

916,717.

P. A. KINGSTON.
SIGNAL LAMP.
APPLICATION FILED JUNE 26, 1908.

Patented Mar. 30, 1909.
3 SHEETS—SHEET 1.

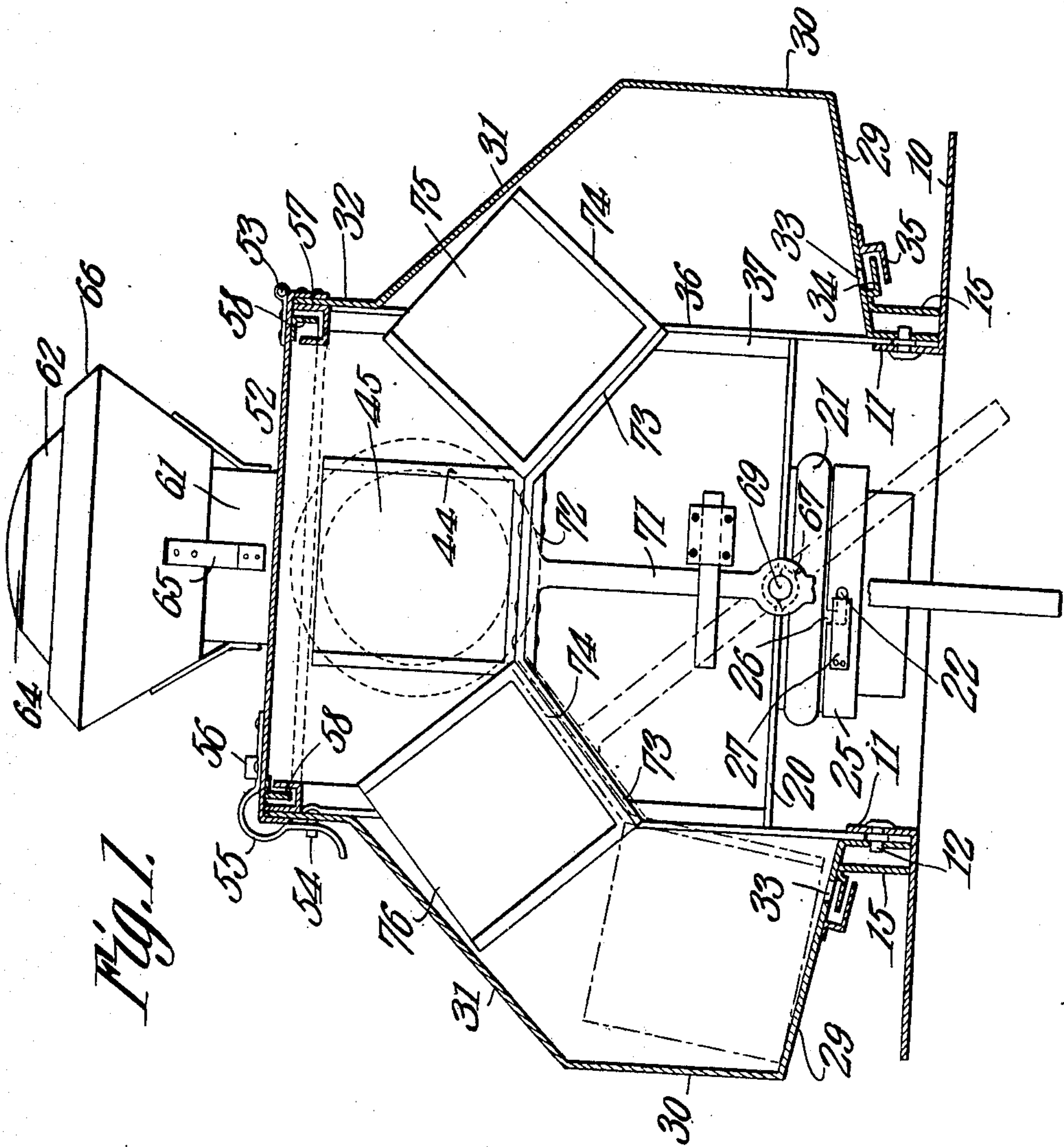


Fig. 1.

