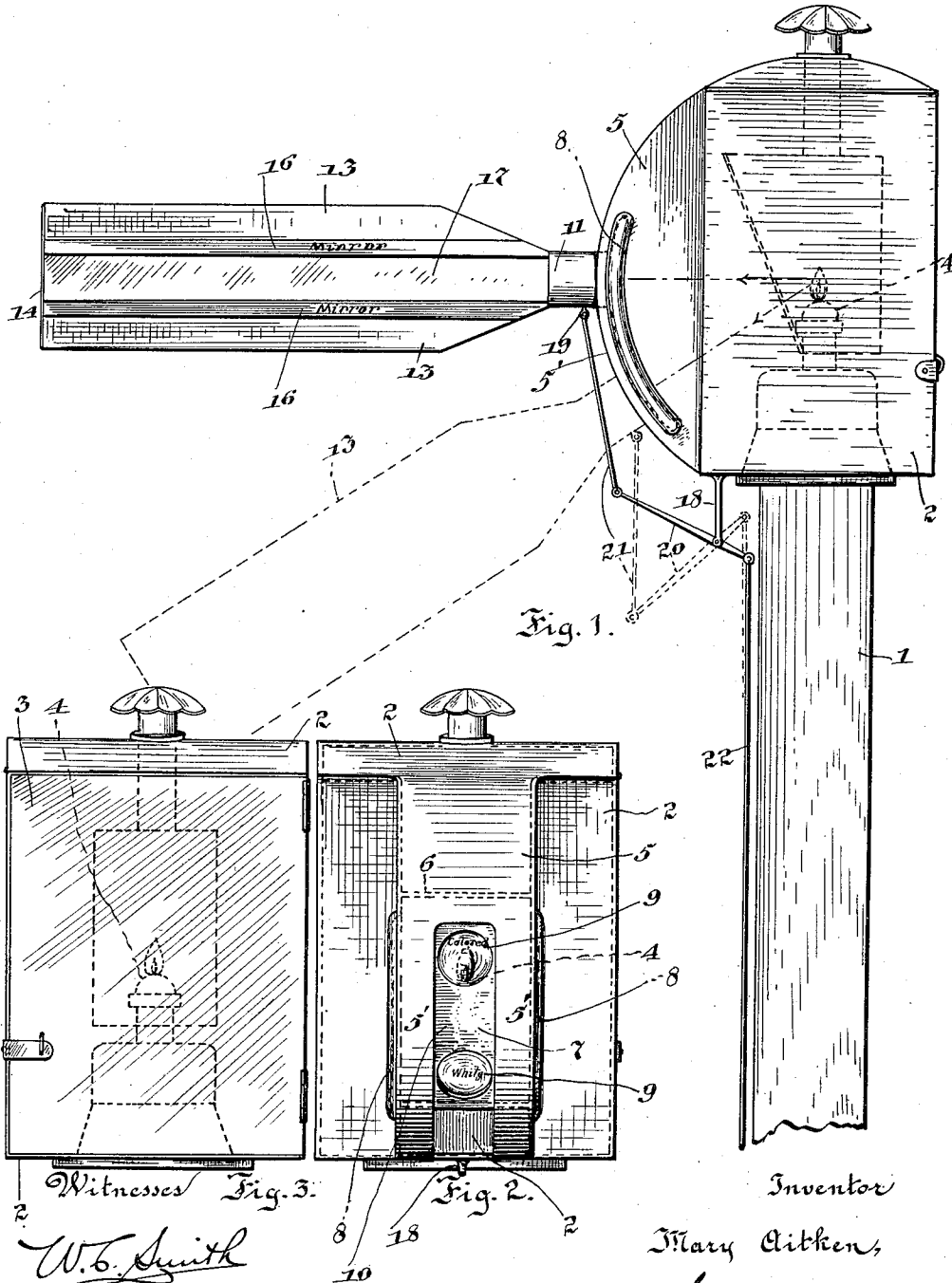


M. AITKEN.
SEMAPHORE SIGNAL.
APPLICATION FILED MAR. 25, 1910.

1,031,610.

