

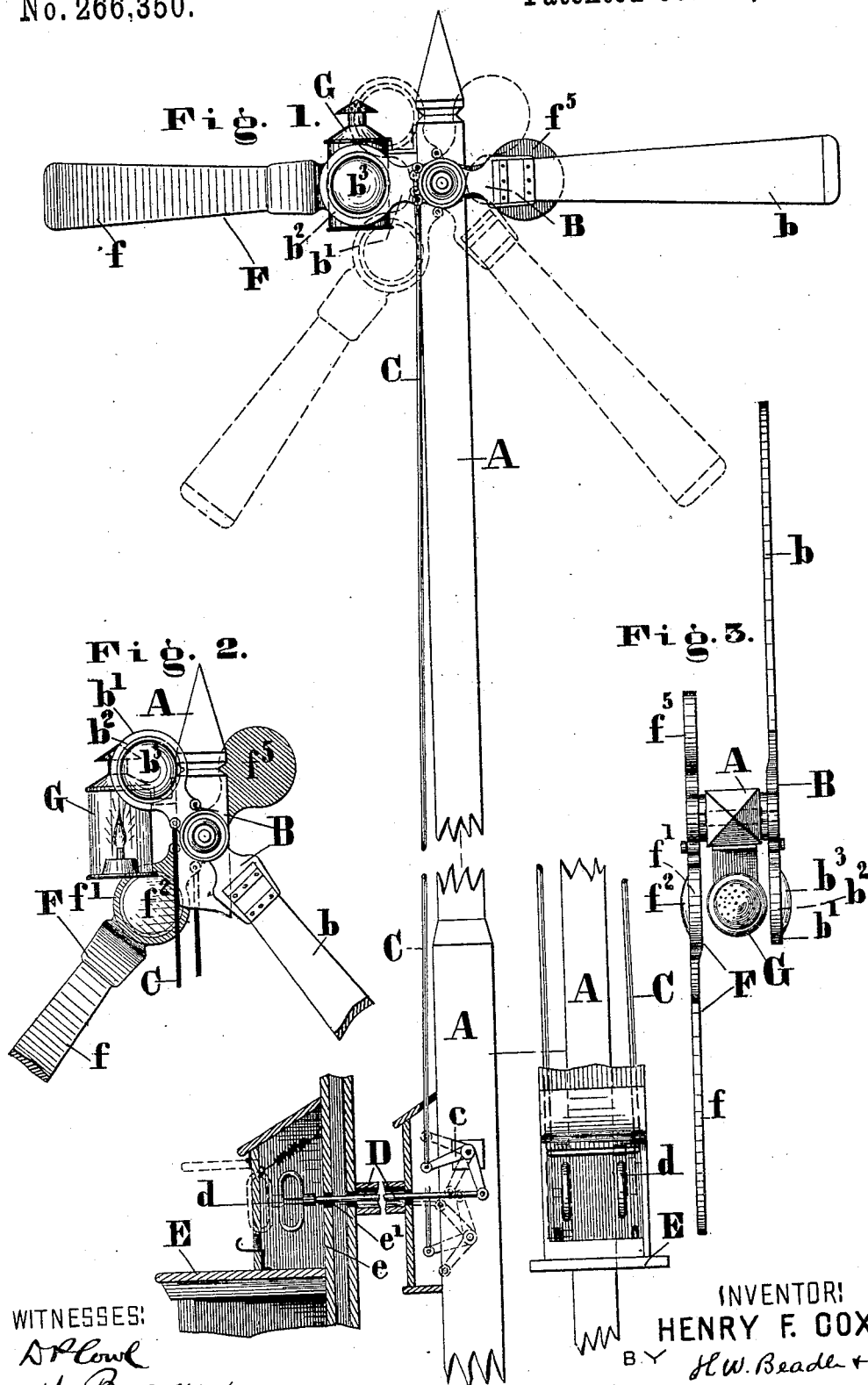
(No Model.)

3 Sheets—Sheet 1

H. F. COX.
SEMAPHORE SIGNAL.

No. 266,350.