Witnesses

E. H. [Signature]
W. [Signature]

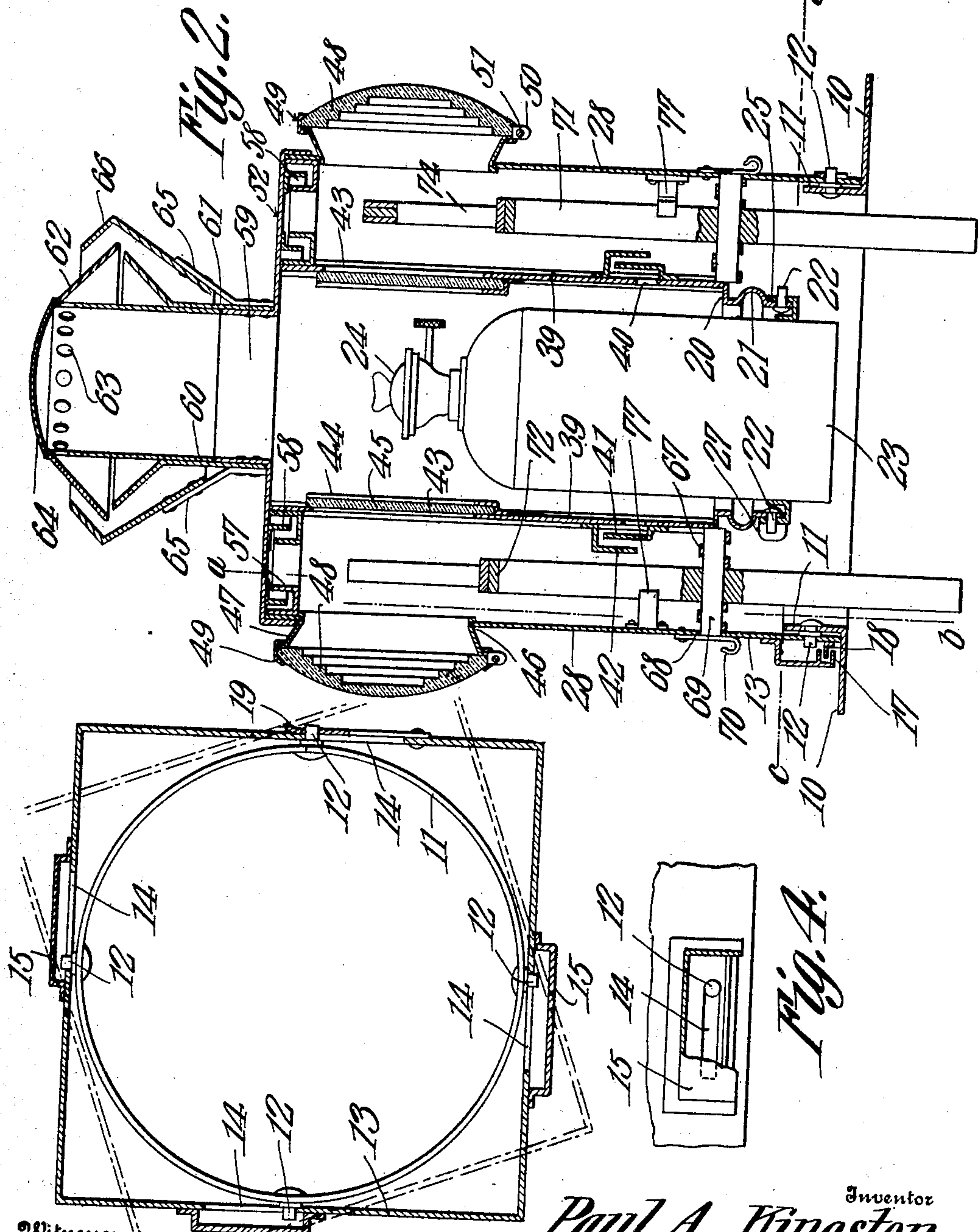
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 SHEETS—SHEET 2.



