No. 688,728.

Patented Dec. 10, 1901.

T. GOLDIE.

SIGNAL LAMP.

(Application filed July 6, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

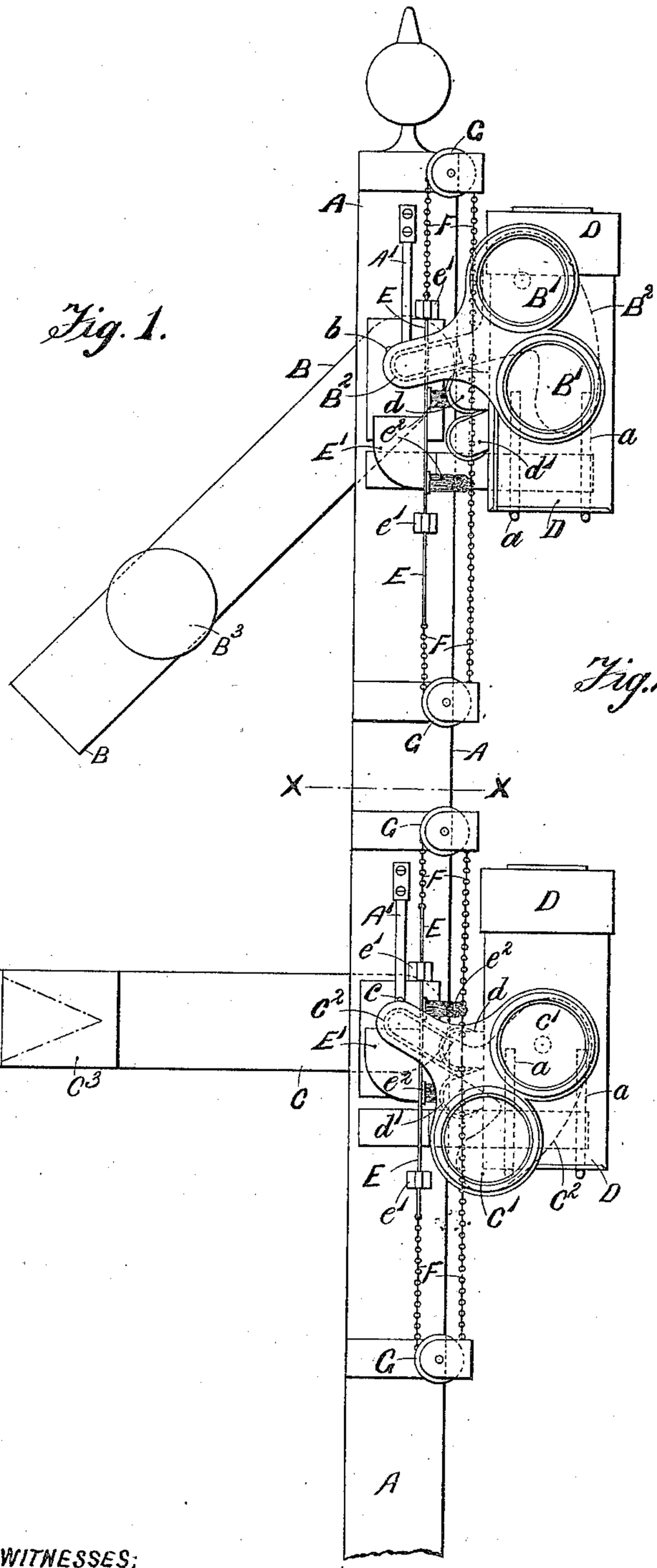
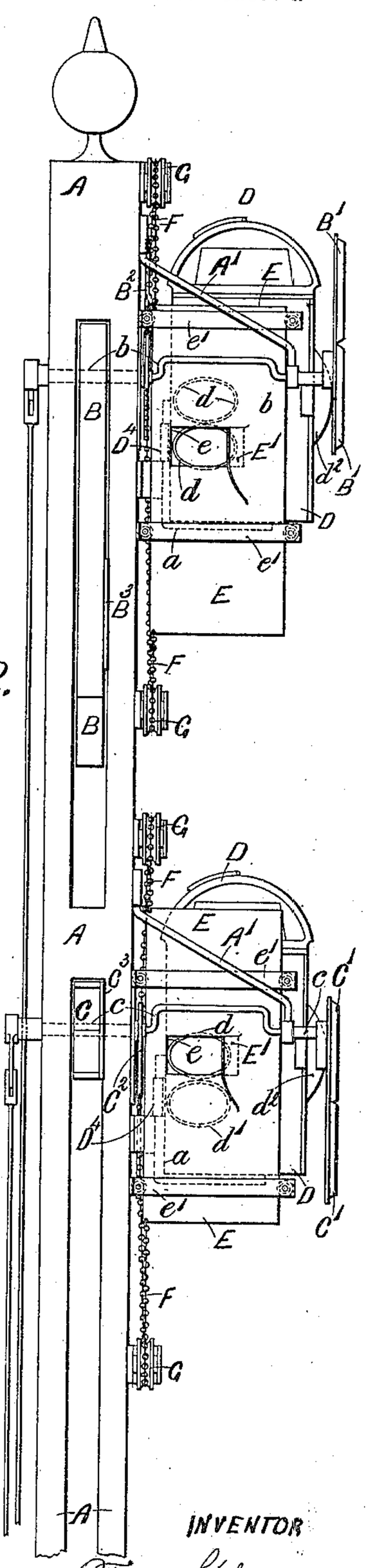