Patented Oct. 24, 1882.



WITNESSES:

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W. Bogan

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Fig. 4.

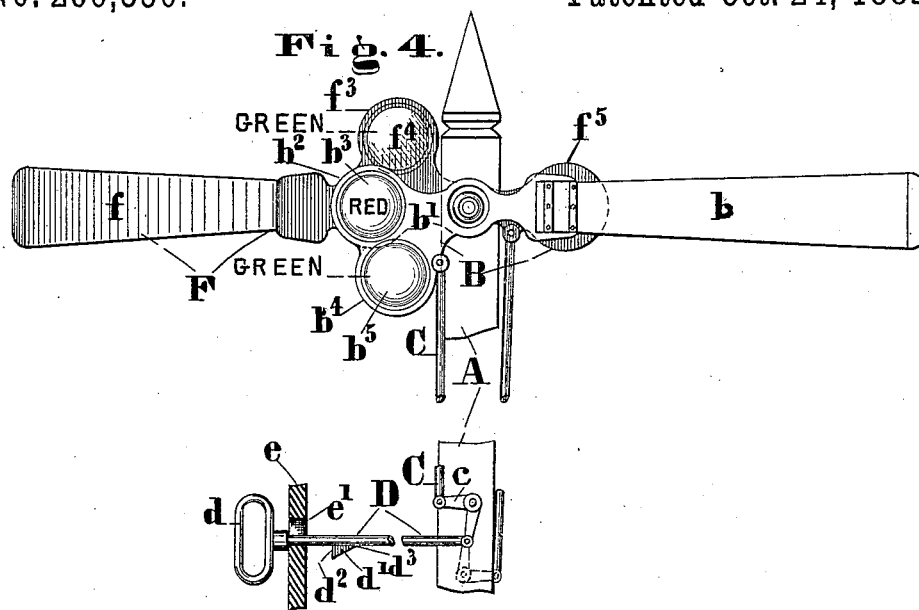


Fig. 5.

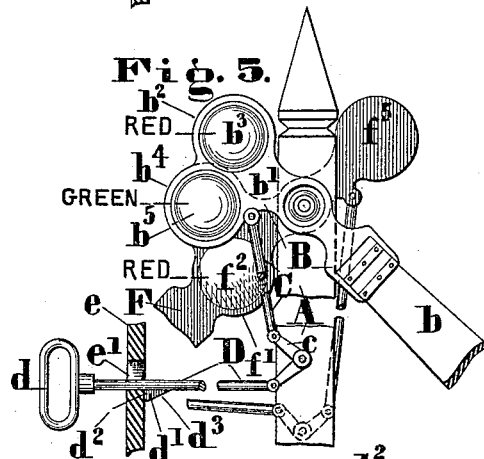
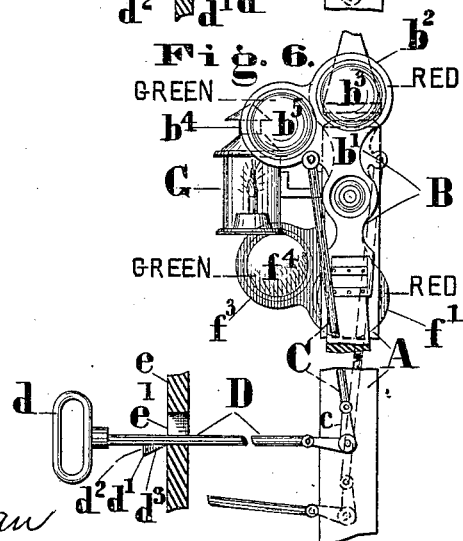


Fig. 6.



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(No Model.)

3 Sheets—Sheet 3.

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SEMAPHORE SIGNAL.