Witnesses
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Fig. 3.

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 3 SHEETS-SHEET 3.

Fig. 5.

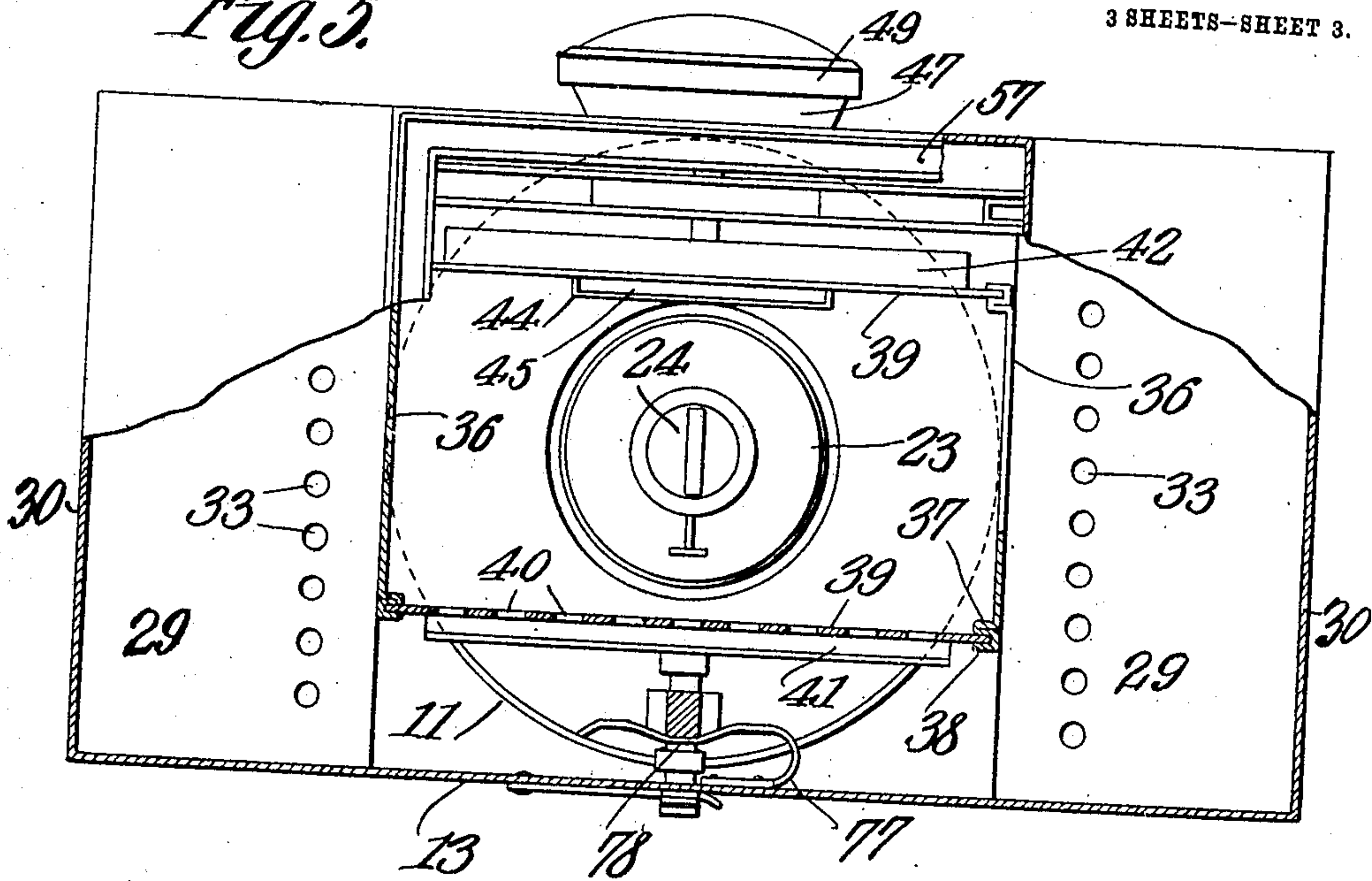


Fig. 7.