Fig. 2.



WITNESSES:
Ella L. Giles
Otto Munk

INVENTOR
Thomas Goldie
BY
Richards & R
ATTORNEYS

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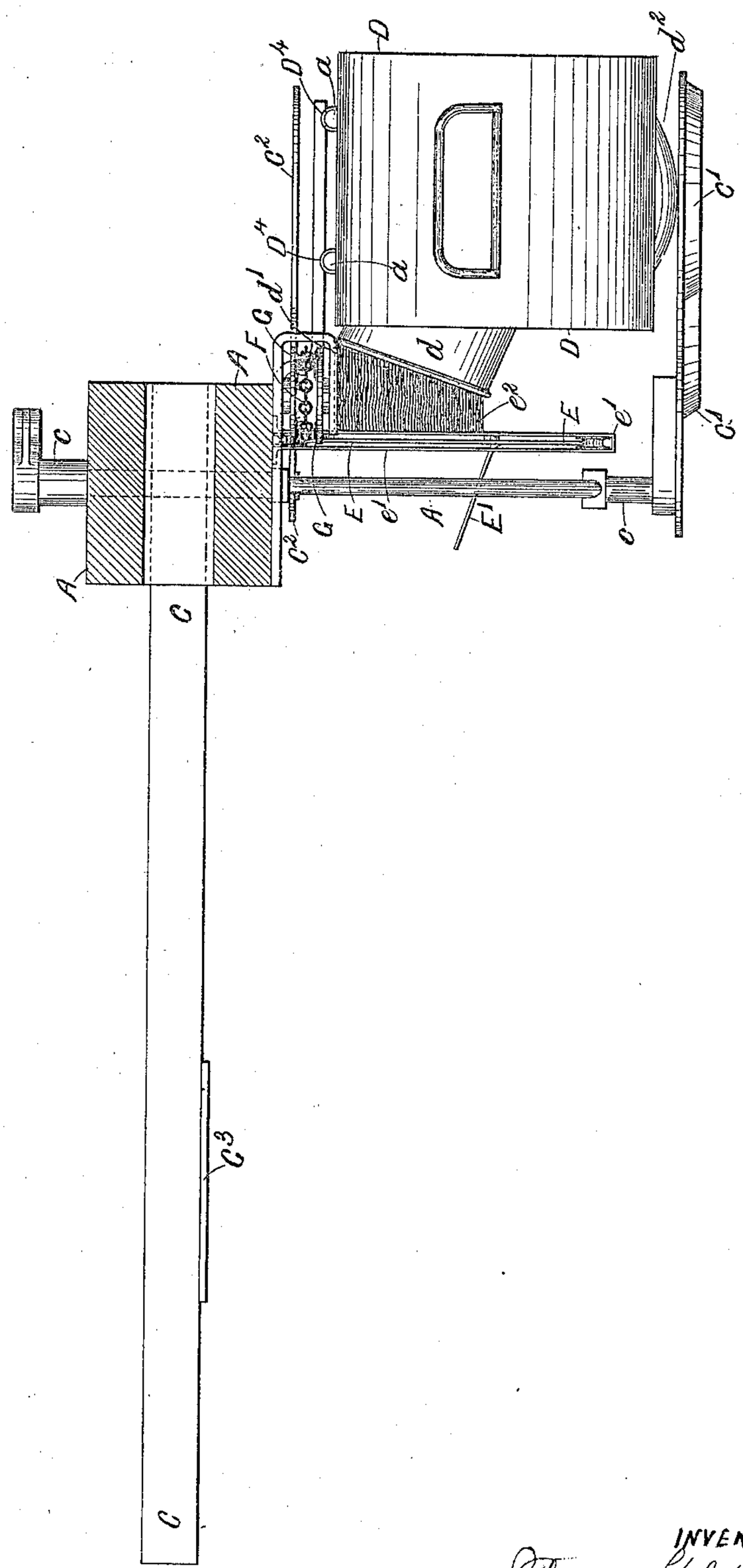