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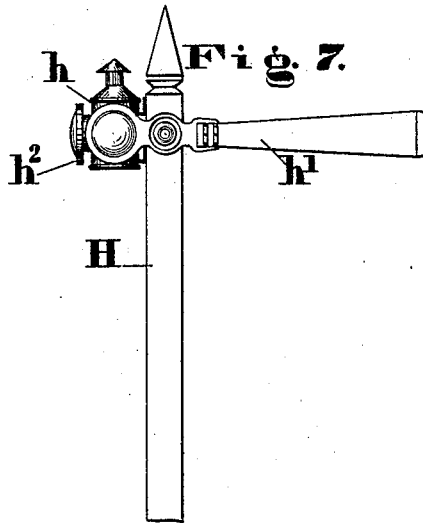
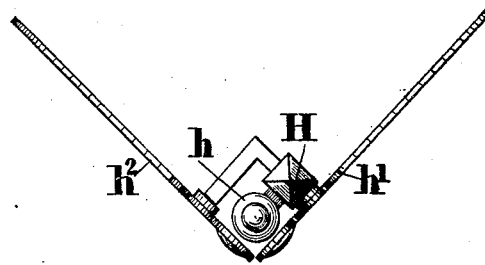


Fig. 8.



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UNITED STATES PATENT OFFICE.

HENRY F. COX, OF ALTOONA, PENNSYLVANIA.

SEMAPHORE-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 266,350, dated October 24, 1882.

Application filed August 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. COX, of Altoona, county of Blair, and State of Pennsylvania, have invented new and useful Improvements in Semaphore-Signals; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 This invention consists mainly in the combination, with a single supporting-post and a single lamp located on one side of a post, of two semaphores carrying lenses located on different sides of the post, the construction being such that the single lamp located upon one side of the vertical center furnishes light to two semaphores pivoted to the center, as will be hereinafter described.

It consists, further, in the combination of a semaphore adapted to fly to "danger" when free to move with a connecting-rod, and adapted to pull the semaphore from "danger," as will be hereinafter described.

15 In the drawings, Figure 1 represents a front elevation of a signal-post and its attachments; Fig. 2, a front elevation of the top of the signal-post with the semaphore arms and lenses in the position of "safety;" Fig. 3, a plan view of the post, the lantern, and the semaphores; Figs. 4, 5, and 6, front elevations of signal-posts and their attachments, the semaphores of which have two lenses instead of one; Figs. 7 and 8, views illustrating a modified form of signal adapted for use in connection with a curved track.

To enable others skilled in the art to make my invention and properly use the same, I will proceed to describe fully its construction and manner of operation.

40 A, Fig. 1, represents the signal post or pillar, which is located at any proper point in reference to the track or tracks in connection with which it is employed.

B represents a semaphore strongly pivoted to the post, near the top of the same, consisting of an extended arm or blade, b , located upon one side of the pivot-point, and a short arm, b' , having a ring portion, b^2 , holding a lens, b^3 , as shown, located upon the other side of pivot-point.

C represents a connecting-rod, the upper end of which is attached to the arm b' of the sem-

aphore and the lower end to the horizontal arm of the bell crank lever c , pivoted to the post at the proper point, as shown.

D also represents a connecting-rod one end of which is attached to the vertical arm of the lever c , and the other end of which is extended into the signal-station, and is provided with a handle, d , as shown.

60 d' , Fig. 4, represents a stud or stop upon the rod D, which is provided with a straight side, d^2 , and an inclined side, d^3 , for the purposes hereinafter explained.

E represents the operator's table, which is located in convenient proximity to the handle d , and is provided with a back-board, e , having a slot, e' , as shown.

If desired, the arm b' on the semaphore B may be provided with an auxiliary ring portion, b^4 , holding a lens, b^5 , as shown in Figs. 4, 5, and 6.

F, Fig. 1, represents a semaphore located upon the opposite side of the post A from the semaphore B, but in the same horizontal plane, the arm f of which extends in the opposite direction to the arm b when both are in their normal position, as shown in Fig. 1.

f' , Fig. 2, represents a ring portion in the blade of the semaphore, holding a lens, f^2 , as shown. If desired, an auxiliary ring portion, f^3 , holding the lens f^4 , may be employed.

f^5 represents a counter-weight by means of which the blade portion of the semaphore is properly overbalanced. This semaphore is provided with proper connections leading to the operator's table, in the manner before described.