Patented July 2, 1912.

2 SHEETS—SHEET 1.



W. B. Smith
B. F. Richards

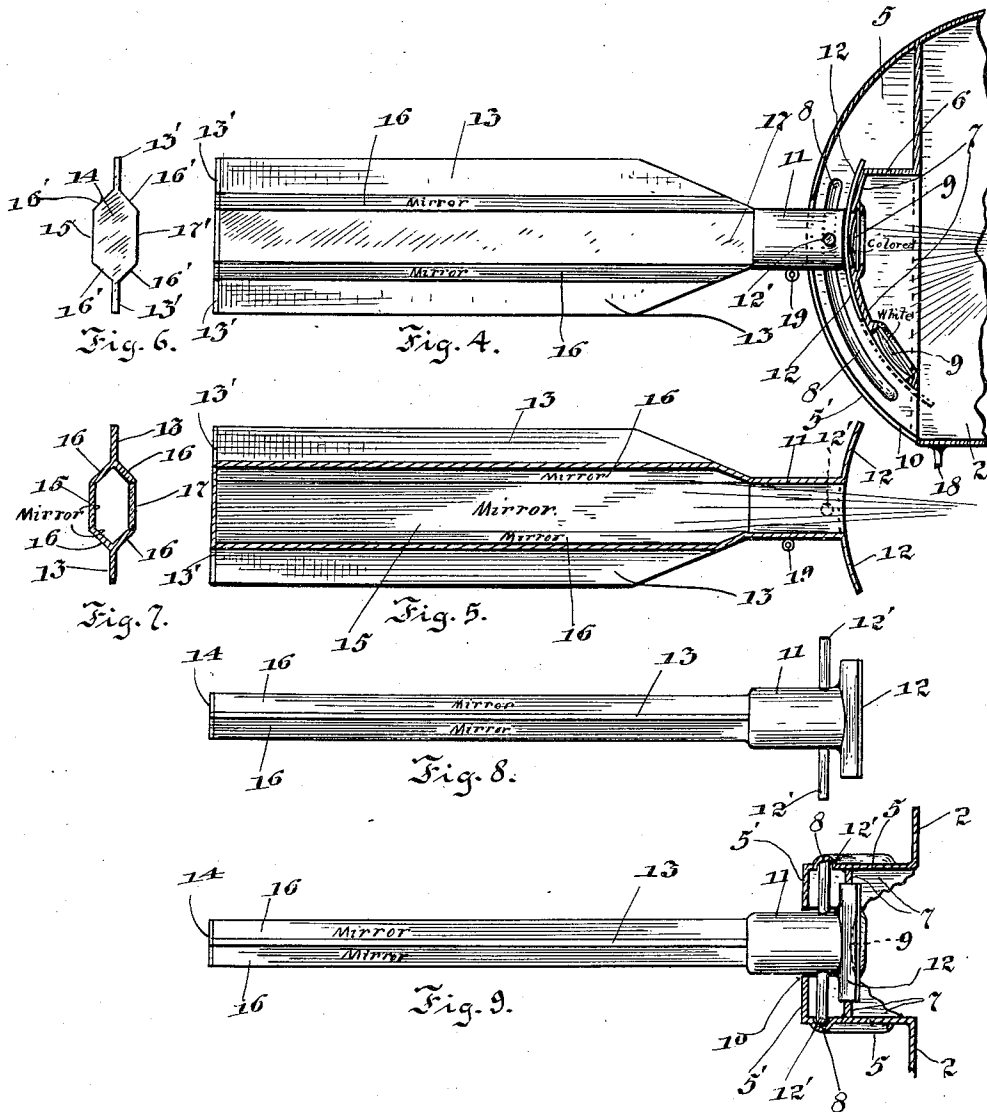
Inventor
Mary Aitken,
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her Attorney.

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Witnesses
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UNITED STATES PATENT OFFICE.

MARY AITKEN, OF CHICAGO, ILLINOIS.