Fig. 3.

WITNESSES:
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UNITED STATES PATENT OFFICE.

THOMAS GOLDIE, OF SOUTH SHIELDS, ENGLAND.

SIGNAL-LAMP.

SPECIFICATION forming part of Letters Patent No. 688,728, dated December 10, 1901.

Application filed July 6, 1900. Serial No. 22,718. (No model.)

To all whom it may concern:

Be it known that I, THOMAS GOLDIE, a subject of the Queen of Great Britain and Ireland, residing at and whose post-office address is 2 Farnham road, South Shields, in the county of Durham, England, have invented certain new and useful Improvements in or Relating to Signal-Lamps, (for which I have applied for a patent in Great Britain under No. 19,566, dated September 29, 1899,) of which the following is a specification.

My invention relates to signal-lamps, and has special reference to those employed with the semaphore system for signaling at night.

The invention has been chiefly devised for railway use, with the object of rendering the position of the semaphore-arm clearly visible at night, thereby making it easy to distinguish "home" and like signals and "distant" signals, which signals at present are seen at night only with the greatest difficulty, if seen at all.

The invention consists in providing the lamp, in addition to the main glass-covered aperture, with one or more subsidiary glass-covered apertures for casting light upon the semaphore-arm when in the "danger" or "all-right" position, the subsidiary aperture or apertures being controlled by a shutter or the like operated by or simultaneously with the said arm or a part connecting therewith.

In order that my invention may be clearly understood, I will describe it in reference to the accompanying drawings, which show the application of my invention to railway signaling.

Figure 1 is an elevation of the upper portion of a signal-post having upon it a "home" or "starting" signal arm in the all-right position and a "distant-signal" arm below it in the danger position. Fig. 2 is a side elevation of the same. Fig. 3 is a plan, to an enlarged scale, on the line $x\,x$, Fig. 1.

A is the signal-post, B is the home or like signal arm, b is the pivot thereof, B′ is the spectacle, B^2 is the back shield, C is the distant-signal arm, c is the pivot thereof, C′ is the spectacle, C^2 is the back shield, and D D are the lamps, one being fitted adjacent to each of the signal-arms B C, all of which are arranged in the ordinary manner, and, with the exception of the lamps D D, of usual construction.

To avoid confusion, I will now confine myself to the lamp D, which is supported adjacent to the signal-arm B and parts connected therewith; but the same description applies also to the other lamp D, and similar reference-letters are used in each case.