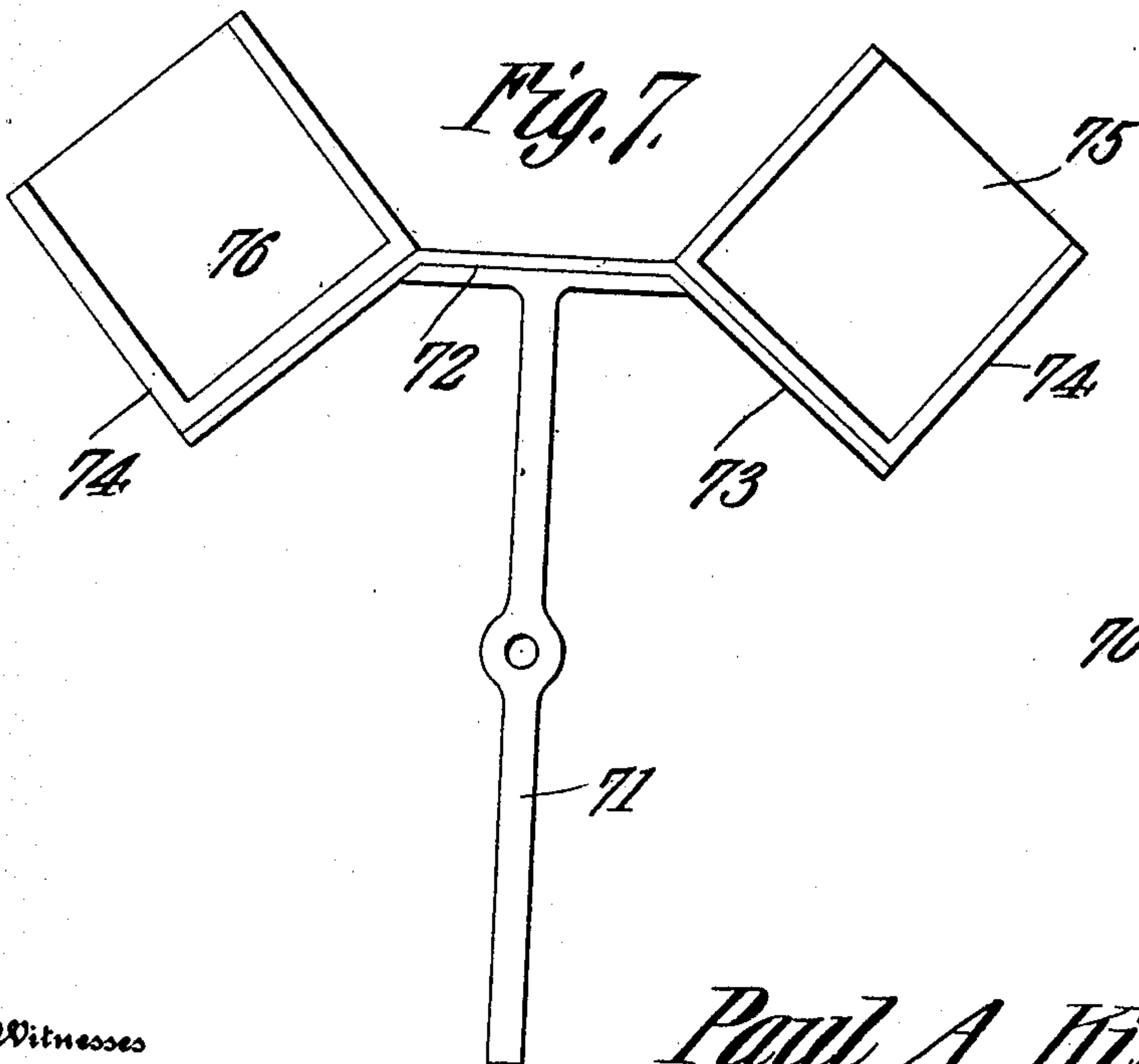
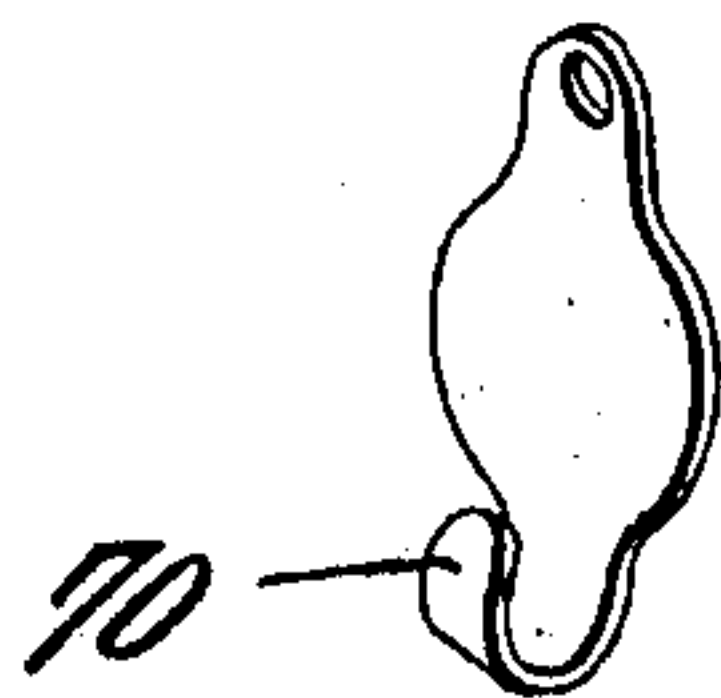