SEMAPHORE-SIGNAL.

1,031,610.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed March 25, 1910. Serial No. 551,461.

To all whom it may concern:

Be it known that I, MARY AITKEN, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Semaphore-Signals, of which the following is a specification.

My invention relates to improvements in semaphore signals, the object being the production of a signal of this class which shall be capable of signaling at night as well as in the day-time.

A further object of my invention is to provide a semaphore signal, the swinging arm of which shall be capable of giving different signals at night, the same to be under the control of a distant operator.

Other objects will appear hereinafter.

With these objects in view my invention consists in the novel construction and arrangement of parts which will be hereinafter fully described and particularly pointed out in the appended claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of my improved semaphore signal in its preferred form, Figs. 2 and 3 are front and rear elevations respectively showing the signal with the swinging arm thereof removed, Fig. 4 is a vertical section, the swinging arm being shown in elevation, Fig. 5 is a vertical section of the swinging arm, Fig. 6 is an end elevation of the swinging arm, Fig. 7 is a transverse section of the swinging arm, Fig. 8 is a top plan view of the swinging arm, and Fig. 9 is a vertical horizontal section showing the manner in which the swinging arm is mounted, the latter being shown in top plan.

Referring now to the drawing, 1 designates a post and 2 a lamp housing mounted on the top thereof. The rear of the housing 2 is provided with a hinged door 3 thereby giving access to the lamp 4 contained in the housing. The front of the housing 2 is provided with a forwardly extending chamber 5 having a front curved surface 5'. Contained within the chamber 5 is a transversely disposed partition 6 and a curved partition 7, the latter being parallel with the curved surface 5'. Formed in the side walls of the chamber 5 are segmental

grooves 8 which extend parallel with the curved wall 5'. Secured in the partition 7 are lenses 9 through which light rays are emitted from the lamp contained within the housing 2. In order that light rays may be emitted through the curved wall 5' a slot 10 is arranged therein, as clearly shown in Fig. 2.

The swinging semaphore arm is provided with a tubular portion 11 which is adapted to project through the slot 10, the inner extremity of said tubular portion being provided with a segment 12 which is adapted to slide on the surface of the curved partition 7. Projecting laterally from the tubular portion 11 are pins 12' the ends of which are adapted to slide in the grooves 8, thereby maintaining the segment 12 in close contact with the partition 7. The swinging arm is provided with longitudinally and vertically extending flanges 13 and with an end cap 14. One side of the swinging arm consists in a wall 15 the inner surface of which is adapted to reflect light rays, and inclined to this wall are walls 16 whose inner surfaces are also adapted to reflect light. The other side of the swinging arm consists in a transparent wall 17 which is preferably formed of clear glass, and inclined to this wall are walls 16 which are similar to walls 16 hereinbefore mentioned. The edges 13', 15', 16', and 17' are flush respectively with the walls 13, 15, 16 and 17, the object of this construction being to provide a neat appearance.

In order to move the swinging arm from the full line position to the dotted line position, as shown in Fig. 1, a lug 18 depending from the housing 2 and an eye 19 secured in the tubular portion 11 is provided, the lever 20 being pivoted in the lug 18 and the connecting rod 21 connecting said lever with said eye. The actuating rod 22 which is pivoted to the lever 20 may be so connected as to be moved by a distant operator.

The operation of the device is as follows: When the swinging arm is in the horizontal position rays of light will be emitted through the uppermost lens 9 which is preferably of colored glass. These rays entering the swinging arm will be reflected on the reflectors therein and be visible through the transparent wall 17, thus causing the arm to appear of the same color as the lens through which the light is emitted. When

it is desired to show a white signal the swinging arm is moved to the dotted line position, thus bringing the same into registration with the lower lens 9 which is of clear glass.

It is apparent that if the light rays are white that the clear glass lens may be omitted but the same is preferred to render the device dust-proof and free from currents of air.

It is obvious that a swinging arm may be provided on either side of the lamp housing 2 to render the device of service in double track railroads.