I make in the side of the lamp D two openings $d\,d'$, into each of which I fit a glass or lens. The lamp D is located on the signal-post A and the openings $d\,d'$ are arranged one above the other, so that the rays of light from the burner pass through the upper opening d to illuminate the signal-arm B in the danger position and through the other opening d' to illuminate it in the all-right position. Only one subsidiary light is intended to be exhibited at a time, and for this purpose I provide a shutter E, which is conveniently arranged and operated by the signal arm or connections and adapted to cut off the illumination at the lower opening d' when the signal-arm is standing at "danger," but when the signal-arm is at "all right" to open the lower opening d' and close the upper one d. A convenient arrangement for effecting the desired movements of the shutter E is shown on the drawings and is constituted as follows: The shutter E, provided with the opening e and light-shield E, is adapted to work in guides $e'\,e'$ in front of the side openings $d\,d'$ of the lamp D and is attached to the chain F, which passes over the pulleys G G and is connected to the back shield B^2. Consequently as the signal-arm B is operated from the signal-cabin its movements are communicated to the shutter E to regulate the illumination in the required manner. The guides $e'\,e'$ are preferably fitted with rollers for easing the movements of the shutter E. Also the pivot of the signal-arm is preferably cranked, as shown, so as to offer no obstruction to the passage of light through the opening e. A stay A′ serves for supporting the outer end of the pivot b.

To prevent the glasses or lenses in the openings $d\,d'$ getting obscured or dirty, as in snowy weather, I attach to the shutter E brushes e^2 e^2 for removing any such impediment when the signal is operated, or the shutter E may

be disposed to answer the same purpose by being fitted closely to the faces of the glasses or lenses.

As shown, the lamp D is supported on the signal-post A by means of tubular sockets D^4 engaging over pins *a a;* but any other suitable arrangement may be employed for this purpose.

In connection with my improved lamp I recommend the painting of the front side of the distant-signal arm C some distinct color—for instance, blue—and the fitting of like tinted glasses or lenses in the side openings *d d'*, whereas I prefer to employ home or starting signal arms colored, as at present, in conjunction with clear glasses or lenses. Hence it will be apparent that the distinction thus set up will further prevent errors. In order to further assist distinction of the signals from a distance, I fix upon the arms B C enameled plates B^3 C^3, which act as reflecting-surfaces, and upon the plate C^3, I paint a "fish-tail," preferably in white, the plates B^3 C^3 being otherwise colored similarly to the arms to which they are attached. In cases where the plates B^3 C^3 are not used I may paint the fish-tail upon the arm itself, or I may use any suitable device other than a fish-tail, and distinguishing devices may also be used for home and other signals. Instead of being painted the fish-tail or other device may be formed of suitable material and attached to the reflecting-plate or to the signal-arm. When the plates B^3 C^3 are employed, I prefer to use clear glasses or lenses in the lamps for both home and distant signals.

To meet particular cases, the subsidiary lights *d d'* may be disposed at both sides of the lamp B, and although I have specially described the application of my invention to railway signaling, yet, as will be obvious, it is equally applicable to other semaphore systems.

It will of course be understood that although I have described one arrangement for controlling the illumination of the signal-arms, yet I am not confined thereto, but may also use any other arrangement that will effect the same result.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, a lamp for use at night in semaphore signaling apparatus having subsidiary apertures through which light is cast upon the semaphore-arm in each of the positions it is intended to assume, and a shutter operated in conjunction with the semaphore-arm for controlling the passage of light from the said subsidiary apertures, substantially as set forth.

2. In combination, a lamp for use at night in semaphore signaling apparatus having subsidiary apertures from which light is cast upon the semaphore-arm in each of the positions it is intended to assume, a shutter for controlling the passage of light from the said subsidiary apertures, connections between the shutter and the semaphore-operating mechanism whereby the shutter is operated in conjunction with the semaphore-arm, and a reflecting-plate on the semaphore-arm, substantially as set forth.

3. In combination, a lamp for use at night in semaphore signaling apparatus having subsidiary apertures from which light is cast upon the semaphore-arm in each of the positions it is intended to assume, a shutter for controlling the passage of light from the said subsidiary apertures, connections between the shutter and the semaphore-operating mechanism whereby the shutter is operated in conjunction with the semaphore-arm, a reflecting-plate on the semaphore-arm, and a distinguishing device on said reflecting-plate, substantially as set forth.

4. In combination, a semaphore-arm B having a spectacle B' and back shield B^2, lamp D having subsidiary apertures *d*, *d'*, shutter E, guides *e'*, *e'*, brushes e^2, e^2, chain F, pulleys G, G and reflecting-plate B^3 all arranged and adapted for operating substantially as set forth and illustrated.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

THOMAS GOLDIE.

Witnesses:
EDMUND W. PATTISON,
JOHN F. GAIRNS.