on said post, two legs contacting and pivoted to said collar at an angle other than a straight angle, a second collar below and spaced from the first collar and slidably received on the post, a pair of arms contacting and each pivoted to said second collar and to each leg, said first collar contacting said legs at a greater radial distance from the axis of said post than the contact of said second collar with said arms so that the arms will fold inside the legs, said legs and said post forming a three-point contact with a horizontal supporting surface.

References Cited by the Examiner

UNITED STATES PATENTS

755,043	3/1904	Pike et al.	248—171
846,552	3/1907	Collins et al.	248—96
1,000,840	8/1911	Pennington	211—119.16
1,199,773	10/1916	Ericson et al.	95—83
1,893,096	1/1933	Michaud	211—172
2,353,374	7/1944	Thompson	211—170

CLAUDE A. LE ROY, *Primary Examiner.*

J. F. FOSS, *Assistant Examiner.*