When the two semaphores B and F are in their normal positions, as shown in Figs. 1 and 4, the lenses b^3 f^2 , it will be observed, are located in the same horizontal and vertical plane.

G, Figs. 2, 3, and 6, represents a lantern supported upon the post by means of a suitable bracket in such position as to throw the rays through the lenses b^3 f^2 when the parts are in their normal position.

The semaphores B and F are so hung upon their pivots, and in connection with their operating parts so balanced, as to rest, when not positively acted upon, in a horizontal position, this normal position indicating "danger."

The operation is substantially as follows: The semaphore-arm b and its lens b^3 are employed to control one track—say, for example,

the down track—and the semaphore F the other
 or up track; or the semaphore B may be em-
 ployed to control the movements in one direc-
 tion on a single track and the arm F to control
 5 the movement in the opposite direction. The
 parts being in their normal position—that is,
 the semaphores B F being held by the action
 of gravitation in a horizontal position over the
 tracks—and it being desired to let a train pass
 10 over the down track, the handle *d* is grasped by
 the operator and pulled until the stop *d'* comes
 in contact with the outer face of the back-board
 of the table, as shown in Fig. 5. As a result
 15 of this action the connecting-rod C is elevated
 to move the semaphore B against the action
 of gravitation into the position indicated by
 dotted lines, Fig. 1, and full lines, Figs. 2 and 5.
 If the semaphore has only one lens, as shown
 in Figs. 1 and 2—that is, the red “danger”
 20 lens—the lantern, now being uncovered, as
 shown in Fig. 2, will show the white light, and
 consequently permit the train to pass. If,
 however, the semaphore has two lenses—the red
 “danger” and the green “caution,” as shown in
 25 Figs. 4, 5, and 6—the red lens by this action
 will be moved from its position before the lan-
 tern, and the green lens instead will be moved
 into position before it, as shown in Fig. 5. A
 green light consequently being shown, the trains
 30 may pass with caution. When two lenses are
 employed the semaphore may be further moved
 into the proper position to uncover the lantern
 by first slightly raising the handle *d* for the
 purpose of disengaging its stop *d'*, and then
 35 pulling it into the position shown in Fig. 6.
 As a result of this action the semaphore-arm
b is moved into its lowest position and the lan-
 tern is entirely exposed. After the proper sig-
 nal has been shown the operator releases the
 40 handle and permits the parts to assume their
 normal positions by the action of gravitation.
 The passage of trains over the other track or
 in the opposite direction on a single track is

controlled in precisely the same way by the
 semaphore F and its attachments. 45

A modified arrangement of the parts upon
 the signal-post, adapted for use in connection
 with a curved track, is shown in Figs. 7 and 8.

H represents the signal-post, *h* the lantern,
 and *h'* *h*² semaphores, arranged at right angles 50
 to each other, as shown. By means of this ar-
 rangement of parts and location of post the
 track-sections running at right angles to each
 other are covered by a single lamp. The con-
 struction described is specially adapted for use 55
 as a block-signal.

Having thus fully described my invention,
 what I claim as new, and desire to secure by
 Letters Patent, is—

1. In combination with a single supporting- 60
 post and a single lamp located upon one side
 of the post, two semaphores, B and F, united
 to the center of the post by a single pivot, one
 of which semaphores has a lens in its short
 arm and the other a lens in its long arm, the 65
 construction being such that the rays of light
 from the single lamp may be transmitted di-
 rectly through the lens of either semaphore, as
 described.

2. In combination with a semaphore, sub- 70
 stantially as described, the handle D, with the
 stop *d'*, the latter being adapted to limit the
 movement of the handle at the proper point,
 as and for the purpose set forth.

3. In combination with a semaphore, sub- 75
 stantially as described, the handle D, with stop
d', and back-board *e*, with slot *e'*, the construc-
 tion being such that the stop may be drawn
 through the back-board when desired, as and
 80 for the purpose set forth.

This specification signed and witnessed this
 16th day of July, 1881.

HENRY F. COX.

Witnesses:

W. D. COUCH,
 THOS. P. FOSTER.