While I have shown what I deem to be the preferable form of my improved semaphore signal, I do not wish to be limited thereto as there might be various changes made in the details of construction and arrangement of parts described without departing from the spirit of my invention, and hence I desire to avail myself of such changes and alterations as fairly fall within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In combination, a lamp box having a lamp therein, a plurality of vari-colored lenses arranged in one end of said box, and a semaphore arm having a tubular portion movable into alinement with any one of said lenses to receive the light rays radiated therefrom and concentrate the same upon the arm, substantially as described.

2. In combination, a lamp box having a lamp therein, a plurality of vari-colored lenses arranged in one end of said box in concentric relation to the lamp, and a semaphore arm having an inner tubular portion movable into alinement with any one of said lenses to concentrate and diffuse the light rays upon the outer portion of the semaphore arm, substantially as described.

3. In a semaphore signal, the combination of a housing having a slot in its front wall and outwardly extending segmental grooves in its side walls; a segmental support in said housing parallel with said grooves; a signal arm projecting through said slot; a bearing piece at the inner end of said arm fitting said support; pins on said arm operating in said grooves; and means for operating said arm, substantially as described.

4. In a semaphore signal, the combination of a housing having a slot in its front wall and outwardly extending segmental grooves in its side walls; a segmental support in said housing parallel with said grooves; a hollow signal arm projecting through said slot and open at its inner end; differently colored lenses in said support arranged to register with the opening in said arm in different signaling positions; a lamp in said housing behind said lenses; a bearing piece at the

inner end of said arm fitting said support; pins on said arm operating in said grooves; and means for operating said arm, substantially as described.

5. In a semaphore signal, a hollow swinging arm, a housing inclosing a lamp, a chamber in open communication with said housing having a curved slotted front wall and vertically disposed side walls, a curved partition in said chamber arranged parallel with said curved wall, a plurality of lenses secured in said partition, said side walls being provided with segment grooves which extend parallel with said curved partition, a tubular portion in said arm, a segment at the inner end of said tubular portion adapted to conform to and to slide on said curved partition, pins projecting laterally from said tubular portion whose ends are adapted to slide in said segment grooves, reflecting surfaces in said arm, and means for registering said tubular portion with said lenses, said tubular portion extending through the slot of said wall and the axis thereof coinciding with a radius of said curved partition, substantially as described.

6. In a semaphore signal, a hollow swinging arm, a housing inclosing a lamp, a chamber in open communication with said housing having a slotted front wall and vertically disposed side walls, a curved partition in said chamber arranged parallel with said curved wall, a plurality of lenses secured in said partition, said side walls being provided with segment grooves which extend parallel with said curved partition, a tubular portion in said arm, a segment at the inner end of said tubular portion adapted to conform to and to slide on said curved partition, pins projecting laterally from said tubular portion whose ends are adapted to slide in said segment grooves, vertical and inclined reflecting surfaces in said arm, and means for registering said tubular portion with said lenses, said tubular portion extending through the slot of said wall and the axis thereof coinciding with a radius of said curved partition, substantially as described.

7. In a semaphore signal, a hollow swinging arm, a housing inclosing a lamp, a chamber in open communication with said housing having a slotted front wall and vertically disposed side walls, a curved partition in said chamber arranged parallel with said curved wall, a plurality of lenses secured in said partition, said side walls being provided with segment grooves which extend parallel with said curved partition, a tubular portion in said arm, a segment at the inner end of said tubular portion adapted to conform to and to slide on said curved partition, pins projecting laterally from said tubular portion whose ends are adapted to slide in said segment grooves, vertical and

inclined reflecting surfaces and a transparent wall in said arm, said tubular portion extending through the slot of said wall and the axis thereof coinciding with a radius
5 of said curved partition, and means for registering said tubular portion with said lenses comprising an eye secured in said tubular portion, a lug depending from said housing
10 connecting said eye with said lever, and

means for oscillating said lever, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARY AITKEN.

Witnesses:

JANET E. HOGAN,

JOSHUA R. H. POTTS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."