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

PAUL A. KINGSTON, OF DANVILLE, ILLINOIS.

SIGNAL-LAMP.

No. 916,717.

Specification of Letters Patent. Patented March 30, 1909.

Application filed June 26, 1908. Serial No. 440,545.

To all whom it may concern:

Be it known that I, PAUL A. KINGSTON, a citizen of the United States, residing at Danville, in the county of Vermilion and State of Illinois, have invented a new and useful Signal-Lamp, of which the following is a specification.

This invention relates to signal lamps such as are commonly used on railroads for tail lights and has special relation to lamps of the kind called caboose deck lamps.

One object of the invention is to improve the general structure of such a lamp so that it may be readily taken apart for cleansing without the use of tools and as readily re-assembled.

Another object of the invention is to provide an improved form of signal lamp in which the color of the light may be changed at will.

Another object of the invention is to provide a caboose signal light with means whereby the color displayed may be changed from the inside of the caboose.

Another object is to provide a signal lamp in which there shall be a double casing so that in certain conditions of the weather the lamp will not sweat.

Another object is to provide an improved form of signal lamp which is inextinguishable by storms.

The invention consists in general of a signal lamp composed of an inner and an outer casing provided with opposed windows and a frame carrying one or more colored glasses between the inner and outer casings and supported on a rocking lever that extends down below the base of the lamp.

The invention further consists in certain novel details of arrangement and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and; Figure 1 is a sectional view of a lamp constructed in accordance with this invention the section being taken on the line *a b* of Fig. 2. Fig. 2 is a sectional view at right angles to Fig. 1, through the center of the lamp. Fig. 3 is a horizontal section on the line *c d* of the Fig. 2. Fig. 4 is a detailed view partly broken away of one of the said devices. Fig. 5 is a plan view partly in section. Fig. 6 is a detailed view

of one of the cover plates for the pivot pin. Fig. 7 is a detailed view of one of the pivoted glass supporting frames.

In the accompanying drawings forming a part of this specification, the numeral 10 indicates the base of the lamp. This base is preferably made rectangular in outline and is attached to the roof of the caboose by any suitable means as screws or the like. It is intended that this base shall remain constantly attached to the roof and that the lamp may be removed therefrom when desired. To this end and for other purposes that will be hereinafter described the base is provided with a centrally disposed opening circular in form around which is located an upward turned flange 11, preferably integral with the base 10. Suitably spaced around the flange 11 are a plurality of outwardly projecting pins 12, preferably four in number as best seen in Fig. 3.

The body of the lamp is provided with a base flange 13, rectangular in form and of such a size as to fit over the circular flange 11 of the base plate. This rectangular flange is provided on each side with an aperture 14 extending from the middle of each of these sides toward one end thereof, these apertures all extending in the same direction around the flange. The apertures 14 are further of such size and so positioned as to receive the ends of the pins 12 when the lamp is placed on the base in the position indicated by the dotted lines of Fig. 3 and rotated to the position indicated by the full lines in that figure. Two of these apertures are provided with cover plates 15 which extend down to the base 10, as clearly indicated in Fig. 1. The apertures which are thus covered are on opposite sides of the base flange. The object of these cover plates is to prevent air entering the apertures over which they are located. Upon a third side of the base flange of the lamp body is a cover plate 16, similar to the cover plates 15, but so arranged as not to contact with the base 10. This cover plate 16 is provided at its lower edge with a pair of spaced ribs 17 and a similar rib 18 is held on the base flange 13 and lies between the ribs 17 and in spaced relation to those ribs. The object of this is to provide a tortuous passage for any air that may enter the slot 14 under the cover plate. Upon the side opposite to the cover plate just described is mounted a spring latch 19, so arranged that when the

lamp body is in the position indicated by the full lines of the Fig. 3, the pin will enter a slot or opening in the latch and the lamp body be prevented from accidentally rotating on the base. When it is desired to remove the lamp body, however, it may readily be accomplished by lifting the outer end of the spring catch which will free the pin therefrom.

10 A partition 20, extends across the lamp body to form a bottom therefor and is provided with a centrally disposed opening surrounded by an annular flange 21. This annular flange extends downward from the partition and is provided with a plurality of pins 15 22, projecting outward therefrom as best seen in Figs. 1 and 2. Within the annular flange 21, and extending up into the body of the lamp is an oil font 23, provided with a 20 suitable burner 24. This oil font 23 is surrounded at or near the bottom with a laterally extending and upwardly bent flange 25, provided with a plurality of bayonet catch slots 26. These slots are equal in number to 25 the pins 22 and similarly disposed so that the oil font may be placed in the lamp in the usual manner. In order to prevent the oil font accidentally becoming disengaged from the lamp body there is provided adjacent to 30 one of the bayonet catch slots a spring stop 27, so arranged that when the oil font is in position the end of the spring will contact with one side of one of the pins and hold the font against rotation within the body of the 35 lamp.

Two of the sides of the lamp are in alignment with two of the sides of the base flange as indicated at 28. The other two sides extend outwardly as at 29, upwardly as at 30, 40 inwardly as at 31, and again upwardly as at 32, the last named portion being in alignment with the base flange. By means of this peculiar arrangement a pair of outwardly extending pockets are formed, one being 45 on either side of the lamp. Air is admitted to each of these pockets through a plurality of openings 33, preferably arranged in the bottom of each of the pockets. In order to prevent direct draft through these openings 50 there is provided a baffle plate 34 extending under the rows of perforation to form a box having an open outer end. A second baffle plate 35 is arranged under the plate 34 so that it forms a box having an open inner end. 55 The central portion of the pocket just described is shut off from the body of the lamp by partitions 36, as is best seen in Fig. 5. At each end of these partitions a channel is formed by forming on the partitions near the 60 edge a flattened bead 37 and then bending the edge to form a flange 38. The partitions just described form two sides of the inner casing of the lamp and the other two sides are formed by partitions 39 slidably held in 65 the grooves formed by the arrangement of

the edges of the partitions 36. Near the bottom of each of the partitions 39, is a series of holes 40 for the purpose of admitting air to the body of the lamp. In order to provide a tortuous passage for the air and 70 assist in preventing the flickering or jumping of the flame there is mounted on each of these partitions, in opposition to the holes a baffle plate 41, extending upward on the outside of the partitions and a similar baffle 75 plate 42 extends downward over the plate 41.

On the upper end of each of the partitions 39, opposite the lamp burner is an opening 43 rectangular in shape and surrounded by a channel strip 44 on the sides and bottom. 80 Held within the channel formed by the channel strip is a clear glass 45, the same being a piece of window or plate glass. Opposite the glazed opening thus formed is an opening 46 in the outer casing member 28. A 85 lens flange 47 is held in the opening 46 and is preferably arranged so that it flares toward the outer end as clearly shown in Fig. 2. A lens 48 is held on the outer portion of this flange by means of a reflexible or resilient 90 band 49 of U-shape, passing therearound and engaging the outer portion of the said flange. This band is slit and provided with ears 50, which are held together by a bolt 51 95 so that the band may be removed and thus permit the removal of the lens and substitution of another lens or the replacement of a broken lens.

The top of the lamp is closed in by means of a cover 52, hinged as at 53, to one of the 100 members 32. Upon the other member 32 is carried a pin 54 and a spring latch 55, is held to engage this pin being prevented from too great movement by a keeper 56. In order 105 to force any air which may pass under the cover through a tortuous passage, there is provided around the inner and outer casings channels 57 and upon the cover is a plurality of ribs 58 fitting within these channels. These ribs and channels are so arranged that 110 any air entering around the edges of the cover will be forced down along side of the ribs and upward again through the channels, the outer end of the channel being spaced from the cover to permit the air to enter between 115 the inner and outer casings. The cover is provided with a centrally disposed circular opening surrounded by a flange 59 extending upwardly above the cover. Mounted upon the flange 59, is a tube 60 having an outer 120 tube 61 rigidly attached thereto of such diameter as to snugly fit over the flange 59. The upper end of the tube 61 is flared outwardly as clearly shown in Fig. 2, and the tube 60 also carries a downwardly inclined 125 and outwardly flared hood 62, the upper end of the tube 61 and the lower end of the hood 62 being spaced apart to provide an influx for air. At the upper end of the tube 60 and preferably immediately below the point of 130

junction with the hood 62 is a series of perforations 63 extending around the tube. A cap 64 is used to close the outer end of the tube. Rigidly secured to the lower end of the tube 61 is a plurality of arms 65, whereon is mounted a hood 66 comprising two frusto conical portions basily opposed. This hood is of such size and proportion as to be spaced from the outer tube at the lower end and from the hood 62 at the upper end while at the same time covering the opening between the upper end of the outer tube and the hood 62. By reason of this arrangement no air can be blown into the body of the lamp from the top and flickering and jumping of the flame is thus prevented.

In the bottom 20 of the lamp body are formed certain bearings comprising alternate struck up and struck down portions of the metal of that bottom as indicated at 67. These bearings are so formed that the axis thereof lies in the plane of the bottom and the side wall 28 is perforated opposite the bearings as indicated at 68. The pin 69 is held in these bearings being secured therein by means of a cover plate 70 pivotally mounted on the outer casing 28. Pivotally mounted upon these pins 69 is a lever 71 the lower end of which extends down through the base 10 and is of such length that it may reach inside of the caboose through the roof. The upper end of this lever 71 is provided with a cross bar 72 and two downwardly inclined bars 73 extending from this cross bar upon which are mounted glass frames 74 of U-shape in cross section and arranged to receive colored glasses 75 and 76, these glasses being respectively red and green. The length of the bar 72 is such that when the lever 71 is in the position indicated in Fig. 1, the entire surface of the clear glass 45 will be exposed, none of the colored glass projecting thereover. When in the mid position indicated in the Fig. 1, the lever 71 is held from accidental movement by means of a keeper 77, said keeper being made of resilient metal and having a centrally disposed depression 78 to receive the lever 71.

In the operation of this device when it is desired to change from one colored light to the other all that is necessary to do is to move the lower end of the lever 71 to the right or left as may be desired when either the red or green light will be brought between the glass 45 and lens 48, the parts being retained in this position by the weight of the other glass as shown in the dotted lines of Fig. 1. In other words the lever and the colored glasses carried thereby are mounted in unstable equilibrium and are only retained in the vertical position by means of the catch 77. When the lever is shifted to one or other side of the vertical plane of its axis, the center of gravity is correspondingly shifted, and will carry the lever fully over to proper position

to display the color desired and the effective weight will naturally increase as the center of gravity shifts farther from the vertical plane of the pin 69, so that the lever will be held in place without the necessity of employing any auxiliary locking devices.

In order to clean the lamp thoroughly the hood is first removed, the lid raised, the partitions 39 drawn out, the oil font 23 removed, the cover plates 70 rotated and the pin 69 removed permitting the removal of the lever 71 and parts attached thereto. When this is done it is found that there is nothing left but the shell of the lamp which may then be cleaned in any desired manner and the various parts thoroughly cleaned also and again reassembled. It is to be noted that throughout this entire operation only the hands are employed in taking the different parts to pieces so that it is not necessary with this lamp to have any tools in order to thoroughly clean the same.

It will be seen that the colored lenses or glasses are arranged in practically inclosed compartments that are protected on one side from exposure to the weather by the casing 28, and the lenses 48, and on the other side are protected from the heat of the lamp and smoke by the vertical partitions 39 and the plain sheets of glass 45.

It is obvious that many minor changes may be made in the form and proportions of this invention without departing from the material principles thereof. It is not therefore desired to confine the same to the exact form herein shown and described, but it is wished to include all such as properly covered in the scope of the invention.

Having thus described the invention what is claimed as new, is:—

1. In a signal lamp, an outer casing and an inner casing provided with opposed windows, a frame pivotally mounted in the space between the inner and outer casings, a plurality of differently colored glasses mounted on the frame, the vertical plane of the center of gravity of the frame being shiftable to thereby hold the frame in position to which it is adjusted.

2. In a signal lamp, an outer casing and an inner casing provided with opposed windows, a frame provided with a plurality of spaced glass supports pivotally mounted in the space between the outer and inner casings, and a plurality of differently colored glasses held in said support, the vertical plane of the center of gravity of the frame being shiftable to thereby hold the frame in position to which it is adjusted.

3. In a signal lamp, an outer casing provided with a glazed opening, an inner casing provided with an oppositely disposed glazed opening, said inner casing being held in grooves in the outer casing to permit its removal therefrom, and a colored glass held

between the inner and outer casings and adapted to be positioned between said glazed openings.

4. In a signal lamp, an outer casing provided with a glazed opening and having circuitous air passages leading from the atmosphere into said outer casing, an inner casing provided with an opposed glazed opening and having circuitous air passages leading from the outer casing to the inner casing, and a colored glass held between the inner and outer casings and adapted to be positioned between said glazed openings.
5. In a signal lamp, an outer casing and an inner casing provided with opposed windows, a colored glass held between the inner and outer casings and adapted to be positioned between said windows, a hinge top extending over both of said casings, channels formed on the interior of the outer casing and exterior of the inner casing near said top, ribs carried on said top extending down into said channels, a cowl on said top comprising an inner tube closed at the upper end and open to the lamp at the lower end provided with a plurality of openings around the upper end thereof, an outer tube having its upper end outwardly flared, a hood mounted upon the upper end of the inner tube downwardly and outwardly flared the

edges of the hood and the top of the outer tube being in spaced relation, and a second hood mounted on the outer tube and consisting of frusto conical portions in spaced relations.

6. In a signal lamp, an outer casing provided with oppositely disposed openings, a plurality of white lenticular glasses held in said openings, an inner casing provided with a plurality of oppositely disposed openings in alinement with the openings in the outer casing, a plurality of plane white glasses held in said openings, a plurality of pivotally mounted levers held in the spaces between the inner and outer casings the lower end whereof extends downwardly through the bottom of the lamp, a plurality of red and green glasses carried on each of said levers, a removable oil font held between the walls of the inner casing, a hinge top covering both the inner and outer casings, and a removable cowl mounted upon said top.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

PAUL A. KINGSTON.

Witnesses:

LIZZIE KILEY,
E. L. SMITH.